Scientific Papers. Series B, Horticulture. Vol. LXX, No. 1, 2026
Print ISSN 2285-5653, CD-ROM ISSN 2285-5661, Online ISSN 2286-1580, ISSN-L 2285-5653

RESEARCH ON THE EVOLUTION OF URBAN GREEN SPACES IN ROMANIA (2019-2025)

Razvan COJOCARU, Silvius STANCIU

"Dunărea de Jos" University of Galați, 47 Domneasca Street, 800008, Galati, Romania

Corresponding author email: silvius.stanciu@ugal.ro

Abstract

Urban green spaces are an essential component of the population`s quality of life and the sustainability of cities, playing a major role in mitigating the effects of climate change. This research analyzes the evolution of urban green spaces in Romania between 2019 and 2025, using a methodology based on temporal and spatial comparative analysis, with reference to mapped data, complemented by official statistics provided by the National Institute of Statistics. The analysis is conducted at the level of development regions, examining both the evolution of the total area of urban green spaces and the green space per capita indicator. The study highlights disparities between more developed urban areas and those with limited resources and identifies general trends of growth or reduction in green infrastructure. The outcomes provide an overview of Romania's urban green infrastructure and offer valuable information for urban planning and public policy development, supporting strategies aimed at maintaining and expanding green spaces.

Key words*: green infrastructure, urban sustainable development.*

INTRODUCTION

Urban green spaces represent an essential component of sustainable urban development, contributing to environmental protection, climate regulation, biodiversity conservation, and the improvement of population well-being. In recent decades, accelerated urbanization and the continuous expansion of built-up areas have considerably transformed the spatial structure of cities, increasing pressure on urban ecosystems and reducing the availability of natural and semi-natural areas within urban environments. In this context, green infrastructure has become an increasingly important element of urban planning policies aimed at improving environmental quality and enhancing urban resilience to climate change.

Specialized literature emphasizes that urban green spaces generate multiple ecological, social, and economic benefits. These areas contribute to reducing urban heat island effects, improving air quality, regulating stormwater runoff, and supporting urban biodiversity. At the same time, access to green spaces is associated with improved physical and mental health, recreational opportunities, and a higher quality of life for urban residents (Humă, 2022; Oprea et al., 2023).

Consequently, the preservation and development of urban green infrastructure are increasingly integrated into European strategies concerning sustainable urban development and climate adaptation policies.

At the European level, the EU Biodiversity Strategy for 2030 highlights the importance of expanding urban green infrastructure and promoting nature-based solutions within cities to improve urban resilience and environmental sustainability (European Commission, 2020).

In addition, the European Environment Agency underlines that equitable access to urban green spaces represents an important objective for reducing social and territorial disparities in urban areas (European Environment Agency, 2022).

These strategic orientations encourage national and local authorities to integrate green infrastructure into urban development policies and territorial planning frameworks.

In Romania, the dynamics of urban green spaces have become increasingly relevant in the context of rapid urban expansion, demographic concentration in major urban centers, and the intensification of real estate development pressures. National legislation establishes a minimum target regarding green space availability per inhabitant, emphasizing the importance of maintaining and expanding urban green areas within the built environment (Monitorul Oficial no. 764, 2009).

Nevertheless, important territorial disparities continue to exist between Romanian cities in terms of green space distribution, accessibility, and management practices.

Previous studies conducted in Romania indicate that the evolution of urban green spaces is influenced by demographic factors, local urban planning policies, land-use transformations, and the administrative management of urban territories (Badiu et al., 2016; Șorcaru, 2015). Furthermore, the dynamics of these spaces are closely connected with local urban planning instruments and territorial development strategies, including General Urban Plans (PUG) and Zonal Urban Plans (PUZ). These planning mechanisms strongly influence the balance between real estate densification and the preservation of green infrastructure, frequently favoring commercial development and built-up expansion at the expense of ecological continuity and urban green networks (Badiu et al., 2016).

Recent research also suggests that official statistical data regarding urban green areas may present methodological limitations, as cadastral records do not always fully reflect the ecological reality observed at the local level. In some cases, reported increases in green space areas may result from administrative reclassification processes, updates of urban green registers, or modifications of territorial boundaries rather than from the actual physical expansion of vegetation-covered surfaces.

