

ASPECTS REGARDING THE CONTRIBUTION OF GDP FROM THE PRIMARY SECTOR OF THE MAIN REGIONS TO THE TOTAL GDP OF ROMANIA

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***Abstract:** Agriculture, the forestry sector and fishing are, by tradition, vital branches in the country's economy, both by the size of the agricultural area and the area occupied by forests and other lands, as well as by the percentage of the population employed in this sector. Regardless the level of development, this sector, through the resources it possesses, both natural and human, through its contribution to the formation of GDP and VAD, through its active participation in trade, clearly occupies a fundamental place. The contribution of the GDP share in this sector is very important in the formation of GDP at the national level, because it can tell us how developed the country is. Through this study, we followed the evolution of this indicator during the analyzed period at the level of the regions of our country, thus it was possible to observe the contribution of each region in the GDP from agriculture, forestry and fishing at the national level.*

***Key words:** gross domestic product, agriculture, evolution, dynamics, regions*

INTRODUCTION

Agriculture remains a cornerstone of economic development in many transition and developing economies, not only as a source of food and jobs, but also as an engine of structural transformation.

Agriculture is simultaneously one of the most vulnerable sectors to climate change and a significant contributor to greenhouse gas emissions. Transition economies face the dual challenge of adapting to extreme weather events, land degradation and water stress, while mitigating emissions through sustainable practices [15].

Practicing smart farming would lead to increased productivity and reduced waste. In emerging economies, digitalized agriculture can contribute to the integration of small farmers into value chains and better access to markets [18].

Digitization of agriculture has the potential to directly influence GDP through increased productivity and efficiency [17].

Transition/developing economies must find the balance between intensifying production and protecting natural resources. Adaptation involves investments in green technologies, efficient irrigation, climate-resilient crops, and risk management policies [17].

For member states or those applying for accession, it is known that the CAP plays a decisive role in the modernisation of agriculture. EU subsidies and funds support investments in technology, rural infrastructure and sustainable practices [18].

Regardless of the level of development of society, land has been and remains the main means of production in agriculture and the main object of value available to agricultural producers.

In agriculture, land acts as the main means of production, which means that the practice of agriculture cannot be conceived without its existence and the results obtained will always be closely linked to the organization, use and rational management of the land fund [3].

The land fund is made up of all the areas occupied by the different categories of use that belong to a certain administrative-territorial unit, be it an agricultural holding, a commercial company, a county, a commune or a locality [2].

It is known that the results of economic activity are materialized in material goods and services. These can be measured using economic indicators. The evaluation of the results of the activity of economic agents and the national economy as a whole using economic indicators is of particular importance [1].

Thus, by economic indicator we understand the quantitative expression of the results of human activity, presented in physical (natural) and value (monetary) units.

In the statistics of countries with a market economy, at the microeconomic level, two groups of final indicators are calculated and used: the domestic product and the national product [6].

The domestic product is calculated as gross domestic product (GDP) and net domestic product (NPD), and the national product as gross national product (GNP) and net national product (NNP). The gross domestic product – GDP represents the monetary expression of the final production of goods and services created during a period in a country and is calculated as the difference between the total value of goods and services created and the value of goods and services consumed in their production, called intermediate consumption. This indicator expresses the added value or the newly created value during a year [2,4].

MATERIALS AND METHODS

To carry out this work, the authors have documented in order to be able to analyze this macroeconomic indicator at the level of the regions of our country. The authors have used as a methodology, for the preparation of this work, the consultation and collection of data from national statistics, data that have been synthesized, centralized and processed, interpreted in graphic form, following which the authors will be able to highlight a series of conclusions [8,9,10].

In addition, the authors have consulted the specialized literature and studies of this macroeconomic indicator, in order to present the evolution of the main sector in the 8 development regions during the analyzed period [2,5,7].

RESEARCH RESULTS

At the beginning of the transition stage, it is known that the share of agriculture in GDP is usually significantly higher than in developed economies, sometimes reaching values of over 15–20%.

This situation reflects the high dependence of the population on the rural environment and agricultural production, but also the low level of diversification of the economy. As the processes of industrialization and modernization advance, the share of agriculture in GDP gradually decreases, even if the sector retains its social and strategic importance [17].

