

## COMPARATIVE ANALYSIS OF INCOME AND EXPENDITURE TRENDS IN AGRICULTURAL HOUSEHOLDS IN ROMANIA

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### **Abstract**

*The study focused on the comparative analysis of income and expenditure trends in agricultural households in Romania. By using a comparative analytical framework, an investigation was conducted into how the evolution of income and expenses influences the economic condition of agricultural households. The primary aim of this research was to recognize fluctuations and patterns in the incomes of agricultural households, while examining how these factors influence farmers' purchasing choices. Through comparative analysis, we gained deeper insights into the expenditure structure in agricultural households across the development regions in Romania. Specialized articles from the main scientific databases were used for documentation. The research was conducted using official statistical data provided by the National Institute of Statistics for the period 2018-2022. The study's results highlighted that understanding the evolution of incomes and expenses in households, with a focus on the agricultural category, can enable the development of appropriate economic and social policies to support the overall well-being and economic development of Romania. Thus, it can be appreciated that the conducted research can provide valuable information in the analysis of sustainable development in the agricultural sector, for the improvement of farmers' quality of life and rural communities.*

**Key words:** agricultural households, income, expenditure, Romania

### **INTRODUCTION**

The national economy has undergone numerous transformations in recent years, and the well-being of households, especially farmers, has been a constant concern for specialized research. Romania's progress in achieving sustainable development goals is modest compared to the European average [3].

The purpose of this study was to provide a comprehensive perspective on the economic evolution of households and farmers, highlighting regional variations and significant changes in recent years.

The analysis of incomes, expenses, and their structure can have significant importance for various fields and can be used by multiple stakeholders, such as economists and researchers, the government and other public authorities, businesspeople, or the general population.

The research aimed to analyze the average incomes of households at the national and regional development level during the period 2018-2022. National income and expenditure

were taken into consideration, with a focus on the social category of farmers. In recent times, researchers have shown increasing concerns regarding the analysis of territorial inequalities concerning household incomes. Therefore, Zaman, Goschin, and Vasile (2013) noted that this aspect should be examined from a multidimensional perspective, transcending traditional regional analyses of economic disparities, with an enhanced focus on elements of social inclusion and exclusion [15].

In the research conducted by Lupu (2018), significant inequalities were observed in terms of access and utilization of resources, with various discrepancies existing between regions in Romania. Low-income households face challenges in adapting to social, political, and economic changes [4].

Household incomes are influenced by the evolution of international agri-food markets. Significant differences between the incomes of Romanian farmers and those of other countries may be attributed to disparities in adopted wage policies, as well as factors

related to the level and composition of the labor force [7].

Therefore, the research can provide a detailed perspective on regional inequalities and how they affect various social categories, especially farmers. Due to the limited job opportunities and relatively low incomes, a significant portion of rural residents are engaged in agricultural activities, primarily aimed at meeting the needs of their own households. This peculiarity of Romanian agriculture is not easily rectified, given that many farmers are elderly, and changing their field of activity is difficult and not necessarily desirable [1].

The differences between the average incomes and expenditures of agricultural households and those at the national level can be explained by the imbalance between the demand and supply of labor in agriculture, which can affect both the population and the financial performance of businesses in the sector, with implications for the national economy [5].

In an analysis conducted by Stanciu (2020) [14], it was found that there is a correlation between understanding the direction of buying habits and managing numerous economic challenges [5].

In the process of devising rural development strategies, it is essential to pay increased attention to human factors from various perspectives and in all their manifestations [2].

Among the numerous human factor analysis indicators are indicators related to average incomes, average expenditures, and the structure and proportion of household expenses.

In Romania, the operation of territorial administrative structures still does not entirely rely on the financial approach of the European Union (EU), which is a significant factor contributing to the dysfunction of regionalism at the national level [6].

In the process of formulating rural development strategies, it is essential to pay attention to human factors from as many perspectives as possible and in all their manifestations.

## MATERIALS AND METHODS

Information regarding the income and expenditures of the population was obtained by accessing official data provided by the National Institute of Statistics (NIS) in Romania for the period 2018-2022. Scientific open access articles from ResearchGate, Clarivate, SCOPUS, and Google Scholar databases were used for documentation. Legislative aspects were selected from information provided by national and European public institutions. The collected data was statistically processed and graphically represented. The obtained results were compared with information from specialized literature for validation.

## RESULTS AND DISCUSSIONS

The total average monthly household incomes are an essential component in assessing the economic health of the country and the well-being of its citizens (NIS, 2023a) These incomes represent the total amount of money entering a household on a monthly basis and serve as a crucial tool for quantifying the population's standard of living. Analyzing this financial information at the regional level can provide a detailed picture of economic inequalities in Romania. Significant differences exist in the incomes recorded among the development regions at the national level.

Table 1 presents information regarding the total average monthly household incomes for the development regions in Romania during the period 2018-2022.