The present study analyses the evolution of urban green spaces in selected Romanian municipalities during the period 2019-2024 using official statistical data provided by the National Institute of Statistics through the TEMPO Online database.

The research focuses on the municipalities of Bucharest, Galați, Iași, Arad, and Brașov, selected due to their different territorial dimensions, demographic characteristics, and urban development dynamics. A comparative temporal and spatial approach was applied to identify the main trends regarding the evolution of urban green infrastructure and green space availability per inhabitant.

This objective is consistent with recent national assessments conducted by Stanciu et al. (2025), which emphasize that monitoring macro-regional disparities is essential for understanding the uneven evolution of sustainable development across Romania's development regions.

The novelty of the study derives not only from the comparative assessment of urban green space dynamics in selected Romanian cities, but also from the critical interpretation of official statistical data in relation to the limitations of cadastral reporting systems and the broader urban development context. The results provide relevant information for understanding territorial disparities in urban green infrastructure and may support the development of more effective urban planning policies oriented toward sustainable urban development and environmental protection.

MATERIALS AND METHODS

For the preparation of the bibliographic documentation, open-access scientific articles indexed in recognized academic databases, including Clarivate, Google Scholar, and ResearchGate, were consulted, together with official reports published by national authorities and relevant European institutions in the fields of environment, urban planning, and sustainable development. The analysis of the legislative framework was based on the examination of national and European regulations concerning the management and development of urban green spaces, to establish the normative context and the reference standards regarding green space availability in relation to the number of inhabitants.

The data regarding the evolution of urban green space areas in Romania during the period 2019-2024 were obtained from the official statistics provided by the National Institute of Statistics (NIS) through the TEMPO Online platform, which provides updated statistical series at national and local administrative levels.

The analysis focused on selected Romanian municipalities, namely Bucharest, Galați, Iași, Arad, and Brașov, chosen due to their different demographic, territorial, and urban development characteristics.

The collected data were organized into a database and processed using descriptive statistical methods. Subsequently, the information was graphically represented to highlight the temporal evolution and territorial

variations of urban green spaces within the analysed administrative units.

However, an important methodological limitation of the NIS dataset derives from its predominantly cadastral character, as the statistical records reflect legally registered urban green surfaces rather than the actual ecological conditions observed on-site (Badiu et al., 2016). In addition, the rapid development of metropolitan areas and the continuous modification of functional urban boundaries may influence the statistical baseline, meaning that some increases in reported green space areas may reflect administrative reclassification processes rather than the effective physical expansion of urban vegetation.

The interpretation of the results was carried out through comparative analysis between different years and between the selected municipalities, to identify the main territorial disparities and temporal dynamics regarding urban green infrastructure. To improve the reliability of the analysis and validate the obtained results, the statistical information was compared and correlated with data and conclusions from specialized scientific literature, including studies published in the fields of urban planning, environmental management, urban ecology, and sustainable development.

This methodological approach facilitated the integration of official statistical data with previous scientific findings, contributing to the formulation of more robust interpretations regarding the evolution and distribution of urban green spaces in Romania.

RESULTS

The analysis was based on statistical data regarding the annual evolution of urban green space areas in the municipalities of Brașov, Iași, Galați, Bucharest, and Arad during the period 2019-2024 (Table 1).

According to the methodology of the National Institute of Statistics (NIS), urban green spaces include parks, public gardens, public squares, areas planted with trees and shrubs, urban forests, cemeteries, and other recreational areas located within the built-up perimeter of localities, excluding agricultural land, greenhouses, and plant nurseries (NIS, 2022). The reported values are expressed in hectares (ha).

Table 1. Evolution of urban green space areas in selected Romanian municipalities (2019-2024)

Urban green spaces	2019	2020	2021	2022	2023	2024
Total (ha)	26,958	29,136	31,319	31,508	33,350	33,419
Brasov (ha)	351	352	357	372	1,365	1365
Iasi (ha)	827	913	1,005	990	1,017	993
Galati (ha)	1,050	1,087	1,051	1,059	1,059	1,059
Bucharest (ha)	4,506	4,506	4,506	4,506	4,506	4,506
Arad (ha)	524	528	540	614	1,020	1,020

Source: Authors' processing based on NIS data (2026).