Agriculture is a sector that currently contributes only 4-5% to Romania's GDP. It could make a more substantial contribution in the coming years if we make the transition to agro-industry, digitalization and sustainability [11].

The percentage is decreasing, but it is not a negative aspect – it indicates that our economy has developed and that we are no longer an agrarian state.

Romanian agriculture has taken important steps towards modernization in recent years, with the absorption of European funds in agribusiness projects being the main driver of this evolution. The role of this sector cannot be taken over by any other activity in the economy because it provides the raw material necessary for the relaunch of other industrial branches [14].

Today, the Romanian farmer is faced with challenges raised by both the regional and international context, as well as climate change and the new regulations introduced in

the field at European level. The area of arable land places us among the top agricultural areas in Europe; plant production was worth 14.5 billion euros in 2022, and animal production was worth 7.1 billion euros [9].

Compared to the provisional version, in the semi-definitive version, GDP - in nominal terms - estimated for 2023 is 0.1% lower [16].

Table 1.**GDP situation in Romania, 2023**

	Provisional data	Semi-final data	Differences (+/-)
Millions of RON current prices	1605591.1	1604554.0	-1037.1
GDP dynamics - in % compared to 2022	102.1	102.4	0.3
GDP deflator - in % compared to 2022	112.2	112.8	0.6

Source: Authors' processing according to Institutul National de Statistica [9]

From the point of view of the formation of the gross domestic product, the changes that occurred in the semi-definitive version, compared to the provisional one, both in terms of dynamics and deflators in the analyzed branch of activity, are presented in the following table. [7]

Table 2.**Evolution of the analyzed sector, 2023**

	Dynamics - in % compared to 2022		Deflator - in % compared to 2022	
	Provisional data	Semi-definitive data	Provisional data	Semi-definitive data
Agriculture, forestry and fishing	110.2	109.6	107.8	107.1

Source: Authors' processing according to Institutul National de Statistica [9]

In 2023, more important changes in the contribution to GDP growth, between the two estimates, were recorded: - Agriculture, forestry and fishing did not record changes in terms of contribution to GDP growth between the two estimates (+0.4%), and the volume of activity decreased by -0.6 percentage points (from 110.2% to 109.6%) [9,16].

Table 3.**Contribution of the analyzed sector in the evolution and growth of GDP, 2023**

	Contribution to GDP evolution - %		Contribution to GDP growth - %	
	Provisional data	Semi-definitive data	Provisional data	Semi-definitive data
Agriculture, forestry and fishing	3.9	3.9	0.4	0.4

Source: Authors' processing according to Institutul National de Statistica [9]

A very important macroeconomic indicator that must be analyzed is the share of agriculture, forestry and fishing in the formation of GDP at the national level. This macroeconomic indicator is calculated as the ratio between the gross domestic product (GDP) of the branch we are analyzing, that is, in our case agriculture, forestry and fishing, and the total GDP at the national level, all multiplied by 100 [3].

The estimated total gross domestic product for the year 2023 – semi-definitive data was 1604554.0 million lei current prices, increasing – in real terms – by 2.4% compared to 2022. In the following table we will present the evolution in the period 2014-2023 of the total GDP at the country level, its evolution in the primary sector, but also the evolution of the share of this sector in the GDP at the national level [15].

Table 4.

Share of agriculture, forestry and fishing in total GDP

- million RON -

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*
Total GDP	668143.6	712658.5	762341.8	856726.6	951728.5	1058190.3	1066780.5	1189089.8	1401345.4	1604554.0
GDP from agriculture, forestry and fishing	33099.7	31536.9	32282.7	37802.1	43137.1	45855	43478.1	54912.5	52978.4	62212.5
Share of agriculture, forestry and fishing (%)	4.95	4.42	4.23	4.41	4.53	4.33	4.07	4.61	3.78	3.87

Source: Tempo online [10]

*Partial data

The results obtained after calculating this indicator highlight the degree of development of a country. As can be seen from Figure 1, both the evolution of total GDP and the evolution of GDP in the primary sector have recorded an upward trend in the years presented.

