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MONITORING THE SDGS IN NORTH-WEST ROMANIA REGION

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Cover image: Raffaella Manfredi

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ABSTRACT

The research work contributes to establishing a relevant and applicable set of indicators for monitoring the achievement of the SDGs at the regional level. The analysis was developed within the "REGIONS2030: project, launched by the Joint Research Centre (JRC) in collaboration with DG REGIO and ESTAT, and supported by the European Parliament.

The principal finding of the review is the identification of 47 indicators for which statistical data are readily available for Nord-Vest. This core group of indicators provides insight into the progress made by the region towards achieving 13 SDGs. Complementarily, a group of 28 additional proxy indicators are proposed for the region, which provides further details on the performance of Nord-Vest. Last, 18 indicators falling under 11 SDGs have been identified with readily available NUTS0-level data that could also be reported at the NUTS2 level.

The main challenges faced during data collection include scarcity of readily available NUTS2-level data, inconsistencies in data availability and low levels of harmonisation across available data sources. Possible steps to address the existing challenges and gaps include

- ensuring that all data are expressed in standardised form across NUTS2-level jurisdictions,

- aligning the periods for which statistics are published with the multiannual planning cycles, and

- ensuring that administrative data are communicated annually to conduct trend analysis.

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EXECUTIVE SUMMARY

The work presented herein aims to contribute to the establishment of a relevant and applicable set of indicators at NUTS2 level, which could then be used by all European regions for monitoring the achievement of SDGs and comparing outcomes over time and across regions. The research work was carried out within the framework of the pilot project entitled "REGIONS2030: Monitoring the SDGs in the EU regions – Filling the data gaps", launched by the European Commission's Joint Research Centre (JRC) in collaboration with the Directorate General for Regional and Urban Policies (DG REGIO) and Eurostat – European Statistics (ESTAT), and supported by the European Parliament, and is focused on the Nord-Vest region of Romania.

The starting point was the set of indicators proposed in the JRC Technical Report for the REGIONS2030 pilot project. The review identifies the extent to which the indicators proposed are relevant and available for calculation in the case of the Nord Vest region, proposes alternative indicators where applicable, and assesses the SDG monitoring capacity of the region, pointing out strengths as well as limitations, challenges and gaps to address.

POLICY CONTEXT

With the adoption of the 2030 Agenda for Sustainable Development in 2015 by all United Nations (UN) Member States, Romania has also committed to achieving the 17 SDGs with 169 specific targets. Following the publication of "Next Steps for a Sustainable European Future" by the European Commission in 2016 and the endorsement of the Agenda in "A Sustainable European Future: The EU Response to the 2030 Agenda for Sustainable Development" in 2017, Romania started working on the establishment of the national framework for the implementation under the coordination of the Department of Sustainable Development, set up within the Prime Minister's Office in 2017.

Romania's Sustainable Development Strategy 2030, adopted by the Government in November 2018, was designed with the involvement of all relevant stakeholders including RDAs as well. The Strategy was meant to be the basis for national, regional, and local strategies, but it does not specify that regional authorities are required to design an SDG strategy of their own. Thus, Nord-Vest has no standalone regional SDG strategy, although this would enhance its SDG monitoring capacity.

KEY CONCLUSIONS

Considering that the Nord-Vest region has no administrative status, similarly to the other development regions in Romania, the pool of readily available statistical data indicates a potentially good SDG monitoring capacity of the region. However, this capacity is weakened by the lack of a regional SDG monitoring strategy. Steps need to be taken to address the existing challenges and gaps as well as to improve the existing strengths. The development of a Voluntary Regional Review with the involvement of the local and county governments in Nord-Vest could substantially improve the localisation of SDGs, helping at the same time the harmonisation of statistics relevant for monitoring the achievement of SDGs and SDG targets. The set of 93 indicators identified for Nord-Vest (Annex 2) can contribute to the establishment of a relevant and applicable regional SDG monitoring framework for all European regions, making it possible to compare outcomes over time and across regions.

MAIN FINDINGS

The principal finding of the review of data availability for SDG indicators at the level of Nord-Vest is the identification of 47 indicators for which statistical data are readily available. This core group of indicators provide an insight into the progress made by the region towards the achievement of SDGs. Complementarily, a group of 28 additional or proxy indicators have been identified for the region, providing further details on the performance of Nord-Vest. Last but not least, 18 indicators have been found with readily available country (NUTS0) level data that could be also reported at NUTS2 level. Four indicators proposed by the JRC have been found as not relevant for Nord-Vest. Overall, these findings indicate that the premises to articulate an EU-wide regional indicator set for monitoring the achievement of SDGs are present. However, the scope of the indicator set could be enhanced by addressing the existing challenges and limitations.

RELATED AND FUTURE JRC WORK

The compiled indicator set already provides a snapshot on the progress made by the region towards achieving key SDG targets and on the specific areas where more policy attention is required to address negative trends. Thus, the resulting set of 93 indicators can contribute to the establishment of a relevant and applicable set of indicators at NUTS2 level to be used by all European regions for monitoring the achievement of SDGs as well as for comparing outcomes over time and across regions. However, it needs to be noted that in the case of 36 JRC proposed indicators, no official NUTS2-level data could be identified as readily available for Nord-Vest. This finding is significant as it indicates the extent to which systematic and authoritative knowledge about various SDG targets are missing. Furthermore, it also points at the missed opportunities to assess the outcomes of various strategies, policies and investments.

The 28 alternative indicators proposed offer a promising starting point for further expanding and articulating the European-wide regional indicator set for monitoring the achievement of SDGs. It has been found that data for a series of regionally relevant target-specific alternative (proxy) indicators are already available at NUTS2 level. In what concerns trends, Nord-Vest shows a positive trend in the case of 17 alternative indicators: 4 indicators under SDG2 – Zero hunger, 3 under SDG4 – Quality education, 4 under SDG6 – Clean water and sanitation, 2 under SDG8 – Decent work and economic growth, and 4 under SDG11 – Sustainable cities and settlements. A negative trend has been revealed in the case of 5 alternative indicators: 2 under SDG2 and 3 under SDG4. In the case of 5 indicators under SDGs 8, 9 and 11, no substantial change has been registered by the region. As for the volume of drinking water supplied to the users, under SDG 6, the interpretation of the trend needs to be contextualised in order to avoid misleading, since the decrease registered could be partly explained by the improvement of the water distribution system, which, if the case, would indicate better water management.

The above findings are especially relevant taking into account the substantial association between the SDGs and the 2030 Agenda, on the one hand, and the system of national and European strategies, on the other. Thus, a comprehensive and standardised European-wide regional SDG indicator set, which also builds on the experience of regions, is likely to provide a unique opportunity to substantiate policy benchmarking and lesson learning on how innovative policy measures can contribute to the achievement of specific SDG targets.

1. INTRODUCTION

The review of the Nord-Vest (North-West) region in Romania was developed within the framework of the pilot project entitled "REGIONS2030: Monitoring the SDGs in the EU regions – Filling the data gaps", launched by the European Commission's Joint Research Centre (JRC) in collaboration with the Directorate General for Regional and Urban Policies (DG REGIO) and Eurostat – European Statistics (ESTAT), and supported by the European Parliament. Along with nine other European regions, namely Βόρειο Αιγαίο (North Aegean), Δυτική Μακεδονία (Western Macedonia), Comunidad Foral de Navarra, Andalucía, Piemonte, Puglia, Pomorskie, Centro (PT), and Manisa, Afyonkarahisar, Kütahya, Uşak, Nord-Vest has engaged in the localisation of the 2030 Sustainable Development Agenda, contributing to the establishment of a relevant indicator set for monitoring the achievement of the 17 Sustainable Development Goals (SDGs) at NUTS2 level.

The starting point for the review was the set of indicators proposed in the JRC Technical Report for the REGIONS2030 pilot project entitled "European Regional SDG indicators – Methodological approach for the creation of an SDG regional monitoring indicator set". The research work, carried out with the involvement of the Nord-Vest Regional Development Agency (RDA), had three objectives: to test the extent to which the indicators proposed are relevant and available for calculation in the case of the Nord Vest region, to identify alternative indicators where applicable, and to assess the SDG monitoring capacity of the region, pointing out strengths as well as limitations, challenges and gaps to address. Thus, the review aims to contribute to the establishment of a relevant and applicable set of indicators at NUTS2 level, which could then be used by all European regions for monitoring the achievement of SDGs and comparing outcomes over time and across regions.

The Nord-Vest region, one of the eight regions at NUTS2 level (development regions) in Romania, was established through the association of 453 local and county governments from six counties, namely Bihor, Bistrița-Năsăud, Cluj, Maramureș, Satu Mare and Sălaj. In terms of territorial administrative units, the region has 49 urban settlements (6 county head municipalities, 12 municipalities and 25 towns) and 404 rural settlements (communes). The total population of the region amounted to 2,831,263 inhabitants in 2021, of which 53.94% (1,527,297 inhabitants) lived in urban areas, while 46.06% (1,303,966 inhabitants) in rural areas. The high administrative fragmentation has a major influence on the economic and social development of the region. Nord-Vest stands out for its natural resources and heritage (170 protected areas of national importance, 88 of European importance and 1 of international importance) as well as its cultural heritage. In what concerns the distribution of enterprises, the main activity sectors include the service sector, industry, construction and agriculture. The region also hosts a high proportion of universities and research institutes.

Similarly to the other seven development regions, Nord-Vest has no administrative status and no legislative or executive council or government. The Nord-Vest Regional Development Agency (RDA), established by Law 151/1998, by decision no. 4/ 16.12.1998 of the Nord-Vest Regional Development Council (RDC) as a public utility body with legal personality, is the "driving force" behind the sustainable development of the region. Its mission is to monitor the regional implementation of economic and social cohesion policies, implement regional development programmes, and provide the necessary services to communities and investors to maximise the economic and social benefits at the regional level.

The Nord-Vest RDA operates as the association of local authorities (municipalities and counties), its main decisional body being the Nord-Vest RDC, which has 24 members, including the 6 Presidents of the County Councils in the region, and members representing the municipalities (6), towns (6) and communes (6). The RDA has coordinated the four Regional Development Plans (RDPs), designed in partnership with the Regional Planning Committee: RDP 2000-2002, RDP 2004-2006, RDP 2007-2013 and RDP 2014-2020. In 2021 RDAs in Romania became Managing Authorities for the 2021-2027 Regional Operational Programmes.

With the adoption of the 2030 Agenda for Sustainable Development in 2015 by all United Nations (UN) Member States, Romania also committed to achieving the 17 SDGs with 169 specific targets. Following the publication of "Next Steps for a Sustainable European Future" by the European Commission in 2016 and the endorsement of the Agenda in "A Sustainable European Future: The EU Response to the 2030 Agenda for Sustainable Development" in 2017, Romania started working on the establishment of the national framework for the implementation under the coordination of the Department of Sustainable Development, set up within the Prime Minister's Office in 2017.

Romania's Sustainable Development Strategy 2030, adopted by the Government in November 2018, was designed with the involvement of all relevant stakeholders including RDAs as well. The Strategy was meant to be "the basis for the future sectoral, regional, and local strategies" (p. 108), but it does not specify that regional authorities are required to design an SDG strategy of their own. Such policy measures continue to be adopted at either national or local governance level.

Thus, while regional development plans cover some SDGs, Nord-Vest has no standalone regional SDG strategy. Measures and strategies have not yet been implemented to encourage and support development regions in monitoring the SDGs. Most of the data relevant for monitoring SDG achievement are still reported at country or local level only. This constitutes a major challenge in conducting a review for Nord-Vest (or for any other development region in Romania).

2. ANALYSIS OF THE JRC PROPOSED INDICATOR SET

In the analysis of the availability and relevance of the JRC proposed indicator set for the Nord-Vest region, the period studied is from 2007 to 2020 (or 2021, even 2022, where data are already published). The choice to start the analysis from 2007, the year when Romania joined the EU, has been made to cover at least two full multi-annual planning cycles (2007-2013 and 2014-2020), which allows for revealing trends in time more accurately. However, in several cases data are available only for a shorter period of time, benchmark years or a single year.

2.1 Collection of data and metadata

The methodology to identify SDG indicators available at the level of the Nord-Vest region departed from the conclusions of the 10-step approach applied by the JRC for the development of a regional indicator set for monitoring the SDGs. Thus, the starting point was to test the extent to which the 83 indicators proposed by the JRC, covering all 17 SDGs and 52 out of the 169 targets, are relevant and available for calculation in the case of the Nord Vest region. The indicators and targets proposed by the JRC are presented by SDG in Table 1 below.

Table 1. JRC proposed indicators and targets

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Targets	3	3	4	5	4	2	3	6	2	2	4	3	1	2	2	2	4	52
Indicators	4	4	5	7	7	4	4	10	5	2	9	3	4	3	4	4	4	83

Source: Vega Rapun M., Stamos I., Proietti P., Siragusa A (2022) *Report on the Methodological approach for the creation of an SDG regional monitoring indicator set*. Joint Research Centre

Based on the sources of data identified for Nord-Vest, the following categories can be distinguished (see Fig. 1):

1. **Internationally available official regional-level data** – In the case of 41 indicators, data are readily available for the Nord-Vest region, being gathered, harmonised and disseminated by EU institutions, such as Eurostat and the JRC, or international organisations, such as the OECD. The indicators are under SDGs 1, 2, 3, 4, 5, 8, 9, 11, 13, 15, 16 and 17.

2. **Nationally available official regional-level data** – In the case of 6 indicators, data are readily available for Nord-Vest at the National Institute of Statistics (NIS). The indicators are under SDGs 2, 5, 6, 8, 9 and 15.

3. **Nationally available official data possible to be aggregated at regional level** – In the case of 18 indicators, NUTS2-level values can be calculated using the data collected regularly (mostly on an annual basis) at country (NUTS0) level by the National Institute of Statistics or relevant ministries. The indicators are under SDGs 1, 2, 5, 7, 8, 10, 11, 12, 13, 16 and 17.

4. **Experimental data**. For the remaining indicators, several data sources have been reviewed in order to establish availability and relevance for the Nord-Vest region. As a result, 28 alternative or proxy indicators are proposed under SDGs 2, 4, 6, 8, 9 and 11.

Four indicators proposed by the JRC **are not relevant for the Nord-Vest region**, namely Electricity production that comes from nuclear power under SDG 7 and the three indicators under SDG 14 Life Below Water.
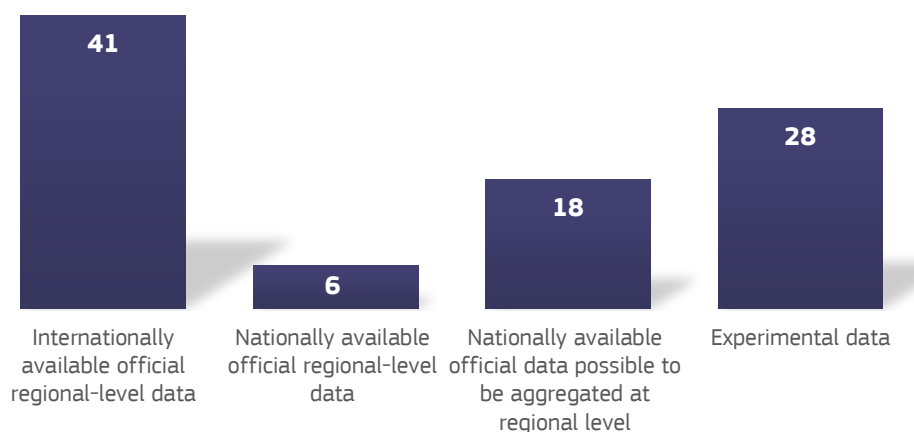
Wherever possible, data have been collected for the Nord-Vest region, Romania, and Macroregion 1 in Romania, of which Nord-Vest forms part together with another development region, Centru. Thus, the performance of Nord Vest can be seen in a wider context, and can be analysed compared to that of the country and that of the macroregion.

For each indicator, metadata are also presented in order to facilitate harmonisation and comparability across EU regions. The metadata cover the following: source identification, hyperlink (API), visualisation, availability and geographic coverage, unit of measurement, level of aggregation, time coverage and frequency.

Table 2 below summarises the indicators available and relevant for Nord-Vest from the 83 indicators proposed by the JRC as well as the additional indicators identified. A more detailed description is included in Annex 1.

Table 2. Summary table of indicators for Nord-Vest by SDG and type of availability

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	**Total**
JRC proposed indicators	4	4	5	7	7	4	4	10	5	2	9	3	4	3	4	4	4	83
Readily available for Nord-Vest	3	2	4	5	4	1	0	8	4	0	5	0	3	0	4	2	2	47
Available at country level	1	2	0	0	4	0	3	1	0	1	2	1	1	0	0	1	1	18
Alternative NUTS2 for Nord-Vest	0	6	0	7	0	5	0	3	0	0	6	1	0	0	0	0	0	28
Not relevant for Nord-Vest	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	0	4

2.2 Statistical analysis of trends of comparative NUTS 2 level indicators

This section focuses on the statistical analysis of the indicators included in the JRC proposed indicator set for which data are available for the Nord-Vest region.

Table 3. Indicators available for Nord-Vest from the JRC proposed indicator set

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
JRC	4	4	5	7	7	4	4	10	5	2	9	3	4	3	4	4	4	**83**
Nord-Vest	3	2	4	5	4	1	0	8	4	0	5	0	3	0	4	2	2	**47**

Source: Own calculations based on Vega Rapun, M., Stamos, I., Siragusa, A. and Proietti, P., REGIONS2030 – European regional SDG indicators, Publications Office of the European Union, Luxembourg, 2022, doi:10.2760/850788, JRC131581.

2.2.1   SDG 1: No poverty

The targets of this goal include eradicating extreme poverty, halving poverty in all its forms, ensuring a basic standard of living and social protection for everyone, and building the resilience of the poor against economic, social and environmental shocks.

Out of the four indicators recommended for EU regions in the JRC Technical Report, three are available for Nord-Vest, while the indicator 1.2 Affected people due to disasters is available at national level only.

2.2.1.1 Persons living in households with very low work intensity – Target 1.2 (reduce poverty)

The indicator measures the share of persons living in households where working-age members worked 20% or less of their total work-time potential during the previous year, as such persons are at risk of poverty. Data in this respect are made available by Eurostat at regional level. For the Nord-Vest region and for the period 2007-2020, the data indicate a 39.4% decrease in the share of persons living in households with very low work intensity.

Figure 2. SDG1 – Persons living in households with very low work intensity
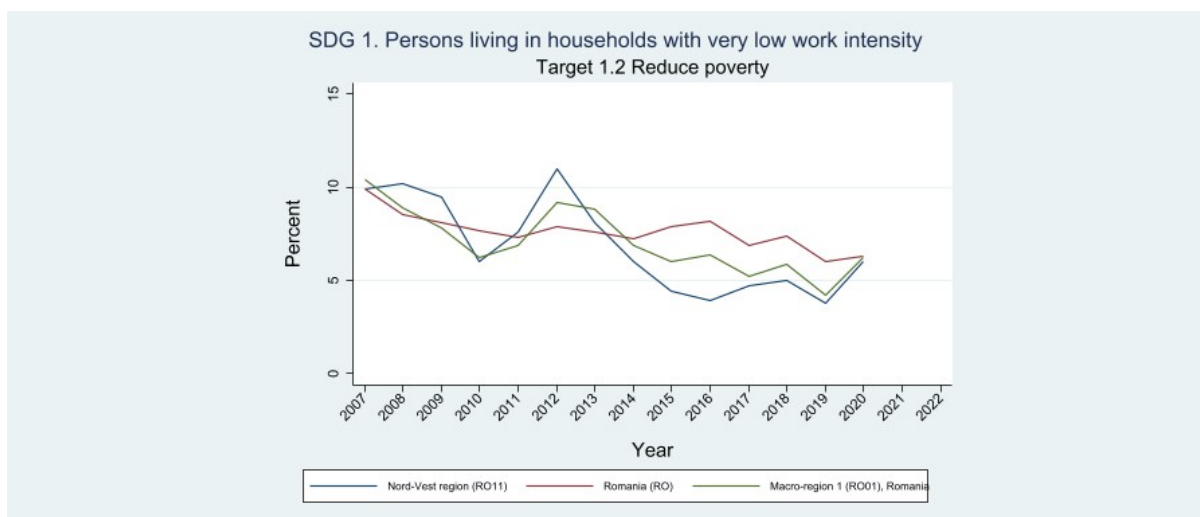
Source: Author's own calculation based on Eurostat (2023, January 17) *Persons living in households with very low work intensity by NUTS regions (population aged 0 to 59 years) - EU 2020 strategy* [Dataset]. Eurostat.

It can be noted that compared to the national trend, the one for the Nord-Vest region shows more significant variations: after a drop in the share of persons living in households with very low work intensity in 2010, the region registered an all-time high in 2012, followed by a continuous decrease until 2016. The region reached an all-time low in 2019, performing much better compared to the country. The spike in 2020 is most likely due to the negative effects of the COVID-19 disruptions. The extent to which this increase is seasonal or a new steady state will be possible to evaluate once the 2021 and 2022 data are also published.

A limitation is that the indicator does not provide information on the possible reasons behind low work intensity, which would be important to know in order to address the issue more effectively. Different measures would be needed if the reasons are, for instance, informal working activities, involuntary part-time unemployment, the lack of employment possibilities or the lack of adequate education/training.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/ilc_lvhl21/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/ilc_lvhl21/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2007-2020. Data collected every year.

2.2.1.2 Material and social deprivation – Target 1.1 (extreme poverty)

The indicator measures the share of the population experiencing an enforced lack of at least 7 out of 13 basic items necessary for an acceptable standard of living. The 13 items considered necessary and desirable include a set of predefined goods, services and social activities related to the individual as well as the household. Regional Eurostat statistics are available for Nord-Vest only starting from 2014, but covering 2021 as well (see Fig. 3 below).

Figure 3. SDG1 – Material and social deprivation
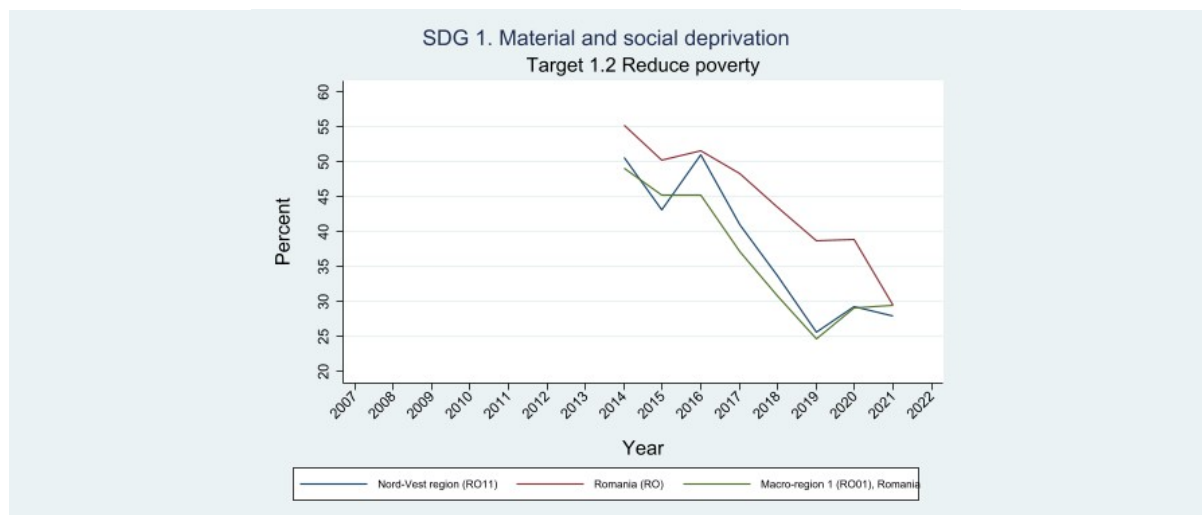
Source: Author's own calculation based on Eurostat (2023, January 17) Material and social deprivation rate by NUTS regions [Dataset]. Eurostat.

Nord-Vest registered the highest rate of material and social deprivation (50.7%) in 2016, which is the only year when the region did not perform significantly better compared to the national rate. By 2019, the rate dropped by 50.49%, reaching 25.6%. Although this can be considered significant progress, especially compared to the national rate, it is still a high value at European level. In 2020, the Nord-Vest region registered an increase to 29.3%, although the national rate remained stable (38.9%). This is also most likely also due to the COVID-19 disruptions, which seem to have had a higher negative impact on the region. Although the national rate of material and social deprivation dropped to 29.4% in 2021, Nord-Vest only registered a slight decrease to 28%, losing most of its previous advantage compared to the national rate.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/ilc_mdsd08/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/ilc_mdsd08/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2014-2020. Data collected every year.

2.2.1.3 Persons at risk of poverty or social exclusion – Target 1.2 (reduce poverty)

The share of population at risk of poverty or social exclusion is calculated by combining three separate measures. The indicator covers those persons who experience at least one of the following situations:

- are at risk of poverty, more precisely with an equivalent disposable income below the at-risk-of-poverty threshold, which is set at 60% of the national median equalised disposable income (after social transfers);

- suffer from severe material and social deprivation, more precisely cannot afford at least 5 out of the 13 basic items considered necessary or desirable for an adequate quality of life (see section Material and social deprivation);

- live in a household with very low work intensity (already discussed under Persons living in households with very low work intensity).

Data for Nord-Vest are available at Eurostat for the period 2007-2020 (see Fig. 4). The region registered a significant decrease in the share of population at risk of poverty, from 39.2% in 2007 to 18.5% in 2020, having a constantly better performance compared to the national rate all throughout the period studied.

Figure 4. SDG1 – Persons at risk of poverty or social exclusion
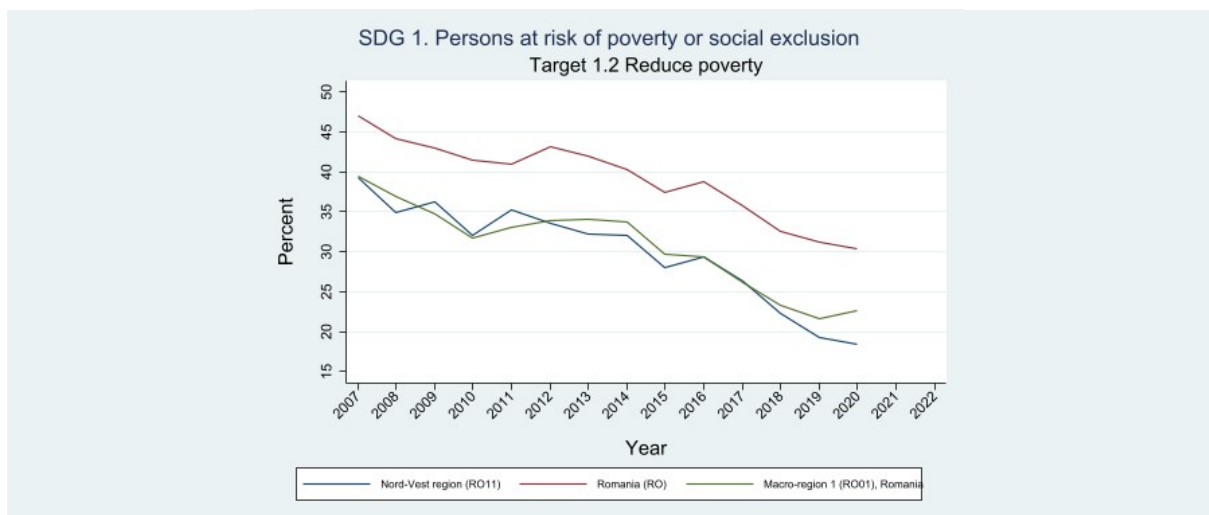
Source: Author's own calculation based on Eurostat (2023, January 23) Persons at risk of poverty or social exclusion by NUTS regions - EU 2020 strategy [Dataset]. Eurostat.

Interestingly enough, in this case the COVID-19 crisis did not result in an increase (although, as described previously, an increase was registered by the region for 2020 both in the share of persons experiencing material and social deprivation and in that of persons living in households with very low work intensity). On the contrary, Nord-Vest reported a slight decrease (by 4.15%) in the share of persons at risk of poverty or social exclusion for 2020. The rate of 18.5% registered by the region in 2020 is slightly lower than the average rate for EU-27 for the same year (21.9%). However, compared to the EU regions with the lowest shares of persons at risk of poverty or social exclusion (5.9% in the Slovak capital region and 8.1% in the Czech capital region), Nord-Vest still needs to make considerable progress.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/ilc_peps11/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/ilc_peps11/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2007-2020. Data collected every year.

2.2.2   SDG 2: Zero hunger

The targets of this goal include ending hunger and all forms of malnutrition, ensuring sustainable food production systems, increasing investment in rural infrastructure, agricultural research and technology development, preventing trade restrictions and distortions in world agricultural markets, and ensuring the proper functioning of food commodity markets.

Out of the four indicators proposed for EU regions in the JRC Technical Report, two are available for Nord-Vest.

2.2.2.1 Indicator 2.1 Gross Value Added (GVA) of agriculture, livestock and fishing – Target 2.3 (agricultural productivity)

Data for this indicator are available at the National Institute of Statistics for the period 2007-2021. Based on these, the Nord-Vest region registered a 60.23% increase in the total gross value added of agriculture, livestock and fishing.

Figure 5. SDG2 – Gross value added (GVA) of agriculture, livestock and fishing
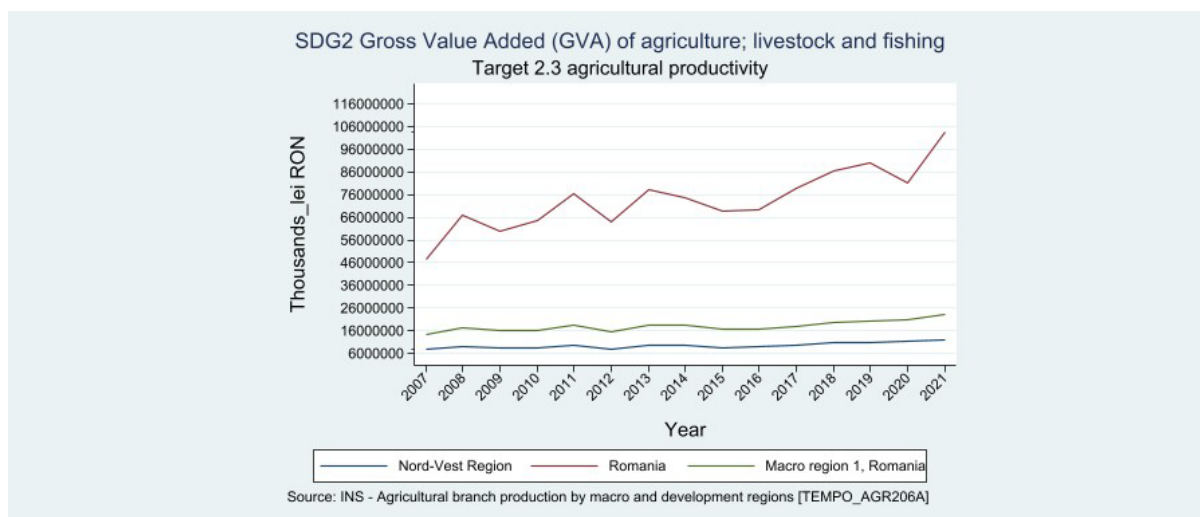
Source: INS - Agricultural branch production by macro and development regions [TEMPO_AGR206A]

Source: Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 28) *Gross value added (GVA) of agriculture, livestock and fishing* [Dataset]. National Institute of Statistics

METADATA

Source:	National Institute of Statistics, TEMPO database
Hyperlink (available API):	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Thousands of lei
Level of aggregation:	NUTS2 region
Time coverage and frequency	2007-2021. Data collected every year.

2.2.2.2 Productivity (Gross Value Added per worker) in agriculture, forestry and fishing – Target 2.3 (agricultural productivity)

Based on the OECD Regional database, variable 'Productivity (Gross Value Added per worker) in agriculture, forestry and fishing', the GVA per worker (in constant 2010 USD PPP) in 2015 in the Nord-Vest region was 11.8% larger than the country average. In this case, trend analysis is not possible since data are available only for 2015.

Table 4. SDG2 – Productivity in agriculture, forestry and fishing

Value	Country average	OECD average	Direction	End value	Year
9,964	8,788	53,631.49	Positive	70,694.06	2015

Source: OECD, Localised Indicator Framework for the SDGs, Regional database, variable 'Productivity (Gross Value Added per worker) in agriculture, forestry and fishing'

METADATA

Source:	**OECD (2023), "Regional demography (Edition 2022)",** *OECD Regional Statistics* **(database)**
Hyperlink (available API):	https://stats.oecd.org/Index.aspx?DataSetCode=REGION_DEMOGR
Visualisation:	https://data.oecd.org/natincome/value-added-by-activity.htm
Availability and geographic coverage:	NUTS2
Unit of measurement:	in constant 2010 USD PPP
Level of aggregation:	NUTS2, NUTS0
Time coverage and frequency	2015

2.2.3 SDG 3: Good health and well-being

The targets of this goal include reducing maternal, neonatal and child mortality, ending epidemics and pandemics, preventing and treating non-communicable diseases, strengthening the prevention and treatment of substance abuse, halving the number of deaths and injuries caused by road traffic accidents, improving sexual and reproductive health, achieving universal health coverage, and addressing environmental health risks. The means of implementation focus on tobacco control, the development and accessibility of vaccines and medicines, health financing and workforce, and emergency preparedness.

Out of the five indicators recommended for EU regions in the JRC Technical Report, four are available for Nord-Vest. Data for the indicator 3.1 Deaths due to COVID-19 are not readily available for regional-level analysis (the data are as pdf files).

2.2.3.1 Self-reported unmet needs for medical examination and care – Target 3.c (health financing and recruitment)

The indicator measures the share of the population (aged 16 and above) reporting unmet needs for medical examination or treatment (except dental care) under three categories that are cumulated, namely 'Financial reasons', 'Waiting list' and 'Too far to travel'. Given that the data are self-reported, respondents' subjective perception, their social and cultural background might influence the responses. It is considered a multi-purpose indicator (MPI), as it is used to monitor progress in achieving SDG 1 as well.

Regarding this indicator, Eurostat regional statistics provide data for Nord-Vest for the period 2008-2021 (see Fig. 6). The share of self-reported unmet needs for medical examination and care in the region has decreased over the years from 9.3% in 2008 to 4.3% in 2021, although 2010, 2011 and 2012 registered a considerable increase (10.9%, 11.6%, and 11.5%, respectively).