At the national level, official statistical data indicate an increase in the total area of urban green spaces from 26,958 hectares in 2019 to 33,419 hectares in 2024, corresponding to an increase of approximately 24% during the analysed period. This evolution suggests a gradual expansion of urban green infrastructure in Romania, consistent with European objectives regarding climate adaptation and sustainable urban development promoted through the EU Biodiversity Strategy for 2030 (European Commission, 2020). At the same time, these macro-regional dynamics and the general upward trend of reported green surfaces are consistent with recent findings from Romanian specialized literature, which emphasize that, despite the overall national increase, the territorial distribution of urban green spaces remains uneven across Romania's development regions (Stanciu et al., 2025). The year 2019 was considered the reference point for analysing the subsequent evolution of urban green spaces in the selected municipalities (Table 2).

Table 2. Green space area in selected areas, 2019 (ha)

City	Green spaces in selected areas, 2019 (ha)
Bucharest	4,506
Galati	1,059
Arad	614
Brasov	372
Iasi	990

Source: Authors' processing based on NIS TEMPO Online data (2026).

In this year, the municipality of Bucharest ranks first in terms of total green space area, with 4,506 hectares. The difference compared to the other cities is considerable, as the following positions are occupied by Galați with 1,050 hectares, Iași with 827 hectares, Arad with 524 hectares, and Brașov with 351 hectares (NIS, 2026).

This distribution reflects both the territorial size of the cities and the way in which local administrations manage urban green

infrastructure. In 2020 a moderate increase in green space areas can be observed in most of the analysed cities. Iași records the largest relative increase, with the green space area increasing from 827 to 913 hectares. Galați increases from 1,050 to 1,087 hectares, and Arad from 524 to 528 hectares. Brașov shows a very small variation, from 351 to 352 hectares. The municipality of Bucharest remains constant at 4,506 hectares. In 2021 the increasing trend continues in some cities, especially in Iași, where the green space area reaches 1,005 hectares, representing an increase of over 21.5% compared to 2019. Arad increases to 540 hectares, and Brașov to 357 hectares. At the same time, Galați records a temporary decrease to 1,051 hectares, indicating a possible update of the green space register or changes in the reporting method (National Institute of Statistics NIS, 2026). In 2022 the evolution of green spaces becomes more pronounced in some cities (Table 3).

Table 3. Urban green space per inhabitant in selected Romanian cities, 2022 (m²/inhabitant)

City	Green spaces in selected Romanian cities, 2022 (m²/inhabitant)
Bucharest	26.15
Galati	21.39
Arad	14.97
Brasov	6.79
Iasi	12.93

Source: Authors' processing based on NIS TEMPO Online data (2026).

In 2022, Arad reached 614 hectares of urban green spaces, representing a significant increase compared to previous years. Brașov recorded 372 hectares, while Galați returned to approximately 1,059 hectares. At the same time, Iași registered a slight decrease to 990 hectares, whereas the municipality of Bucharest maintained a constant value of 4,506 hectares. At national level, the green space per inhabitant indicator varied between approximately 2.69 and 52.38 m²/inhabitant, with a national average of approximately 15.16 m²/inhabitant according to NIS data. This indicator suggests that access to urban green spaces depends not only on their total surface area, but also on population density and urban demographic structure. The year 2023 marked a more visible change in the evolution of urban green spaces in several of the analysed municipalities (Table 4).

Table 4. Green space area in analysed areas, 2023 (ha)
Source: Authors' processing based on NIS data (2026).

City	Green spaces in analysed areas in 2023 (ha)
Bucharest	4,506
Galati	1,059
Arad	1,020
Brasov	1,365
Iasi	1,017

In 2023, Arad recorded a substantial increase in urban green spaces, from 614 to 1,020 hectares, while Brașov reached 1,365 hectares following a considerable increase compared to previous years (NIS, 2026). Iași registered a slight increase to 1,017 hectares, whereas Galați and Bucharest remained relatively stable.

At national level, the total urban green space area reached approximately 33,350 hectares, with an average value of approximately 794 hectares per analysed administrative unit.