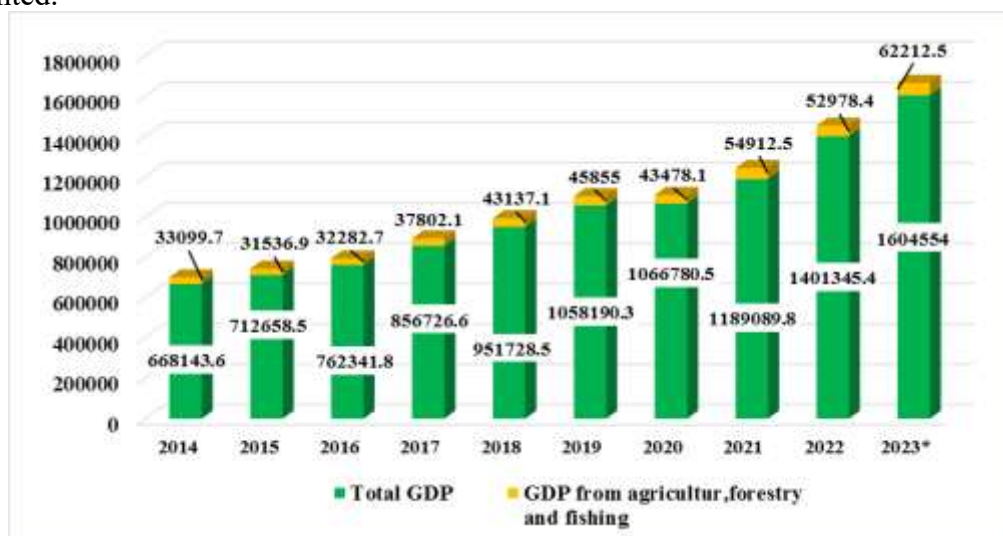


Figure 1. Evolution of total GDP and primary sector GDP in Romania (million RON)

Source: Authors' own processing

Even though the national GDP and the GDP of the main sector have registered visible increases in the years studied, when it comes to the share of this sector in the national GDP, the situation is different. The evolution of the share of the primary sector is highlighted in Figure 2.

As can be seen, it has registered oscillations during the period under study, but starting with 2022, a more visible decrease is noted.

Depending on the percentage obtained after calculating the indicator, three situations can be distinguished, namely:

- If the share of the analyzed sector (agriculture, forestry and fishing) has values between 3-4%, the country is developed;
- If the share of the analyzed sector has values between 5-15%, the country is moderately developed;
- If the share of the analyzed sector exceeds the value of 15%, the country is developing [3,6].

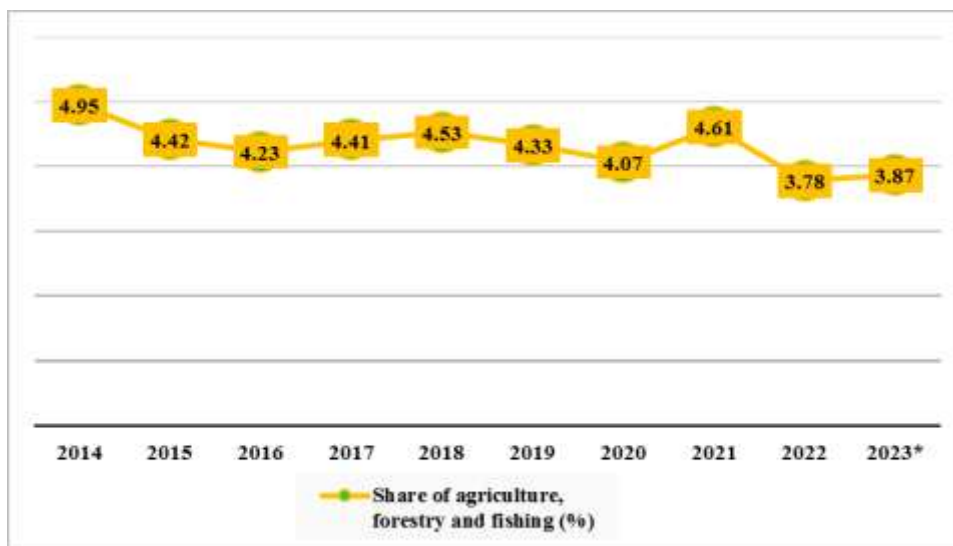


Figure 2. Evolution of the share of agriculture, forestry and fishing in total GDP

Source: Authors' own processing

Development regions are eight statistical units, without legal personality, created in 1998 by the association of county councils in Romania to coordinate the regional development necessary for Romania to join the European Union [12].