Figure 6. SDG3 – Self-reported unmet needs for medical examination
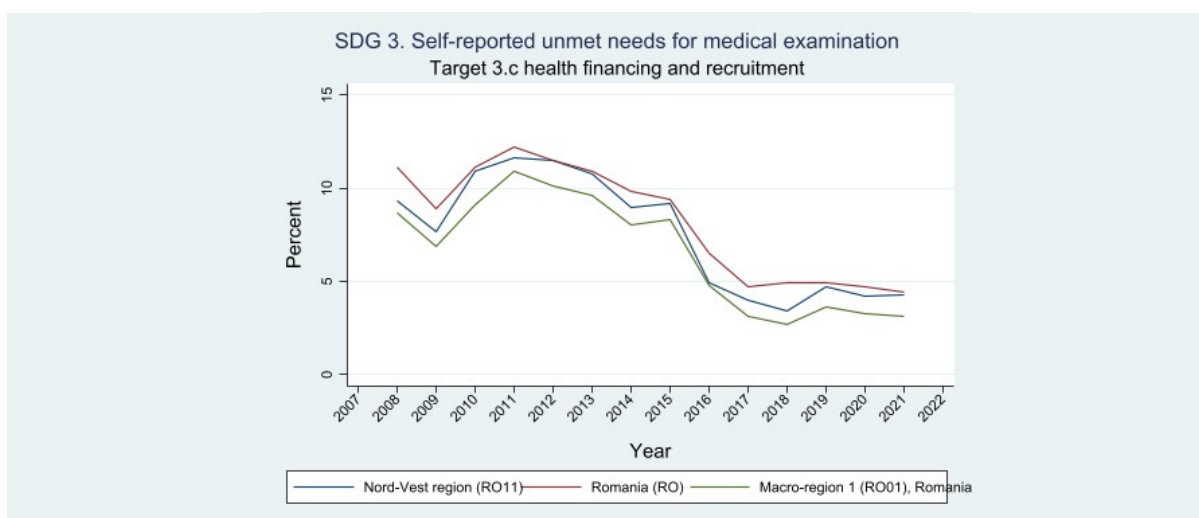
Source: Author's own calculation based on Eurostat (2023, January 23) *Self-reported unmet needs for medical examination by main reason declared and NUTS 2 regions* [Dataset]. Eurostat.

After a drop from 9.2% in 2015 to 4.9% in 2016, followed by a further slight decrease both in 2017 and 2018 (to 3.4%), the year 2019 registered a 38% increase in the share of self-reported unmet needs for medical examination and care. The years 2020 and 2021, under the influence of the COVID-19 crisis, registered a slight decrease compared to 2019, but as expected it did not achieve the all-time low rate reported in 2018, when the region had the best performance compared to the national rate.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/HLTH_SILC_08_R__custom_600040/bookmark/table?lang=en&bookmarkId=12aa09d8-ef57-4bfc-b8fb-97db5dd0d8a5
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/HLTH_SILC_08_R__custom_600040/bookmark/map?lang=en&bookmarkId=12aa09d8-ef57-4bfc-b8fb-97db5dd0d8a5
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2008-2021. Data collected every year.

2.2.3.2 Healthcare personnel – Target 3.c (health financing and recruitment)

The indicator measures the number of healthcare personnel including physicians, professional nurses and midwives, healthcare assistants as well as other health service providers such as dentists, pharmacists, physiotherapists, psychologists, dieticians, audiologists and speech therapists, and laboratory assistants (under three categories, i.e., practising, professionally active, and licensed, if applicable) per 100,000 inhabitants.

Data for Nord-Vest are available under Eurostat regional statistics for the period 2007-2020. However, there are breaks for 2007 and 2019. Thus, the analysis focuses only on 2008-2018. In the case of this indicator, data are not available for the macro region. As Fig. 7 shows, there was a sustained ascending trend in the number of healthcare personnel per 100,000 inhabitants in Nord-Vest, the increase amounting to 31.4%. Nevertheless, the performance of the region remained below the national scores all throughout the period studied.

Figure 7. SDG3 – Healthcare personnel
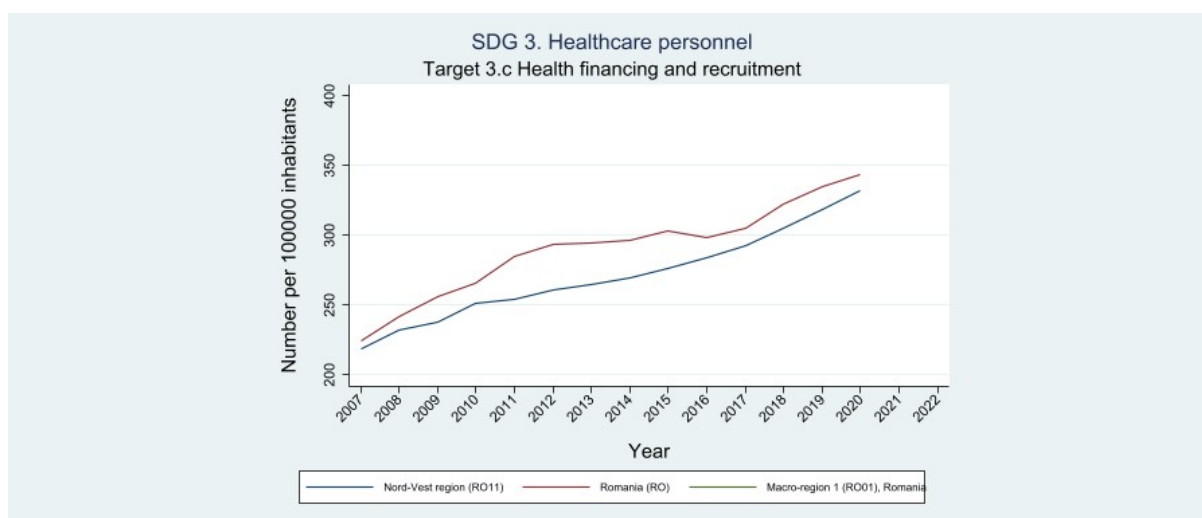
Source: Author's own calculation based on Eurostat (2023, January 24) *Health personnel by NUTS 2 regions – historical data (1993-2021)* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/hlth_rs_prsrg/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/hlth_rs_prsrg/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number per 100,000 inhabitants
Level of aggregation:	NUTS2 region
Time coverage and frequency	2007-2020. Breaks in data (2007, 2019). Data collected every year.

2.2.3.3 Hospital beds – Target 3.8 (universal health coverage)

The indicator measures the number of hospital beds per 100,000 inhabitants available for use, covering beds for curative care, beds for rehabilitative care, beds for long-term care, and beds for other purposes, irrespective of whether they are occupied or not. Thus, it provides information on healthcare capacities, more precisely on the maximum number of patients that can be treated in hospitals (both public and private), including general hospitals, mental health hospitals, and other specialty hospitals.

Based on Eurostat regional statistics, Nord-Vest experienced significant variations in the number of hospital beds per 100,000 inhabitants (see Fig. 8), but had a better performance compared to the country throughout the entire period. The highest number was registered in 2007, but there was a drop in the following years, 2010 registering an all-time low score. After that, a positive trend can be noticed. However, the number of hospital beds in 2020 was still slightly lower compared to that in 2007.

The decrease in the number of hospital beds does not in itself signal a shortage. Several factors need to be taken into consideration, such as population decline, faster treatments available due to progress in healthcare and medical technology, possible shift to community services, etc. Hospital bed occupancy rate might be a more revealing indicator, although there is an ongoing debate on recommended 'safety limits', especially in light of the COVID-19 crisis.

Figure 8. SDG3 – Hospital beds
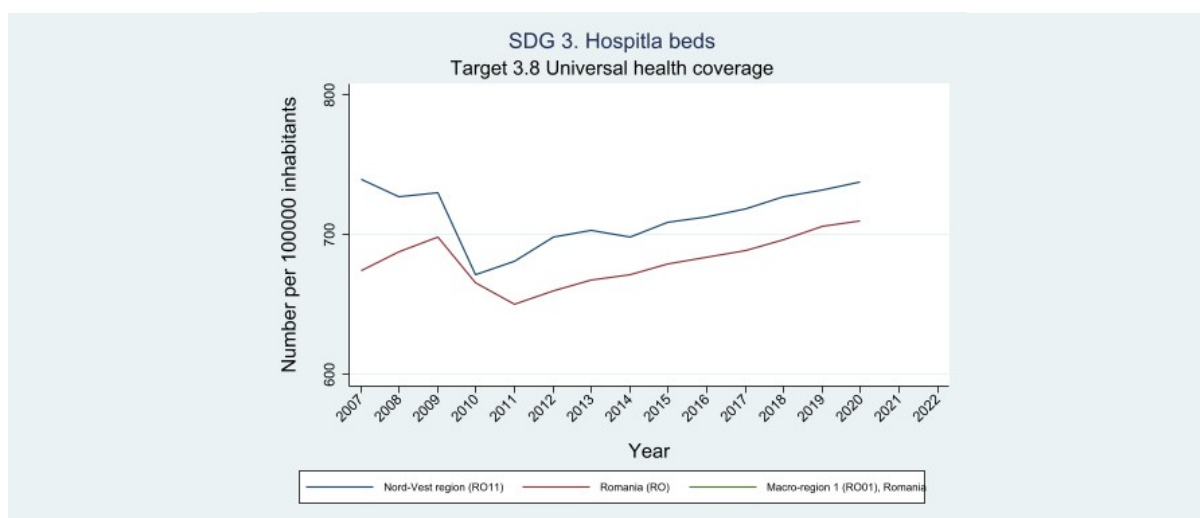
Source: Author's own calculation based on Eurostat (2023, January 24) *Hospital beds by NUTS 2 regions– historical data (1993-2021)* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/hlth_rs_bdsrg/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/hlth_rs_bdsrg/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2007-2020. Data collected every year.

2.2.3.4 Infant mortality – Target 3.2 (preventable death of new-borns)

The indicator measures the number of deaths of live-born infants under one year of age per 1,000 live births in that year.

Data regarding infant mortality in Nord-Vest are available at Eurostat for the period 2007-2020. As Fig. 9 shows, the infant mortality rate fell from 11.8 deaths per 1,000 live births in 2007 to 6.7 in 2020. However, although the region registered a slightly lower rate (11.8 deaths per 1,000 live births) compared to the country (12 deaths per 1,000 live births) in 2007, the downward trend was not constant throughout the period studied and in 2020 the regional rate was higher (6.7) compared to the national one (5.6). Despite the fact that the infant mortality rate has almost halved both in North-Vest and in Romania, it is still among the highest within the European Union, where the lowest rate recorded in 2021 was 1.8 deaths per 1,000 live births (in Finland, Slovenia and Sweden).

Figure 9. SDG 3 – Infant mortality
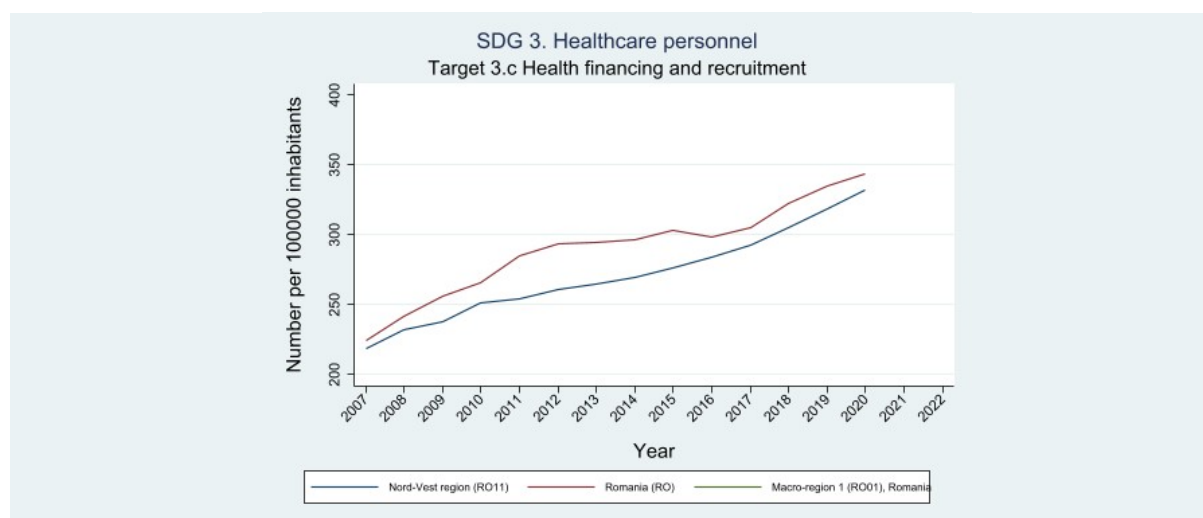
Source: Author's own calculation based on Eurostat (2023, January 24) *Infant mortality rates by NUTS 2 region* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/DEMO_R_MINFIND__custom_5395527/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/DEMO_R_MINFIND__custom_5395527/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2007-2020. Data collected every year.

2.2.4   SDG 4. Quality education

The targets of this goal include ensuring that everyone has equal access to inclusive and quality education at all levels and in all types of education, substantially increasing the number of persons with relevant skills for employment and entrepreneurship as well as for the promotion of sustainable development and lifestyles, a culture of non-violence, and the appreciation of cultural diversity, and ensuring adequate school facilities and qualified teachers.

Out of the seven indicators recommended for EU regions in the JRC Technical Report, five are available for Nord-Vest.

2.2.4.1 Students enrolled in tertiary education – Target 4.3 (vocational and tertiary education)

The indicator measures the number of students enrolled in tertiary education, including short-cycle, Bachelor's, Master's and PhD programmes. Data regarding the number of students enrolled in tertiary education in Nord-Vest are readily accessible at Eurostat, but only starting from 2013.

Compared to 95,027 students enrolled in tertiary education in 2013, the region registered almost the same number in 2020, more precisely 95,046. However, taking into consideration the population decline, the trend can be considered positive (as Fig. 10 shows, the number of students enrolled in tertiary education decreased both in the macro region and in the country over the period studied).

Figure 10. SDG 4 – Students enrolled in tertiary education
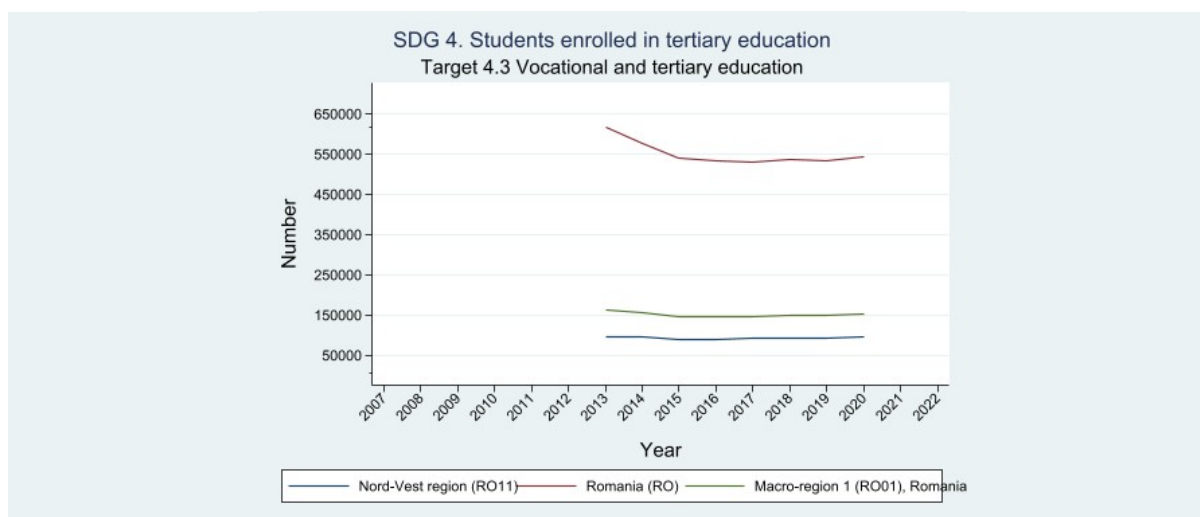
Source: Author's own calculation based on Eurostat (2023, January 26) *Students enrolled in tertiary education by education level, programme orientation, sex and NUTS2 regions* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enrt06/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enrt06/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number
Level of aggregation:	NUTS2 region
Time coverage and frequency	2013-2020. Data collected every year.

2.2.4.2 Participation in education – Target 4.3 (vocational and tertiary education)

The indicator measures the participation rate in formal and non-formal education and training. Data available for the region at Eurostat cover the period 2014-2020. As Fig. 11 shows, Nord-Vest registered considerably higher rates compared to the macro region and the country all throughout the period studied. The lowest participation rate in the region, 42.2%, was recorded in 2017, which was then followed by a constant increase, Nord-Vest registering the highest participation rate in education, 47.7%, in 2020, by far surpassing the participation rates both in the macro region and in Romania.

Figure 11. SDG4 – Participation in education
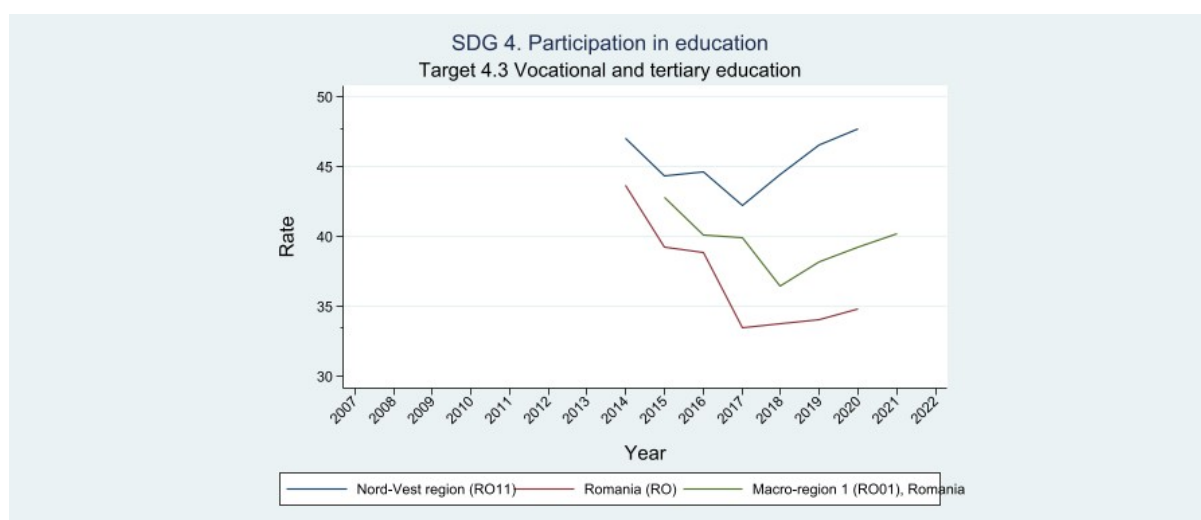
Source: Author's own calculation based on Eurostat (2023, January 26) *Participation rates of selected age groups in education at regional level* [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/EDUC_UOE_ENRA14__custom_3868425/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/EDUC_UOE_ENRA14__custom_3868425/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Rate
Level of aggregation:	NUTS2 region
Time coverage and frequency	2014-2020. Data collected every year.

2.2.4.3 Pupils enrolled in early childhood education – Target 4.2 (access to early childhood education)

The indicator measures the number of pupils enrolled in programmes for young children (under primary school age) that are considered to be educational according to the international standard classification for education (ISCED 2011). Data are available for Nord-Vest at Eurostat for the period 2013-2020 and show a decrease of 8.57%.

Figure 12. SDG 4 – Pupils enrolled in early childhood education
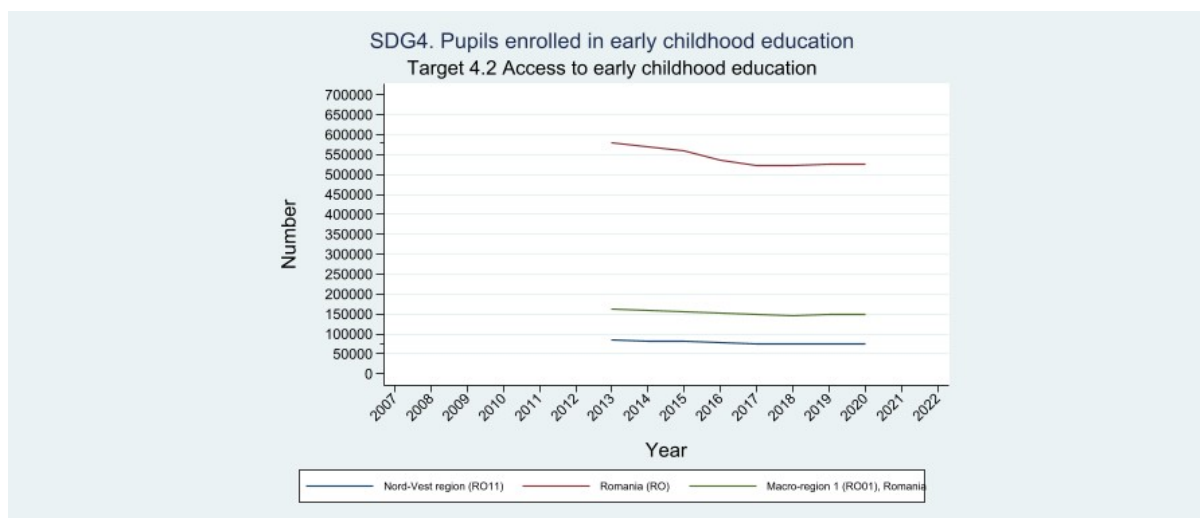
Source: Author's own calculation based on Eurostat (2023, January 26) *Pupils enrolled in early childhood education by sex and NUTS2 regions* [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enrp03/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enrp03/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number
Level of aggregation:	NUTS2 region
Time coverage and frequency	2013-2020. Data collected every year.

2.2.4.4 Early leavers from education and training – Target 4.6 (youth and adult literacy)

The indicator measures the percentage of people aged 18 to 24 who have completed at most lower secondary education and received no further education or training in the four weeks preceding the survey out of the total population of the same age.

Data regarding early leavers from education and training in Nord-Vest are available at Eurostat only for the period 2015-2020. According to these, the region performed better compared to the macro region and Romania all throughout the five years, but still has to make effort to achieve the EU-level target, less than 9% by 2030. Nord-Vest registered the highest share of early leavers from education and training, 18.3%, in 2016. By 2020, the region succeeded in reducing this share to 14.9% (although the lowest share, 13.5%, was recorded in 2019; the increase in the rate of early leavers from education and training in 2020, following a steady decrease in the previous four years, is most likely due to the introduction of remote/online learning during the COVID-19 pandemic).

Figure 13. SDG 4 – Early leavers from education
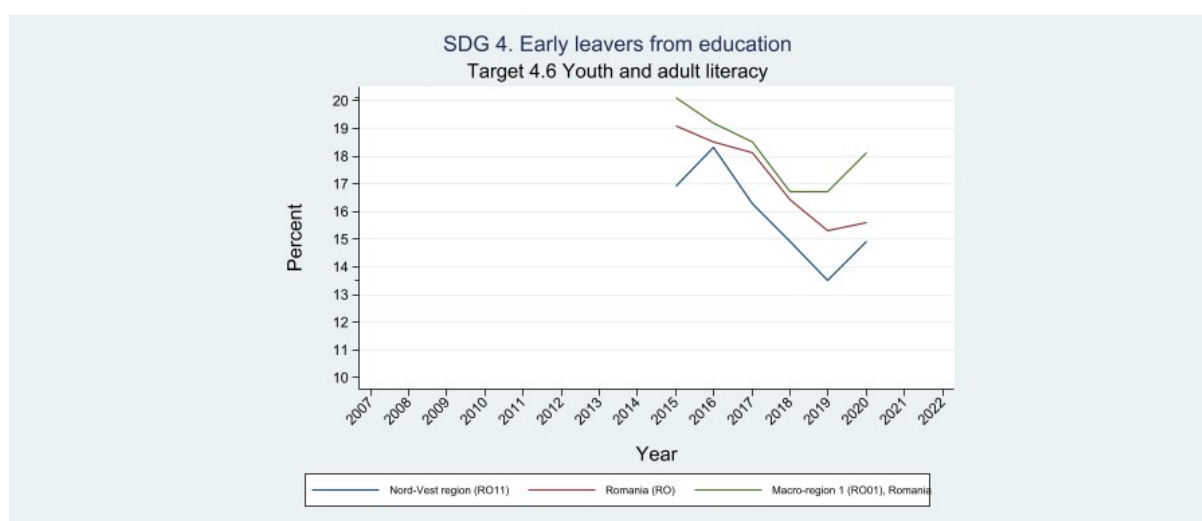
Source: Author's own calculation based on Eurostat (2023, January 26) *Early leavers from education and training by sex and NUTS 2 regions* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/edat_lfse_16/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/edat_lfse_16/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2015-2020. Data collected every year.

2.2.4.5 Participation rate at selected education level – Target 4.1 (primary and secondary education)

The Eurostat data available for the period 2013-2020 refer to primary and lower secondary education (levels 1 and 2). As Fig. 14 shows, the Nord-Vest region registered a slight decrease in the share of learners at these levels of education, from 8.7% in 2013 to 8.4% in 2020.

Figure 14. SDG4 – Participation rate at primary and lower secondary levels
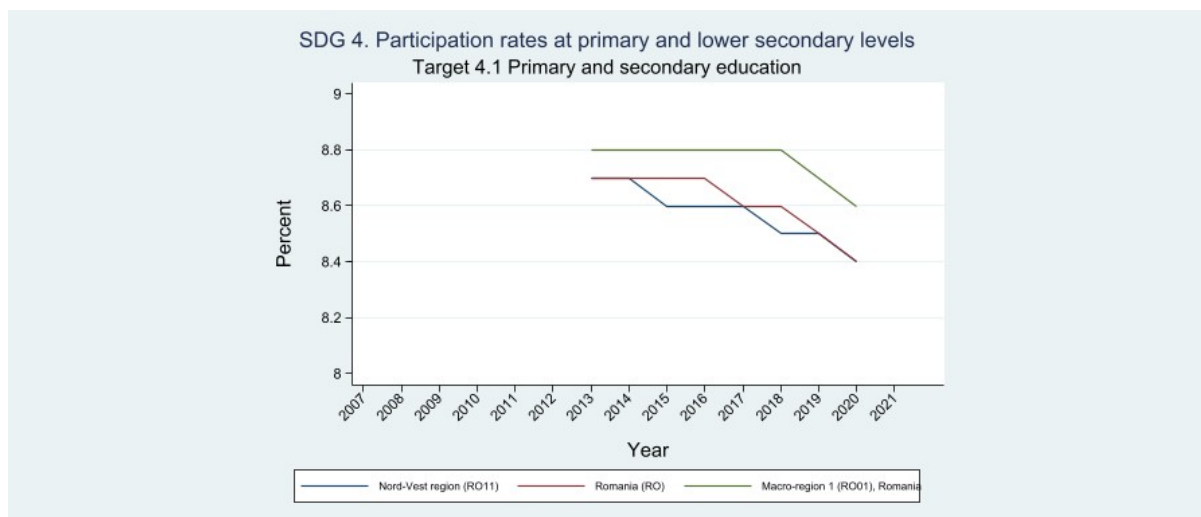
Source: Author's own calculation based on Eurostat (2023, January 27) *Participation rates in selected education levels at regional level* [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enra15/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enra15/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2013-2020. Data collected every year.

2.2.5 SDG 5: Gender equality

The targets of this goal include ending all forms of discrimination and violence against all women and girls, recognising and valuing domestic work and unpaid care, safeguarding reproductive rights, ensuring equal opportunities for women to participate in decision-making in all fields, promoting gender equality and empowering all women and girls.

Out of the seven indicators recommended for EU regions in the JRC Technical Report, four are available for Nord-Vest.

2.2.5.1 Female research and development personnel – Target 5.5 (women participation and leadership)

The indicator measures the share of female research and development personnel of total research and development employment. Data are available for Nord-Vest in the OECD Localised Indicator Framework for the SDGs, Regional Database, only for 2015. In that year, the region had a larger share of female R&D personnel (48.63%) compared to the national average (45.83%).

Table 5. SDG5 – Share of female research and development personnel

Value	Country average	OECD average	Direction	End value	Year
48.63	45.83	37.21	Positive	50	2015

Source: OECD, Localised Indicator Framework for the SDGs, Regional database, variable 'Female research and development personnel as a percentage of total research and development employment

METADATA

Source:	**OECD (2023), "Regional demography (Edition 2022)",** *OECD Regional Statistics* **(database)**
Hyperlink (available API):	https://www.oecd.org/regional/regional-statistics/
Visualisation:	NA
Availability and geographic coverage:	NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2015

2.2.5.2 Female achievement and disadvantage indices – Target 5.1 (gender discrimination)

The two indices measure the level of female achievement compared to the best regional female performance (varying between 0 and 100) and that of female disadvantage in cases when women have lower scores than men. The two indices are based on 33 indicators grouped into seven domains (see Fig. 15). Data are available for Nord-Vest at the Urban Data Platform Plus only for the year 2021.

Considering the Female achievement index, Nord-Vest ranks 205th out of the 235 NUTS2-level regions of the European Union. The region scores lowest, 18.2%, on the Power composite indicator, which measures female representation in political institutions such as the government, the parliament, regional and local assemblies and executive positions.

The region ranks even lower considering the Female disadvantage index, occupying the 211th position out of the 235 NUTS2 European regions, which puts Nord-Vest near bottom 10%. In this case, the region ranks lowest on the Work and money indicator.

Figure 15. SDG5 – Female achievement and disadvantage indices, Nord-Vest

Female achievement index

Female disadvantage index
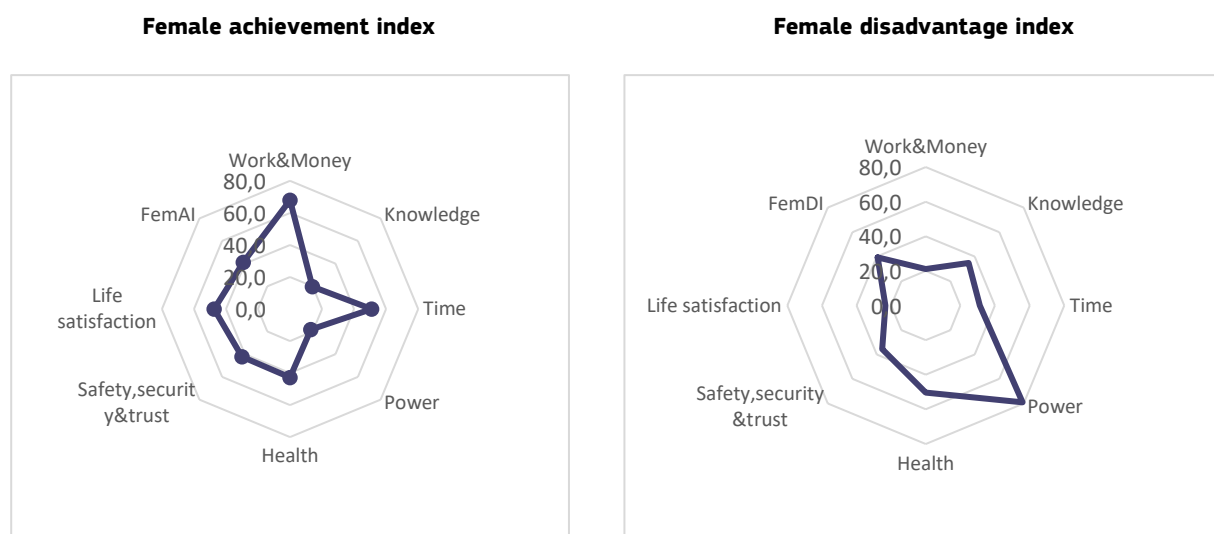
Source: Authors own calculation based on Norlén H., Papadimitriou E., Dominicis l.,Dijkstra L.(2021). Mapping the glass ceiling: The EU regions where women thrive and where they are held back. Monitoring EU regional gender equality with the female achievement and disadvantage indices. European Commission doi:10.2776/07411

METADATA

Source:	Norlén H., Papadimitriou E., Dominicis l.,Dijkstra L.(2021). Mapping the glass ceiling: The EU regions where women thrive and where they are held back. Monitoring EU regional gender equality with the female achievement and disadvantage indices. European Commission doi:10.2776/07411
Hyperlink (available API):	https://urban.jrc.ec.europa.eu/regional-gender-equality/?lng=en
Visualisation:	https://urban.jrc.ec.europa.eu/regional-gender-equality/?lng=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2021

Annex 1 includes the Perception Index of Gender Equity in Management (PIGEM) – Target 5.5 (equal participation in leadership), developed by Bîrsănuc E.M. (2023), applied at the level of Nord Vest. PIGEM measures gender prejudice towards female professional advancement, considering 5 main dimensions: education, economy, politics, family/private space, and safety/quality of life. Considering the existing data, Nord-Vest registers an overall low level of gender prejudice (32.12). Results by dimension suggest that the main reason for the scarcity of female CEOs, managers, directors or political representatives is based on biased perceptions on: domestic division of labour, childcare responsibilities, and women's leadership abilities.

2.2.5.3 Women in parliament and government – Target 5.5 (women participation and leadership)

At present, all 24 members of the Nord-Vest Regional Development Council (RDC) are men. In what concerns women representatives from the region in the Romanian Parliament, see Fig. 66 in Section 3.4 Data available at NUTS 1 level.

2.2.5.4 Index 5.7 Gender gap in part-time employment incidence (5.4 unpaid work)

The indicator measures the gender gap in part-time employment incidence (female-male, percentage points). Data are available for Nord-Vest in the OECD Localised Indicator Framework for the SDGs, Regional Database, only for 2015. In that year, the region registered a lower percentage point (-1.10%) compared to the national average (1.20%).

Table 6. SDG5 – Gender gap in part-time employment incidence

Value	Country average	OECD average	Direction	End value	Year
-1.10	1.20	17.3749	Negative	0	2015

Source: OECD, Localised Indicator Framework for the SDGs, Regional database, variable 'Gender gap in part-time employment incidence'

METADATA

Source:	**OECD (2023), "Regional demography (Edition 2022)",** *OECD Regional Statistics* **(database)**
Hyperlink (available API):	https://www.oecd.org/regional/regional-statistics/
Visualisation:	NA
Availability and geographic coverage:	NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2015

2.2.6   SDG 6: Clean water and sanitation

The targets of this goal include ensuring equitable access to safe and affordable drinking water as well as to adequate sanitation and hygiene for all, substantially improving water quality and water-use efficiency, protecting and restoring water-related ecosystems, implementing integrated water resources management, and increasing the involvement of local communities.

Out of the four indicators recommended for EU regions in the JRC Technical Report, one is available for Nord-Vest.

2.2.6.1 Water bodies that exceed a standardised quality rating – Target (6.3 water quality)

In 2020, the three water basins in the Nord-Vest region, Tisa, Someș and Crișuri, represented 17.65% (6,639 km) of the total length of monitored water body in the country (37,612 km). Over the period 2008-2020, the length of monitored water bodies registered a 65.08% increase (from 4,464 km to 7,369 km) at the level of the region (Tisa – 1,307 km, Someș – 3,563 km and Crișuri 2,499 km).

The evolution of water quality for the period indicates that in parallel with the increase of the monitored water body, the quality of water decreased. Thus, while in 2008, very good and quality water represented 80.44% of all monitored surface, in 2020 this rate decreased to 31.83%.

Figure 16. SDG6 – Surface water quality for hydrographic basins

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2020
■ VGGS	80,44	77,39	54,08	75,83	63,71	70,38	65,43	59,51	59,29	54,34	31,83
■ MS	12,90	15,10	42,24	24,17	35,74	28,68	31,93	37,31	37,84	42,11	61,42
■ PS	5,19	5,45	3,67	-	-	-	1,71	1,48	1,45	2,05	5,34
■ BS	1,47	2,07	-	-	0,55	0,94	0,93	1,70	1,42	1,50	1,42

Source: Source: Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 19) *Surface water quality for hydrographic basins* [Dataset]. National Institute of Statistics.

METADATA

Source:	**The National Administration "Romanian Waters" through the Romanian Statistical Yearbook**
Name of indicator:	Surface water quality for Hydrographic basins
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	https://crisuri.rowater.ro/ https://rowater.ro/
Availability and geographic coverage:	NUTS2
Unit of measurement:	km – The quality rating includes four classes, which are: First and second class- Very good and good status (VGGS); Third class – Moderate status (MS); Fourth class – Poor status (PS) and Fifth class – bad status (BS).
Level of aggregation:	Water basin
Time coverage and frequency:	2009-2021 Data collected every year

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2.2.7   SDG 8: Decent work and economic growth

The targets of this goal include sustaining per capita economic growth, increasing economic productivity, decoupling economic growth from environmental degradation, achieving productive employment for all women and men, ensuring safe working environments, expanding access to insurance and financial services for all, and ending forced labour, modern slavery and human trafficking.