In the same year, the national average of green space per inhabitant in Romania was approximately 16.10 m²/inhabitant, while the recorded values varied between approximately 2.71 m²/inhabitant and over 52 m²/inhabitant according to NIS data.

Table 5. Green space per inhabitant in selected Romanian cities, 2023 (m²/inhabitant)

City	Green spaces per inhabitant in selected cities (sqm), 2023
Bucharest	26.12
Galati	21.43
Arad	24.85
Brasov	24.69
Iasi	13.14

Source: Authors' processing based on NIS data (2026).

Comparing the data presented in Tables 3 and 5 regarding green space area per inhabitant in 2022 and 2023 for the five analysed cities, several different development patterns can be identified. In Bucharest, the indicator remained relatively constant, decreasing slightly from 26.15 m²/inhabitant in 2022 to 26.12 m²/inhabitant in 2023. Galați recorded a marginal increase, from 21.39 to 21.43 m²/inhabitant. More substantial increases were observed in Arad, where the indicator rose from 14.97 to 24.85 m²/inhabitant, and in Brașov, where the value increased from 6.79 to 24.69 m²/inhabitant. In Iași, the evolution remained moderate, with a slight increase from 12.93 to 13.14 m²/inhabitant.

Overall, the data indicate that most of the analysed municipalities recorded increases in green space availability relative to population in

2023, the most important changes being observed in Arad and Brașov.

It should be emphasized that the substantial statistical increases recorded in Brașov and Arad during 2023 should not be interpreted exclusively as immediate physical expansions of urban vegetation surfaces. Instead, these developments may also reflect administrative updates of local Green Space Registers and the inclusion of previously unclassified urban areas in official statistical records (Badiu et al., 2016). These localized dynamics are consistent with the findings of Stanciu et al. (2025), which indicate that although the national aggregate shows an overall increase in urban green spaces, their territorial distribution remains uneven across Romania's development regions.

In 2024, Bucharest maintained a constant green space area of 4,506 hectares, while Galați remained at approximately 1,059 hectares. Iași recorded a slight decrease to 993 hectares, whereas Arad and Brașov maintained the values registered in the previous year, namely 1,020 hectares and 1,365 hectares respectively (Table 6).

Table 6. Green space per inhabitant in selected Romanian cities, 2024 (m²/inhabitant)

City	Green spaces per inhabitant in selected cities (sqm), 2024
Bucharest	26.17
Galati	21.43
Arad	24.85
Brasov	24.69
Iasi	13.14

Source: Authors' processing based on NIS data (2026).

In 2024, the national average of green space per inhabitant reached approximately 16.12 m²/inhabitant, while the recorded values at national level varied between approximately 2.71 and 52.34 m²/inhabitant according to NIS data.

The data regarding green space availability per inhabitant in 2024, summarized in Table 6, highlight important differences between the analysed municipalities. Bucharest recorded the highest value, at 26.17 m²/inhabitant, being the only analysed city exceeding the threshold of approximately 26 m²/inhabitant considered the recommended minimum level under Romanian legislation. Arad and Brașov registered similar values, namely 24.85 m²/inhabitant and 24.69 m²/inhabitant respectively, indicating a relatively high level of green space availability in relation to population size. Galați recorded an intermediate value of 21.43 m²/inhabitant, suggesting a moderate level of green infrastructure availability. In contrast, Iași registered the lowest value, namely 13.14 m²/inhabitant, indicating a lower level of green space availability compared with the other analysed municipalities.

Overall, the data indicate an uneven territorial distribution of urban green spaces, reflected in significant differences regarding the accessibility of these areas for urban residents.

Furthermore, the green space per capita indicator may also be influenced by demographic and methodological limitations. The NIS census records the population according to official residence addresses rather than actual dwelling locations. In dynamic metropolitan regions such as Bucharest–Ilfov, daily commuting flows, unregistered residential mobility, and suburban migration may increase the effective urban population using the existing infrastructure, potentially reducing the actual green space availability per effective user (Dumitrache et al., 2016).

Overall, the chronological analysis highlights differentiated patterns regarding the evolution of urban green spaces in Romania. The municipalities of Arad and Brașov registered the most substantial increases in green space areas during the analysed period, whereas cities such as Galați and Bucharest maintained relatively stable values. Iași occupies an intermediate position, characterized by moderate fluctuations in urban green space areas. In the context of European policies promoting sustainable urban development, the expansion and balanced distribution of urban green infrastructure remain important objectives for improving urban quality of life and increasing the resilience of cities to climate change.