These regions are not administrative-territorial units, they are administrative areas that provide a framework for the implementation and evaluation of regional development policy, as well as the collection of specific statistical data, in accordance with the European regulations issued by EUROSTAT for the second level of territorial classification NUTS 2, existing in the EU[13].

The following figure highlights the main development regions at the level of our country.

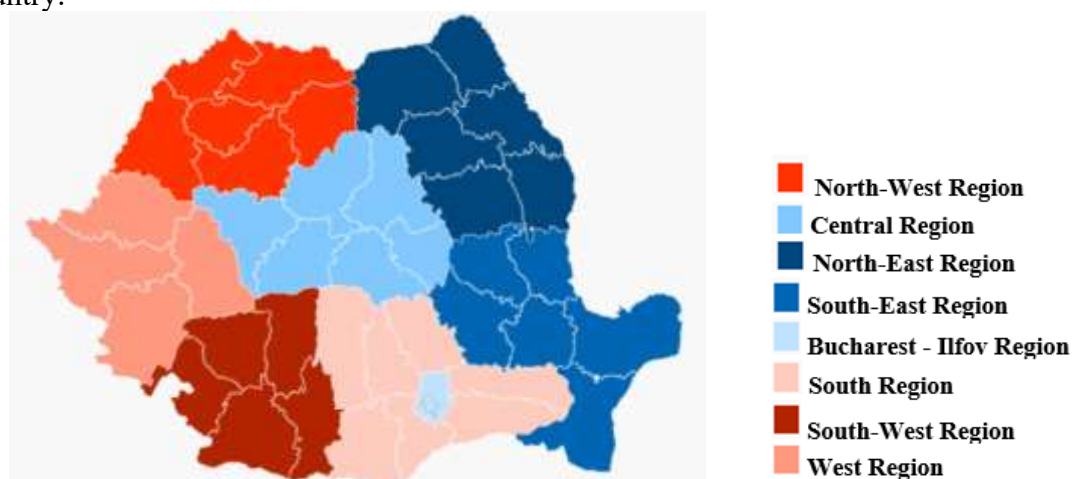


Figure 3. Distribution of development regions in Romania

Source: Authors' own processing

The regions, as can be seen, have different sizes and different predominant sectors. The smallest region in terms of area is the Bucharest-Ilfov Region (1,821 km²), and the largest is the North-East Region (36,850 km²) [13].

Given this aspect, it is obvious that the size of the GDP from the primary sector in these regions in the formation of the total GDP at the country level is also variable. Thus, Table 5 details both at national and regional level the variation of the GDP in the analyzed sector during the period 2014-2022.

Table 5.

GDP contribution in the analyzed sector at regional level (mil RON)

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Agriculture, forestry and fishing TOTAL	33099.7	31536.9	32282.7	37802.1	43137.1	45855	43478.1	54912.5	52978.4
North-West Region	3975.9	3742.7	3784.7	4248.4	4949.5	5262.9	5651	5967.8	5640.8
Central Region	4134.2	3829.2	3791.3	4121.3	4776.6	5101.9	5644.8	6310.4	6296.7
North-East Region	5807.3	5328.1	5241.9	6089.8	7221.6	7353.4	7642.4	9474.4	8592.3
South-East Region	5490.4	5445.1	5706.1	6756.8	7451.3	7192.8	5557.7	9871.8	8033
Bucharest – Ilfov Region	501.5	489.9	827.7	1097.1	1387.1	1810.1	1895.8	1847.9	1714.8
South Region	5984.5	6022.5	5947	6941.5	7606.8	8063.7	6965.7	10019.9	11347.3
South-West Region	3637	3482.9	3483.6	4592	5016.8	5382.9	5387.9	6358.4	6299.3
West Region	3568.9	3196.5	3500.4	3955.2	4727.4	5687.3	4732.8	5061.9	5054.2

Source: Authors' own processing after Tempo online [10]

To better highlight the data presented in the table above, we have also created a graphic representation for better visibility of the evolution of the analyzed indicator at the level of the main development regions. (Figure 4.)