Out of the ten indicators recommended for EU regions in the JRC Technical Report, eight are available for Nord-Vest.

2.2.7.1 Occupational accidents – Target 8.8 (labour rights)

The indicator shows the number of accidents at work, including individual and collective accidents, fatalities and accidents leading to temporary incapacity of work.

Regarding occupational accidents in Nord-Vest, data are available in the Romanian Statistical Yearbook, provided by the National Institute of Statistics, starting from 2009. The trend is ascending, similarly to those in the macroregion and the country.

Figure 17. SDG8 – Injured at work
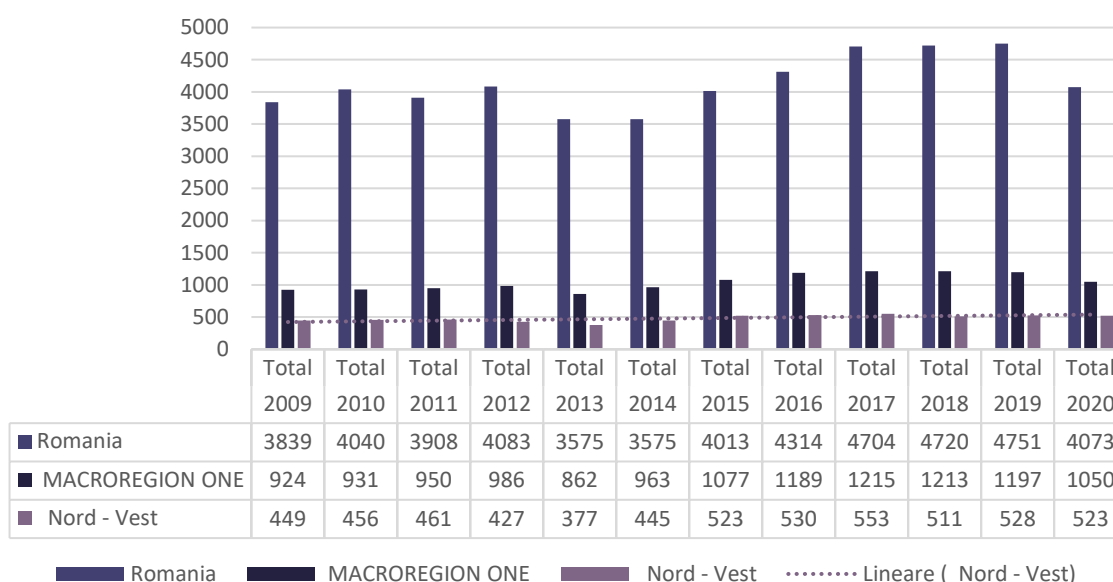
	Total 2009	Total 2010	Total 2011	Total 2012	Total 2013	Total 2014	Total 2015	Total 2016	Total 2017	Total 2018	Total 2019	Total 2020
■ Romania	3839	4040	3908	4083	3575	3575	4013	4314	4704	4720	4751	4073
■ MACROREGION ONE	924	931	950	986	862	963	1077	1189	1215	1213	1197	1050
■ Nord - Vest	449	456	461	427	377	445	523	530	553	511	528	523

■ Romania   ■ MACROREGION ONE   ■ Nord - Vest   ········· Lineare (Nord - Vest)

Source: Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 19) *Injured at work* [Dataset]. National Institute of Statistics.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Variable(s):	Number of injured at work
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	Nord-Vest Region (Bihor, Bistrița-Năsăud, Cluj, Maramureș, Satu-Mare, Sălaj), Macroregion 1, Country
Unit of measurement:	Number; Rates per thousands
Level of aggregation:	County
Time coverage and frequency	2009-2021 Data collected every year
Notes:	The data is provided as: Number of accidents; Fatalities; Temporary incapacity of work; Collective accidents at work

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2.2.7.2 Economic activity – Target 8.5 (productive employment)

The indicator shows the number of economically active persons aged 15 to 74, summing both the employed and unemployed population.

Data regarding economic activity in Nord-Vest are available at Eurostat for the 2007-2021 period. However, in 2010 there is a break in the time-series data, and therefore only the period 2011-2020 is consistent.

The region registered a slight increase in the number of economically active persons, from 1,181 thousand in 2011 to 1,197.1 thousand in 2020.

Figure 18. SDG8 – Economically active population from 15 to 74 years
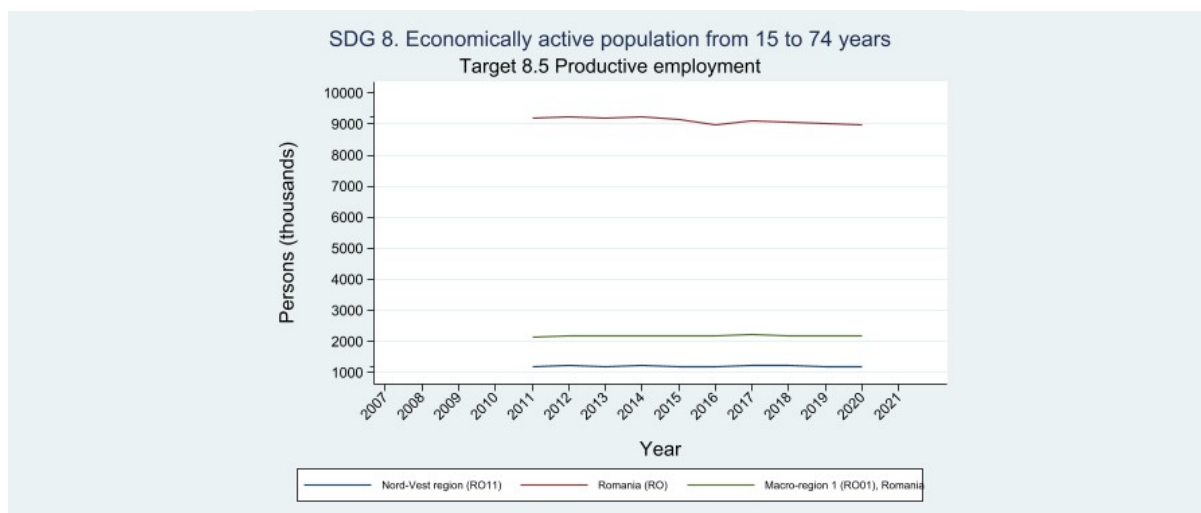
Source: Author's own calculation based on Eurostat (2023, January 30) Economically active population by sex, age and NUTS 2 regions (1 000) [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfp2act/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfp2act/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Thousand persons
Level of aggregation:	NUTS2 region
Time coverage and frequency	2011-2020. Data collected every year.

2.2.7.3 Unemployment – Target 8.5 (productive employment)

The indicator measures the share of unemployed persons aged 15 to 74 in the labour force. According to data available at Eurostat for the period 2011-2020, Nord-Vest registered a considerable decrease in the rate of unemployment, from 5.1% in 2011 to 3.8% in 2020, although the lowest shares were recorded in the previous two years (2.9% in 2018 and 3% in 2019).

Figure 19. SDG8 – Unemployment rate
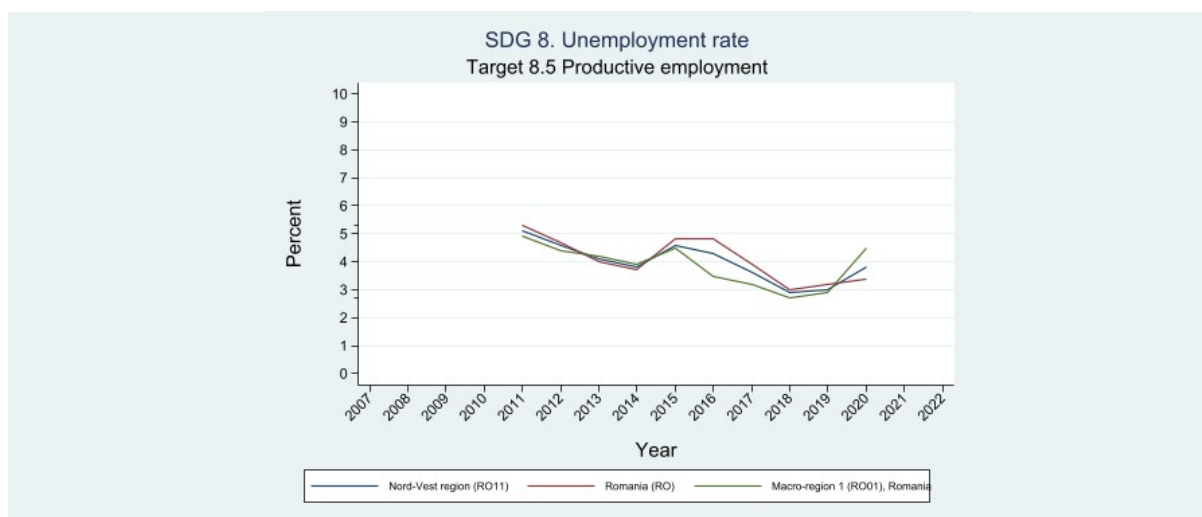
Source: Author's own calculation based on Eurostat (2023, January 30) *Unemployment by sex, age, educational attainment level and NUTS 2 regions (1 000)* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/LFST_R_LFU3PERS/default/table?lang=en&category=labour.employ.lfst.lfst_r.lfst_r_lfu
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/LFST_R_LFU3PERS/default/map?lang=en&category=labour.employ.lfst.lfst_r.lfst_r_lfu
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	rate
Level of aggregation:	NUTS2 region
Time coverage and frequency	2011-2020. Data collected every year.

2.2.7.4 Employment – target 8.5 (productive employment)

The indicator shows the number of persons in employment (per thousand persons). Data for Nord-Vest are available at Eurostat for the period 2011-2020. The region registered a positive trend with an increase in the number of the employed from 1077.2 thousand in 2011 to 1122.5 thousand in 2020.

Figure 20. SDG8 – Number of employed
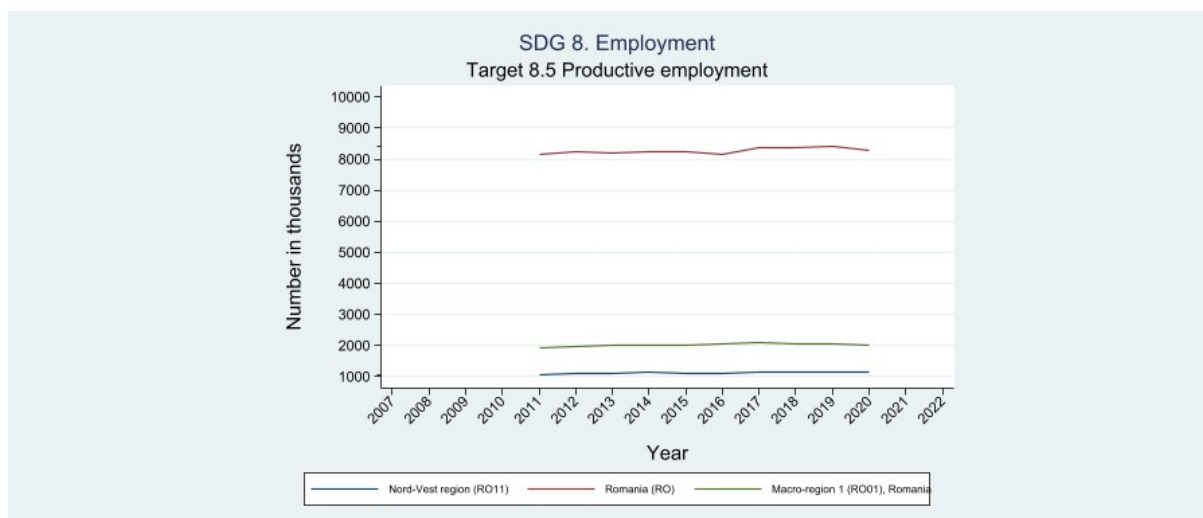
Source: Author's own calculation based on Eurostat (2023, January 30) *Employment by sex, age and NUTS 2 regions (1 000)* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics	
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfe2emp/default/table?lang=en	
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfe2emp/default/map?lang=en	
Availability and geographic coverage:	All NUTS2 regions	
Unit of measurement:	Rate	
Level of aggregation:	NUTS2 region	
Time coverage and frequency	2011-2020. Data collected every year.	

2.2.7.5 Gross domestic product at current market prices – Target - 8.1 (economic growth)

The indicator measures economic activity, more precisely the total value of goods and services produced less the value of those used during the production process. Data are available for Nord-Vest at Eurostat for the entire period 2007-2021 and show a positive trend, the region registering a significant increase in GDP, from 15,357.72 million euros in 2007 to 29,948.46 million euros in 2021.

Figure 21. SDG8 – Gross domestic product (GDP) at current market prices

Source: Author's own calculation based on Eurostat (2023, January 30) *Gross domestic product (GDP) and Gross value added (GVA) in volume by NUTS 2 regions* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics	
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_2gdp/default/table?lang=en	
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_2gdp/default/table?lang=en	
Availability and geographic coverage:	All NUTS2 regions	
Unit of measurement:	Million euro	
Level of aggregation:	NUTS2 region	
Time coverage and frequency	207-2021. Data collected every year.	

2.2.7.6 Indicator 8.7 SDG 8. Gross value added (GVA) at basic prices – 8.2 (economic productivity)

The indicator shows the output value at basic prices less intermediate consumption valued at purchasers' prices. According to data available at Eurostat for the entire period 2007-2021, Nord-Vest registered an increase from 13,688.36 million euros in 2007 to 27,064.57 million euros in 2021.

Figure 22. SDG8 – Gross value added at basic prices

Source: Author's own calculation based on Eurostat (2023, January 30) *Gross domestic product (GDP) and Gross value added (GVA) in volume by NUTS 2 regions* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics	
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_3gva/default/table?lang=en	
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_3gva/default/map?lang=en	
Availability and geographic coverage:	All NUTS2 regions	
Unit of measurement:	Million euro	
Level of aggregation:	NUTS2 region	
Time coverage and frequency	207-2021. Data collected every year.	

2.2.7.7 Long-term unemployment (12 months and more) – 8.5 (productive employment)

In the case of this variable there are different breaks in the data and NUTS2 level data, especially for 2021, that are marked as unreliable. Also, the percent could refer to Percent of unemployed (PC_UNE) or Percent of unemployed in the labour force (PC_ACT).

METADATA

Source:	Eurostat, regional statistics	
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfu2ltu/default/table?lang=en	
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfu2ltu/default/map?lang=en	
Availability and geographic coverage:	All NUTS2 regions	

Unit of measurement:	Million euro	
Level of aggregation:	NUTS2 region	
Time coverage and frequency	2007-2021. Data collected every year.	

2.2.7.8 Compensation of employees – Target 8.5 (productive employment)

The indicator refers to the total remuneration, in cash (wages, salaries, and employers' social contributions) or in kind, payable to an employee in return for work. Data are available for Nord-Vest at Eurostat for the period 2007-2020 and show a positive trend. The region registered a significant increase in the compensation of employees from 5,100.02 million euros to 10,858.57 million euros, although not as large as the country and the macro region.

Figure 23. SDG8 – Compensation of employees
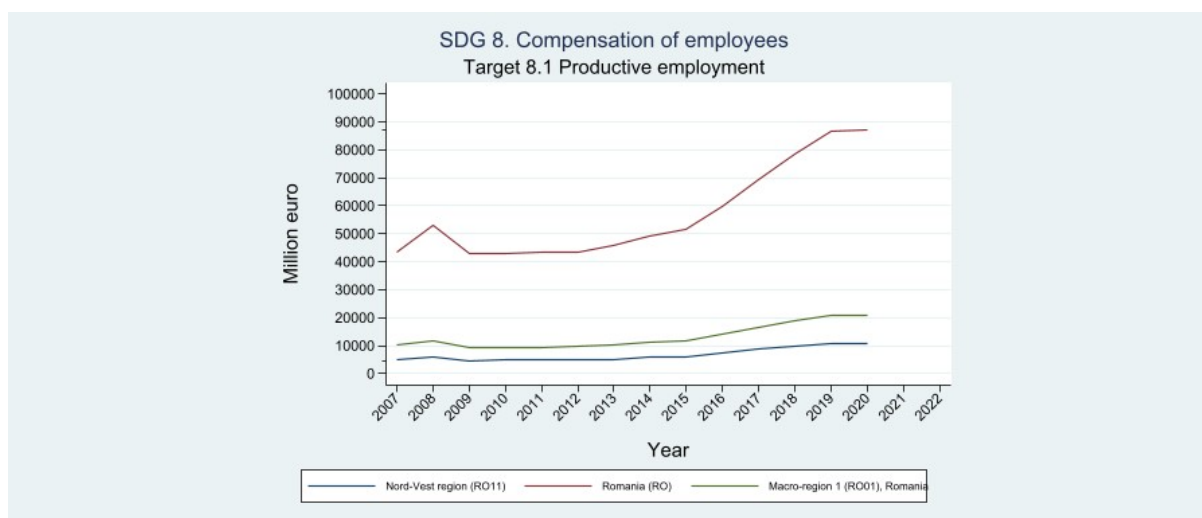
Source: Author's own calculation based on Eurostat (2023, January 31) *Compensation of employees by NUTS 2 regions* [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_2coe/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_2coe/default/map?lang=en
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Million euro
Level of aggregation:	NUTS2 region
Time coverage and frequency	2007-2020. Data collected every year.

2.2.8 SDG 9: Industry, innovation and infrastructure

The targets of this goal include developing quality, sustainable and resilient infrastructure with equitable access for all, promoting inclusive and sustainable industrialisation, and enhancing scientific research and innovation in order to achieve economic prosperity, better employment opportunities, well-being and environmental sustainability.

Out of the five indicators recommended for EU regions in the JRC Technical Report, four are available for Nord-Vest.

2.2.8.1 GVA of the industry with respect to the GVA of the total sectors (current price) – 9.2 (sustainable industrialization)

The National Institute of Statistics publishes annual statistics on the regional gross value added (RGVA), which show a decrease in the share of industrial gross value added of the GVA of the total sectors. The decrease registered in the Nord-Vest region for the period 2007-2019 was 17.43%, while at the country level the decrease was 15.83%.

Figure 24. SDG9 – GVA of the industry with respect to the GVA of the total sectors
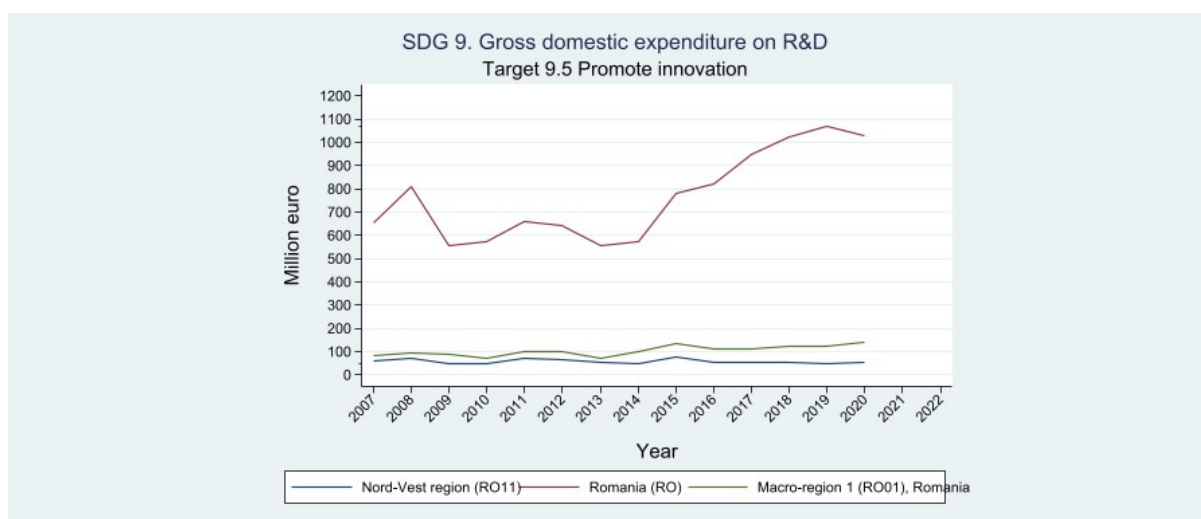
Source: Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *GVA of the industry with respect to the GVA of the total sectors* [Dataset]. National Institute of Statistics.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregions
Unit of measurement:	million lei current prices
Level of aggregation:	Nord-Vest Region Macroregion 1 Country
Time coverage and frequency	2007-2019 Data collected every year

2.2.8.2 Gross domestic expenditure on R&D – Target 9.5 (promote innovation)

The indicator shows the total expenditure on research and development by the government, the business sector, the higher education sector and private non-profit organisations.

Data regarding gross domestic expenditure on R&D are available for Nord-Vest at Eurostat, covering the period 2007-2020. As Fig. 25 shows, the region registered a decrease in 2020 compared to 2007, from 58.003 million euros to 55.382 million euros, although the latter value is higher than those recorded in the previous four years, the period 2016-2019. However, compared to the year 2015, when Nord-Vest registered the highest gross domestic expenditure on R&D, 75.676 million euros, the drop is significant, especially in light of the fact that both the country and the macro region recorded a considerable increase over the period studied.

Figure 25. SDG9 – Gross domestic expenditure on R&D
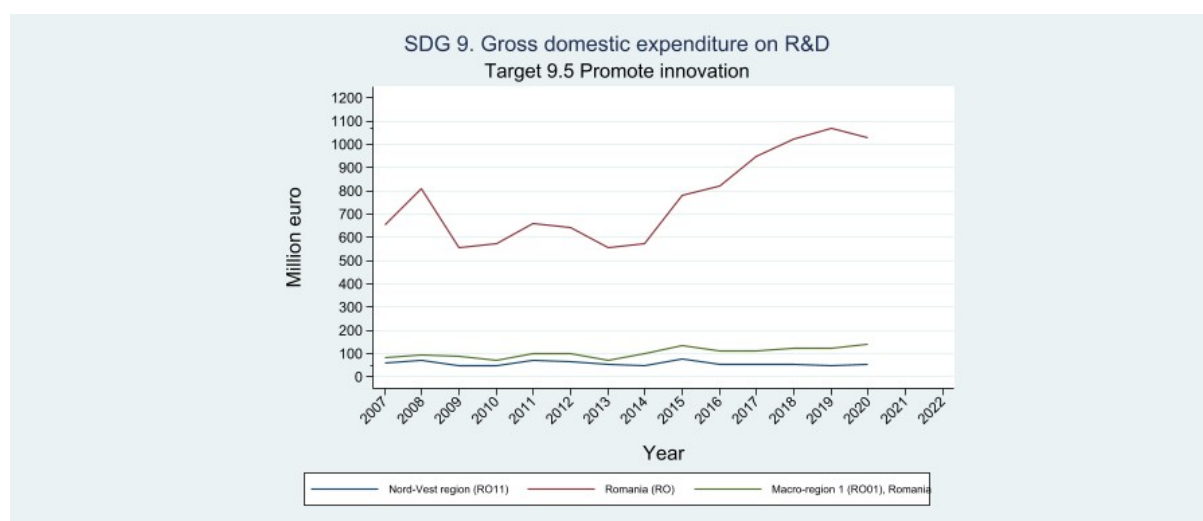
Source: Author's own calculation based on Eurostat (2023, January 23) *GERD by sector of performance and NUTS 2 regions* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/rd_e_gerdreg/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/rd_e_gerdreg/default/map?lang=en
Availability and geographic coverage:	NUTS2, Macroregions
Unit of measurement:	Million euro
Level of aggregation:	NUTS2
Time coverage and frequency	2007-2021. Data collected every year.

2.2.8.3 R&D personnel and researchers – Target 9.5 (promote innovation)

The indicator shows the total number of full-time equivalent research and development personnel and researchers in the business sector, the government sector, higher education and private non-profit organisations, providing information on the evolution of the knowledge-based economy.

Data regarding R&D personnel and researchers in Nord-Vest are available at Eurostat for the period 2007-2020. Being strongly related to gross domestic expenditure on R&D, which – as mentioned earlier – decreased in the region during the period studied, the number of full-time equivalent R&D personnel and researchers also shows a slight decrease, from 2,459 in 2007 to 2,347 in 2020. However, the number registered in 2020 is higher than those registered in the previous seven years, from 2014 to 2019 (the highest number, 2,752, was recorded in the year after Romania's EU accession).

Figure 26. SDG9 – R&D personnel and researchers
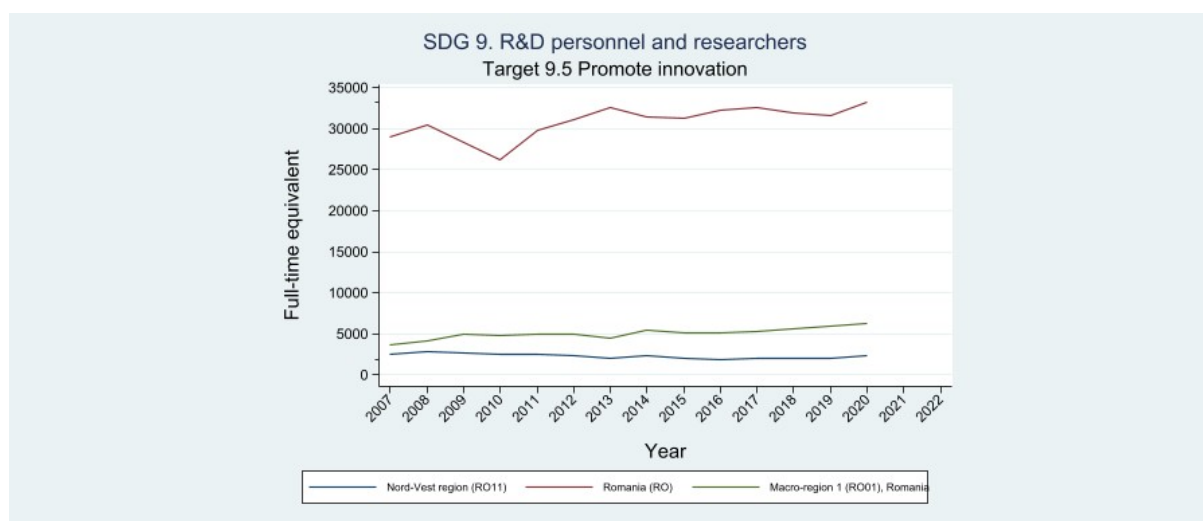
Source: Author's own calculation based on Eurostat (2023, January 31) *R&D personnel and researchers by sector of performance, sex and NUTS 2 regions* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/rd_p_persreg/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/rd_p_persreg/default/map?lang=en
Availability and geographic coverage:	NUTS2, Macro regions
Unit of measurement:	Full-time equivalent
Level of aggregation:	NUTS2, Macro regions
Time coverage and frequency	2007-2020. Data collected every year.

2.2.8.4 Employment in high-technology manufacturing as a percentage of total manufacturing employment

The indicator measures the share of employment in high-technology manufacturing from total manufacturing employment. Data are available for Nord-Vest in the OECD Localised Indicator Framework for the SDGs, Regional Database, only for 2016. In that year, the region registered a higher percentage point 1.12%) compared to the national average (1.20%).

Table 7. SDG9 – Employment in high-technology manufacturing as a % of total manufacturing employment

Value	Country average	OECD average	Direction	End value	Year
1.12	0.72	1.257	Positive	1.97	2016

Source: OECD, Localised Indicator Framework for the SDGs, Regional database, variable 'Employment in high-technology manufacturing as a percentage of total manufacturing employment' [Dataset]. OECD.

METADATA

Source:	**OECD (2023), "Regional demography (Edition 2022)",** *OECD Regional Statistics* **(database)**
Hyperlink (available API):	https://www.oecd.org/regional/regional-statistics/
Visualisation:	NA
Availability and geographic coverage:	NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2015

2.2.9   SDG 11: Sustainable cities and settlements

The targets of this goal include ensuring access for all to adequate and affordable housing, basic services, safe and sustainable transport systems and inclusive green and public spaces, enhancing inclusive and sustainable urbanisation, protecting cultural and natural heritage, reducing the environmental impact of cities, and increasing resilience to disasters.

Out of the nine indicators recommended for EU regions in the JRC Technical Report, five are available for Nord-Vest.

2.2.9.1 Daily accessibility – Target 11.2 (access to transport system)

JRC's Land-Use based Integrated Sustainability Assessment modelling platform (LUISA) defines daily accessibility as indicating the amount of people that live within four hours of driving from the location at hand. For the Nord-Vest region in Figure 27 the estimated indicate a mixed evolution over time.

Figure 27. SDG11 – Daily accessibility
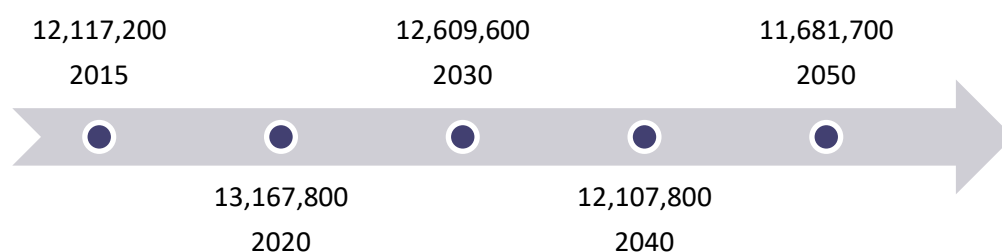
Source: Lavalle, Carlo; Jacobs Crisioni, Chris (2015): LF444 - Daily accessibility (LUISA Platform REF2014). European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-luisa-lf444-daily-accessibility-ref-2014.

METADATA

Source:	European Commission, Joint Research Centre
Hyperlink (available API):	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=infrastructure-20-26-20accessibility&i=1&db=1&it=download&y=2020&tv=-1&cwt=line-chart&date=2030
Visualisation:	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=infrastructure-20-26-20accessibility&i=1&db=1&it=ranking&y=2020&tv=-1&cwt=line-chart
Availability and geographic coverage:	All NUTS2
Unit of measurement:	Number
Level of aggregation:	NUTS2
Time coverage and frequency	2015, 2020, 2030, 2040, 2050 Decade

2.2.9.2 Stock of vehicles (passenger cars) – Target 11.2 (access to transport systems)

The indicator shows the number of passenger cars per 1,000 inhabitants.

Data regarding passenger cars in Nord-Vest are available at Eurostat for the period 2007-2020 and reflect a large and steady increase. As Fig. 28 shows, the number of passenger cars per 1,000 inhabitants more than doubled in the region (and also in the macroregion and in the country) over the period studied, reaching 376 in 2020 compared to 159 in 2007.

Figure 28. SDG11 – Stock of vehicles (passenger cars)
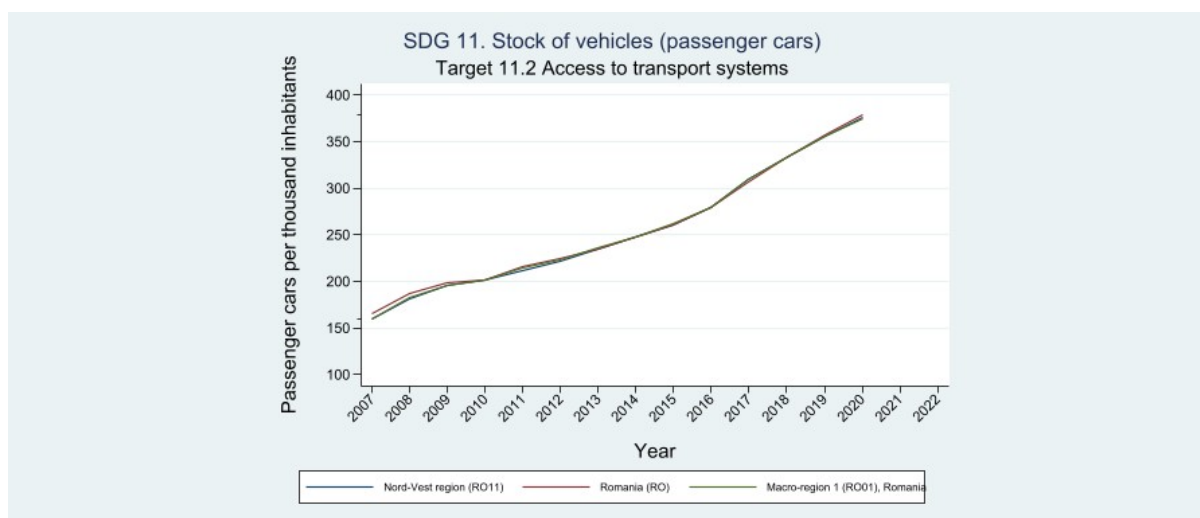
Source: Author's own calculation based on Eurostat (2023, January 31) *Stock of vehicles by category and NUTS 2* [Dataset]. Eurostat.

METADATA

Source:	Eurostat, regional statistics
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/TRAN_R_VEHST__custom_3430576/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/TRAN_R_VEHST__custom_3430576/default/map?lang=en
Availability and geographic coverage:	All NUTS2, Macroregions
Unit of measurement:	NUMBER
Level of aggregation:	NUTS3, NUTS2, Macroregions, Country
Time coverage and frequency	2007-2020. Data collected every year.

2.2.9.3 Difference between built-up area growth rate and population growth rate – Target 11.1 (access to housing)

The indicator measures the difference between built-up area growth rate and population growth rate. Data are available for Nord-Vest in the OECD Localised Indicator Framework for the SDGs, Regional Database, only for 2016. In that year, the region registered a negative score (2.74%) compared to the national average (1.97%).

Table 8. SDG11 – Difference between built-up area growth rate and population growth rate

Nord-Vest	Country average	OECD average	Direction	End value	Year
2.74	1.97	0.31	Negative	0	2014

Source: OECD, Localised Indicator Framework for the SDGs, Regional database, variable 'Difference between built-up area growth rate and population growth rate'

METADATA

Source:	**OECD (2023), "Regional demography (Edition 2022)",** *OECD Regional Statistics* **(database)**
Hyperlink (available API):	https://www.oecd.org/regional/regional-statistics/
Visualisation:	
Availability and geographic coverage:	NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2014

2.2.9.4 Atmospheric emissions of PM2.5 – Target 11.6 (environmental impact)

The indicator shows the spatial distribution of PM2.5 (sub-25µm particulate matter in 100 kg/year) emissions over Europe. Figure 29 show the figures for Nord-Vest and it shows estimates to be decreasing.