The comparative analysis of the evolution of urban green space areas between 2019 and 2024 highlights significant differences between the analysed municipalities (Table 7).

Table 7. Evolution of urban green space areas in the analysed municipalities (2019-2024)

City	2019 (ha)	2024 (ha)	Difference (ha)	Evolution (%)
Bucharest	4,506	4,506	0	0%
Galati	1,050	1,059	+9	+0,9%
Iasi	827	993	+166	+20,1%
Arad	524	1,020	+496	+94,7%
Brasov	351	1,365	+1014	+288,9%

Source: Authors' processing based on NIS data (2026).

The comparative analysis of the selected municipalities highlights different patterns

regarding the evolution of urban green infrastructure during the period 2019-2024. In 2019, the recorded values were 4,506 hectares in Bucharest, 1,050 hectares in Galați, 827 hectares in Iași, 524 hectares in Arad, and 351 hectares in Brașov. The subsequent evolution of these indicators suggests different rhythms of development and management of urban green spaces across the analysed municipalities.

In the case of Bucharest, the total green space area remained constant throughout the analysed period, maintaining a value of 4,506 hectares between 2019 and 2024. This stability suggests the absence of significant expansions of urban green infrastructure within the Romanian capital. From the perspective of percentage evolution, the variation remained practically null (0%), reflecting the influence of high construction density and intense urban development pressures that may limit the possibilities for expanding green spaces.

However, this apparent statistical stability may conceal more complex ecological dynamics. While official cadastral records maintain relatively constant green space surfaces through the inclusion of peripheral green patches or fragmented urban parks, previous remote sensing analyses based on near-infrared spectral combinations have identified significant reductions in mature vegetation cover in certain inner-city areas affected by urban densification and real estate development processes (Badiu et al., 2016; Lillesand et al., 2015). These observations suggest that administrative statistical records may not fully capture the ecological transformations occurring within major Romanian urban areas (Necula et al., 2023).

Galați registered a relatively stable evolution, characterized by moderate fluctuations in green space area. Between 2019 and 2024, the green space surface increased slightly from 1,050 hectares to approximately 1,059 hectares, corresponding to a total increase of approximately 0.9%. Although limited, this increase suggests the maintenance of existing urban green infrastructure in the context of ongoing urban development pressures. This relatively stable evolution is also associated with the preservation and gradual integration of peri-urban forest areas within the municipality's green infrastructure system (Geacu et al., 2022).

Iași recorded a more dynamic evolution during the analysed period. The green space area increased from 827 hectares in 2019 to 993 hectares in 2024, representing an overall increase of approximately 20%. The most visible growth occurred between 2019 and 2021, when the reported green space area exceeded 1,000 hectares. These developments may reflect local urban policies oriented toward the extension and consolidation of urban green infrastructure.

Arad registered one of the most significant increases among the analysed municipalities. The green space area increased from 524 hectares in 2019 to 1,020 hectares in 2024, corresponding to an increase of approximately 95%. Similarly, Brașov recorded the highest relative increase, from 351 hectares in 2019 to 1,365 hectares in 2024, representing an increase of approximately 289%. In both municipalities, the most substantial changes were recorded in 2023, suggesting either the expansion of urban green infrastructure or the administrative updating of local green space inventories and registers.

The comparative analysis suggests the existence of three general patterns regarding the evolution of urban green spaces. The first pattern includes municipalities characterized by relatively stable dynamics, such as Bucharest and Galați, where green space areas remained almost constant throughout the analyzed period. The second pattern is represented by municipalities with moderate growth, such as Iași, where the expansion of green infrastructure occurred gradually. The third pattern includes municipalities with accelerated growth, such as Arad and Brașov, where the reported green space areas increased substantially during the final years of the analysed period.