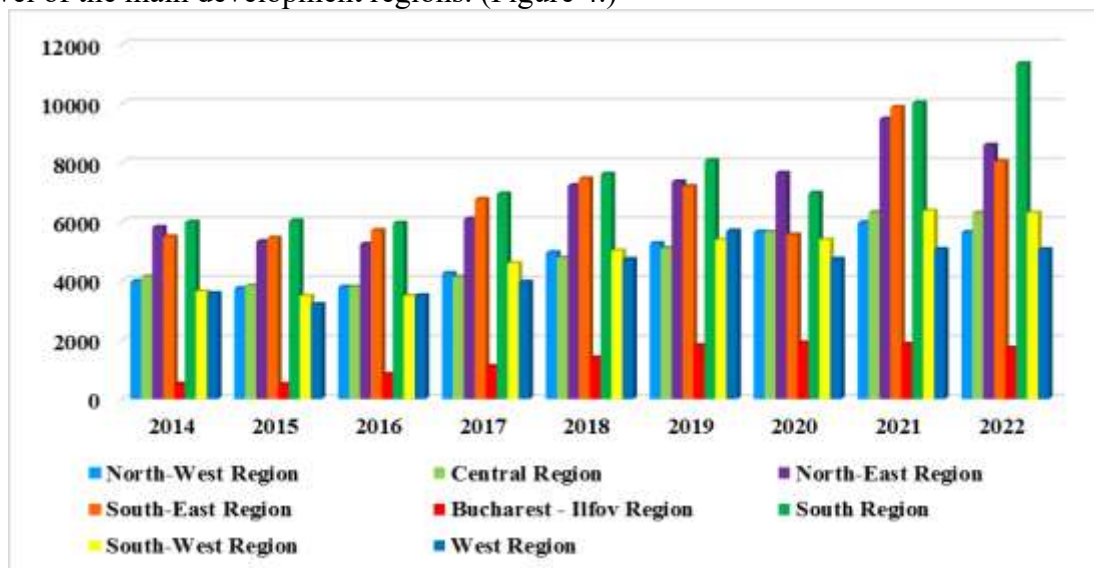


Figure 4. Variation of GDP in the main sector by development regions

Source: Authors' own processing

Following the collected and centralized data, we were able to calculate the share of the main sector in the total GDP of the same sector in each development region.

The data are centralized in Table 6 for the analyzed period 2014-2022. For better visibility, the data are also represented graphically in Figure 5.

Table 6.
The evolution of the main sector's share in the main development regions (%)
 -mil RON-

	2014	2015	2016	2017	2018	2019	2020	2021	2022
North-West Region	12.01	11.86	11.72	11.23	11.47	11.47	12.99	10.86	10.64
Central Region	12.49	12.14	11.74	10.9	11.07	11.12	12.98	11.49	11.88
North-East Region	17.54	16.89	16.23	16.10	16.74	16.03	17.57	17.25	16.21
South-East Region	16.58	17.26	17.67	17.87	17.27	15.68	12.78	17.97	15.16
Bucharest - Ilfov Region	1.51	1.55	2.56	2.90	3.21	3.94	4.36	3.36	3.23
South Region	18.08	19.09	18.42	18.36	17.63	17.58	16.02	18.24	21.41
South-West Region	10.98	11.04	10.79	12.14	11.32	11.73	12.39	11.57	11.89
West Region	10.78	10.05	10.84	10.46	10.95	12.40	10.88	9.21	9.54