Figure 29. SDG11 – PM2.5 emissions
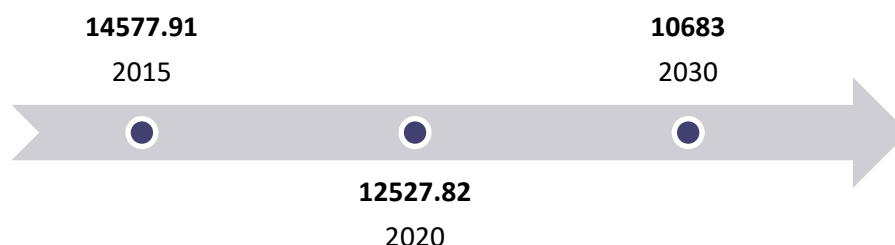
Source: Aurambout, Jean-Philippe; Trombetti, Marco (2015): UDP – Atmospheric emissions of PM2.5, 2010 – 2030 (JRC LUISA Reference Scenario 2016). European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-luisa-udp-pm25emissions-reference-2016

METADATA

Source:	European Commission, Joint Research Centre
Hyperlink (available API):	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=009-environment-climate&i=25&db=44&it=download&y=2020&tv=-1&cwt=line-chart&date=2030
Visualisation:	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=009-environment-climate&i=25&db=44&it=ranking&y=2020&tv=-1&cwt=line-chart
Availability and geographic coverage:	All NUTS2
Unit of measurement:	TONS
Level of aggregation:	NUTS2
Time coverage and frequency	2015, 2020, 2030

2.2.9.5 Victims in road accidents – Target 11.2 (access to transport systems)

The indicator measures the number of victims injured or killed in road accidents. Data are available for Nord-Vest at Eurostat for the period 2007-2020. Although, as mentioned earlier, the number of passenger cars per 1000 inhabitants more than doubled in the region during this period, the number of victims injured in road accidents did not increase significantly (3,054 in 2007 to 3,223 in 2020, which is the second lowest number registered after 2007), while the number of those killed in road accidents decreased from 329 in 2007 to 204 in 2020.

Figure 30. SDG11 – Victims in road accidents (injured and killed)

Source: Author's own calculation based on Eurostat (2023, January 31) *Victims in road accidents by NUTS 2 regions* [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/TRAN_R_ACCI__custom_5372349/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/TRAN_R_ACCI__custom_5372349/default/map?lang=en
Availability and geographic coverage:	NUTS2, Macroregions
Unit of measurement:	NUMBER
Level of aggregation:	NUTS2, Macroregions, Country
Time coverage and frequency	2007-2020. Data collected every year.

2.2.10 SDG 13: Climate action

The targets of this goal include integrating measures addressing climate change into national strategies and policies, increasing resilience to natural disasters, and improving awareness-raising as well as human and institutional capacity in order to combat climate change.

Out of the four indicators recommended for EU regions in the JRC Technical Report, three are available for Nord-Vest.

2.2.10.1 PM10 Emissions – Target 13.2 (climate change measures into policy)

This indicator, part of the Luisa modelling platform of the JRC, measures the annual mean concentrations of PM10 (μg / m3). PM10 is one of the main pollutants emitted by household and (to a lower extent) commercial and institutional fuel combustion, followed by industrial activities and transport. Figure 31 for the Nord-Vest indicates a decreasing trend of PM10 emissions.

Figure 31. SDG13 – PM10 emissions

| | 18,055.24 | | 14,100.81 |
| 2015 | | 2030 |

15,822.7
2020
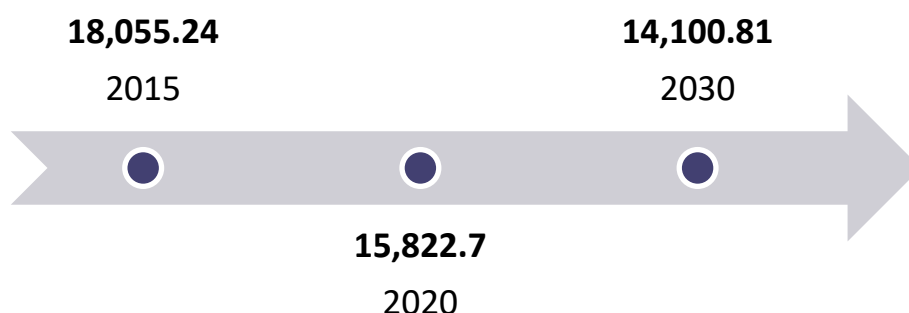
Source: Aurambout, Jean-Philippe; Trombetti, Marco (2015): UDP – PM10 emissions, 2010 – 2030 (JRC LUISA Reference Scenario 2016).

European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-luisa-udp-pm10emissions-reference-2016

METADATA

Source:	**European Commission, Joint Research Centre**
Hyperlink (available API):	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=009-environment-climate&i=15&db=27&it=download&y=2020&tv=-1&cwt=line-chart&date=2030
Visualisation:	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=009-environment-climate&i=15&db=27&it=outline&y=2020&tv=-1&cwt=line-chart&date=2030
Availability and geographic coverage:	All NUTS2
Unit of measurement:	TON
Level of aggregation:	NUTS2
Time coverage and frequency	2015, 2020, 2030

2.2.10.2 Atmospheric emissions of CO2 – Target 13.2 (climate change measures into policy)

The LUISA modelling platform of the JRC also reports on the spatial distribution of CO_2 (Carbon dioxide) emissions over Europe and the total emissions for each country are derived from the GAINS model. This currently available data are a first version of the dataset (1.0) and, acceding to JRC, it has not been extensively validated yet. Fir the Nord-Vest region the model estimates a substantial decrease in CO_2 emission, i.e. compare to 2015 in 2030 it estimates a decrease by 22.23%.

Figure 32. SDG 13 – CO2 emissions

| 120,584.9 | | 93,779.18 |
| 2015 | | 2030 |

98,194.3
2020
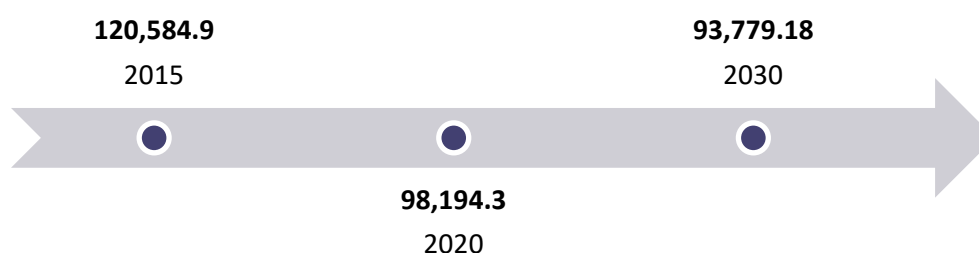
Source: Lavalle, Carlo; Trombetti, Marco; Pisoni, Enrico (2015): UI – Atmospheric emissions of CO2 (LUISA Platform REF2014). European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-luisa-co2-atmospheric-emissions-ref-2014
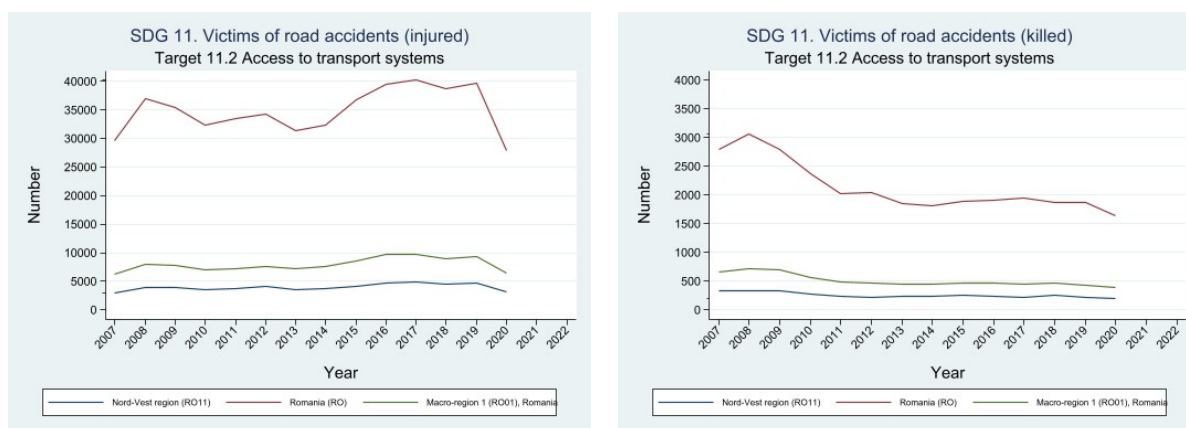
METADATA

Source:	**European Commission, Joint Research Centre**
Hyperlink (available API):	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=009-environment-climate&i=13&db=25&it=download&y=2020&tv=-1&cwt=line-chart&date=2030
Visualisation:	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=009-environment-climate&i=13&db=25&it=outline&y=2020&tv=-1&cwt=line-chart&date=2030
Availability and geographic coverage:	All NUTS2
Unit of measurement:	TON
Level of aggregation:	NUTS2
Time coverage and frequency	2015, 2020, 2030

2.2.10.3 Cooling and heating degree days – Target 13.2 (climate change measures into policy)

The indicators measure the energy consumption for heating and cooling (air conditioning) buildings based on weather conditions.

Data on cooling and heating degree days are available for Nord-Vest at Eurostat for the entire period 2007–2022. Significant fluctuations can be observed over the years, the lowest values being registered in 2014 and 2019 (2581.46 and 2657.45, respectively), while the highest ones in 2011 and 2021 (3246.3 and 3184.39, respectively). Looking at the entire period, heating degree days values show a minor increase, from 2971.25 in 2007 to 2975.87 in 2022.

Cooling degree days values have also slightly increased over the period studied, from 83.76% in 2007 to 85.79% in 2022. Significant fluctuations can be observed here as well, the highest cooling degree days being registered in 2012 and 2015 (132.15 and 127.5, respectively), while the lowest values being recorded in 2020, 2008 and 2014 (29.6, 33.54 and 33.55, respectively).

Figure 33. SDG13 – Heating and cooling degree days

Source: Author's own calculation based on Eurostat (2023, January 31) *Cooling and heating degree days by NUTS 3 regions - annual data* [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/NRG_CHDDR2_A__custom_5370616/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/NRG_CHDDR2_A__custom_5370616/default/map?lang=en
Availability and geographic coverage:	All NUTS3, NUTS2, Macroregions
Unit of measurement:	NUMBER
Level of aggregation:	NUTS3, NUTS2, Macroregions, Country
Time coverage and frequency	2007–2021. Data collected every year.

2.2.11   SDG 15: Life on land

The targets of this goal include ensuring the conservation, restoration and sustainable use of freshwater and mountain ecosystems, all types of forests and biodiversity, halting the degradation of land and natural habitats, and integrating related measures into national and local strategies and policies.

All the four indicators recommended for EU regions in the JRC Technical Report are available for Nord-Vest. However, annual data are available for only one indicator.

2.2.11.1 Terrestrial protected areas as a percentage of total area – Target 15.5 (degradation of habitats)

The indicator measures terrestrial protected areas as a percentage of total area. Data are available for Nord-Vest in the OECD Localised Indicator Framework for the SDGs, Regional Database, only for 2017. In that year, the region registered a positive figure (22.31%) compared to the OECD average (15.81%), but below the national average (25.49%).

Table 9. SDG15 – Terrestrial protected areas as a percentage of total area

Nord-Vest	Country average	OECD average	Direction	End value	Year
22.31	25.49	15.81	Positive	37.58	2017

Source: OECD, Localised Indicator Framework for the SDGs, Regional database, variable 'Terrestrial protected areas as a percentage of total area'

METADATA

Source:	OECD (2023), "Regional demography (Edition 2022)", *OECD Regional Statistics* (database)
Hyperlink (available API):	https://www.oecd.org/regional/regional-statistics/
Visualisation:	NA
Availability and geographic coverage:	NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2017

2.2.11.2 Estimated soil erosion by water – Target 15.5 (degradation of habitats)

Soil erosion rates by water reported by JRC and it is estimated on the basis of the Revised Universal Soil Loss Equation (RUSLE) empirical computer model in tonnes per ha of EU territory per year. In the case of Nord-Vest region, data estimation, shown in Figure 34, indicate a decreasing trend.

Figure 34. SDG15 – Estimated soil erosion by water
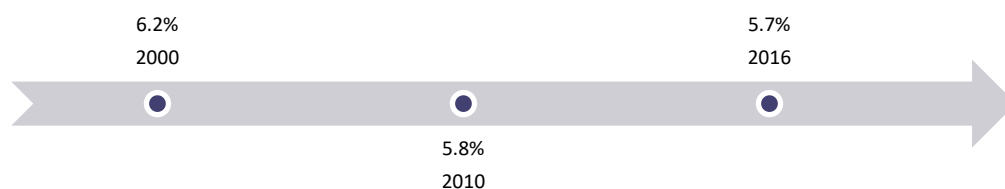
Source: Lavalle, Carlo; Perpina Castillo, Carolina; Mari Rivero, Ines; Maes, Joachim (2015): LF521 - Capacity of ecoystems to avoid soil erosion (LUISA Platform REF2014). European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-luisa-lf521-capacity-of-ecoystems-to-avoid-soil-erosion-ref-2014

METADATA

Source:	European Commission – Joint Research Centre (JRC)
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/AEI_PR_SOILER__custom_3433609/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/AEI_PR_SOILER__custom_3433609/default/map?lang=en
Availability and geographic coverage:	All NUTS3, NUTS2
Unit of measurement:	Tonnes per hectare
Level of aggregation:	NUTS3, NUTS2, Macro regions, Country
Time coverage and frequency	2000, 2010, 2016

2.2.11.3 Land abandonment – Target 15.1 (restoration of ecosystems)

Land abandonment can be also found in the JRC LUISA modelling platform and it refers to land that have no visible use. Figure 35 reports the rate and evolution of abandonment for land used for agricultural, pasture, and industrial purposes. The estimates show no substantive change over this period.

Figure 35. SDG15 – Land abandonment
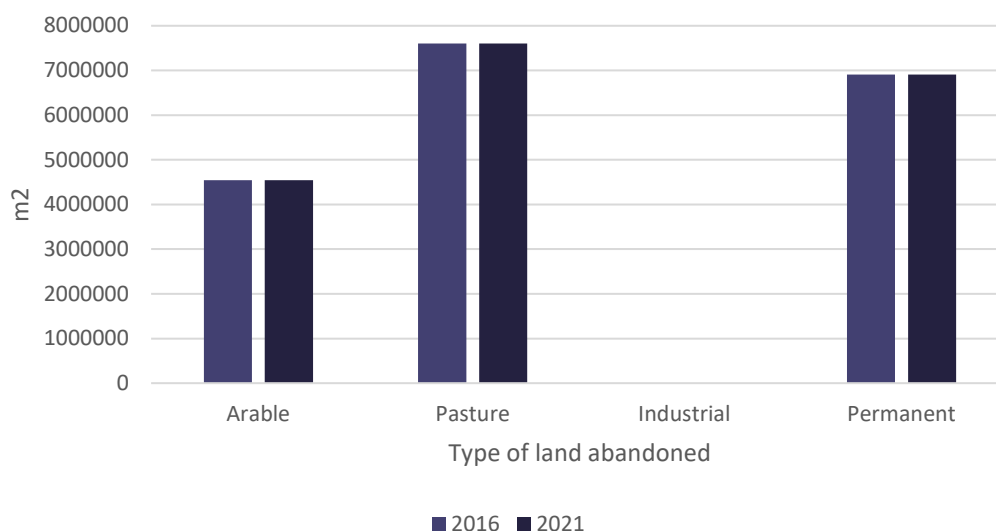
Source: Lavalle, Carlo (2014): OUTPUT – Land-use/cover maps (LUISA Platform REF2014). European Commission, Joint Research Centre (JRC) [Dataset] PID: http://data.europa.eu/89h/jrc-luisa-land-use-ref-2014

METADATA

Source:	**European Commission – Joint Research Centre (JRC)**
Hyperlink (available API):	https://urban.jrc.ec.europa.eu/
Visualisation:	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&y=2020&tl=2&i=256&clc=009-environment-climate&db=703&it=download&date=2020&cwt=pie-chart
Availability and geographic coverage:	NUTS2
Unit of measurement:	Tonnes per hectare
Level of aggregation:	NUTS3, NUTS2, Macroregions, Country
Time coverage and frequency	2016, 2021

2.2.11.4 Forest area over total surface area – Target 15.1 (restoration of ecosystems)

The indicator measures forest area as a share of the total area of the country.

Data are available for Nord-Vest at the National Institute of Statistics for the period 2008-2021. The trend is positive, the region registering a slight increase over the period, from 28.05% in 2008 to 29% in 2021. Nord-Vest is ahead of the country, where the shares for the same years are 26.46% and 27.05%, respectively.

Figure 36. SDG15 – Share of forest area in the total area of the country
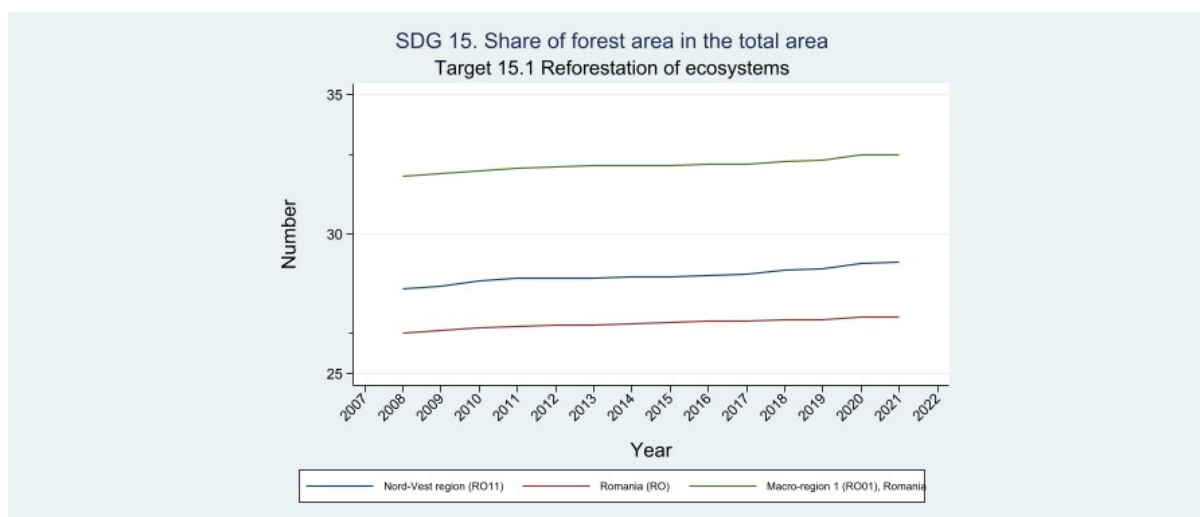
Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 31) *Share of forest area in the total area of the country* [Dataset]. National Institute of Statistics.

METADATA

Source:	**National Institute of Statistics**
Hyperlink (available API):	http://statistici.insse.ro:8077/tempo-online
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, Macroregions
Unit of measurement:	Percent
Level of aggregation:	NUTS3, NUTS2, Macroregions, Country
Time coverage and frequency	2008-2021. Data collected every year.

2.2.12 SDG 16: Peace, justice and strong institutions

The targets of this goal include promoting the rule of law, protecting fundamental freedoms, ensuring equal access to justice for all, preventing all forms of violence and combatting crime and terrorism, having accountable, transparent and effective institutions at all levels, and ensuring that decision-making is inclusive, responsive and participatory at all levels.

Out of the four indicators recommended in the JRC Technical Report, two are available for Nord-Vest.

2.2.12.1 Quality of Government Index – Target 16.6 (effective institutions)

European Quality of Government Index (EQI) is based on a large citizen survey across European countries. The respondents are asked to share their perceptions and experiences regarding impartiality of the government in the treatment of citizens, corruption, and quality of the public services.

The EQI index for Nord-Vest is among the lowest NUTS2 level scores in all the four waves of surveying. Since 2013 there has been a slow improvement; however, the 2021 score (-1.419) was still higher than the 2010 value (-1.115).

Table 10. SDG16 – Quality of Government Index

Year	EQI	EQI_low_me	EQI_high_me	qualityp	impartialityp	corruptionp
2010	-1.115	-1.552	-0.678	-1.528	-1.105	-0.600
2013	-1.790	-2.324	-1.256	-1.842	-2.061	-1.314
2017	-1.743	-2.277	-1.209	-1.708	-1.940	-1.405
2021	-1.419	-1.747	-1.091	-1.514	-1.307	-1.279

Source: University of Gothenburg: The QoG Working Paper Series 2021:4.

METADATA

Source:	**Charron, Nicholas, Victor Lapuente, Monika Bauhr & Paola Annoni (2022) Change and Continuity in Quality of Government: Trends in subnational quality of government in EU member states.** *Investigaciones Regionales-Journal of Regional Research,* **2022(53), 5-23. DOI: 10.38191/iirr-jorr.22.008**
Hyperlink (available API):	https://www.gu.se/en/quality-government/qog-data/data-downloads/european-quality-of-government-index
Visualisation:	https://ec.europa.eu/regional_policy/information-sources/maps/quality-of-government_en
Availability and geographic coverage:	All NUTS2
Unit of measurement:	Index
Level of aggregation:	NUTS2
Time coverage and frequency	2010, 2013, 2017, 2021

2.2.12.2 Extract from Quality of Government Index as an indicator on corruption – Target 16.5 (reduce corruption)

The corruption dimension of the EQI index shows that citizens living in the Nord-Vest region report one of the highest levels of corruption among EU-27 NUTS2 regions. Compared to the 2013 and 2017 scores there has been a slight improvement in 2021. However, the 2021 score was still considerably below the 2010 value.

Table 11. SDG16 - Quality of Government Index – corruption

Year	Corruption	Corruption subExp	Corruption subPer
2010	-0.600		
2013	-1.314		
2017	-1.405	-1.139	-1.983
2021	-1.279	-2.252	-1.635

Source: University of Gothenburg: The QoG Working Paper Series 2021:4.

METADATA

Source:	**Charron, Nicholas, Victor Lapuente, Monika Bauhr & Paola Annoni (2022) Change and Continuity in Quality of Government: Trends in subnational quality of government in EU member states.** *Investigaciones Regionales-Journal of Regional Research,* **2022(53), 5-23. DOI: 10.38191/iirr-jorr.22.008**
Hyperlink (available API):	https://ec.europa.eu/regional_policy/en/information/maps/quality_of_governance
Visualisation:	NA
Availability and geographic coverage:	All NUTS2
Unit of measurement:	Index
Level of aggregation:	NUTS2
Time coverage and frequency	Periodical

2.2.13 SDG 17: Partnerships for the goals

The targets of this goal include enhancing global multi-stakeholder partnerships for sustainable development, mobilising and sharing financial resources, knowledge, expertise, and technology needed for the implementation of the SDGs, and building capacity to monitor progress.

Out of the four indicators recommended in the JRC Technical Report, two are available for Nord-Vest.

2.2.13.1 PCT co-patent applications that are done with foreign regions – Target 17.6 (regional and international cooperation)

The indicator measures the share of co-patent applications with foreign regions filed under the Patent Co-operation Treaty (PCT) of the total co-patent applications. Data are available for Nord-Vest in the OECD Localised Indicator Framework for the SDGs, Regional Database, only for 2015. In that year, the region registered a positive figure (80%), which is above both the OECD average (45.61%) and the national average (65.74%).

Table 12. SDG17 – PCT co-patent applications that are done with foreign regions

Nord-Vest	Country average	OECD average	Direction	End value	Year
80	65.74	45.61	Positive	78.93	2015

Source: OECD, Localised Indicator Framework for the SDGs, Regional database, variable 'Share of PCT co-patent applications that are done with foreign regions'

METADATA	
Source:	**OECD (2023), "Regional demography (Edition 2022)",** *OECD Regional Statistics* **(database)**
Hyperlink (available API):	https://www.oecd.org/regional/regional-statistics/
Visualisation:	
Availability and geographic coverage:	NUTS2 regions
Unit of measurement:	Percent
Level of aggregation:	NUTS2 region
Time coverage and frequency	2015

2.2.13.2 Individuals who used the internet for interaction with public authorities

The indicator measures the share of individuals (of all adults) who used the internet for interaction with public authorities, including public services and administrative activities at the local, regional and national levels, during the previous 12 months.

Data are available for Nord-Vest at Eurostat starting from 2015. As Fig. 37 shows, the trend is positive, there has been an increase, from 10.27% in 2015 to 12.8% in 2021, in the share of individuals using the internet for interaction with public authorities, although not at the same scale as in the macroregion or the country.

Figure 37. SDG17 – Share of individuals who used the internet for interaction with public authorities
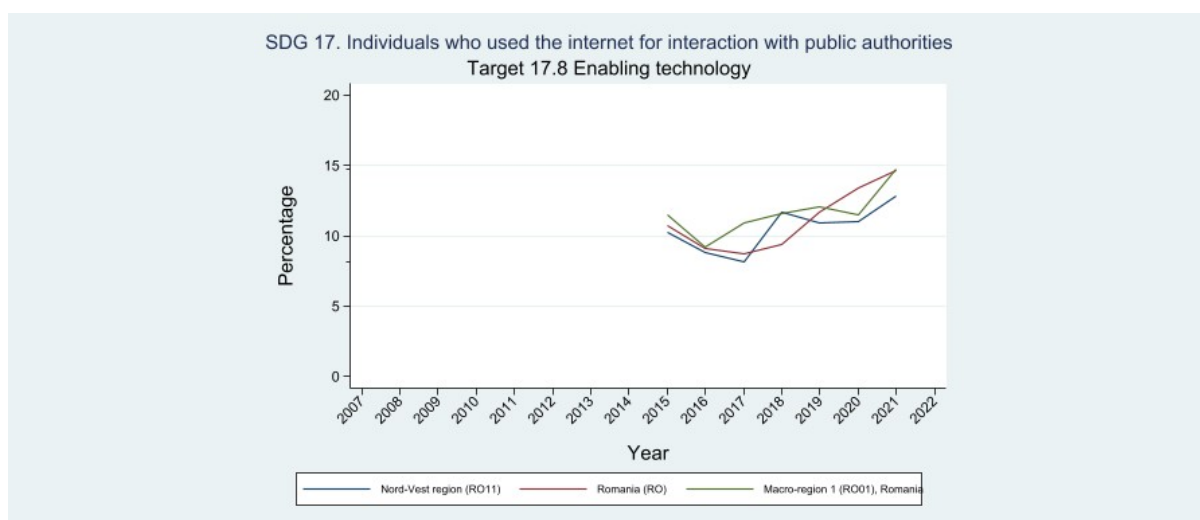
Source: Author's own calculation based on Eurostat (2023, January 31) *Individuals who used the internet for interaction with public authorities* [Dataset]. Eurostat.

METADATA

Source:	**Eurostat, regional statistics**
Hyperlink (available API):	https://ec.europa.eu/eurostat/databrowser/view/isoc_r_gov_i/default/table?lang=en
Visualisation:	https://ec.europa.eu/eurostat/databrowser/view/isoc_r_gov_i/default/map?lang=en
Availability and geographic coverage:	NUTS2, Macroregions
Unit of measurement:	Percentage of individuals
Level of aggregation:	NUTS2, Macroregions
Time coverage and frequency	2015--2021. Data collected every year.

2.3 Horizontal analysis of metadata

From among the 47 indicators presented in the previous section, in the case of 14 data are available for the whole period (2007-2020/2021/2022), being published annually. This offers the possibility of time-series analysis.

Table 13. Indicators with annual data without breaks

No.	Indicator	Period
1	SDG1. Persons living in households with very low work intensity – Target 1.2 (reduce poverty)	2007-2020
2	SDG1. Persons at risk of poverty or social exclusion – Target 1.2 (reduce poverty)	2007-2020
3	SDG2. Gross Value Added (GVA) of agriculture, livestock and fishing – Target 2.3 (agricultural productivity)	2007-2021
4	SDG3. Hospital beds – Target 3.8 (universal health coverage)	2007-2020
5	SDG3. Infant mortality – Target 3.2 (preventable death of new-borns)	2007-2020
6	SGD8. Gross domestic product at current market prices – Target - 8.1 (economic growth)	2007-2021
7	SDG8. Gross value added at basic prices – Target 8.2 (economic productivity)	2007-2021
8	SDG8. Long-term unemployment (12 months and more) – Target 8.5 (productive employment)	2007-2021
9	SDG8. Compensation of employees – Target 8.5 (productive employment)	2007-2020
10	SDG9. Gross domestic expenditure on R&D – Target 9.5 (promote innovation)	2007-2020
11	SDG9. R&D personnel and researchers – Target 9.5 (promote innovation)	2007-2020
12	SDG11. Stock of vehicles (passenger cars) – Target 11.2 (access to transport systems)	2007-2020
13	SDG11. Victims in road accidents – Target 11.2 (access to transport systems)	2007-2020
14	SDG13. Cooling and heating degree days – Target 13.2 (climate change measures into policy)	2007-2022

Source: Own calculations based on Vega Rapun M., Stamos I., Proietti P., Siragusa A (2022) *Report on the Methodological approach for the creation of an SDG regional monitoring indicator set.* Joint Research Centre.

In the case of 16 indicators, data are published annually, which offers the possibility of time-series analysis, but they are available for shorter time periods (due either to lack of data for earlier years or to breaks in data).

Table 14. Indicators with annual data for shorter time periods or with breaks

No.	Indicator	Period
1	SDG1. Material and social deprivation – Target 1.1 (extreme poverty)	2014-2021
2	SDG3. Self-reported unmet needs for medical examination and care – Target 3.c (health financing and recruitment)	2008-2021
3	SDG3. Healthcare personnel – Target 3.c (health financing and recruitment)	2007-2020
4	SDG4. Students enrolled in tertiary education – Target 4.3 (vocational and tertiary education)	2013-2020
5	SDG4. Participation in education – Target 4.3 (vocational and tertiary education)	2014-2020
6	SDG4. Pupils enrolled in early childhood education – Target 4.2 (access to early childhood education)	2013-2020
7	SDG4. Early leavers from education and training – Target 4.6 (youth and adult literacy)	2015-2020
8	SDG4. Participation rate at selected education level – Target 4.1 (primary and secondary education)	2013-2020
9	SDG6. Water bodies that exceed a standardized quality rating – Target 6.3 (water quality)	2008-2020
10	SDG8. Occupational accidents – Target 8.8 (labour rights)	2009-2020
11	SDG8. Economic activity – Target 8.5 (productive employment)	2011-2020
12	SDG8. Unemployment – Target 8.5 (productive employment)	2011-2020
13	SDG8. Employment – target 8.5 (productive employment)	2011-2020
14	SDG9. GVA of the industry with respect to the GVA of the total sectors (current price) – Target 9.2 (sustainable industrialisation)	2007-2019
15	SDG15. Forest area over total surface area – Target 15.1 (restoration of ecosystems)	2008-2021
16	SDG17. Individuals who used the internet for interaction with public authorities	2015-2021

Source: Own calculations based on Vega Rapun M., Stamos I., Proietti P., Siragusa A (2022) *Report on the Methodological approach for the creation of an SDG regional monitoring indicator set.* Joint Research Centre.

In the case of 9 indicators, there is a single data point available, which does not allow for trend analysis; however, it provides a snapshot of the situation in a given year.

Table 15. Indicators with a single data point

No.	Indicator	Period
1	SDG2. Productivity (Gross Value Added per worker) in agriculture, forestry and fishing - Target 2.3 (agricultural productivity)	2018
2	SDG5. Female research and development personnel – Target 5.5 (women participation and leadership)	2015
3	SDG5. Women in parliament and government – Target 5.5 (women participation and leadership)	2021
4	SDG5. Female achievement and disadvantage indices – Target 5.1 (gender discrimination)	2021
5	SDG5. Gender gap in part-time employment incidence – Target 5.4 (unpaid work)	2015
6	SDG9. Employment in high-technology manufacturing as a percentage of total manufacturing employment	2016
7	SDG11. Difference between built-up area growth rate and population growth rate – Target 11.1 (access to housing)	2014
8	SDG15. Terrestrial protected areas as a percentage of total area – Target 15.5 (degradation of habitats)	2017
9	SDG17. PCT co-patent applications that are done with foreign regions – Target 17.6 (regional and international cooperation)	2015

Source: Own calculations based on Vega Rapun M., Stamos I., Proietti P., Siragusa A (2022) *Report on the Methodological approach for the creation of an SDG regional monitoring indicator set.* Joint Research Centre.

A group of 8 indicators identified cover a mix of historical and future estimation data. These data have specific benchmark years and follow-up estimates at different time spams, providing the possibility for trend analysis.

No.	Indicator	Period
1	SDG11. Daily accessibility – Target 11.2 (access to transport system)	2015, 2020, 2030, 2040, 2050
2	SDG11. PM2.5 Emissions – Target 11.6 (environmental impact)	2015, 2020, 2030
3	SDG13. PM10 Emissions – Target 13.2 (climate change measures into policy)	2015, 2020, 2030
4	SDG13. CO2 Emissions – Target 13.2 (climate change measures into policy)	2015, 2020, 2030
5	SDG15. Estimated soil erosion by water – Target 15.5 (degradation of habitats)	2000, 2010, 2016
6	SDG15. Land abandonment – Target 15.1 (restoration of ecosystems)	2016, 2021
7	SDG16. Quality of Government Index – Target 16.6 (effective institutions)	2010, 2013, 2017, 2021
8	SDG16. Extract from Quality of Government Index as an indicator on corruption – Target 16.5 (reduce corruption)	2010, 2013, 2017, 2021

The 47 indicators listed above capture several of the principal areas of policy activism at the level of the Nord-Vest region towards the achievement of SDGs. In the case of 25 indicators, a positive trend can be observed, while for 10 indicators the trend is negative. There are 3 indicators where the data show minor to no change over the period studied. In the case of 9 indicators, no trend analysis can be conducted, given that there is a single data point available.