The interpretation of these developments should also consider the green space per inhabitant indicator, which reflects the accessibility of urban green infrastructure for the population. According to the data presented in Tables 3, 5, and 6, the national average increased from approximately 15.16 m²/inhabitant in 2022 to 16.10 m²/inhabitant in 2023 and 16.12 m²/inhabitant in 2024. Although this evolution suggests a moderate improvement in population access to green spaces, the recorded values

remain relatively low compared with certain international standards.

Overall, the analysed data indicate a general tendency toward the expansion of urban green infrastructure in Romania, although the pace and territorial distribution of this process differ significantly between municipalities (Figure 1). While municipalities such as Arad and Brașov registered substantial increases in reported green space areas, other cities displayed more stable dynamics. These territorial differences reflect both local urban development strategies and the demographic and economic characteristics of each municipality.

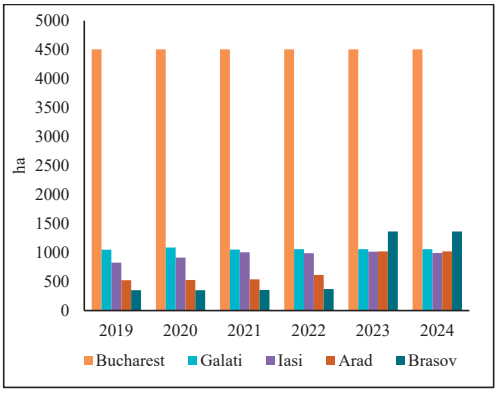

Figure 1. Evolution of Urban Green Spaces in Selected Romanian Cities (2019-2024)
Source: Authors, using NIS (2026)

From the perspective of European sustainable urban development policies, green infrastructure represents an important component for improving environmental quality and increasing urban resilience to climate change. The EU Biodiversity Strategy for 2030 emphasizes the importance of integrating green infrastructure into urban planning policies and expanding urban ecological networks (European Commission, 2020). In this context, the evolution of urban green spaces in Romania suggests a gradual alignment with these European objectives, although their implementation remains uneven at the territorial level.

The evolution of urban green space areas should be analysed not only from the perspective of total surface area, but also in relation to urban population size and the accessibility of these spaces for residents. In the context of accelerated urbanisation and increasing population density in major cities, the green space per inhabitant indicator represents an important instrument for evaluating urban environmental quality and living conditions.

According to the statistical data and thematic maps developed using information provided by the National Institute of Statistics, the average value of green space per inhabitant in Romania was approximately 15.16 m² in 2022, increasing slightly to approximately 16.10 m² in 2023 and 16.12 m² in 2024. These values indicate a moderate improvement in population access to urban green spaces, although significant territorial disparities continue to exist.

The analysed NIS data also reveal important variations between Romanian administrative units, with green space per inhabitant values ranging from approximately 2.7 m² to over 52 m² per inhabitant. This uneven distribution reflects the influence of demographic structure, urban morphology, and local urban planning policies on the availability and accessibility of green infrastructure. In densely populated cities, even relatively large green space areas may correspond to low per capita values, limiting residents' effective access to these spaces.

From the perspective of international standards, the World Health Organization recommends a minimum of at least 9 m² of green space per inhabitant to ensure basic health and environmental benefits for the population, while optimal values may reach approximately 50 m² per inhabitant. In addition, European studies regarding urban green infrastructure recommend that residents should have access to a green area located within a maximum distance of 300 meters from their homes in order to facilitate frequent recreational and physical activities (European Environment Agency, 2022).

In Romania, the legislation regarding the administration of urban green spaces establishes a target of approximately 26 m² of green space per inhabitant, according to the provisions of Law no. 24/2007 concerning the regulation and administration of green spaces within the built-up area of localities (Monitorul Oficial no. 764, 2009). Comparing these standards with the values recorded at the national level indicates that many Romanian cities still do not reach this threshold, highlighting the need for more efficient urban planning policies oriented

toward the expansion, protection, and balanced distribution of urban green infrastructure.

CONCLUSIONS

The comparative analysis of the analysed municipalities indicates that the evolution of urban green spaces is influenced by local urban planning conditions and territorial development strategies. While municipalities such as Arad and Brașov recorded substantial increases in green space areas during the final years of the analysed period, cities such as Bucharest and Galați displayed relatively stable dynamics, which may reflect territorial constraints, urban densification processes, or stronger development pressures. Iași occupies an intermediate position, characterized by moderate increases and temporary fluctuations in urban green space areas.