Table 1. Monthly Average Incomes by Regions (RON)

	<b>Region</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
1	North-West	4,516	5,192	5,598	6,242	6,992
2	Central	4,426	5,041	5,705	5,944	6,766
3	West	4,172	4,840	4,986	5,434	6,430
4	South Muntenia	4,021	4,306	4,908	5,214	5,969
5	South-West Oltenia	3,638	4,210	4,563	5,041	5,754
6	South-East	3,706	4,257	4,506	4,775	5,440
7	North-East	3,414	3,860	3,971	4,553	5,145
	<b>National average</b>	<b>4,251</b>	<b>4,790</b>	<b>5,216</b>	<b>5,683</b>	<b>6,464</b>

Source: Authors' by using [8] (2023).

According to the presented data, a general trend of increasing average monthly household incomes can be observed in all regions and at the national level during the analyzed period, correlating with the national economic development.

At the national scale, average incomes saw a significant increase of 52% in 2022 compared to 2018. Notably, there's a notable variance in regional growth trends, with the highest observed in the Northwest Region (2,476 RON), and the lowest in the Northeast Region (1,367 RON). In concrete terms, the contrast between the highest and lowest-ranked regions in 2022 amounted to 1,847 RON, a figure higher than the monthly net minimum wage level recorded in 2022 (1,594 RON).

The Bucharest-Ilfov sector has the highest level of average monthly household incomes, while households in the Southeast and Northeast Regions have lower average incomes compared to other regions.

Table 2 showcases the average monthly household incomes across development regions. Throughout the analyzed period, a consistent upward trend akin to the national level is evident. Notably, the Northwest Region emerges with the highest average monthly incomes per household for farmers, while the Southwest Oltenia and Northeast Regions report the lowest average values. Of particular significance is the Northwest Region's outstanding performance, exhibiting a remarkable 90% growth, which stands as the highest at the national level.

Table 2. Average Monthly Incomes of Agricultural Households (RON)

	Region	2018	2019	2020	2021	2022
	<b>National average</b>	<b>2,770</b>	<b>2,937</b>	<b>3,151</b>	<b>3,505</b>	<b>4,352</b>
1	North-West	3,407	3,508	4,171	4,109	6,506
2	Central	2,374	3,310	3,970	4,132	6,065
3	West	4,732	3,423	4,255	4,719	5,655
4	South Muntenia	2,849	3,669	3,156	2,696	5,274
5	South-West Oltenia	3,335	2,961	3,271	3,847	4,744
6	South-East	2,395	2,876	2,907	3,149	3,480
7	North-East	2,151	2,182	2,304	2,872	2,621

Source: Authors, by using [8] (2023).

The Central and South-Muntenia regions have recorded significant increases in farmers' incomes, displaying positive economic

dynamics. There are significant differences in farmers' incomes across various regions. The North-West Region surpasses the national average. In terms of overall income, the South-West Oltenia Region ranks fourth nationally, but in terms of agricultural household incomes, it is at the bottom of the ranking. Although, overall, during the analyzed period, average incomes in the social category of farmers are lower than the national household incomes, their growth is more accelerated. Consequently, the increase in average household incomes at the national level from 2018 to 2022 is 52.06%, which is 5.19% less than the growth observed in rural areas.

This trend may indicate a positive dynamic in farmers' incomes but also a continuance of inequalities in income between social categories and regions. By comparing the growth in farmers' incomes with the national income growth, the effectiveness of existing agricultural policies can be evaluated. If farmers' incomes are increasing more rapidly than those at the national level, it could be an indicator of the success of agricultural sector support policies. Significant differences in household income growth may suggest the need for special strategies to be applied in regions with slower growth to reduce regional disparities. Economic development in the agricultural sector can influence the well-being and quality of life in rural areas.

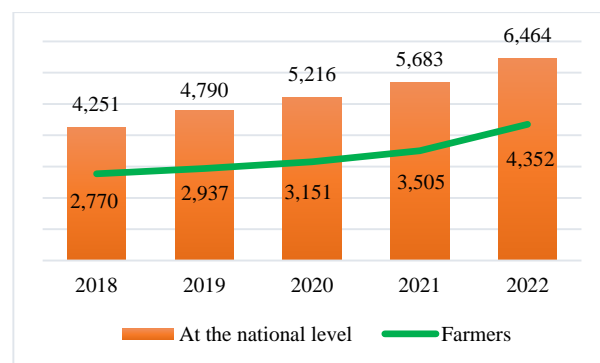


Fig. 1. Evolution of Average Total Incomes  
 Source: Authors, by using [8] (2023).

In Figure 1, a comparison between the evolution of average total incomes of farmers and those at the national level during the period 2018-2022 can be observed. In the year 2018, at the national level, average total

incomes were significantly higher than those for farmers, with figures standing at 4,251 RON compared to 2,770 RON, respectively. Overall income averages across the nation, also saw a significant increase during the analyzed period (52.06%), reaching a value of 6,464 RON in 2022. The faster increase in incomes for farmers has led to a reduction in the difference compared to the national average, reflecting an overall improvement in the economic level.

Table 2 presents a comparison between household expenditures at the national level and those in the agricultural sector. Household expenditures can have a significant impact on the standard of living and savings. To assess the well-being and financial sustainability of a household, both incomes and expenditures must be quantified. By comparing income levels with expenditures, it can be determined whether households are able to cover their basic expenses and meet their long-term financial goals.