Table 17. Trend analysis for JRC proposed indicators available for Nord-Vest

No.	Indicator	Trend
1	SDG1. Persons living in households with very low work intensity – Target 1.2 (reduce poverty)	**Positive**
2	SDG1. Material and social deprivation – Target 1.1 (extreme poverty)	**Positive**
3	SDG1. Persons at risk of poverty or social exclusion – Target 1.2 (reduce poverty)	**Positive**
4	SDG2. Productivity (Gross Value Added per worker) in agriculture, forestry and fishing - Target 2.3 (agricultural productivity)	**Positive**
5	SDG2. Gross Value Added (GVA) of agriculture, livestock and fishing – Target 2.3 (agricultural productivity)	**Single data point**
6	SDG3. Self-reported unmet needs for medical examination and care – Target 3.c (health financing and recruitment)	**Positive**
7	SDG3. Healthcare personnel – Target 3.c (health financing and recruitment)	**Positive**
8	SDG3. Hospital beds – Target 3.8 (universal health coverage)	**Negative**
9	SDG3. Infant mortality – Target 3.2 (preventable death of newborns)	**Positive**
10	SDG4. Students enrolled in tertiary education – Target 4.3 (vocational and tertiary education)	**Neutral**
11	SDG4. Participation in education – Target 4.3 (vocational and tertiary education)	**Positive**
12	SDG4. Pupils enrolled in early childhood education – Target 4.2 (access to early childhood education)	**Negative**
13	SDG4. Early leavers from education and training – Target 4.6 (youth and adult literacy)	**Positive**
14	SDG4. Participation rate at selected education level – Target 4.1 (primary and secondary education)	**Negative**
15	SDG5. Female research and development personnel – Target 5.5 (women participation and leadership)	**Single data point**
16	SDG5. Women in parliament and government – Target 5.5 (women participation and leadership)	**Single data point**
17	SDG5. Female achievement and disadvantage indices – Target 5.1 (gender discrimination)	**Single data point**
18	SDG5. Gender gap in part-time employment incidence – Target 5.4 (unpaid work)	**Single data point**
19	SDG6. Water bodies that exceed a standardized quality rating – Target 6.3 (water quality)	**Negative**
20	SDG8. Occupational accidents – Target 8.8 (labour rights)	**Negative**
21	SDG8. Economic activity – Target 8.5 (productive employment)	**Positive**
22	SDG8. Unemployment – Target 8.5 (productive employment)	**Positive**
23	SDG8. Employment – Target 8.5 (productive employment)	**Positive**
24	SDG8. Gross domestic product at current market prices – Target - 8.1 (economic growth)	**Positive**
25	SDG8. SDG 8. GVA at basic prices – Target 8.2 (economic productivity)	**Positive**
26	SDG8. Long-term unemployment (12 months and more) – Target 8.5 (productive employment)	**Positive**

27	SDG8. Compensation of employees – Target 8.5 (productive employment)	Positive
28	SDG9. GVA of the industry with respect to the GVA of the total sectors (current price) – Target 9.2 (sustainable industrialisation)	Negative
29	SDG9. Gross domestic expenditure on R&D – Target 9.5 (promote innovation)	Negative
30	SDG9. R&D personnel and researchers – Target 9.5 (promote innovation)	Negative
31	SDG9. Employment in high-technology manufacturing as a percentage of total manufacturing employment	Single data point
32	SDG11. Daily accessibility – Target 11.2 (access to transport system)	Positive
33	SDG11. Stock of vehicles (passenger cars) – Target 11.2 (access to transport systems)	Positive
34	SDG11. Difference between built-up area growth rate and population growth rate – Target 11.1 (access to housing)	Single data point
35	SDG11. PM2.5 Emissions – Target 11.6 (environmental impact)	Positive
36	SDG11. Victims in road accidents – Target 11.2 (access to transport systems)	Positive
37	SDG13. PM10 Emissions – Target 13.2 (climate change measures into policy)	Positive
38	SDG13. CO2 Emissions – Target 13.2 (climate change measures into policy)	Positive
39	SDG13. Cooling and heating degree days – Target 13.2 (climate change measures into policy)	Neutral
40	SDG15. Terrestrial protected areas as a percentage of total area – Target 15.5 (degradation of habitats)	Single data point
41	SDG15. Estimated soil erosion by water – Target 15.5 (degradation of habitats)	Positive
42	SDG15. Land abandonment – Target 15.1 (restoration of ecosystems)	Neutral
43	SDG15. Forest area over total surface area – Target 15.1 (restoration of ecosystems)	Positive
44	SDG16. Quality of Government Index – Target 16.6 (effective institutions)	Negative
45	SDG16. Extract from QGI an indicator on corruption – Target 16.5 (reduce corruption)	Negative
46	SDG17. PCT co-patent applications that are done with foreign regions – Target 17.6 (regional and international cooperation)	Single data point
47	SDG17. Individuals who used the internet for interaction with public authorities	Positive

3. IDENTIFICATION OF SDGS AND SDG TARGETS THAT REQUIRE CUSTOMISED APPROACH

3.1 Fit of proposed indicator set with Nord-Vest region

As presented in the previous section, out of the 83 indicators proposed for EU regions by the JRC, 47 are readily available and relevant for the Nord-Vest region. These indicators address 13 of the 17 SDGs, namely SDGs 1, 2, 3, 4, 5, 6, 8, 9, 11, 13, 15, 16, and 17, and cover 28 SDG targets. 4 indicators, 1 under SDG7 and 3 under SDG14, are not relevant for the region.

For the remaining 32 indicators proposed by the JRC, where data are not readily available for the Nord-Vest region, several alternative data sources have been reviewed in order to identify proxy indicators. The next section presents the additional indicators proposed, while section 3.4. discusses the indicators for which country(NUTS0)-level data are available and could be used to calculate NUTS-2 level values.

3.2 Proposal of additional indicators

Following the review of other possible data sources, 28 additional indicators have been identified as available for the Nord-Vest region and relevant for measuring progress towards the achievement of the SDGs at NUTS2 level. The data sources include the Romanian Statistical Yearbooks for the period 2008-2021, published by the NIS, the Ministry of Agriculture and Rural Development (MARD) and the National Trade Register Office (NTRO). As Table 18 shows, the 28 indicators address 6 SDGs, namely SDGs 2, 4, 6, 8, 9 and 11, and cover 7 targets.

Table 18. Additonal indicators proposed

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	**Total**
Targets	0	1	0	1	0	2	0	1	1	0	1	0	0	0	0	0	0	**7**
Indicators	0	6	0	7	0	5	0	3	1	0	6	0	0	0	0	0	0	28

Source: Own calculations based on the Romanian Statistical Yearbooks for period 2008-2021, published by the National Institute of Statistics (NIS), and sources by the Ministry of Agriculture and Rural Development (MARD) and the National Trade Register Office (NTRO)

The period of analysis is the same as the one described in Section 2, from 2007 to 2020 (or 2021, even 2022, where data are already published). Trend analysis is possible for each additional indicator identified, although in some cases data are available for shorter periods of time (see Tables 19 and 20 in Section 3.3). In order to reveal the performance of Nord-Vest in a wider context, data have been collected for Romania and Macroregion 1 as well. Metadata are also provided, including source, hyperlink (API), visualisation, availability and geographic coverage, unit of measurement, level of aggregation, time coverage and frequency.

3.2.1 SDG 2: Zero hunger

Since there are no data available at the level of the Nord-Vest region for **Indicator 2.2 Organic farming: areas with different crops** – Target 2.4 (sustainable food production), the additional/proxy indicators proposed refer to the use of various pesticides in agriculture. Data for this group of six indicators are available at the MARD for Nord-Vest (NUTS2) as well as the macroregion and the country for the period 2007-2021. (The detailed lists of pesticides, and their regulatory status in the European Union, are available in the EU Pesticides Database[1]. The National Phytosanitary Agency, under the MARD, is the oversight authority on the implementation of the Pesticide Regulation (EC) No 1107/2009 and the Sustainable Use Directive 2009/128/EC. The National Sanitary Veterinary and Food Safety Authority – General Food Safety Directorate is responsible for the monitoring of the implementation of Residues – Regulation (EC) No 396/2005.)

The proposed proxy indicators include the quantities of insecticides, fungicides and herbicides used in farming as well as the size of the areas treated with pesticides.

3.2.1.1 Use of insecticides in farming (kg)

The proposed indicator measures the quantity, in kilograms, of insecticides used in farming activities.

Data regarding the use of insecticides in agriculture at the level of the Nord-Vest region show that at the end of the period 2007-2021 there was a decrease of 30.71% in use compared to the initial year of 2007. This is a much more substantial decrease compared to the trends in the macroregion (4.05%) and in the country (4.75%).

Figure 38. SDG2 – Use of insecticides in farming, kg

Source: Author's own calculation based on TEMPO Database (2023, January 23) *The use of insecticides in farming* [Dataset]. Ministry of Agriculture and Rural Development.

METADATA

Source:	**Ministry of Agriculture and Rural Development, TEMPO_AGR106A**
Hyperlink (available API):	TEMPO database – TEMPO Online (insse.ro)
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Kg
Level of aggregation:	NUTS2, Macroregional, Country level

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[1] The EU Pesticides Database can be accessed here: https://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/start/screen/active-substances, accessed 5/22/2023.

Time coverage and frequency:	2007-2021. Data collected every year.

3.2.1.2 Use of fungicides in farming (kg)

The proposed indicator measures the quantity, in kilograms, of fungicides used in farming activities.

The MARD data on the quantities of fungicides used in farming in the Nord-Vest region show an even larger decrease (67.96%), which is continuous starting from 2015. The quantity of fungicides applied in 2021 represents 27.31% of that used in 2015. In comparison, Macroregion One registered a smaller decrease (13.29%), while at country level the quantity of fungicides applied in farming registered an increase of 23.18%.

Figure 39. SDG2 – Use of fungicides in farming, kg

Source: Author's own calculation based on TEMPO Database (2023, January 23) *The use of fungicides in farming* [Dataset]. Ministry of Agriculture and Rural Development.

METADATA

Source:	Ministry of Agriculture and Rural Development, TEMPO_AGR106A
Hyperlink (available API):	TEMPO database – TEMPO Online (insse.ro)
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Kg
Level of aggregation:	NUTS2, Macroregional, Country level
Time coverage and frequency:	2007-2021. Data collected every year.

3.2.1.3 Use of herbicides in farming (kg)

The proposed indicator measures the quantity, in kilograms, of herbicides used in farming activities. Data provided by the MARD indicate a similar descending trend in the use of herbicides in Nord-Vest. While in 2007 the total quantity of herbicides used in the region amounted to 728,451 kg, in 2021 it dropped to 196,419 kg, which corresponds to a 73.04% decrease. In comparison, the decrease at the level of the macroregion was 45.03%, while at country level it was 28.42%.

Figure 40. SDG2 – Use of herbicides in farming, kg

Source: Author's own calculation based on TEMPO Database (2023, January 23) *The use of herbicides in farming* [Dataset]. Ministry of Agriculture and Rural Development.

METADATA

Source:	**Ministry of Agriculture and Rural Development, TEMPO_AGR106A**
Hyperlink (available API):	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Kg
Level of aggregation:	NUTS2, Macroregional, Country level
Time coverage and frequency:	2007-2021. Data collected every year.

3.2.1.4 Use of insecticides in farming (area)

The proposed indicator measures the area, in hectares, where insecticides are used in farming activities.

Regarding the surface area under insecticide treatment in farming, the MARD data show a divergence among the trends in Nord-Vest, Macroregion One and the country. Thus, while in the Nord-Vest region the area treated with insecticides decreased by 13.17% during the period 2007-2021, an increase was registered both at country level (72.44%) and at macroregional level (34.09%).

Figure 41. SDG2 – Use of insecticides in farming (area)

Source: Author's own calculation based on TEMPO Database (2023, January 23) *The use of insecticides in farming* [Dataset]. Ministry of Agriculture and Rural Development.
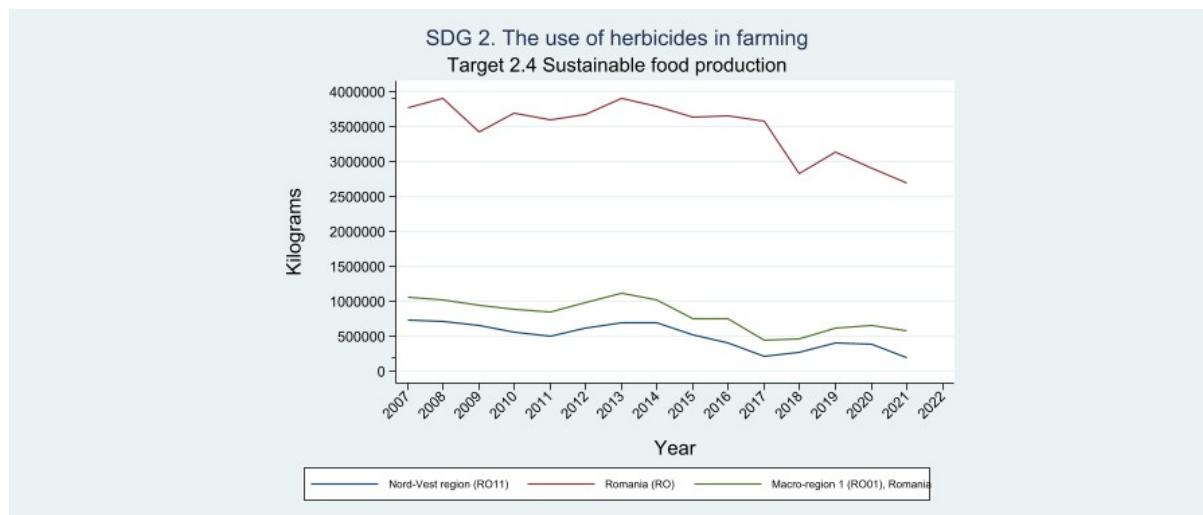
METADATA

Source:	**Ministry of Agriculture and Rural Development, TEMPO_AGR106A**
Hyperlink (available API):	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Hectares
Level of aggregation:	NUTS2, Macroregional, Country level
Time coverage and frequency:	2007-2021. Data collected every year.

3.2.1.5 Use of fungicides in farming (area)

The proposed indicator measures the area, in hectares, where fungicides are used in farming activities.

In this case, over the same period, the Nord-Vest region registered an increase of 63.89% in the area treated with fungicides. While in 2007 a total of 158,013 hectares were treated with fungicides, in 2021 the surface under treatment increased to 258,970 hectares. However, the level of increase in Nord-Vest is still below the rates registered in the country (89.44%) and in Macroregion One (70.03%).

Figure 42. SDG2 – Use of fungicides in farming (area)

Source: Author's own calculation based on TEMPO Database (2023, January 23) *The use of fungicides in farming* [Dataset]. Ministry of Agriculture and Rural Development.
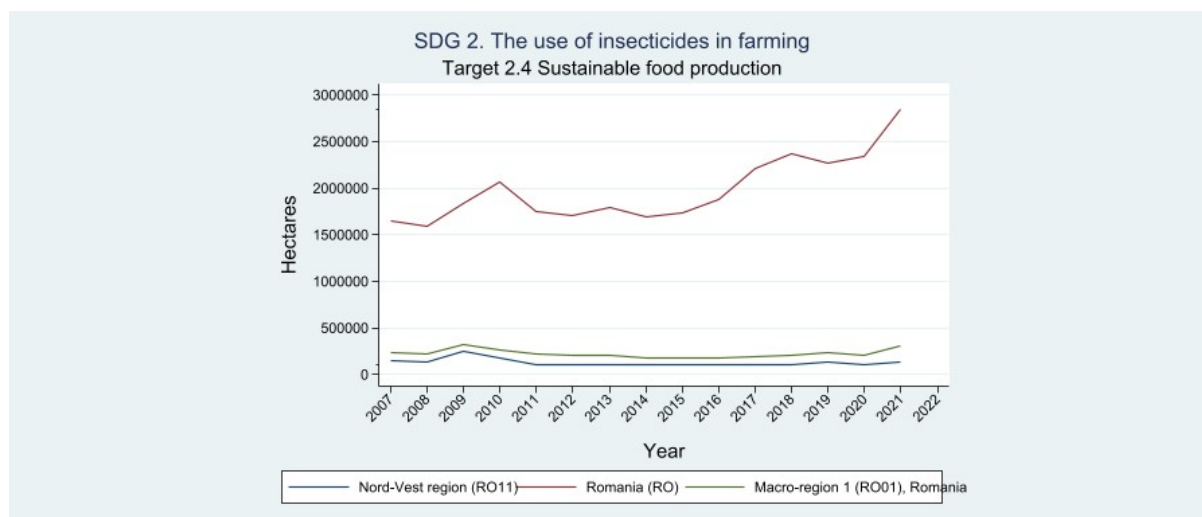
METADATA

Source:	**Ministry of Agriculture and Rural Development, TEMPO_AGR106A**
Hyperlink (available API):	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Hectares
Level of aggregation:	NUTS2, Macroregional, Country level
Time coverage and frequency:	2007-2021. Data collected every year.

3.2.1.6 Use of herbicides in farming (area)

The proposed indicator measures the area, in hectares, where herbicides are used in farming activities.

As Fig. 43 shows, there is an increase in the surface of areas under herbicide treatment in farming. In the Nord-Vest region, the increase registered for the period 2007-2021 was 10.45%. In the case of Macroregion One, the increase was 10.82%, while at country level it amounted to 37.09%.

Figure 43. SDG2 – Use of herbicides in farming (area)

Source: Author's own calculation based on TEMPO Database (2023, January 23) *The use of herbicides in farming* [Dataset]. Ministry of Agriculture and Rural Development.
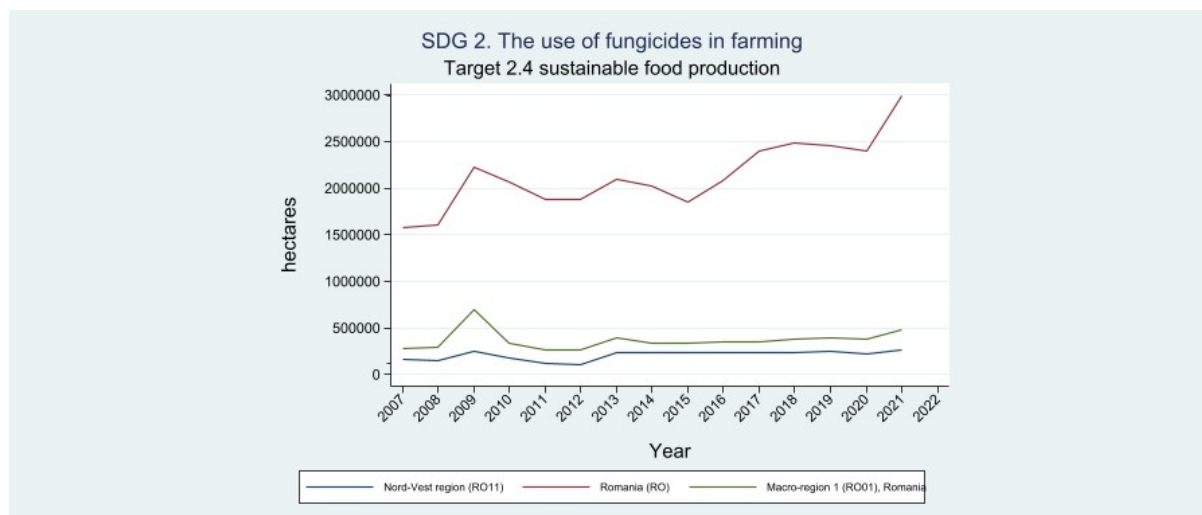
METADATA

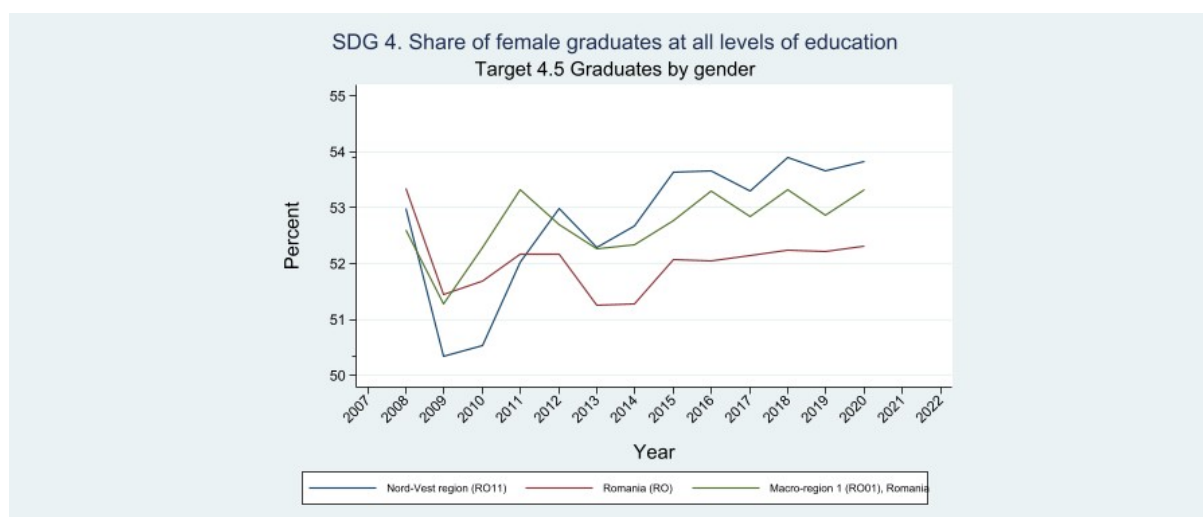| Source:	Ministry of Agriculture and Rural Development, TEMPO_AGR106A
Hyperlink (available API):	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Hectares
Level of aggregation:	NUTS2, Macroregional, Country level
Time coverage and frequency:	2007-2021. Data collected every year.

3.2.2   SDG 4: Quality education

Regarding Indicator **Graduates, gender distribution at territorial level and by educational attainment** included in the JRC proposed indicator set, the NIS publishes annual educational graduation data for lower-secondary, higher secondary, vocational, post-secondary non-tertiary education, foreman education and tertiary education. For all levels of education, data are expressed as the total number of graduates and the number of female graduates. This allows for calculating the share of female graduates by level of education at NUTS2, macroregional and national levels.

Seven proxy indicators have been identified in order to capture the gender dimension of educational attainment.

3.2.2.1 Graduates, gender distribution at all levels of formal education

The proposed indicator shows a full correspondence with the JRC proposed indicator. The NIS data available for the period 2008-2020 indicate the overall shares of female graduates at all levels of education. Figure 44 shows a high share of female graduates in Nord-Vest, the rate being above 50% throughout the entire period. It is worth noting that while in 2008 female graduation rates were similar at NUTS2, macroregional and country levels and in 2009 a decrease can be observed in the share of female graduates at all three spatial levels analysed, at the end of the period larger differences were registered, Nord-Vest taking the lead.

Figure 44. SDG4 – Share of female graduates at all levels of education

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *Share of female graduates at all levels of education* [Dataset]. National Institute of Statistics.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number of persons
Level of aggregation:	NUTS3, NUTS2, Macroregional, Country level
Time coverage and frequency:	2008-2020. Data collected every year.

3.2.2.2 Graduates, gender distribution at lower secondary level

The indicator shows the share of female graduates at lower secondary educational level. Data available at the NIS show some degree of variance over the period 2008-2020 (see Fig. 45). At all three spatial levels, the shares of female graduates are below 50% for all years, the lowest value (48.32%) being registered in 2019 at the level of Nord-Vest. Regarding the region, no clear upward or downward trend can be established, indicating a relatively stable and high share of female graduates. Lower secondary educational attainment refers to ISCED (International Standard Classification of Education) 2011 level 2 for data from 2014 onwards.

Figure 45. SDG4 – Share of female graduates at lower secondary level

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *Share of female graduates at lower secondary level* [Dataset]. National Institute of Statistics.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number of persons
Level of aggregation:	NUTS3, NUTS2, Macroregional, Country level
Time coverage and frequency:	2008-2020. Data collected every year.

3.2.2.3 Graduates, gender distribution at upper secondary level

The indicator shows the share of female graduates at upper secondary level. Upper secondary educational attainment refers to ISCED 2011 level 3 for data from 2014 onwards.

Based on the NIS data available, the shares of female graduates at upper secondary level decreased relative to the whole population between 2008 and 2013 at all three spatial levels analysed. In Nord-Vest, the share of female graduates fell from 52.17% in 2008 to 49.13% in 2013 (see Fig. 46).

Figure 46. SDG4 – Share of female graduates at upper secondary level
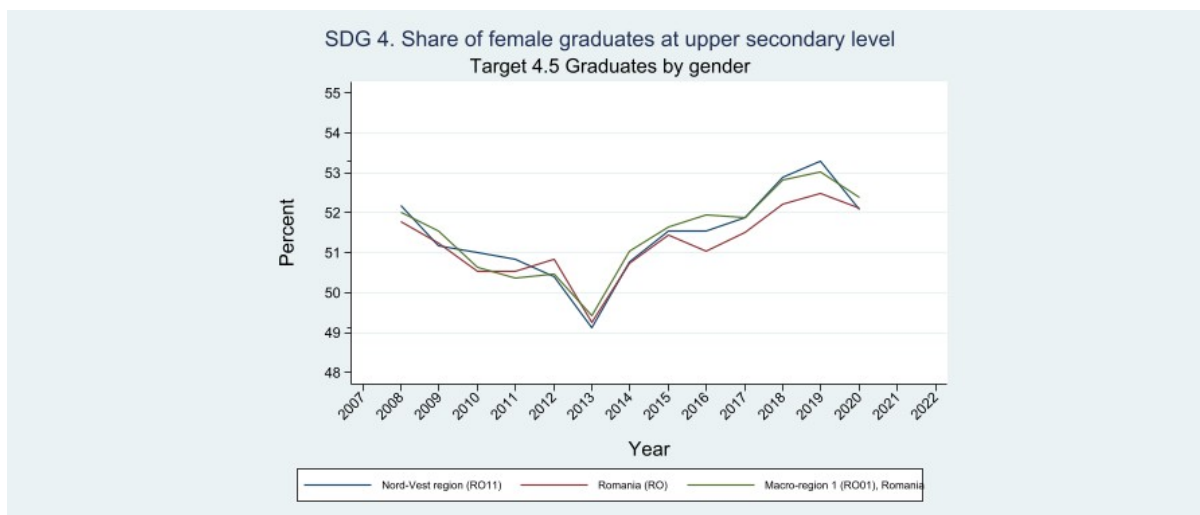
Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *Share of female graduates at upper secondary level* [Dataset]. National Institute of Statistics.
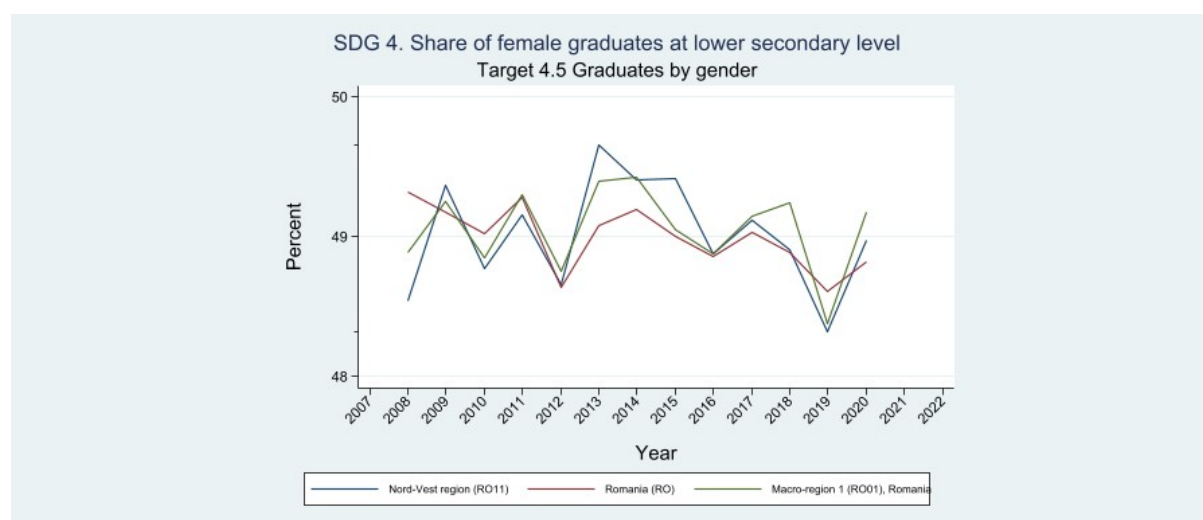
Starting from 2014 up until 2019 an overall increasing trend can be observed, the region registering a share of 53.29% in 2019. However, 2020 shows a decrease compared to the previous years: in Nord-Vest, the share of female graduates shrinks to 52.07%. All in all, the values at the end of the period are almost identical to those registered at the beginning, but at least are above 50%.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number of persons
Level of aggregation:	NUTS3, NUTS2, Macroregional, Country level
Time coverage and frequency:	2008-2020. Data collected every year.

3.2.2.4 Graduates, gender distribution at vocational level

The indicator shows the share of female graduates at vocational education level.

NIS data show that the shares of female graduates in vocational education are smaller than the shares of male graduates throughout the entire period studied and the trend is negative. In the Nord-Vest region the share of female graduates in vocational education dropped from 37.06% in 2008 to 22.7% in 2016. Starting from 2017 an ascending trend can be observed, the share of female graduates increasing to 32.72% by 2020. However, this value is still lower than that in 2008. It is worth noting that while in 2008 the share of female graduates in vocational education was higher at national level than in the region, by 2020 Nord-Vest registered a higher share compared to the country.

Figure 47. SDG4 – Share of female graduates at vocational education level

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *Share of female graduates at vocational education level* [Dataset]. National Institute of Statistics.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number of persons
Level of aggregation:	NUTS3, NUTS2, Macroregional, Country level
Time coverage and frequency:	2008-2020. Data collected every year.

3.2.2.5 Graduates, gender distribution at post-secondary non-tertiary level

The indicator shows the share of female graduates at post-secondary non-tertiary level. Post-secondary non-tertiary educational attainment refers to ISCED 2011 level 4 for data from 2014 onwards.

Data available at the NIS show (see Fig. 48) that in Nord-Vest the share of female graduates at post-secondary non-tertiary level was 73.92% in 2008. Similar gender imbalance can be observed in the country (74.39%) and in the macroregion (72.37%). In 2020 there was a larger difference among the shares registered at the three spatial levels: the Nord-Vest region recorded the highest share (70.64%), while the country rate dropped to 64.37%. Despite the negative trend, the shares of female graduates in post-secondary non-tertiary education continue surpassing by far the shares of male graduates.

Figure 48. SDG4 – Share of female graduates at post-secondary non-tertiary level

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *Share of female graduates at post-secondary non-tertiary level* [Dataset]. National Institute of Statistics.
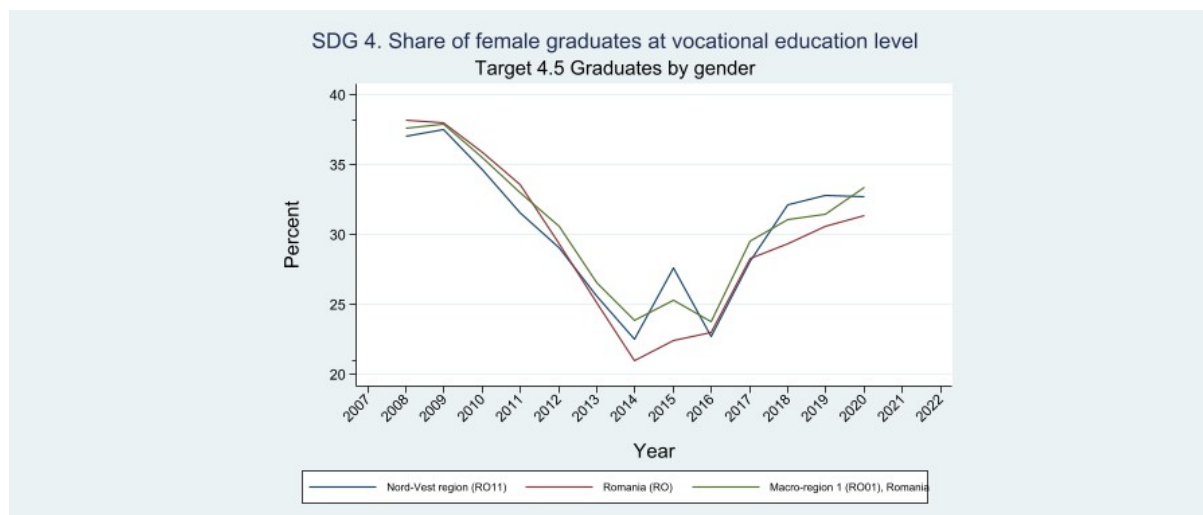
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number of persons
Level of aggregation:	NUTS3, NUTS2, Macroregional, Country level
Time coverage and frequency:	2008-2020. Data collected every year.

3.2.2.6 Graduates, gender distribution at foreman level

The indicator shows the share of female graduates at foreman educational level.

In contrast to the previous indicator, at the level of foreman education the shares of female graduates are very low, under 11%, for the entire period and for all three spatial levels, but showing a positive trend. As Fig. 49 presents, in the Nord-Vest region the share of female graduates in foreman education increased from 1.23% in 2008 to 8.74% in 2020.

Figure 49. SDG4 – Share of female graduates at foreman level education

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *Share of female graduates at foreman level education* [Dataset]. National Institute of Statistics.
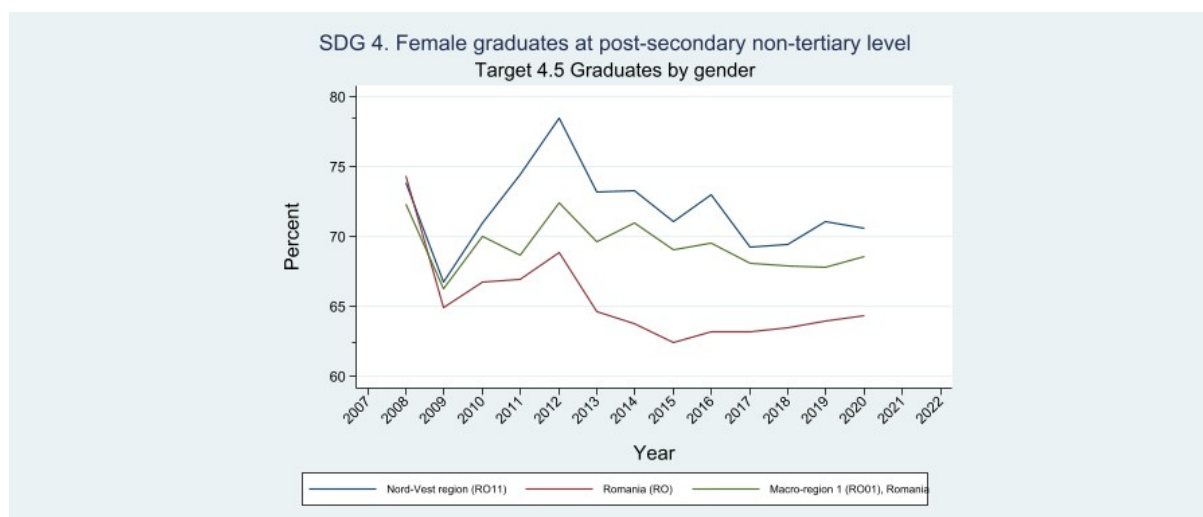
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number of persons
Level of aggregation:	NUTS3, NUTS2, Macroregional, Country level
Time coverage and frequency:	2008-2020. Data collected every year.

3.2.2.7 Graduates, gender distribution at tertiary level

This indicator shows the share of female graduates at tertiary education level. Tertiary educational attainment refers to ISCED 1997 levels 5–6 for data up to 2013 and to ISCED 2011 levels 5–8 for data from 2014 onwards.

Data regarding the shares of female graduates at tertiary education level are available for Nord-Vest at the NIS, covering the period 2008-2020. As Fig. 50 shows, the region registered a decrease, from 67% in 2008 to 61.76% in 2020, but this value is still above those recorded in the country (59.075%) and in Macroregion One (61.36%).

Figure 50. SDG4 – Share of female graduates at tertiary education level

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, January 23) *Share of female graduates at tertiary education level* [Dataset]. National Institute of Statistics.

METADATA

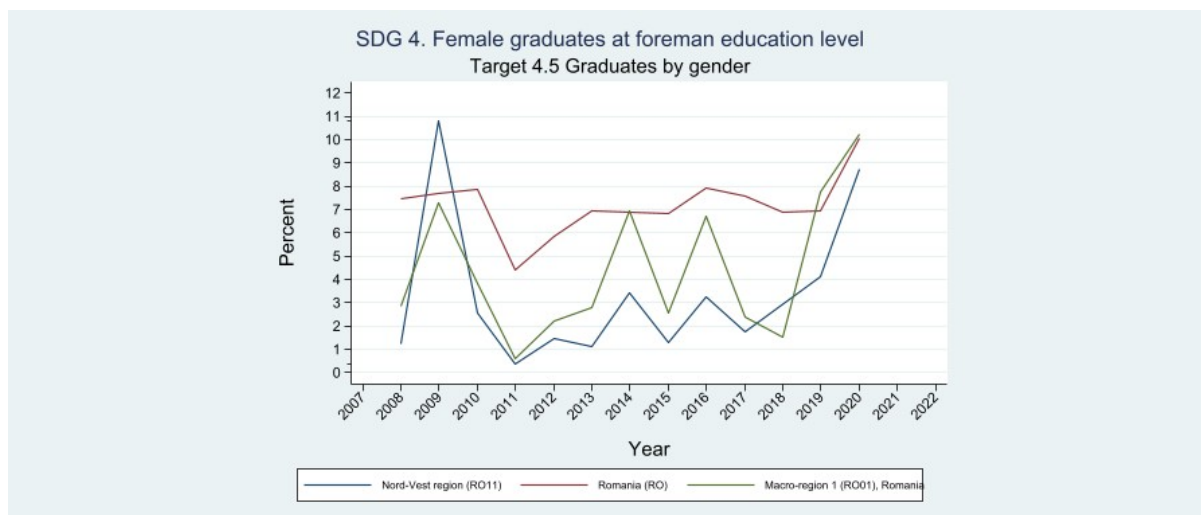| Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 regions
Unit of measurement:	Number of persons
Level of aggregation:	NUTS3, NUTS2, Macroregional, Country level
Time coverage and frequency:	2008-2020. Data collected every year.