In the context of European policies promoting sustainable urban development, green infrastructure is considered an essential component for improving environmental quality, reducing urban heat island effects, and increasing the resilience of cities to climate change. The European Union Biodiversity Strategy for 2030 emphasizes the importance of integrating green infrastructure into urban planning policies and expanding urban ecological networks. In this context, the evolution of urban green spaces in Romania suggests a gradual alignment with these objectives, although the implementation process remains uneven across municipalities.

Overall, the results of the analysis indicate a general upward trend in the development of urban green spaces in Romania. Nevertheless, their territorial distribution and accessibility remain uneven. At the same time, the interpretation of official statistical data requires caution, particularly in relation to the methodological limitations of cadastral reporting systems. Future urban planning policies and environmental monitoring frameworks should better integrate geospatial analyses, satellite-based vegetation indicators, and demographic dynamics associated with metropolitan expansion to provide a more accurate representation of urban ecological conditions (Badiu et al., 2016; Dumitrache et al., 2016).

The interpretation of NIS data should therefore consider the fact that official statistics primarily reflect cadastral records of legally registered green surfaces rather than the complete ecological reality observed on-site. For example, the statistical stability of green spaces in Bucharest contrasts with evidence from remote sensing analyses indicating important reductions in mature vegetation cover in some urban areas, despite the simultaneous creation of new parks. In addition, changes in the territorial configuration of cities through metropolitan expansion, together with demographic processes such as commuting, suburban migration, and the discrepancy between official residence and actual dwelling location, may also influence the interpretation of the green space per inhabitant indicator.

To improve urban environmental quality and comply with European standards regarding urban green infrastructure, it is necessary to strengthen urban planning policies oriented toward the expansion, protection, and balanced distribution of green spaces within Romanian cities.

REFERENCES

Badiu, D., L., Iojă, I., C., Pătroescu, M., Breuste, J., Artmann, M., Niță, M., R., Hossu, C. A., & Onose, D. A. (2016). Is Romania facing an urban green space crisis? The role of public authorities in urban green space planning. *Land Use Policy, 56*, 160–171.

Dumitrache, L., Nae, M., & Dumitru, I. (2016). Urban sprawl and residential migration in the Bucharest Metropolitan Area. *Procedia Environmental Sciences, 32*, 310–317.

European Commission. (2020). *EU biodiversity strategy for 2030: Bringing nature back into our lives*. European Commission.

European Environment Agency. (2022). Who benefits from nature in cities? Social inequalities in access to urban green and blue spaces across Europe. *Publications Office of the European Union*.

Geacu, S., Dumitrașcu, M., & Grigorescu, I. (2022). Historical changes in urban and peri-urban forests: Evidence from Galați, Romania. *Land, 11*(11), 2043.

Humă, C. (2022). Urban green spaces and quality of life in Romanian cities. *Calitatea Vieții, 33*(1), 45–60.

Lillesand, T., Kiefer, R., W., & Chipman, J. (2015). *Remote sensing and image interpretation* (7th ed.). John Wiley & Sons.

Monitorul Oficial al României. (2009). *Legea nr. 24/2007 privind reglementarea și administrarea spațiilor verzi din intravilanul localităților, republicată în Monitorul Oficial nr. 764/2009.* Monitorul Oficial al României.

National Institute of Statistics NIS (2026). Suprafața spațiilor verzi în municipii și orașe – baza de date TEMPO Online. INS.

Necula, M., Andrei, T., Oancea, B., & Păun, M. (2023). Urban green index estimation based on data collected by remote sensing for Romanian cities. *Romanian Statistical Review, 4*, 59–74

Oprea, C., Popescu, R., & Ionescu, A. (2023). Urban green infrastructure and sustainable urban development in Romania. *Land, 12*(3), 689.

Stanciu, S., Manolache, S., B., & Pilă, M. (2025). Urban green spaces: An analysis of evolution in Romania's regions. *IBIMA Proceedings*.

Șorcaru, I. (2015). Spațiile verzi urbane și rolul lor în dezvoltarea durabilă a orașelor din România. *Analele Universității din București – Seria Geografie, 64*(1), 89–102.