Source: Authors' own processing

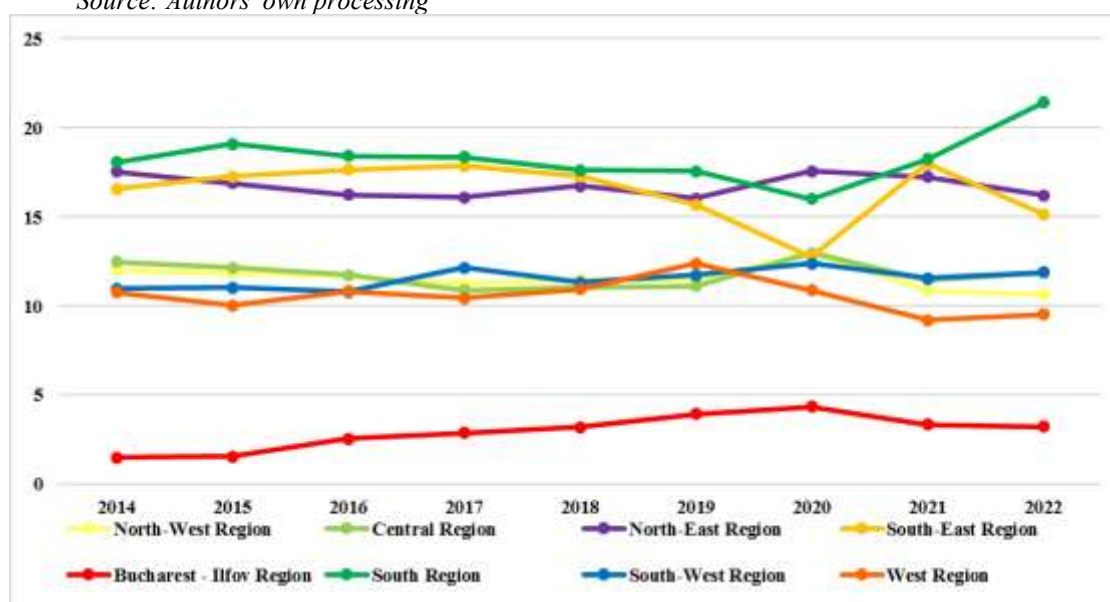


Figure 5. The evolution of the main sector's share in the main development regions (%)

Source: Authors' own processing

As can be seen from Figure 5, the region that contributes the smallest share to the total GDP of the main sector is the Bucharest-Ilfov Region. If in 2014 it recorded a contribution of 1.51%, in 2020 it had the highest contribution to the total GDP of the analyzed sector, then it recorded slight decreases reaching a contribution of 3.23% in 2022.

The region with the highest contribution is the South Region. Even though it has recorded some oscillations over time, in 2022 the share of the analyzed sector in the total GDP of this sector reached a maximum of 21.41% [7].

CONCLUSIONS

Following the data presented in the study, it is observed that the GDP situation in Romania in 2023 recorded a decrease of 1037.1 million RON at current prices. Regarding the dynamics of GDP and GDP deflator in the analyzed branch, slight increases are observed in 2023 compared to 2022.

The total GDP situation in Romania recorded significant increases in the analyzed years, reaching a value of 1604554.0 million RON in 2023. The same is observed when it comes to the GDP in the analyzed sector (agriculture, forestry and fishing), in the analyzed years an upward trend of this indicator is observed, reaching a value of 62212.5 million RON in 2023.

Following the calculations performed, we can highlight an important conclusion regarding the share of the analyzed sector in the total GDP at the national level, namely that the value of this share has decreased slightly since 2014, reaching 3.87% in 2023. Thus, we can say about Romania that it is a developed country, which does not depend exclusively on agriculture. Even if Romania is a developed country due to this aspect, from an economic point of view it is moderately developed, due to the decrease in the total active population and the population working in the main sector which exceeds 10.6%.

The Bucharest-Ilfov Region, following centralized data, has throughout the analyzed period the lowest contribution of the primary sector in total GDP agriculture, forestry and fishing at the country level, while the South Region has the highest contribution.

The West Region unfortunately does not occupy leading positions when it comes to this indicator. Although it has large areas of agricultural land, very good soil fertility, the evolution of the share of the analyzed sector in total GDP main sector recorded a decrease in the analyzed years, reaching 9.54% in 2022.

Development regions have different sizes, different soil types and fertility, agricultural areas of different sizes, different potential for various crops, this aspect makes the difference between the regions and their contribution to GDP formation.

Agriculture remains a central pillar of economies in transition and development. It is not only a traditional economic sector, but also a key area for food security, rural development, environmental protection and adaptation to global change. In the context of the CAP, digitalisation and climate change, the role of agriculture is being redefined: it is no longer just “producing food”, but also providing solutions for sustainability, resilience and competitiveness.

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