3.2.3   SDG 6: Clean water and sanitation

As alternatives to Indicator **Population served by safely managed drinking water supply services** – Target 6.1 (universal access to water), the NIS publishes annual data also at NUTS2 regional level on the length of the drinking water supply network, on the volume of drinking water supplied to the users and on the number of settlements served by the drinking water supply network. Data for this group of proxy indicators cover the period 2008-2020.

3.2.3.1 Drinking water supply network – length (km)

The indicator shows the total length of the drinking water supply network, expressed in kilometres. Data for Nord-Vest are available at the NIS, covering the period 2008-2020. As Fig. 51 shows, the region registered an increase of 56.45% in 2020 compared to 2007, from 8,844 kilometres to 13,836.5 kilometres. Similar increases can be observed both at the country level (55.02%) and in the macroregion (56.17%).

Figure 51. SDG6 – Drinking water supply network - length
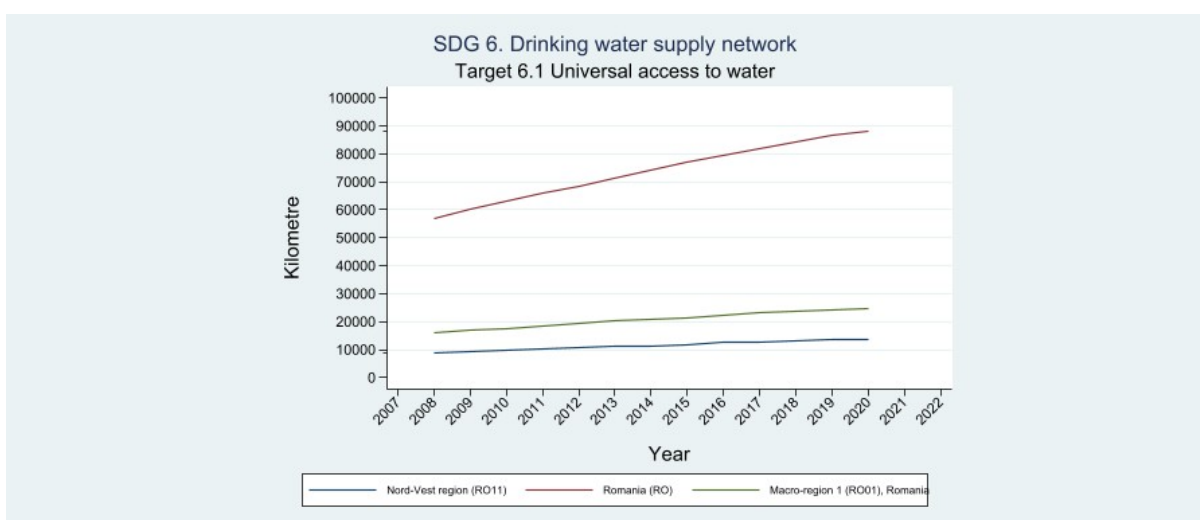
Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 19) *Drinking water supply network - km* [Dataset]. National Institute of Statistics.
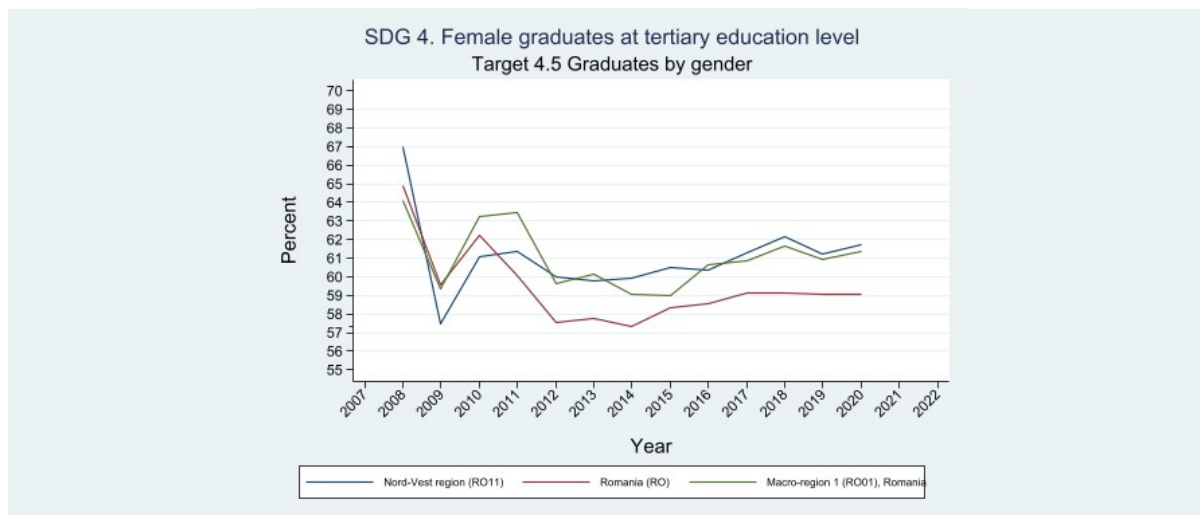
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregions
Unit of measurement:	Length in km
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly

3.2.3.2 Volume of drinking water supplied to the users

The indicator shows the total volume of drinking water supplied to households. NIS data are available for Nord-Vest, Macroregion One and the country for the period 2008-2020. Fig. 51 shows that the total volume of drinking water supplied to households in the Nord-Vest region registered a decrease of 7.49% over the period, from 83,993 thousand cubic meters in 2008 to 77,699 thousand cubic meters in 2020. Similar descending trends can be observed both at country level (11.01%) and in Macroregion One (13.08%). However, as the decrease in the volume of drinking water supplied to the users is likely attributable to improvements in the quality of the distribution network and to decreasing losses on supply routes, this trend needs to be contextualised.

Figure 52. SDG6 – Volume of drinking water supplied to households

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 19*) Volume of drinking water supplied to households -m³* [Dataset]. National Institute of Statistics.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregions
Unit of measurement:	Thousands of cubic meters
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020, Data collected yearly

3.2.3.3 Drinking water supply network – settlements served

The indicator measures the total number of settlements served by the drinking water supply network. NIS data are available for Nord-Vest, Macroregion One and the country for the period 2008-2020.

Figure 53 shows the evolution of the number of settlements served by the drinking water supply network over the period. The Nord-Vest region registered an increase, from 354 settlements in 2008 to 410 in 2020. Similar increases can be observed at the levels of the country and Macroregion One.

Figure 53. SDG6 – Drinking water supply network – settlements served

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 19) *Drinking water supply network – settlements served* [Dataset]. National Institute of Statistics.
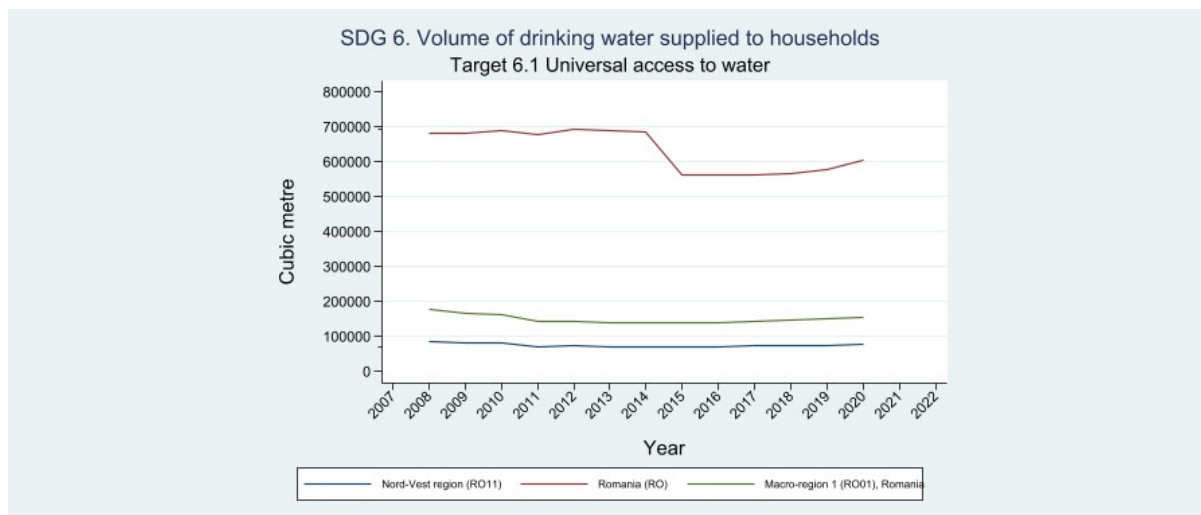
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregions
Unit of measurement:	Number of settlements covered
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly

As alternatives to **Indicator 6.4 Population connected to wastewater with at least secondary treatment** – Target 6.3 (water quality), the NIS publishes annual data also at NUTS2 regional level on the length of the public sewerage system and on the number of settlements served by the public sewerage system. Data for this group of proxy indicators cover the period 2008-2020.

3.2.3.4 Public sewerage system – length (km)

The indicator measures the length, in kilometres, of the public sewerage system. According to data available at the NIS for the period 2008-2020, Nord-Vest registered a considerable increase in the length of the system, from 2,857 km in 2008 to 7,092.9 km in 2020. The expansion rate of the public sewerage system in the Nord-Vest region (248%) surpasses both the country-level rate (207.07%) and that of Macroregion One (227.9%).

Figure 54. SDG6 – Length of public sewerage system

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 19) *Length of public sewerage system*
[Dataset]. National Institute of Statistics.
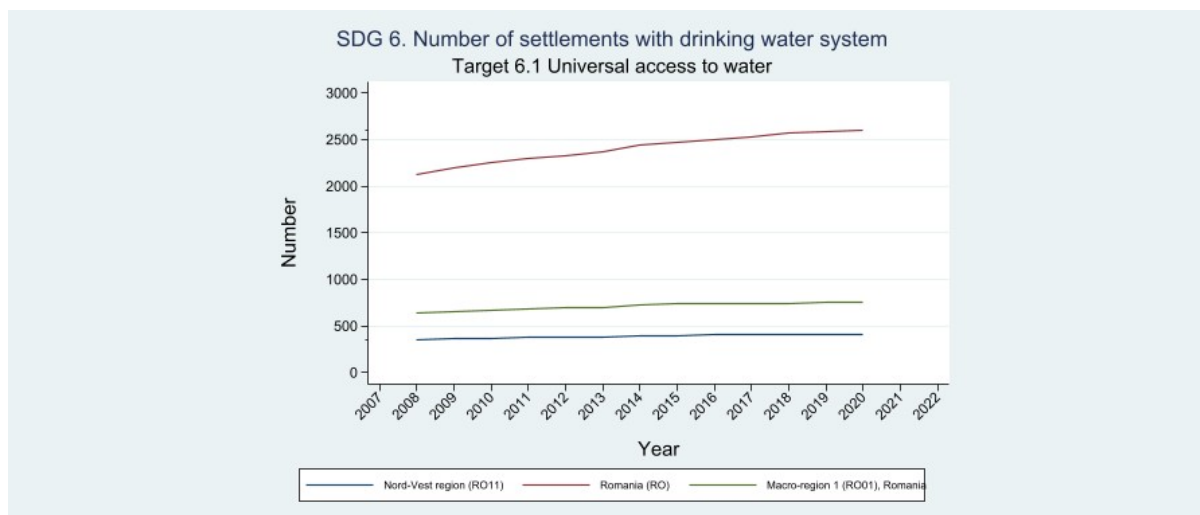
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregion, Country
Unit of measurement:	Length in km
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly

3.2.3.5 Public sewerage system – settlements covered

The indicator measures the number of settlements covered by public sewerage services. According to data available at the NIS for the period 2008-2020, Nord-Vest registered a considerable increase in the number of settlements covered, from 110 in 2008 to 245 in 2020.

Figure 55. SDG6 – Number of settlements with public sewerage system
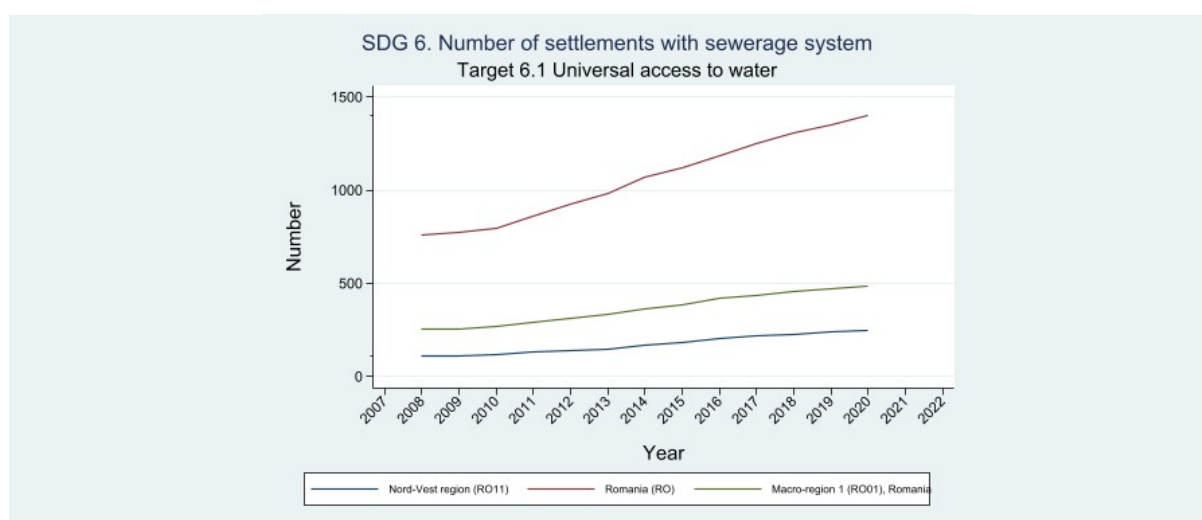
Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 19*) Number of settlements with public sewerage system* [Dataset]. National Institute of Statistics.
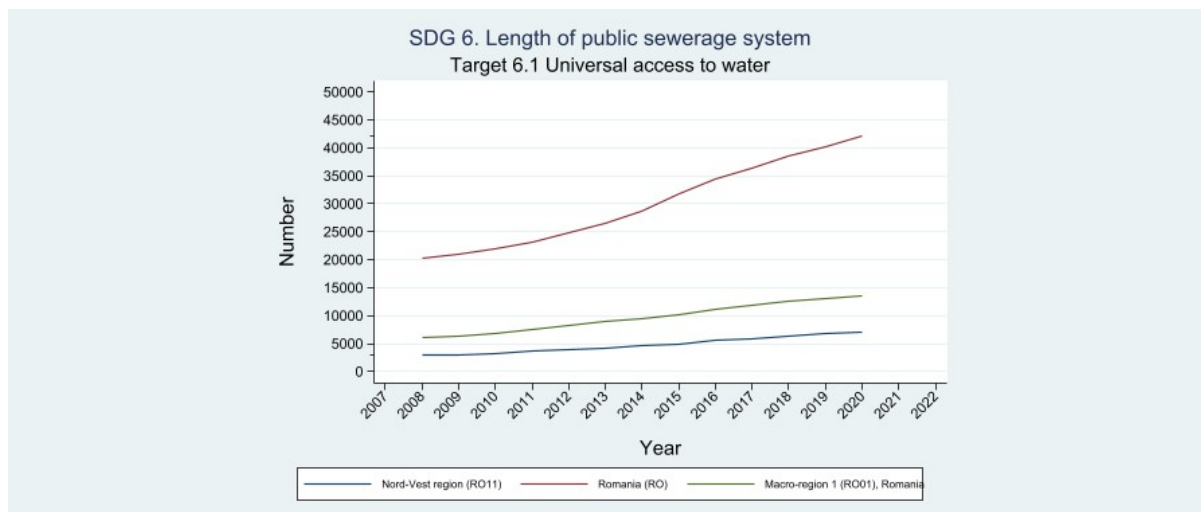
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregion, Country
Unit of measurement:	Number of settlements covered
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly

3.2.4 SDG 8: Decent work and economic growth

Since there are no readily available data for Nord-Vest regarding the Indicator 8.4 Firm creation – Target 8.3 (job creation), the NUTS3-level firm registration data, published monthly by the National Trade Register Office, can be annualised and aggregated at NUTS2 level. This dataset also allows for generating additional indicators relevant under SDG 5, namely the number and share of female entrepreneurs in newly registered companies.

3.2.4.1 Firm creation – Target 8.3 (job creation)

The indicator measures the number of firms registered at the NTRO, providing information on incorporated economic activity, more precisely on the number of private legal entities that are registered and operate in the given jurisdictions. Data are available on a monthly basis for the period 2009-2022 at NUTS3 and country levels, but have been annualised and aggregated for Nord-Vest and Macroregion One as well (see Fig. 56).

Based on NTRO data, Nord-Vest experienced an overall increase in the number of registered firms over the period, from the all-time low score (16,047 firms) in 2009 to the highest number of firms (24,097) registered in 2021. Thus, the trend is positive, although in 2020 there was a considerable decrease (likely due to the COVID-19 disruptions).

Figure 56. SDG8 – Firm creation
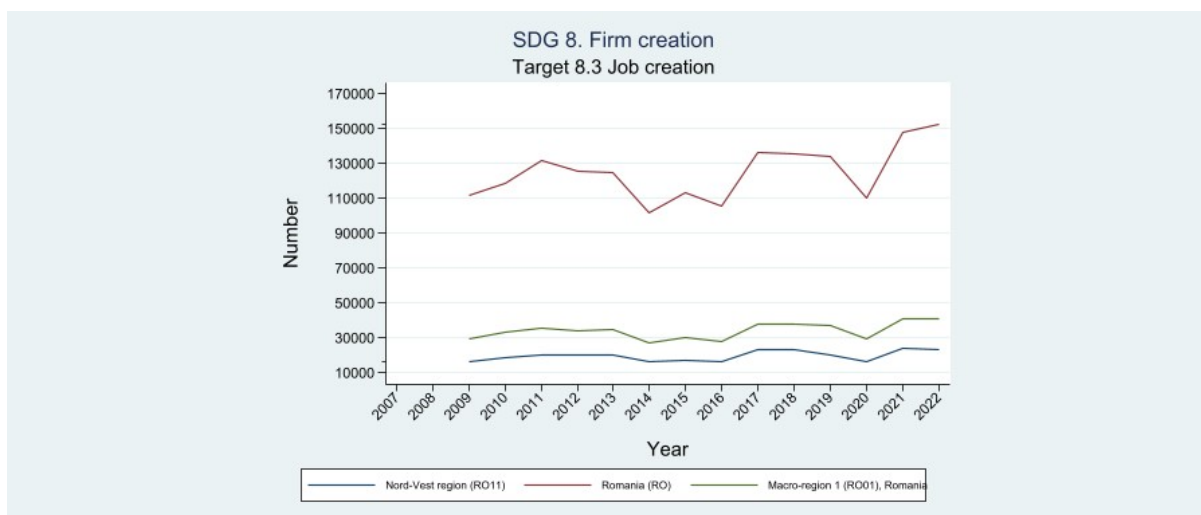
Source: Author's own calculation based on Incorporations of natural and legal persons (2023, April 23) *Firm creation* [Dataset]. The National Trade Register Office.

METADATA

Source:	**The National Trade Register Office**
Variable(s):	Firm creation (incorporation, suspensions, insolvencies and dissolution)
Hyperlink (available API):	https://www.onrc.ro/index.php/en/statistics
Visualisation:	NA
Availability and geographic coverage:	NUTS3 level and Country
Unit of measurement:	Number
Level of aggregation:	NUTS3
Time coverage and frequency	2009–2022. Data collected every month

3.2.4.2 Firm creation – number of female entrepreneurs

The indicator measures the number of female entrepreneurs in the newly registered firms, all different legal forms. NTRO data are published on a monthly basis for the period 2014-2022 at NUTS3 and country levels, but have been annualised and aggregated for the Nord-Vest region and Macroregion One as well (see Fig. 57).

According to the NTRO data available, Nord–Vest registered a considerable increase in the number of female entrepreneurs, from 56,692 in 2014 to 82,977 in 2020.

Figure 57. SDG8 – Number of female entrepreneurs
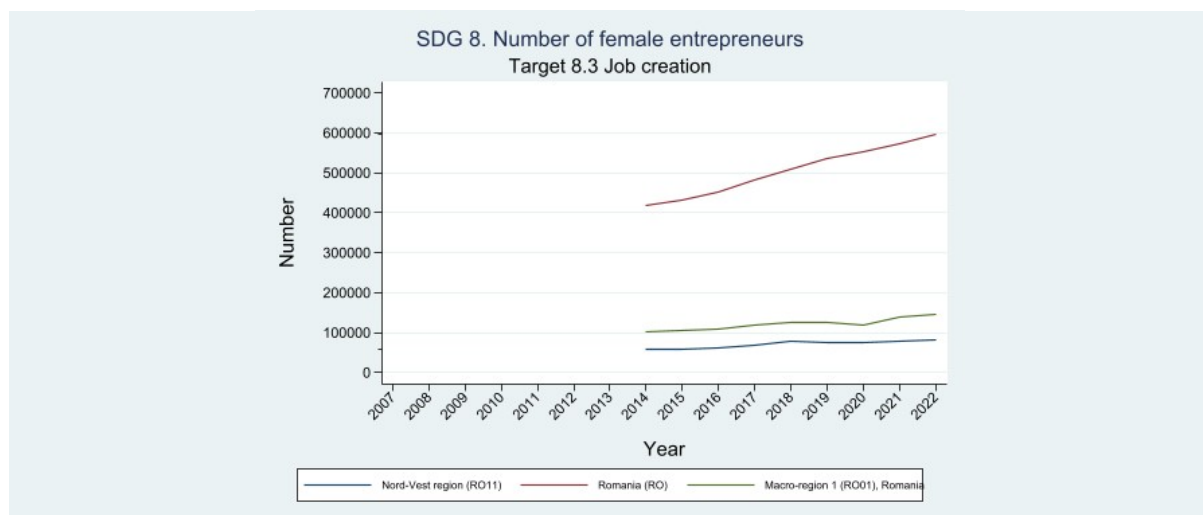
Source: Author's own calculation based on Incorporations of natural and legal persons (2023, April 23*) Number of female entrepreneurs* [Dataset]. The National Trade Register Office.

METADATA

Source:	**The National Trade Register Office**
Variable(s):	Firm creation
Hyperlink (available API):	https://www.onrc.ro/index.php/en/statistics
Visualisation:	NA
Availability and geographic coverage:	NUTS3 level and Country
Unit of measurement:	Number
Level of aggregation:	NUTS3
Time coverage and frequency	2014–2022. Data collected every month

3.2.4.3 Firm creation – share of female entrepreneurs

The indicator measures the share of female entrepreneurs in the newly registered firms, all different legal forms. NTRO data are published on a monthly basis for the period 2014-2022 at NUTS3 and country levels, but have been annualised and aggregated for the Nord-Vest region and Macroregion One as well (see Fig. 58).

According to the NTRO data available, the share of female entrepreneurs in the Nord-Vest region remains similar over the period: 35.83% in 2014 and 35.78% in 2022, with an all-time high share in 2018.

Figure 58. SDG8 – Share of female entrepreneurs

Source: Author's own calculation based on Incorporations of natural and legal persons (2023, April 23) *Share of female entrepreneurs* [Dataset]. The National Trade Register Office.

METADATA

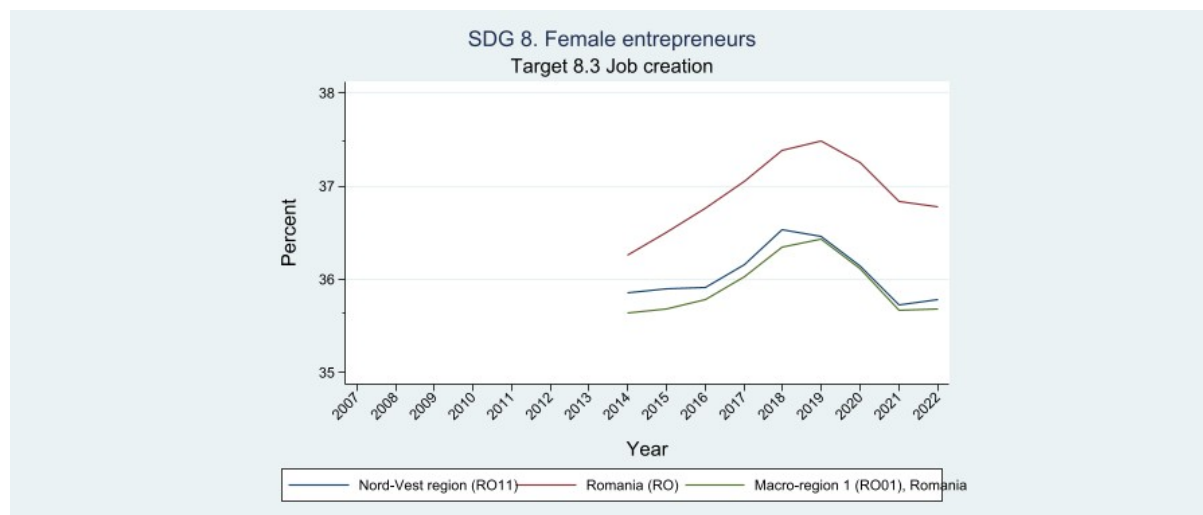| Source:	The National Trade Register Office
Hyperlink (available API):	https://www.onrc.ro/index.php/en/statistics
Visualisation:	NA
Availability and geographic coverage:	NUTS3 level and Country
Unit of measurement:	Share
Level of aggregation:	NUTS3
Time coverage and frequency	2014-2022

3.2.5 SDG 9: Industry, innovation and infrastructure

The Eurostat data available for indicator **Patent applications to the EPO** – Target 9.5 (promote innovation) cover the period 1977-2012, which falls outside the current SDG framework, and thus, have limited usefulness for monitoring progress. As an alternative, data are available at the NIS on the number of patent applications submitted by Romanian applicants for the period 2007-2020.

3.2.5.1 Patent applications to the EPO – Target 9.5 (promote innovation)

The indicator shows the number of patent applications submitted by Romanian applicants. NIS data are available for Nord-Vest, Macroregion One and Romania for the period 2007-2020. As Fig. 59 presents, the Nord-Vest region registered fluctuations over the period, without showing a clear ascending or descending trend. While in 2007 the number of patents submitted was 83, in 2010 it increased to 142. However, by 2013 it dropped to 83 again. After another increase in 2014 (117), in 2016 it dropped to 80. The next two years registered an increase, but in 2019 there was another drop in the number of patent applications. However, compared to Macroregion One and Romania, which both registered a decrease, in Nord-Vest the number of patent applications submitted was slightly higher in 2020 than in 2007.

Figure 59. SDG9 – Patent applications submitted by Romanian applicants
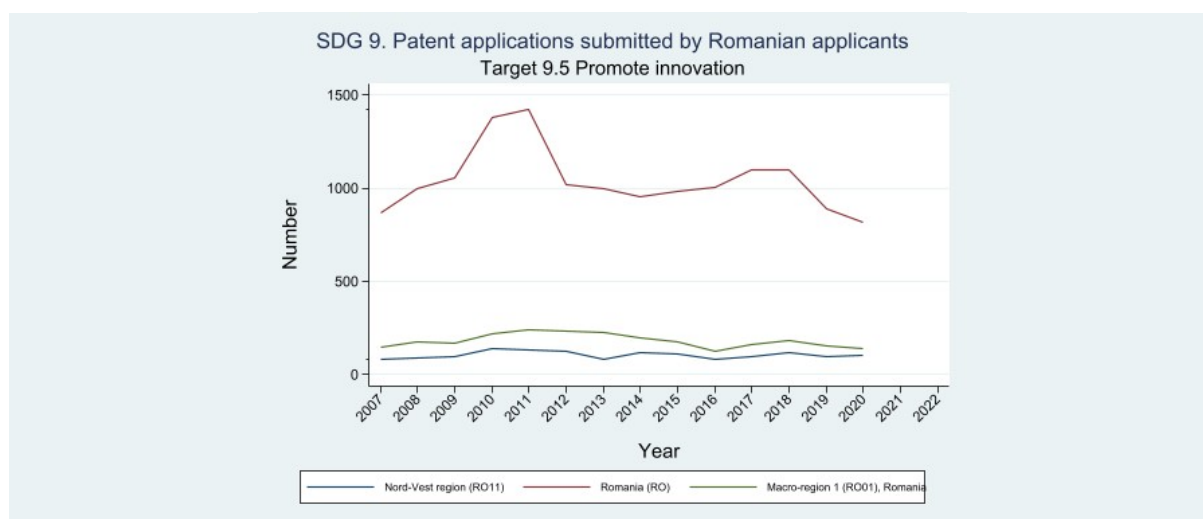
Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 29) *Patent applications submitted by Romanian applicants* [Dataset]. National Institute of Statistics.

METADATA

Source:	Romanian Statistical Yearbook, National Institute of Statistics
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 and Macroregions
Unit of measurement:	Number
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2007-2020

3.2.6 SDG 11: Sustainable cities and communities

As alternatives for indicator **Transport performance** – Target 11.2 (access to transport systems), six proxy indicators have been identified, for which data are published by the NIS also at NUTS2 level.

3.2.6.1 Density of public roads

The indicator measures the density of public roads per 100 km2. Data for Nord-Vest are available in the NIS's Romanian Statistical Yearbook for the period 2008-2020. As Fig. 60 shows, the region registered an increase in public road density from 35.38 in 2008 to 37.70 in 2020. Similar increasing trends can be observed at the levels of the country and Macroregion One.

Figure 60. SDG11 – Density of public roads
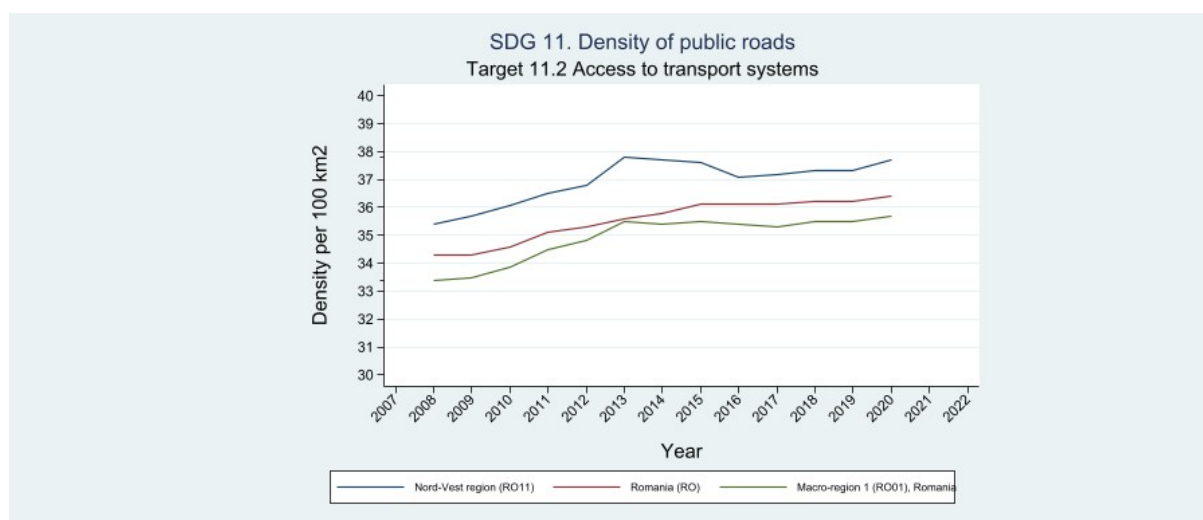
Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 29) *Density of public roads* [Dataset]. National Institute of Statistics.

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 and Macroregions
Unit of measurement:	Density per 100 km2
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly

3.2.6.2 Share of modernised public roads

The indicator measures the share of modernised public roads of total public roads. Data are available for Nord-Vest in the NSI's Romanian Statistical Yearbook for the period 2008-2020. As Fig. 61 shows, Nord-Vest experienced an ascending trend. However, the gap between the share of modernised public road in Nord-Vest and the shares registered at country and Macroregion One levels widened over the period: while in Romania 45.15% of all public roads were modernised in 2020, in the Nord-Vest region the rate was merely 31.85%.

Figure 61. SDG11 – Share of modernised public roads

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 29*) Share of modernised public roads*

[Dataset]. National Institute of Statistics

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 and Macroregions
Unit of measurement:	Length in km
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly
Notes:	own calculations

3.2.6.3 Share of modernised national roads

The indicator measures the share of modernised national public roads. Data are available for Nord-Vest in the NIS's Romanian Statistical Yearbook for the period 2008-2020. Fig. 62 indicates an ascending trend in the share of modernised national roads in the region. Over the period under focus, the gap between Nord-Vest and the macroregion as well as the one between Nord-Vest and the country decreased.

Figure 62. SDG11 – Share of modernised national roads

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 29) *Share of modernised national roads* [Dataset]. National Institute of Statistics
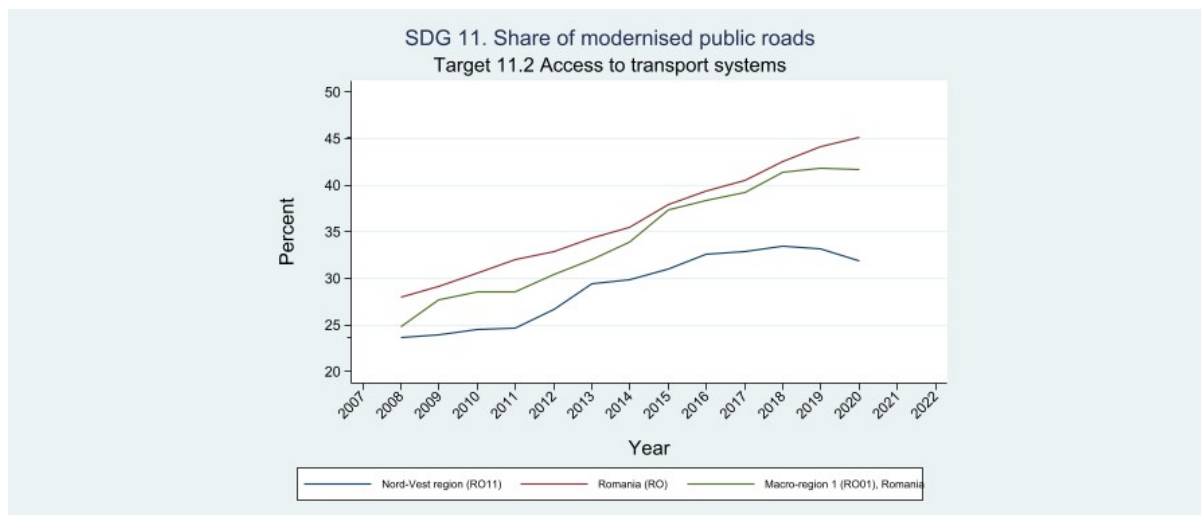
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 and Macroregions
Unit of measurement:	Length in km
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly
Notes:	Own calculations

3.2.6.4 Share of modernised county and communal roads

The indicator measures the share of modernised county and communal public roads. Data are available for Nord-Vest in the NIS's Romanian Statistical Yearbook for the period 2008-2020.

Fig. 63 shows an ascending trend at regional level. Thus, while in 2008 the share of modernised county and communal roads in Nord-Vest was 9.85%, in 2020 this share increased to 17.43%. However, the share of modernised county and communal roads in Nord-Vest remains below those at country and macroregion levels. Furthermore, despite the ascending regional trend, the gap between Nord-Vest and the country widened during the period studied, similarly to the gap between Nord-Vest and Macroregion One. While in 2008 the region had 9.85% of county and communal roads modernised, the shares in Romania and Macroregion One were 11.96% and 8.85%, respectively. In contrast, in 2020 the share of modernised county and communal roads in Nord-Vest increased to 17.43%, it reached 32.08% in Romania and 27.5% in Macroregion One.

Figure 63. SDG11 – Share of modernised county and communal roads

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 29) *Share of modernised county and communal roads* [Dataset]. National Institute of Statistics
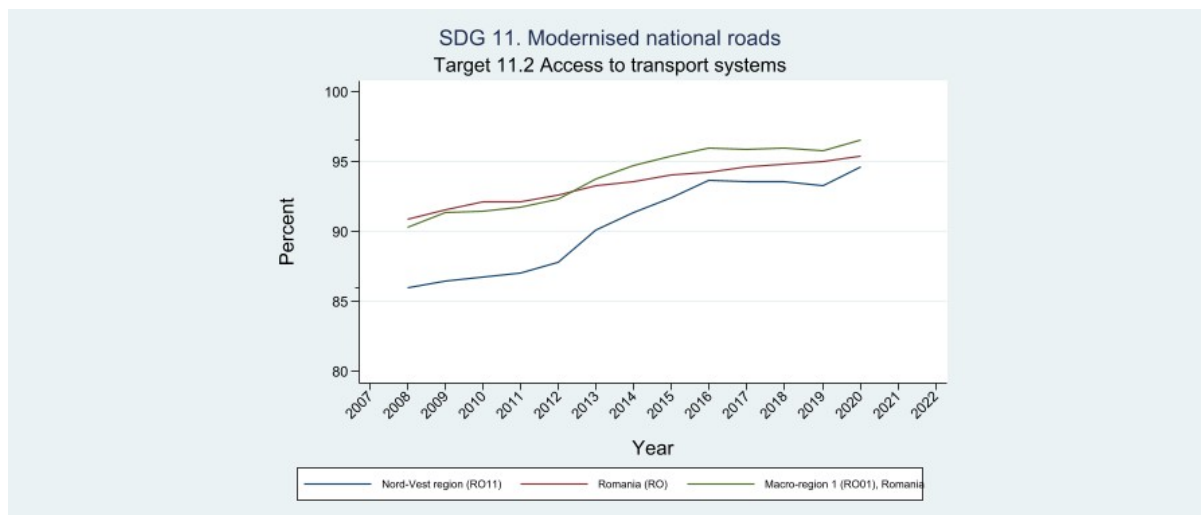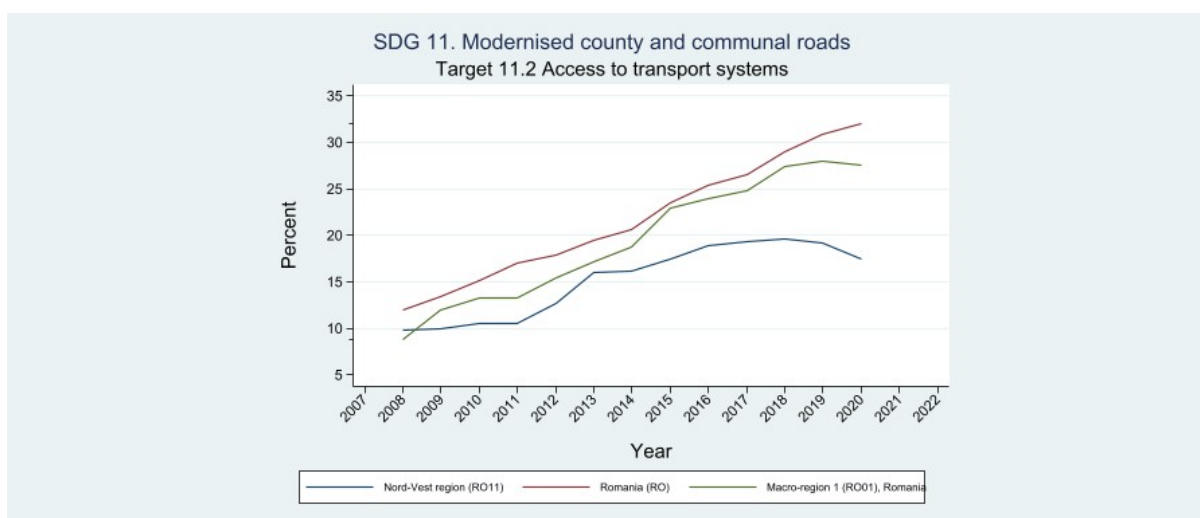
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregions
Unit of measurement:	Length in km
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2007-2020. Data collected yearly
Notes:	Own percentage calculations based on totals of modernised and light asphalts roads

3.2.6.5 Density of railroads in operation

The indicator measures the density of railroads in operation per 1,000 square kilometres. Data are available for Nord-Vest in the NIS's Romanian Statistical Yearbook for the period 2008-2020.

There has been small variance in the density of railroads in operation at all three spatial levels analysed. It is worth noting that, as Fig. 64 shows, the density of railroads in operation in Nord-Vest was the highest during the entire period (close to 49 per 1,000 km2 compared to slightly above 45 per 1,000 km2 at country level and close to 44 per 1,000 km2 in Macroregion One).

Figure 64. SDG11 – Density of railroads in operation

Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 29) *Density of railroads in operation*

[Dataset]. National Institute of Statistics

METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2 and Macroregions
Unit of measurement:	Per 1,000 km2
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly

3.2.6.6 Share of electrified railroads in operation

The indicator measures the share of electrified railroads in operation. Data are available for Nord-Vest in the NIS's Romanian Statistical Yearbook for the period 2008-2020. Figure 65 shows that the share of electrified railroads in operation at regional level did not vary significantly during the period analysed, remaining constantly and considerably below the shares registered in Romania and Macroregion One, which both show a slight increase over the years.

Figure 65. SDG11 – Share of electrified railroads in operation
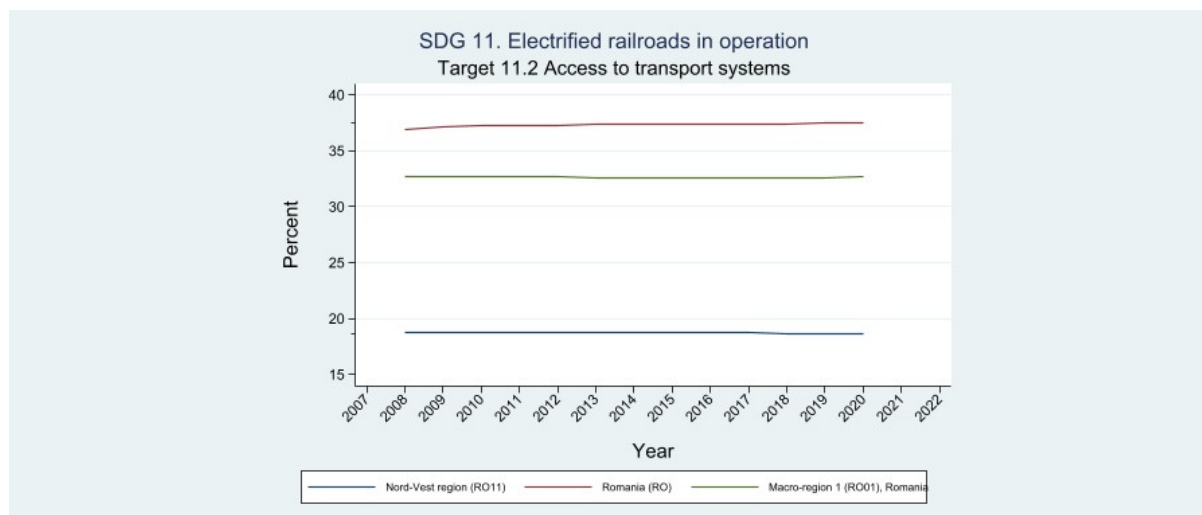
Source: Author's own calculation based on Romanian Statistical Yearbook 2007-2021 (2023, April 29) *Share of electrified railroads in operation* [Dataset]. National Institute of Statistics
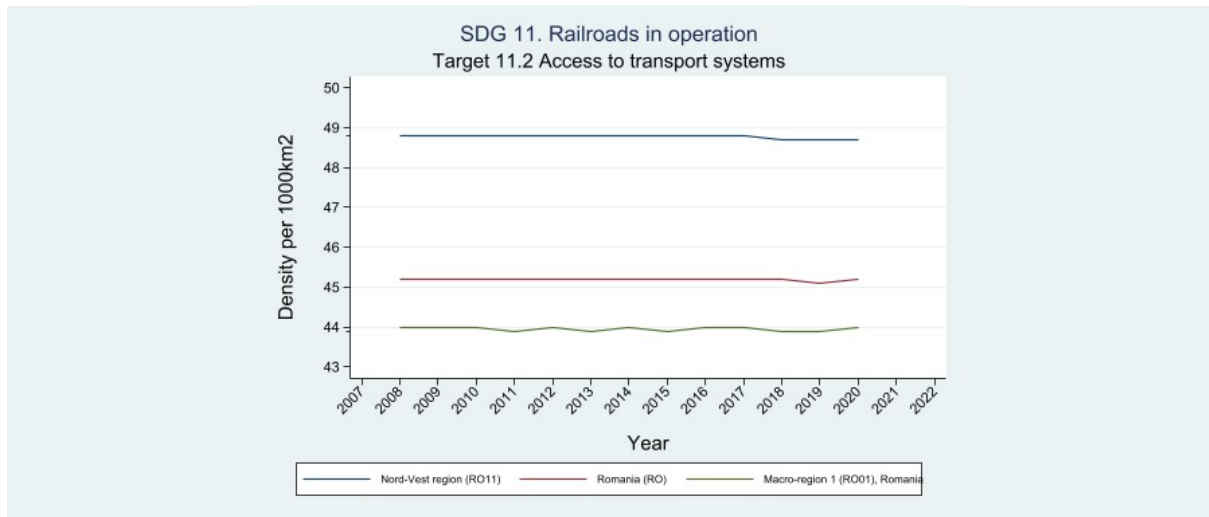
METADATA

Source:	**Romanian Statistical Yearbook, National Institute of Statistics**
Hyperlink (available API):	https://insse.ro/cms/en/content/statistical-yearbooks-romania
Visualisation:	NA
Availability and geographic coverage:	All NUTS2, and Macroregions
Unit of measurement:	Length in km
Level of aggregation:	Nord-Vest Region, Macroregion 1, Country
Time coverage and frequency	2008-2020. Data collected yearly

3.3 Horizontal analysis of metadata for alternative indicators

For 18 out of the 28 alternative indicators proposed, the data available cover the period 2008-2020. In the case of 6 alternative indicators, data are available for the period 2007-2021, while in the case of the remaining 4 alternative indicators, the periods covered include 2007-2020 (1), 2009-2022 (1) and 2014-2022 (2).

Table 19. Alternative indicators proposed for Nord-Vest

No.	Indicator	Period
1	SDG2. Use of insecticides in farming (kg)	2007-2021
2	SDG2. Use of fungicides in farming (kg)	2007-2021
3	SDG2. Use of herbicides in farming (kg)	2007-2021
4	SDG2. Use of insecticides in farming (area)	2007-2021
5	SDG2. Use of fungicides in farming (area)	2007-2021
6	SDG2. Use of herbicides in farming (area)	2007-2021
7	SDG4. Graduates, gender distribution at all levels of formal education	2008-2020
8	SDG4. Graduates, gender distribution at lower secondary level	2008-2020
9	SDG4. Graduates, gender distribution at upper secondary level	2008-2020
10	SDG4. Graduates, gender distribution at vocational level	2008-2020
11	SDG4. Graduates, gender distribution at post-secondary non-tertiary level	2008-2020
12	SDG4. Graduates, gender distribution at foreman education level	2008-2020
13	SDG4. Graduates, gender distribution at tertiary education level	2008-2020
14	SDG6. Drinking water supply network – length (km)	2008-2020
15	SDG6. Volume of drinking water supplied to the uses	2008-2020
16	SDG6. Drinking water supply network – settlement served	2008-2020
17	SDG6. Public sewerage system – length (km)	2008-2020
18	SDG6. Public sewerage system – settlements covered	2008-2020
19	SDG8. Firm creation	2009-2022
20	SDG8. Firm creation – number of female entrepreneurs	2014-2022
21	SDG8. Firm creation – share of female entrepreneurs	2014-2022
22	SDG9. Patent applications submitted	2007-2020

23	SDG11. Density of public roads	2008-2020
24	SDG11. Share of modernised public roads	2008-2020
25	SDG11. Share of modernised national roads	2008-2020
26	SDG11. Share of modernised county and communal roads	2008-2020
27	SDG11. Density of railroads in operation	2008-2020
28	SDG11. Share of electrified railroads in operation	2008-2020

In what concerns trend analysis, presented in Table 20, in the case 17 alternative indicators Nord-Vest shows a positive trend, in the case of 5 indicators the trend is negative, while in the case of 5 indicators no substantial change was registered by the region. In the case of Indicator 6.6 Volume of drinking water supplied to the users, the interpretation of the trend needs to be contextualised in order to avoid misleading.

Table 20. Trend analysis for alternative indicators proposed for Nord-Vest

No.	Indicator	Trend
1	SDG2. Use of insecticides in farming (kg)	Positive
2	SDG2. Use of fungicides in farming (kg)	Positive
3	SDG2. Use of herbicides in farming (kg)	Positive
4	SDG2. Use of insecticides in farming (area)	Positive
5	SDG2. Use of fungicides in farming (area)	Negative
6	SDG2. Use of herbicides in farming (area)	Negative
7	SDG4. Graduates, gender distribution at all levels of formal education	Positive
8	SDG4. Graduates, gender distribution at lower secondary level	Neutral
9	SDG4. Graduates, gender distribution at upper secondary level	Positive
10	SDG4. Graduates, gender distribution at vocational level	Negative
11	SDG4. Graduates, gender distribution at post-secondary non-tertiary level	Negative
12	SDG4. Graduates, gender distribution at foreman education level	Positive
13	SDG4. Graduates, gender distribution at tertiary education level	Negative
14	SDG6. Drinking water supply network – length (km)	Positive
15	SDG6. Volume of drinking water supplied to the uses	
16	SDG6. Drinking water supply network – settlement served	Positive

17	SDG6. Public sewerage system – length (km)	Positive
18	SDG6. Public sewerage system – settlements covered	Positive
19	SDG8. Firm creation	Positive
20	SDG8. Firm creation – number of female entrepreneurs	Positive
21	SDG8. Firm creation – share of female entrepreneurs	Neutral
22	SDG9. Patent applications submitted	Neutral
23	SDG11. Density of public roads	Positive
24	SDG11. Share of modernised public roads	Positive
25	SDG11. Share of modernised national roads	Positive
26	SDG11. Share of modernised county and communal roads	Positive
27	SDG11. Density of railroads in operation	Neutral
28	SDG11. Share of electrified railroads in operation	Neutral

3.4 Data available at country level

As a member of the UN[2] and the EU[3], Romania has adopted the 2030 Agenda for Sustainable Development. Romania's national strategic framework for implementing the 2030 Agenda, provides the context and the roadmap for achieving the 17 SDGs. The Department for Sustainable Development, under the Prime Minister's Office, coordinates the activities related to the monitoring and implementation of SDGs, operating an open access digital aggregator of statistical data[4] in the field of sustainable development. The database comprises available country-level data on key indicators prioritised in the national SDG strategy.

For the indicators proposed by the JRC where readily available data for Nord-Vest could not be identified, an analysis of the country data aggregator has been conducted. Furthermore, complementary public data sources have also been reviewed in order to identify data available at country (NUTS0) level. As a result, a number of 18 indicators have been identified for which data are currently available at country level but could be aggregated at NUTS2 level.

3.4.1   SDG1 No poverty – Indicator: Affected people due to disasters

Romania has set up and started operating the national platform for disaster risk reduction starting from 2017[5], and the national disaster risk reduction strategy[6] is in line with the Sendai Framework for Disaster Risk Reduction 2015-2030[7], which corresponds to **Indicator** Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, under **Target 1.5**.

Under this specific target, UNStats SDG Indicators Metadata repository[8] also includes the following:

- Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population
- Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)
- Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies

3.4.2   SDG2 Zero hunger – Indicator: Organic farming, areas with different crops

The indicator measures the share of areas occupied by organic farming (existing organically grown areas and areas in the process of conversion) of the total agricultural area utilised. Farming is recognised as organic if it complies with Regulation (EC) No 834/2007 for regulating imports of organic products into the EU, as well as the detailed rules for implementation laid down in Commission Regulation (EC) No 889/2008. Data at country level (NUTS0) are available for the period 2005-2020.

3.4.3   SDG2 Zero hunger – Indicator: Overweight rate

The indicator measures the share of obese people based on body mass index (BMI), defined as the weight, expressed in kilograms, divided by the square of height, in meters. People aged 18 and above are considered obese if they have a BMI equal to or greater than 30. Other categories are: underweight (BMI less than 18.5), normal weight (BMI between 18.5 and less than 25) and pre-obese (BMI between 25 and less than 30). The overweight category (BMI equal to or greater than 25) combines the pre-obese and obese categories. The source of country (NUTS0)-level data is the European Health Interview Survey (EHIS), covering the years 2008, 2014, 2017 and 2019.

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[2] UN General Assembly adopted the 2030 Agenda through resolution A/RES/70/1

[3] The European Council endorsed the 2030 Agenda in "A Sustainable European Future: The EU Response to the 2030 Agenda for Sustainable Development" on 20 June 2017

[4] The SDGs statistical data aggregator can be accessed here: http://agregator.romania-durabila.gov.ro/

[5] https://fiipregatit.ro/

[6] https://www.igsu.ro/Resources/COJ/ProgrameStrategii//pdf24_merged.pdf

[7] https://gov.ro/fisiere/subpagini_fisiere/NF_HG_768-2016.pdf

[8] https://unstats.un.org/sdgs/metadata/

3.4.4 SDG5 Gender equality – Indicator: Victims of violence against women

The indicator measures the share of women from the age of 15 who answered "yes" when asked if they had experienced physical and/or sexual violence by a partner or non-partner in the 12 months prior to the interview. Survey data are available for the year 2012.

Additionally, the National Agency for Equal Opportunities between Women and Men (NAEO) publishes country-level annual monitoring reports on the implementation of the strategy to tackle domestic violence and of the gender equality strategy. The reports are available in Romanian by accessing the following link: https://anes.gov.ro/rapoarte-de-monitorizare-2/ and indicate that at national level there is an upward trend in the incidence of gender violence against women. The reports contain data relevant for Indicator 5.1 Fatal victims of gender-based violence at the hands of their partners or ex-partners – Target 5.2 (gender violence).

Since 2016, the NAEO has been operating a 24/7 hotline 0800500333 addressing family-based violence. The agency publishes nationally aggregated annual reports on the calls received (reports available here). However, the forms of the reports vary from year to year, making time-series comparison difficult to conduct.

3.4.5 SDG5 Gender equality – Indicator: Inactive population rate due to caregiving responsibilities

The economically inactive population comprises women and men who do not work, who are not actively looking for a job and who are not available to work. Therefore, they are neither employed nor unemployed and are considered to be out of the workforce. Inactivity due to caring responsibilities refers to "caring for incapacitated children or adults" and "other family or personal responsibilities." Data are available for the 2002-2021 period and are disaggregated by sex.

3.4.6 SDG5 Gender equality – Indicator: Female research and development personnel

The National Institute of Statistics provides data on the following two indicators:

- CDP102H - Researchers from research and development activity by age group, at the end of the year.
- CDP102F - Employees from research and development units, by sector of performance and sex, at the end of year.

3.4.7 SDG5 Gender equality – Indicator: Women in parliament and government

The indicator measures the proportion of women in both the national parliament and the government. Data are available for the period 2003-2022.

The Romanian Parliament presents the list of parliamentarians by NUTS3 level and gender. This, as Fig. 66 shows, allows for calculating the share of women representatives in the parliament at NUTS2 level.

Figure 66. SDG5 – Share of women in Romanian Parliament

Figure 66. SDG5 – Share of women in Romanian Parliament
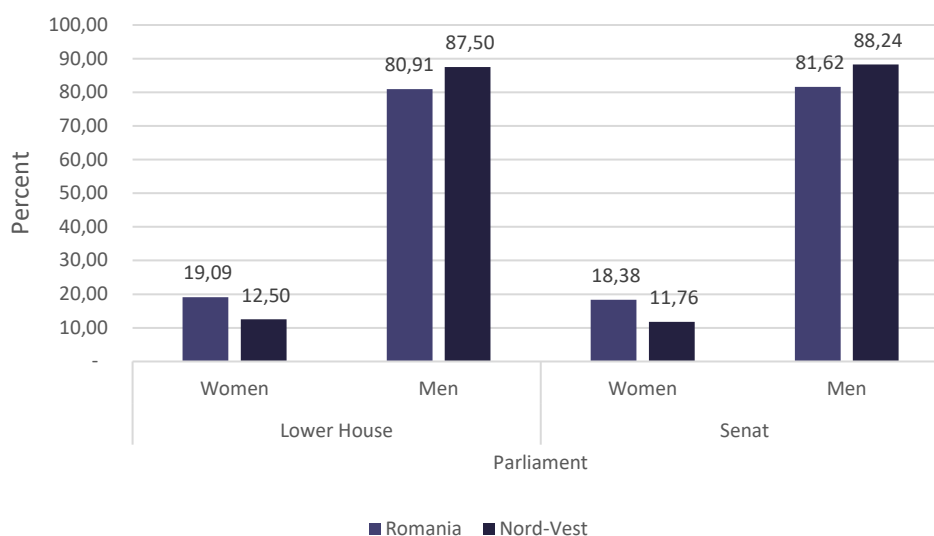
Source: Source: Author's own calculation based on Romanian Parliament's Structure (2023, May 6) *Share of women in Romanian Parliament* [Dataset]. Romanian Parliament

Data following the 2020 elections indicate that the share of women in the Romanian Parliament remains below 20%. The share of women representatives from the Nord-Vest region is below the national rate both in the Lower House and in the Senate.

METADATA

Source:	**Romanian Parliament**
Hyperlink (available API):	https://www.cdep.ro/pls/parlam/structura.home?leg=2020&idl=1
Visualisation:	
Availability and geographic coverage:	NUTS3
Unit of measurement:	Number
Level of aggregation:	NUTS2, Macroregions
Time coverage and frequency	2020-2023. Election cycle – with adjustments.

3.4.8 SDG7 Affordable and clean energy – Indicator: Energy intensity

The indicator measures the proportion of energy-related GHG emissions and gross domestic energy consumption. It expresses how many tonnes of CO_2 equivalent to energy-related GHGs are emitted in a given saving per unit of energy consumed. Data on energy emissions are available annually in the United Nations Framework Convention on Climate Change (UNFCCC) reports on GHG emissions, covering the period 2000–2020.

3.4.9 SDG7 Affordable and clean energy – Indicator: People affected by energy poverty

The indicator measures the share of the population unable to heat their home sufficiently. Data collection is based on a survey conducted in the period 2007-2018.

3.4.10 SDG7 Affordable and clean energy – Indicator: Electricity production that comes from renewable sources

The indicator measures the share of renewable energy of gross final energy consumption under the Renewable Energy Directive. Gross final energy consumption is the energy used by final consumers plus network losses and own consumption of power plants. Data are published annually, covering the period 2004-2021.

Additionally, the Romanian Energy Regulatory Authority publishes monthly country reports on the generation structure of the National Power System by type of resources. Electricity production is divided by source: wind, sun (PV), biomass, hydro, nuclear, solid (coal), gas and liquid (fuel oil). Data are available for the period December 2006 - November 2022.

3.4.11 SDG8 Decent work and economic growth – Indicator: Young people neither in employment nor in education and training

The indicator measures the share of young people aged 15-29 who are neither on the labour market nor in a vocational training or education programme. Data are published annually, covering the period 2004-2021. In the national data aggregator, the indicator is under SDG10.

3.4.12 SDG10 Reduced inequalities – Indicator: Gini index of disposable income (after taxes and transfers)

The indicator measures the Gini coefficient, which is one of the specific indices on the depth of poverty and gives an insight into the inequality of income distribution. Theoretically, the Gini coefficient can take values between 0 and 1 (or 0-100%), where 0 represents perfect equality of income distribution (the entire population of a country receiving the same level of income) and 1 represents perfect inequality (the entire income would be realised by a single person). The data aggregator operated by the Department for Sustainable Development reports country-level Gini for the 2008-2020 period.

3.4.13 SDG11 Sustainable cities and settlements – Indicator: Transport performance

The indicator measures the share of collective transport modes of the total passenger transport capacity on land, expressed in passenger-kilometres (pkm). Collective transport modes refer to buses, including coaches, trolleybuses and trains. Total land transport includes transport by cars, buses and coaches and trains. Data are available annually for the period 2002-2017.

3.4.14 SDG11 Sustainable cities and settlements – Indicator: Land use

This indicator measures the area occupied by taking over land for the construction of buildings, industrial and commercial areas, infrastructure and sports fields, including both covered and uncovered areas. The indicator is closely linked to the concept of land use for construction, which includes physical components of buildings as well as infrastructure and services for which physical elements provide support (such as education, health, culture, welfare, recreation and nutrition). Data are in quarter meter and are available tri-annually for the years 2012, 2015 and 2018.

3.4.15 SDG12 Responsible consumption and production – Indicator: Hazardous waste

The indicator measures the quantity of hazardous waste generated in accordance with the Guidance for the compilation and reporting of data on municipal waste according to Commission Implementing Decisions

2019/1004/EC and 2019/1885/EC, and the Joint Questionnaire of Eurostat and OECD. The data are published annually by the Environmental Protection Agency, covering the period 2012-2020.

3.4.16 SDG13 Climate action – Indicator: Greenhouse gas emissions

The indicator measures total national emissions (in both the ESD and ETS sectors), including the so-called 'Kyoto basket', which encompasses greenhouse gases such as carbon dioxide, methane, nitrogenous oxide and F-gases (hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride). Data are available annually for the period 1990-2020 (tonnes per capita and percentage, 1990 as base year).

3.4.17 SDG16 Peace, justice and strong institutions – Indicator: Transparency index

Data are published by Transparency International[9] and refer to the perception of corruption, based on a survey conducted annually and available for the period 2004-2022.

3.4.18 SDG17 Partnerships for the goals – Indicator: Imports from developing countries

The indicator is defined as the value (at current prices) of EU imports from developing countries on the OECD Development Assistance Committee (DAC) list of official development assistance recipients. The indicator is presented broken down into partner countries' income groups as distinguished by the DAC list. Data are available annually for the period 2000-2021, expressed in millions.

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[9] https://www.transparency.org.ro/ro/tiropage/indicele-de-perceptie-coruptiei

4. DESCRIPTION OF CHALLENGES IN DATA AVAILABILITY AND COLLECTION

The review of data availability for SDG indicators at the level of the Nord-Vest region, Romania, has resulted in the identification of a core group of indicators for which data are readily available (47 out of the 83 indicators proposed by the JRC). However, there are limitations in data availability even for this group of indicators.

Thus, the first group of limitations, **inconsistencies in data availability**, can already be observed in the case of the 47 indicators for which data are readily available for Nord-Vest. For 16 indicators, data are available for shorter time periods than the one defined as the period under analysis (2007-2020), or there are breaks in data due to changes in methodology (see Table 14 in Section 2.3). In the case of 9 indicators, there is a single datapoint available (see Table 15 in Section 2.3), which does not allow for conducting trend analysis and assessing whether progress towards the achievement of SDGs has been made. For 8 indicators, data are published for certain benchmark years only and also include future trend foresight figures (see Table 16 in Section 2.3).

The second major challenge in conducting the review for Nord-Vest has been the **lack of readily available NUTS2-level data**, encountered in the case of 36 indicators proposed for EU regions by the JRC (see Table 21). Four of these indicators have been found as not relevant for the Nord-Vest region.

Table 21. List of indicators relevant for Nord-Vest but with no corresponding data

No.	Indicator
1	SDG1 Affected people due to disasters, Target 1.5 (exposure to vulnerability)
2	SDG2 Organic farming: areas with different crops, Target 2.4 (sustainable food production)
3	SDG2 Overweight rate, Target 2.2 (end malnutrition)
4	SDG3 Deaths due to Covid-19, Target 3.3 (epidemics and diseases)
5	SDG4 Women 30-34 years old with higher education level, Target 4.5 (gender and other disparities in education), Target 4.6 (youth and adult literacy)
6	SDG4 Distribution of pupils and students enrolled in general and vocational education, Target 4.3 (vocational and tertiary education)
7	SDG5 Fatal victims of gender-based violence at the hands of their partners or expartners, Target 5.2 (gender violence)
8	SDG5 Victims of violence against women, Target 5.2 (gender violence)
9	SDG5 Inactive population rate due to caregiving responsibilities, Target 5.4 (unpaid work)
10	SDG6 Groundwater that exceeds a standardised quality rating, Target 6.3 (water quality)
11	SDG6 Population served by safely managed drinking water supply services, Target 6.1 (universal access to water)

12	SDG6 Population connected to wastewater with at least secondary treatment, Target 6.3 (water quality)
13	SDG7 Electricity production that comes from renewable sources, Target 7.2 (share of renewable energy)
14	SDG7 Energy intensity, Target 7.1 (access to energy)
15	SDG7 People affected by energy poverty, Target 7.1 (access to energy)
16	SDG8 Firm creation, Target 8.3 (job creation)
17	SDG8 Young people neither in employment nor in education and training, Target 8.6 (youth not in employment, education or training)
18	SDG9 GVA of the industry with respect to the GVA of the total sectors (current price), Target 9.2 (sustainable industrialization)
19	SDG10 Unemployment of people with disabilities, Target 10.2 (inclusion irrespective of status)
20	SDG10 Gini index of disposable income (after taxes and transfers), Target 10.4 (greater equality)
21	SDG11 Households expenses dedicated to housing costs, Target 11.1 (access to housing)
22	SDG11 Transport performance, Target 11.2 (access to transport systems)
23	SDG11 Land use, Target 11.3 (sustainable urbanization)
24	SDG11 Household and commercial waste generation per inhabitant, Target 11.6 (environmental impact)
25	SDG12 Carbon footprint, Target 12.2 (management of natural resources)
26	SDG12 Food waste, Target 12.3 (reduce food waste)
27	SDG12 Hazardous Waste, Target 12.4 (chemical management)
28	SDG13 Greenhouse Gas Emissions, Target 13.2 (climate change measures into policy)
29	SDG16 Criminal infractions, Target 16.1 (Number of victims of intentional homicide per 100,000 population, by sex and age)
30	SDG16 Transparency index, Target 16.6 (effective institutions)
31	SDG17 Official Development Assistance, Target 17.2 (development assistance commitments)
32	SDG17 Imports from developing countries, Target 17.12 (imports from least developed countries)

Source: Own compilation based on Vega Rapun M., Stamos I., Proietti P., Siragusa A (2022) *Report on the Methodological approach for the creation of an SDG regional monitoring indicator set.* Joint Research Centre

Table 22 sums up the JRC proposed indicators and targets for which data are unavailable at the level of the Nord-Vest region.

Table 22. Number of indicators and targets relevant for Nord-Vest but with no corresponding data

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total
Targets	1	2	1	2	2	2	2	2	1	2	4	3	1	0	0	2	2	29
Indicators	1	2	1	2	3	3	3	2	1	2	4	3	1	0	0	2	2	32

Source: Own calculations based on Vega Rapun M., Stamos I., Proietti P., Siragusa A (2022) *Report on the Methodological approach for the creation of an SDG regional monitoring indicator set.* Joint Research Centre

A third type of challenge relates to the territorial level at which data are published. For 18 of the 83 indicators proposed by the JRC, **official statistics are available, but without NUTS2-level aggregation**. Table 23 presents the list of the indicators with data available at country (NUTS0) level, possible to be aggregated and communicated at NUTS2 level as well.

Table 23. List of indicators with data available at country level (NUTS0)

No.	Indicator
1	SDG1 Affected people due to disasters, Target 1.5 (exposure to vulnerability)
2	SDG2 Organic farming: areas with different crops, Target 2.4 (sustainable food production)
3	SDG2 Overweight rate, Target 2.2 (end malnutrition)
4	SDG5 Victims of violence against women, Target 5.2 (gender violence)
5	SDG5 Inactive population rate due to caregiving responsibilities, Target 5.4 (unpaid work)
6	SDG 5 Female research and development personnel, Target 5.5 (women participation and leadership)
7	SDG5 Women in parliament and government, Target 5.5 (women participation and leadership)
8	SDG7 Energy intensity, Target 7.1 (access to energy)
9	SDG7 People affected by energy poverty, 7.1 (access to energy)
10	SDG7 Electricity production that comes from renewable sources, Target 7.2 (share of renewable energy)
11	SDG8 Young people neither in employment nor in education and training, Target 8.6 (youth not in employment, education or training)
12	SDG10 Gini index of disposable income (after taxes and transfers), Target 10.4 (greater equality)
13	SDG11 Transport performance, Target 11.2 (access to transport systems)
14	SDG11 Land use, Target 11.3 (sustainable urbanization)
15	SDG12 Hazardous waste, Target 12.4 (chemical management)
16	SDG13 Greenhouse gas emissions, Target 13.2 (climate change measures into policy)
17	SDG16 Transparency index, 16.6 (effective institutions)

| 18 | SDG17 Imports from developing countries, Target 17.12 (imports from least developed countries) |

Another data limitation stems from the fact that in some cases, relevant statistical data are available at NUTS3 level, without being standardised or officially communicated at NUTS2 level. While the aggregation of NUTS3-level data was not an objective of the review, due to the relevance of some indicators for the RDA, a few possible aggregations have been developed and included in the section on the additional indicators proposed for Nord-Vest (see Firm creation indicators in Section 3.2.4).

Last but not least, in the case of the additional indicators proposed for Nord-Vest, **further standardisation within the SDG monitoring framework is required**. While these official statistics are relevant for the RDA and provide good proxy indicators for assessing the progress of the region towards the achievement of key SDGs and targets, they are not standardised and thus, only partially capture the given targets.

5. RECOMMENDATIONS TOWARDS THE DEVELOPMENT OF A EUROPEAN-WIDE REGIONAL INDICATOR SET FOR MONITORING THE SDGS

The principal finding of the review of data availability for SDG indicators at the level of Nord-Vest is the identification of 47 indicators for which statistical data are readily available. This core group of indicators, presented and discussed in Section 2, provide an insight into the progress made by the region towards the achievement of 13 SDGs. Complementarily, a group of 28 additional or proxy indicators are proposed for the region, which provide further details on the performance of Nord-Vest (see Section 3.2). Last but not least, 18 indicators falling under 11 SDGs have been identified with readily available NUTS1-level data that could be also reported at NUTS2 level. Overall, these findings indicate that the premises to articulate an EU-wide regional indicator set for monitoring the achievement of SDGs are present. However, the scope of the indicator set could be enhanced by addressing the limitations described in Section 4. Possible steps to be considered include:

- Ensuring that all data are expressed in standardised form across NUTS2-level jurisdictions.
- Ensuring that administrative data are communicated with annual regularity so that trend analysis could be conducted.
- Aligning the time periods for which statistics are published with the multiannual planning cycles (2007-2013, 2014-2020, 2021-2027, etc.).

The proposed dataset should also take into consideration the differences in the status of NUTS2 regions across the EU. Some NUTS2-level units have an administrative status, and thus are part of regular statistical reporting, while other NUTS2 regions, including Nord-Vest, have been established through the association of local and county governments, with no administrative status. In order to address the challenge of differences in status, standard procedures could be established for data aggregation from LAUs and NUTS3 level to NUTS2 level. Additionally, the development of Voluntary Regional Reviews with the involvement of LAUs of NUTS2 regions could provide a substantial improvement in the localisation of SDGs, also helping to address some of the existing challenges and gaps in data collection and availability and to harmonise statistics related to the achievement of SDGs and SDG targets.

The development of a European regional indicator set for monitoring SDG achievement would also need to take into consideration specific regional contexts. In the case of several indicators available for Nord-Vest, the interpretation of trends requires caution, as without contextualising the indicators, the findings could be misleading. A few examples of such indicators:

- **Water bodies that exceed a standardised quality rating (under SDG6 Clean water and sanitation)** – The region experienced a substantial decrease in the quality of water bodies (see Fig. 16): while in 2008 very good and good quality water represented 80.44% of all monitored surface, in 2020 this rate decreased to 31.83%. However, during the same period, the region extended water body monitoring by 65%, which makes the trend possibly ambiguous.
- **Volume of drinking water supplied to users (under SDG6 Clean water and sanitation)** – The region registered a decrease of 7.49% over the period studied (see Fig. 51) However, the decrease in the volume of drinking water supplied to the users may be partly attributable to improvements in the quality of the distribution network and to decreasing losses on supply routes. If this were the case, the decrease would in fact indicate better water management. Therefore, this trend also requires caution in interpretation and contextualisation.
- **Stock of passenger cars (under SDG11 Sustainable cities and settlements)** – The number of passenger cars per 1,000 inhabitants more than doubled in the region over the period studied, reaching

376 in 2020 compared to 159 in 2007 (see Fig. 28). In terms of access to transport systems, the trend is positive. However, taking into consideration that such increase in the stock of passenger cars can be associated with increased pollution, the trend could be interpreted as negative.

In the case of Romania, to support the localisation of SDG monitoring, a comprehensive review of all official statistics available at NUTS2 could be conducted. Complementing the national implementation and monitoring framework of the Sustainable Development Strategy 2030 with NUTS2-level comprehensive data would reinforce and expand the main directions for development and the basis for future sectoral, regional and local strategies.

From an institutional perspective, the Department of Sustainable Development, which has the responsibility of ensuring policy coherence in the field of sustainable development in Romania, could be involved – along with similar institutions from other EU Member States – in articulating a common approach towards the localisation of SGD monitoring.

6. CONCLUSIONS

The research work had three objectives: to test the extent to which the indicators proposed by the JRC are relevant and available for calculation in the case of the Nord-Vest region, to identify alternative indicators where applicable, and to assess the SDG monitoring capacity of the region, pointing out strengths as well as limitations, challenges and gaps to address.

The main finding of the review is the identification of 47 indicators (out of the 83 indicators proposed by the JRC) for which statistical data are readily available for Nord-Vest. Data sources include official regional-level data available internationally (for 41 indicators) or nationally (for 6 indicators). These indicators provide an insight into the progress made by the region towards the achievement of 13 SDGs. In order to provide further details on the performance of Nord-Vest, several alternative data sources have been reviewed, resulting in 28 additional or proxy indicators proposed. In an attempt to cover more SDG targets and the remaining 4 SDGs, 18 indicators have been identified with readily available country (NUTS0) level data that could also be aggregated at NUTS2 level. One indicator under SDG7 and the three indicators under SDG14 have been found as not relevant for Nord-Vest.

The resulting set of 93 indicators can contribute to the establishment of a relevant and applicable set of indicators at NUTS2 level to be used by all European regions for monitoring the achievement of SDGs as well as for comparing outcomes over time and across regions. However, it needs to be noted that in the case of 36 JRC proposed indicators, no official NUTS2-level data could be identified as readily available for Nord-Vest. This finding is significant as it indicates the extent to which systematic and authoritative knowledge about various SDG targets are missing. Furthermore, it also points at the missed opportunities to assess the outcomes of various strategies, policies and investments.

The compiled indicator set already provides a snapshot on the progress made by the region towards achieving key SDG targets and on the specific areas where more policy attention is required to address negative trends. For the period 2007-2020, the Nord-Vest region made some outstanding progress on key targets under **SDG1 — No poverty**. The region achieved a 39.4% decrease in the share of persons living in households with very low work intensity, almost halved the rate of material and social deprivation, and registered a 39.2% decrease in the share of population at risk of poverty. Similarly, in the case of **SDG2 — Zero hunger**, the Nord-Vest region registered a 60.32% increase in the total gross value added of agriculture, livestock and fishing. The region also showed mostly positive trends in the case of the indicators under **SDG3 — Good health and well-being**. The share of self-reported unmet needs for medical examination and care in the region decreased from 9.3% in 2008 to 4.3% in 2021. A sustained ascending trend has been revealed in the number of healthcare personnel per 100,000 inhabitants. In what concerns the number of hospital beds per 100,000 inhabitants, Nord-Vest experienced a slight decrease compared to 2007, which might be due to population decline, faster treatments available or a possible shift to community services. The infant mortality rate fell from 11.8 deaths per 1,000 live births in 2007 to 6.7 in 2020.

The indicators under **SDG4 — Quality education** show mixed trends. Positive trends have been revealed regarding the participation rate in education and the share of early leavers from education and training. Negative trends have been identified for the number of pupils enrolled in early childhood education and for the participation rate at selected education level (primary and lower secondary). The indicator measuring the number of students enrolled in tertiary education shows no particular trend.

SGD5 — Gender equality stands out in the sense that no statistical data have been found as readily available to conduct trend analysis. The existing data, such as the female achievement and disadvantage indices rank the Nord-Vest region 205th and 211th, respectively, out of the 235 NUTS2-level regions of the EU.

The indicator measuring water bodies that exceed a standardised quality ranking, under **SDG6 — Clean water and sanitation**, shows a decrease in the quality of water for the period 2008-2020 in parallel with the increase of the water bodies monitored.

In the case of the 8 indicators for which readily available statistical data could be identified, under **SDG 8 — Decent work and economic growth**, 7 show a positive trend. The region has registered a slight increase in the number of economically active population (aged 15 to 74), a considerable decrease in the share of the unemployed, a slight increase in the number of persons employed, an expansion of gross domestic product at

current market prices, a significant increase in gross value added at basic prices, a decrease in long-term unemployment, and a significant increase in the compensation of employees. The exception is the number of occupational accidents, which shows a slight negative trend.

In contrast, the three indicators under **SDG9 – Industry, innovation and infrastructure** for which trend analysis could be conducted show negative trends (GVA of industry with respect to the GVA of the total sectors, gross domestic expenditure on R&D, and the full-time equivalent numbers of R&D personnel and researchers).

It is worth noting the two indicators under **SDG11 – Sustainable cities and settlements** for which trend analysis is possible. While there has been a substantial increase in the stock of passenger cars per 1,000 inhabitants, reaching 376 in 2020 compared to 159 in 2007, there has been a decrease in the number of victims killed in road accidents (from 329 in 2007 to 204 in 2020).

Under **SDG13 – Climate action**, trend analysis was possible for only a pair of indicators, namely cooling and heating degree days. In both cases, data indicate cyclical fluctuations over the period 2007-2022, but overall, no clear trend could be established. In the case of **SDG15 – Life on Land**, the region registered a slight increase in forest area over total surface area over the period 2008-2021.

The Quality of Government Index, based on a large survey across European countries, has been used to cover targets under **SDG16 – Peace, justice and strong institutions**, providing insights into respondents' perceptions and experiences regarding impartiality of the government in the treatment of citizens, corruption and quality of the public services. Survey responses indicate negative trends for both the overall Quality of Government Index and its corruption dimension.

The indicator measuring the share of individuals who used the internet for interaction with public authorities, under **SDG17 – Partnership for the goals,** shows a robust positive trend for the period 2015-2021.

The 28 alternative indicators proposed offer a promising starting point for further expanding and articulating the European-wide regional indicator set for monitoring the achievement of SDGs. It has been found that data for a series of regionally relevant target-specific alternative (proxy) indicators are already available at NUTS2 level. In what concerns trends, Nord-Vest shows a positive trend in the case of 17 alternative indicators: 4 indicators under **SDG2 – Zero hunger**, 3 under **SDG4 – Quality education**, 4 under **SDG6 – Clean water and sanitation**, 2 under **SDG8 – Decent work and economic growth**, and 4 under **SDG11 – Sustainable cities and settlements**. A negative trend has been revealed in the case of 5 alternative indicators: 2 under **SDG2** and 3 under **SDG4**. In the case of 5 indicators under **SDGs 8, 9 and 11**, no substantial change has been registered by the region. As for the volume of drinking water supplied to the users, under **SDG 6**, the interpretation of the trend needs to be contextualised in order to avoid misleading, since the decrease registered could be partly explained by the improvement of the water distribution system, which, if the case, would indicate better water management.

The above findings are especially relevant taking into account the substantial association between the SDGs and the 2030 Agenda, on the one hand, and the system of national and European strategies, on the other. Thus, a comprehensive and standardised European-wide regional SDG indicator set, which also builds on the experience of regions, is likely to provide a unique opportunity to substantiate policy benchmarking and lesson learning on how innovative policy measures can contribute to the achievement of specific SDG targets.

The current analysis has also focused on comparing the trends registered by the Nord-Vest region to those at country and Macroregion One levels. As a result, useful insights have been provided into how different territorial levels can show different types of progress in the achievement of SDGs and SDG targets.

Overall, considering the particular institutional set-up of the Nord-Vest region, the pool of readily available statistical data, provided by both EU and national institutions, indicates a potentially good SDG monitoring capacity of the Nord-Vest region. However, this capacity is weakened by the lack of a regional SDG monitoring strategy. Steps need to be taken to address the existing challenges and gaps as well as to improve the existing strengths. The development of a Voluntary Regional Review with the involvement of the local and county governments from the six counties in Nord-Vest could substantially improve the localisation of SDGs, helping at the same time to harmonise statistics relevant for monitoring the achievement of SDGs and SDG targets.

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LIST OF ABBREVIATIONS AND DEFINITIONS

BMI	Body mass index
CO2	Carbon dioxide
COVID-19	Coronavirus disease 2019
CPI	Corruption Perceptions Index
DAC	Development Assistance Committee
DG	Directorate-General
DG REGIO	Directorate General for Regional and Urban Policies
EC	European Commission
EHIS	European Health Interview Survey
EPO	European Patent Office
EQI	European Quality of Government Index
ESD	Effort Sharing Decision
ETS	Emissions trading system
Eurostat (ESTAT)	Directorate General for European Statistics
EU	European Union
F-gases	Fluorinated gases
GDP	Gross domestic product
GHG	Greenhouse gases
GVA	Gross value added
LAUs	Local Administrative Units
LRGs	Local and regional governments
ISCED	International Standard Classification of Education
JRC	Joint Research Centre
LUISA	Land-Use based Integrated Sustainability Assessment modelling platform
NAEO/ANES	National Agency for Equal Opportunities between Women and Men
NIS/INS	National Institute of Statistics
NTRO/ONRC	National Trade Register Office
NUTS0	Nomenclature of territorial units for statistics level 0 corresponds to country
NUTS1	Nomenclature of territorial units for statistics level 1
NUTS2	Nomenclature of territorial units for statistics level 2
NUTS3	Nomenclature of territorial units for statistics level 3
OECD	Organisation for Economic Cooperation and Development
PCT	Patent Co-operation Treaty
PIGEM	Perception Index of Gender Equity in Management
PPP	Purchasing power parity

R&D	Research and development
RDA	Regional Development Agency
RDC	Regional Development Council
RDP	Regional Development Plan
RUSLE	Revised Universal Soil Loss Equation
SDG	Sustainable Development Goal
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNStats	United Nations Statistics Division

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Annex 1. Perception Index of Gender Equity in Management [PIGEM] – Target 5.5 (equal participation in leadership)

PIGEM measures the local (LAU2 and NUTS3 level) and regional (NUTS2) level of gender prejudice towards female professional advancement, considering 5 main dimensions: education, economy, politics, family/private space, and safety/quality of life. It ranges from 0 to 100 for the total PIGEM score, and from 0 to 20 within each dimension (the higher the score, the higher the level of gender bias).

Considering the existing data, Nord-Vest registers an overall low level of gender prejudice (32.12). Results by dimension suggest that the main reason for the scarcity of female CEOs, managers, directors or political representatives is based on biased perceptions on: domestic division of labour, childcare responsibilities, and women's leadership abilities.

Figure 67. SDG5 – Share of women in Romanian Parliament
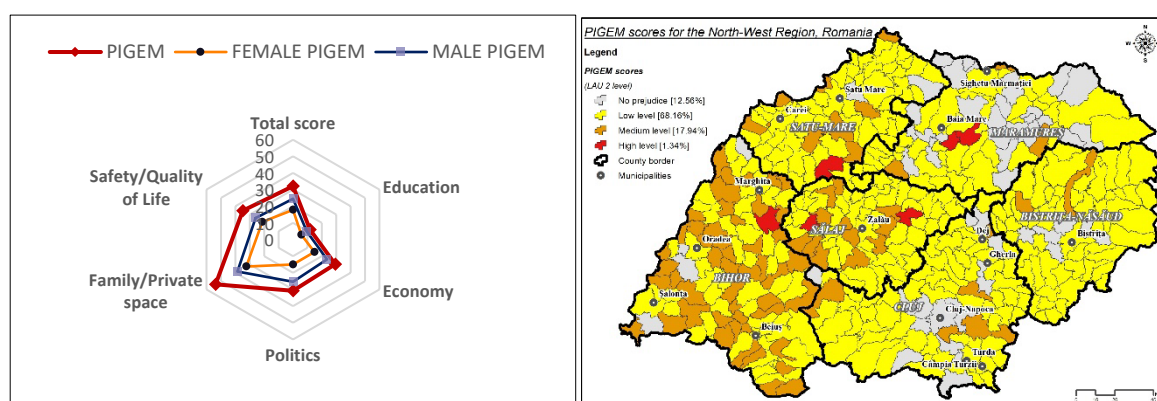
Source: Bîrsănuc E.M. (2023), forthcoming

With male PIGEM scores higher than the female ones, the highest level of gender prejudice within the region is focused on the family/private space dimension (10.74 out of 20). Considering SDG 5.5, within Nord-Vest there are unequal opportunities for leadership, as women's domesticity and unpaid domestic labour are encouraged through gender-biased perceptions, thus affecting their professional advancement through the glass ceiling.

Data collected for the index is available only for Nord-Vest Region (2022), with the possibility of applying the PIGEM methodology to all NUTS2 regions.

METADATA

Source:	**Bîrsănuc E.M. (2023) To be published soon**
Hyperlink (available API):	NA
Visualisation:	NA
Availability and geographic coverage:	Nord Vest Region
Unit of measurement:	Score/100 (total); Score/20 (by dimension)
Level of aggregation:	LAU2 (TAU level); NUTS3 (counties); NUTS2 (regions)
Time coverage and frequency:	2022

Annex 2. SDG indicator set for the Nord-Vest region

SDG	Indicator Name	Type	Coverage	EU27	Availability (no. of entry points)	Year of avail-ability	Source	Reference	Visualization	Unit of measurement	Time coverage	Frequency	SDG Target(s)
1	Persons living in households with very low work intensity	Official	EU-27 plus others	1	244	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/ilc_lvhl21/default/map?lang=en	Percentage	2017-2021	Annual	1.2 (reduce poverty)
1	Material and social deprivation	Official	EU-27 plus others	1	136	2020	European Union Statistics on Income and Living Conditions (EU-SILC)	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/ilc_mdsd08/default/map?lang=en	Rate	2014-2021	Annual	1.1 (extreme poverty)
1	Persons at risk of poverty or social exclusion	Official	EU-27 plus others	1	244	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/ilc_peps11/default/map?lang=en	Rate	2016-2020	Annual	1.2 (reduce poverty)
2	Gross Value Added (GVA) of agriculture, livestock and fishing	Official	Romania	1	1	2019	Romanian Statistical Institute, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table	Number	1996-2019	Annual	2.3 (agricultural productivity)

2	Organic farming: areas with different crops	Official	EU-27 plus others	1	240	2013	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/EF_SO_MPORG__custom_3464927/default/map?lang=en	Number	2003-2013	Tria nnu al	2.4 (sustainabl e food production)
2	Insecticides in farming: kg	Official	Romania		15	2021	TEMPO-online	Ministry of Agriculture and Rural Development,	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table	Kilogram	2007-2021	Ann ual	2.4 (sustainabl e food production)
2	Insecticides in farming: areas	Official	Romania		15	2021	TEMPO-online	Ministry of Agriculture and Rural Development	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table	hectares	2007-2021	Ann ual	2.4 (sustainabl e food production)
2	Fungicides in farming: kg	Official	Romania		15	2021	TEMPO-online	Ministry of Agriculture and Rural Development	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table	Kilogram	2007-2021	Ann ual	2.4 (sustainabl e food production)
2	Fungicides in farming: areas	Official	Romania		15	2021	TEMPO-online	Ministry of Agriculture and Rural Development	http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table	hectares	2007-2021	Ann ual	2.4 (sustainabl e food production)

2	Herbicides in farming: areas	Official	Romania		15	2021	TEMPO-online	Ministry of Agriculture and Rural Development	http://statist ici.insse.ro:8 077/tempo-online/#/pag es/tables/ins se-table	hectares	2007-2021	Ann ual	2.4 (sustainabl e food production)
2	Herbicides in farming: kg	Official	Romania		15	2021	TEMPO-online	Ministry of Agriculture and Rural Development	http://statist ici.insse.ro:8 077/tempo-online/#/pag es/tables/ins se-table	Kilogram	2007-2021	Ann ual	2.4 (sustainabl e food production)
2	Productivity (Gross Value Added per worker) in agriculture, forestry and fishing	Experime ntal	OECD countries and other European countries	2	52	2016	Organisation for Economic Cooperation and Developmen t (OECD)	OECD, Regional database, variable	https://www. oecd.org/reg ional/region al-statistics/	Number	2014-2016	Ann ual	2.3 (agricultur al productivit y)
3	Self reported unmet needs for medical examination	Official	EU-27 plus others	1	139	2020	European Union Statistics on Income and Living Conditions (EU-SILC)	Eurostat all data, population and social conditions	https://ec.eu ropa.eu/euro stat/databro wser/view/H LTH_SILC_0 8_R__custo m_600040/ bookmark/m ap?lang=en &bookmarkI d=12aa09d 8-ef57-4bfc-b8fb-97db5dd0d 8a5	Percentage	2008-2021	Ann ual	3.c (health financing and recruitmen t)

3	Health personnel	Official	EU-27 plus others	1	244	2019	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/hlth_rs_prsrg/default/map?lang=en	Number	1993-2021	Annual	3.c (health financing and recruitment)
3	Hospital beds	Official	EU-27 plus others	1	213	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/hlth_rs_bdsrg/default/map?lang=en	Number	1993-2021	Annual	3.8 (universal health coverage)
3	Infant mortality	Official	EU-27 plus others	1	323	2017	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/hlth_cd_yinfr/default/map?lang=en	Rate	2013-2017	Annual	3.2 (preventable death of newborns)
4	Students enrolled in tertiary education	Official	EU-27 plus others	1	255	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/educ_uoe_enrt06/default/map?lang=en	Number	2013-2020	Annual	4.3 (vocational and tertiary education)
4	Participation in education	Official	EU-27 plus others	1	249	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS	https://ec.europa.eu/eurostat/databrowser/view/E	Rate	2013-2020	Annual	4.3 (vocational and tertiary

								classification.	DUC_UOE_E NRA14_cu stom_3868 425/default/ map?lang=e n				education)
4	Pupils enrolled in early childhood education	Official	EU-27 plus others	1	249	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.eu ropa.eu/euro stat/databro wser/view/e duc_uoe_en rp03/defaul t/map?lang= en	Number	2013-2020	Ann ual	4.2 (access to early childhood education)
4	Early leavers from education and training	Official	EU-27 plus others	1	225	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.eu ropa.eu/euro stat/databro wser/view/e dat_lfse_16 /default/ma p?lang=en	Percentage	2000-2021	Ann ual	4.6 (youth and adult literacy)
4	Participation rates in selected education levels	Official	EU-27 plus others	1	249	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.eu ropa.eu/euro stat/databro wser/view/e duc_uoe_en ra15/defaul t/map?lang= en	Rate	2012-2020	Ann ual	4.1 (primary and secondary education)
4	Distribution of pupils and students enrolled in	Official	EU-27 plus others	1	252	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.eu ropa.eu/euro stat/databro wser/view/e duc_uoe_en	Percentage	2013-2020	Ann ual	4.3 (vocational and tertiary education)

	general and vocational programmes								ra13/default/map?lang=en			
4	Graduates, gender distribution at al levels of formal education	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2020	Annual	4.5 (gender and other disparities in education), 4.6 (youth and adult literacy)
4	Graduates, gender distribution at lower secondary level	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2020	Annual	4.5 (gender and other disparities in education), 4.6 (youth and adult literacy)
4	Graduates, gender distribution at upper secondary level	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2020	Annual	4.5 (gender and other disparities in education), 4.6 (youth and adult literacy)
4	Graduates, gender distribution at vocational level	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2020	Annual	4.5 (gender and other disparities in education), 4.6 (youth

													and adult literacy)
4	Graduates, gender distribution at post-secondary non-tertiary level	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2020	Annual	4.5 (gender and other disparities in education), 4.6 (youth and adult literacy)
4	Graduates, gender distribution at foremen level	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2020	Annual	4.5 (gender and other disparities in education), 4.6 (youth and adult literacy)
4	Graduates, gender distribution at tertiary level	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2020	Annual	4.5 (gender and other disparities in education), 4.6 (youth and adult literacy)
5	Female research and development personnel	Experimental	OECD countries and other European countries	2	126	2015	OECD	OECD, Regional database.	https://www.oecd.org/regional/regional-statistics/	Percentage	2011-2015	Biennial	5.5 (women participation and leadership)
5	Female achievement /disadvantag	Experimental	EU-27	1	235	2021	European Commission,	Norlén H., Papadimitriou E., Dominicis	https://urban.jrc.ec.euro	Percentage	2021	-	5.1 (gender discriminat

	e index						DG REGIO	l.,Dijkstra L.(2021).	pa.eu/region al-gender-equality/?ln g=en				ion)
5	Gender gap in part-time employment incidence	Experime ntal	EU-27	OECD countri es and other Europe an countri es	184	2016	OECD	OECD, Regional database.	https://www. oecd.org/reg ional/region al-statistics/	Percentage	2016-2017	Ann ual	5.4 (unpaid work)
6	Water bodies that exceed a standardized quality rating	Official	Romania	1	13	2021	National Institute of Statistics, Annual Statistical Report	The National Administration "Romanian Waters" Romanian Statistical Yearbook	https://insse. ro/cms/en/c ontent/stati stical-yearbooks-romania	kilometre	2009-2021	Ann ual	6.3 (water quality)
6	Drinking water supply network	Official	Romania	1	15	2021	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse. ro/cms/en/c ontent/stati stical-yearbooks-romania	Kilometers	2007-2020	Ann ual	6.1 (universal access to water)
6	Drinking water supply network – settlemente d served	Official	Romania	1	15	2021	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse. ro/cms/en/c ontent/stati stical-yearbooks-romania	Number	2007-2020	Ann ual	6.1 (universal access to water)
6	Volume of drinking water supplied to	Official	Romania	1	15	2021	National Institute of Statistics, Annual	Romanian Statistical Institute, Annual Statistical	https://insse. ro/cms/en/c ontent/stati	thousand of m3	2007-2021	Ann ual	6.1 (universal access to

	households						Statistical Report	Report.	stical-yearbooks-romania			water)
6	Volume of drinking water supplied to non-household use	Official	Romania	1	15	2021	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	thousand of m3	2007-2021	Ann ual	6.1 (universal access to water)
6	Volume of total drinking water supplied to both household and non-household use	Official	Romania	1	15	2021	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	thousand of m3	2007-2021	Ann ual	6.1 (universal access to water)
6	Public sewerage length (km)	Official	Romania	1	15	2021	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Kilometers	2007-2020	Ann ual	6.1 (universal access to water)
6	Public sewerage number of settlements	Official	Romania	1	15	2021	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Number	2007-2020	Ann ual	6.1 (universal access to water)
8	Occupational accidents	Official	Romania	1	13	2021	National Institute of	Romanian Statistical Yearbook,	https://insse.ro/cms/en/content/stati	Number	2009-2021	Ann ual	8.8 (labour rights)

							Statistics	National Institute of Statistics	stical-yearbooks-romania				
8	Economic activity	Official	EU-27 plus others	1	274	2020	Eurostat, regional statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfp2act/default/map?lang=en	Rate	1999-2021	Annual	8.5 (productive employment)
8	Unemployment	Official	EU-27 plus others	1	279	2020	Eurostat, regional statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfe2emp/default/map?lang=en	Rate	1999-2021	Annual	8.5 (productive employment)
8	Employment	Official	EU-27 plus others	1	274	2021	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfe2emp/default/map?lang=en	Number	2011-2021	Annual	8.5 (productive employment)
8	GDP at current market prices	Official	EU-27 plus others	1	272	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_2gdp/default/map?lang=en	Number	1995-2020	Annual	8.1 (economic growth)

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8	GVA at basic prices	Official	EU-27 plus others	1	272	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_3gva/default/map?lang=en	Number	1995-2020	Annual	8.2 (economic productivity)
8	Long-term unemployment (12 months and more)	Official	EU-27 plus others	1	210	2021	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/lfst_r_lfu2ltu/default/map?lang=en	Rate	1999-2021	Annual	8.5 (productive employment)
8	Compensation of employees	Official	EU-27 plus others	1	263	2019	Eurostat, regional statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/nama_10r_2coe/default/map?lang=en	Number	1995-2020	Annual	8.5 (productive employment)
8	Firm creation	Experimental	Romania	1	178	2023	The National Trade Registry Office	ONRC Statistics	https://www.onrc.ro/index.php/en/statistics	Number	June 2009 – January 2023	Monthly	8.3 (job creation)
8	Firm creation by gender structure of partners/shareholders	Experimental	Romania	1	890	2023	The National Trade Registry Office	ONRC Statistics	https://www.onrc.ro/index.php/en/statistics	Share	June 2009 – January 2023	Monthly	8.3 (job creation)

8	Firm creation number of female entrepreneurs	Experimental	Romania	1	356	2023	The National Trade Registry Office	ONRC Statistics	https://www.onrc.ro/index.php/en/statistics	Number	June 2009 – January 2023	Monthly	8.3 (job creation)
9	GVA of the industry with respect to the GVA of the total sectors (current price)	Official	Romania	2	17	2019	Romanian Statistical Institute, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://www.ine.es/jaxi/Tabla.htm?path=/t35/p010/rev19/l0/&file=01001.px&L=0	Percentage	2007-2019	Annual	9.2 (sustainable industrialization)
9	Gross Domestic Expenditure on R&D	Official	EU-27 plus others	1	201	2019	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/rd_e_gerdreg/default/map?lang=en	Number	1980-2020	Annual	9.5 (promote innovation)
9	R&D personnel and researchers	Official	EU-27 plus others	1	198	2019	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/rd_p_persreg/default/map?lang=en	Number	1980-2020	Annual	9.5 (promote innovation)
9	Employment in high-technology manufacturing as a percentage of total manufacturi	Experimental	OECD countries and other European countries	2	124	2016	Organisation for Economic Cooperation and Development (OECD)	OECD, Regional database.	https://www.oecd.org/regional/regional-statistics/	Percentage	2015-2016	Annual	9.5 (promote innovation)

	ng employment												
9	Patent applications submitted by Romanian applicant	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Number	2002-2016, 2017-2020	Annual	9.5 (promote innovation)
11	Density of public roads per 100 km2 of territory	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Kilometers	2007-2020	Annual	11.2 (access to transport systems)
11	Share of modernised public roads	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2021	Annual	11.2 (access to transport systems)
11	Share of modernised national roads	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2022	Annual	11.2 (access to transport systems)
11	Share of modernised county and communal roads roads	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2023	Annual	11.2 (access to transport systems)

11	Density of railroads in operation per 100 km2 of territory	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Kilometers	2007-2020	Annual	11.2 (access to transport systems)
11	Electrified railroads in operation	Official	Romania	1	15	2020	National Institute of Statistics, Annual Statistical Report	Romanian Statistical Institute, Annual Statistical Report.	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2007-2021	Annual	11.2 (access to transport systems)
11	Daily accessibility	Experimental	EU-27	1	240	2020	European Commission, Joint Research Centre		https://urban.jrc.ec.europa.eu/trends?lng=en&ctx=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=infrastructure-20-26-20accessibility&i=1&db=1&it=ranking&y=2020&tv=-1&cwt=line-chart	Number	2015-2050	Decade	11.2 (access to transport systems)
11	Stock of vehicles (passenger	Official	EU-27 plus others	1	206	2020	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS	https://ec.europa.eu/eurostat/databro	Number	1990-2020	Annual	11.2 (access to transport

11								classification. .	wser/view/T RAN_R_VEH ST__custom _3430576/ default/map ?lang=en				systems)
cars)													
11	Difference between built-up area growth rate and population growth rate	Experime ntal	OECD countries and other European countries	2	191	2014	Organisation for Economic Cooperation and Developmen t (OECD)	OECD, Regional database.	https://www. oecd.org/reg ional/region al-statistics/	Percentage	2014	–	11.3 (sustainabl e urbanizati on)
11	PM2.5 Emissions	Experime ntal	EU-27	1	233	2020	European Commission, Joint Research Centre	Atmospheric emissions of PM2.5, 2010 – 2030 (JRC LUISA Reference Scenario 2016)	https://urba n.jrc.ec.euro pa.eu/trends ?lng=en&ctx =udp&ts=E U&pil=level- indicator&is =Default&cl =default&tl =2&clc=009 _ environmen t- climate&i=2 5&db=44&i t=ranking&y =2020&tv= _ 1&cwt=line- chart	Number	2015-2030	Dec ade	11.6 (environm ental impact)
11	Victims in road	Official	EU-27 plus others	1	266	2020	Eurostat, Regional	Eurostat, Regional statistics by	https://ec.eu ropa.eu/euro stat/databro	Number	1990-2020	Ann ual	11.2 (access to transport

	accidents						Statistics	NUTS classification.	wser/view/tr an_r_acci/d efault/map?l ang=en				systems)
13	PM10 Emissions	Experime ntal	EU-27	1	233	2020	European Commission, Joint Research Centre	PM10 concentration, 2010 – 2050 (JRC LUISA Reference Scenario 2016)	https://urba n.jrc.ec.euro pa.eu/trends ?lng=en&ctx =udp&ts=E U&pil=level-indicator&is =Default&cl =default&tl =2&clc=009 _ environmen t- climate&i=1 5&db=27&i t=ranking&y =2020&tv= _ 1&cwt=line-chart	Number	2015-2030	Dec ade	13.2 (climate change measures into policy)
13	CO2 Emissions	Experime ntal	EU-27	1	233	2020	European Commission, Joint Research Centre	Atmospheric emissions of CO2 (LUISA Platform REF2014)	https://urba n.jrc.ec.euro pa.eu/trends ?lng=en&ctx =udp&ts=E U&pil=level-indicator&is =Default&cl =default&tl =2&clc=009 _ environmen	Number	2015-2030	Dec ade	13.2 (climate change measures into policy)

									t-climate&i=13&db=25&it=ranking&y=2020&tv=-1&cwt=line-chart				
13	Cooling and heating degree days	Official	EU-27 plus others	1	240	2021	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/nrg_chddr2_a/default/map?lang=en	Number	1979-2021	Annual	13.2 (climate change measures into policy)
15	Terrestrial protected areas as a percentage of total area	Experimental	OECD countries and other European countries		191	2017	Organisation for Economic Cooperation and Development (OECD)	OECD, Regional database.	https://www.oecd.org/regional/regional-statistics/	Percentage	2017	-	15.5 (degradation of habitats)
15	Estimated soil erosion	Experimental	EU-27	1	272	2016	European Commission, Joint Research Centre	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/AEI_PR_SOIL_ER__custom_3433609/default/map?lang=en	Rate	2000-2016	Annual	15.5 (degradation of habitats)
15	Land Abandonment	Experimental	EU-27	1	234	2020	European Commission, Joint Research	from the LUISA territorial modelling platform at	https://urban.jrc.ec.europa.eu/trends?lng=en&ctx	Percentage	2015-2050	Decade	15.1 (restoration of ecosystem

						Centre	national, regional (NUT2/NUTS3) and grid level for EU28 Member States.	=udp&ts=EU&pil=level-indicator&is=Default&cl=default&tl=2&clc=009_-_environment-climate&i=4&db=5&it=ranking&y=2020&tv=-1&cwt=line-chart					s)
15	Forest area over total surface area	Official	Romania	1	14	2021	National Statistical Institute	TEMPO	https://insse.ro/cms/en/content/statistical-yearbooks-romania	Percentage	2008-2021	Annual	15.1 (restoration of ecosystems)
16	Participation in the last national elections	Official	Romania	2		2020	Romanian Permanent Electoral Authority	Election results	https://rezultatevot.ro/elections/112/results	Percentage	2014-2022	Per election cycle	16.6 (effective institutions)
	Participation in the last local elections	Official	Romania	2		2020	Romanian Permanent Electoral Authority	Election results	https://prezenta.roaep.ro/locale27092020	Percentage	2014-2023	Per election cycle	16.6 (effective institutions)
16	Quality of Government	Experimental		2	181	2021	University of Gothenburg	University of Gothenburg: The QoG Working	https://ec.europa.eu/regi	Index	2010-2021	Quinqu	16.6 (effective

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	Index							Paper Series 2021:4.	onal_policy/en/information/maps/quality_of_governance			enn ial	institutions)
16	Extract from QGI an indicator on corruption	Experime ntal		2	184	2021	University of Gothenburg	University of Gothenburg: The QoG Working Paper Series 2021:4.	https://ec.europa.eu/regional_policy/en/information/maps/quality_of_governance	Index	2010-2021	Qui nqu enn ial	16.5 (reduce corruption)
17	PCT co-patent applications that are done with foreign regions	Experime ntal	OECD countries and other European countries		174	2015	OECD	OECD, Regional database.	https://www.oecd.org/regional/regional-statistics/	Share	2015	–	17.6 (regional and internation al cooperatio n)
17	Individuals who used the internet for interaction with public authorities	Official	EU-27 plus others	1	184	2021	Eurostat, Regional Statistics	Eurostat, Regional statistics by NUTS classification.	https://ec.europa.eu/eurostat/databrowser/view/isoc_r_gov_i/default/map?lang=en	Percentage	2008-2021	Ann ual	17.8 (enabling technology)

| 17 | Official Development Assistance | Official | Romania | 1 | 23 | 2022 | Ministry of Development, Public Works and Administration | Ministry of Development, Public Works and Administration, General Direction for Fiscal Policies and Local Budgets | http://www.dpfbl.mdrap.ro/sit_ven_si_chelt_uat.html | number | 1999-2022 | Annual | 17.2 (development assistance commitments) |

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