Table 3. Monthly Average Expenditures: National vs. Farmers

Region		2018	2019	2020	2021	2022
National average	All categories	3,667	4,092	4,372	4,876	5,611
	Farmers	2,532	2,752	2,822	3,190	4,025
North-West Central	All categories	4,048	4,542	4,725	5,371	6,157
	Farmers	3,199	3,349	3,494	3,868	5,929
West South Muntenia	All categories	3,758	4,245	4,704	4,925	5,765
	Farmers	3,262	2,974	3,265	3,112	5,135
South-West Oltenia South-East	All categories	3,090	3,508	3,526	4,083	4,588
	Farmers	2,255	2,768	2,666	2,922	3,199
North-East North-West	All categories	3,248	3,799	4,026	4,343	4,919
	Farmers	3,098	2,924	3,042	3,540	4,593
Central West	All categories	3,370	3,627	4,069	4,338	5,208
	Farmers	2,076	2,904	3,410	3,741	5,367
South Muntenia South-West Oltenia	All categories	3,173	3,616	3,847	4,295	4,993
	Farmers	2,110	2,068	2,122	2,758	2,553
South-East	All categories	3,643	4,128	4,214	4,573	5,254
	Farmers	2,640	2,379	2,832	2,375	4,514

Source: Authors' by using [9] (2023).

At the national level, during the analyzed period, the total average monthly household expenditures increased significantly, from 3,667 RON in 2018 to 5,611 RON in 2022. Agricultural households also experienced an expenditure growth from 2,532 RON (2018) to 4,025 RON (2022). The increase in expenditures is noticeable both at the national level and particularly for agricultural

households. There are significant differences in total average monthly expenditures among various development regions.

The Northwest Region records higher expenditures compared to other regions, while the Southwest Oltenia Region reports lower expenditures, especially for farmers. The Northwest Region registered the highest increase in expenditures for farmers during the analyzed period. Farmers, in general, have lower expenses than the national average, indicating a relatively lower standard of living or a prevalence of the subsistence system. However, there is a significant increase in the expenditures recorded by agricultural households during this period, indicating an improved financial situation or a reduction in production for own consumption. The increase in farmers' expenditures can be influenced by agricultural policies and government support.

Supplementing the analysis with data on expenditures for purchasing food products by main social categories, monthly averages per person, can provide a more detailed perspective on the economic situation and how households manage food expenses.

Figure 2 displays the evolution of expenditures for agri-food products by major social categories (RON), highlighting the average monthly amounts per person, throughout the period 2020-2022.

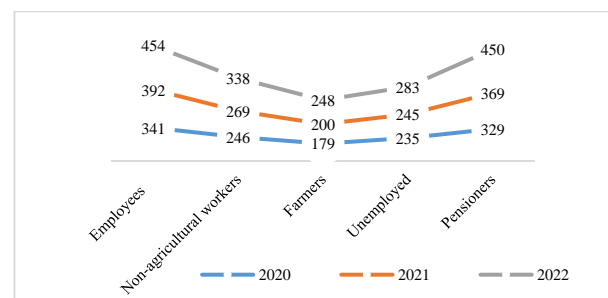


Fig. 2. Agri-Food Expenditures by Social Categories  
 Source: Authors', by using [10] (2023).

Expenditures on agri-food products per person have increased for all social categories, which can be linked to rising incomes and a higher standard of living for Romanians during the analyzed period. This increase may indicate that the population has additional financial means, allowing them to purchase a wider

range of higher-quality food products and, practically, to increase the amounts allocated, given the rising prices of agri-food products. According to the data presented in Figure 2, it is observed that farmers allocate a smaller sum of money for the purchase of agri-food products compared to other categories.

This observation can be approached from various perspectives. Economically, farmers may face financial constraints, experience income fluctuations depending on the season, and largely depend on crop performance. Socially, farmers may have dietary habits or preferences that result in lower expenses for agri-food products. Many agricultural households in Romania practice subsistence farming, benefit from food resources from their own production, and have a smaller budget for expenses in this category. The allocation of small amounts of money by farmers for agri-food products can also indicate that they prioritize financial resources differently than other categories.

The structure of agri-food expenditures by social categories correlates with the proportion of expenditures on product and service categories.

In Figure 3, the proportion of total expenditures allocated at the national perspective is illustrated, and Figure 4 displays the distribution of these expenditures among farmers, specifically for the acquisition of agricultural-food products and non-alcoholic drinks, for which farmers allocate approximately 44%. The percentage allocated among farmers is higher than the national average (34%), but nevertheless, the actual amounts allocated, calculated based on these percentages, are lower.

Additional data analysis and comparisons between the percentages of product and service categories provide insights into how the Romanian population manages expenditures and how they fit into a broader context of life and business.

The configuration of overall household spending across the country for the year 2022 is depicted. This information at the countrywide scale offer an insight into the priorities and preferences of Romanian households' expenditures in the last year of

the analyzed period. Most of the expenditure is directed towards basic needs, such as food and housing, which may indicate that a significant portion of the population is facing economic difficulties.

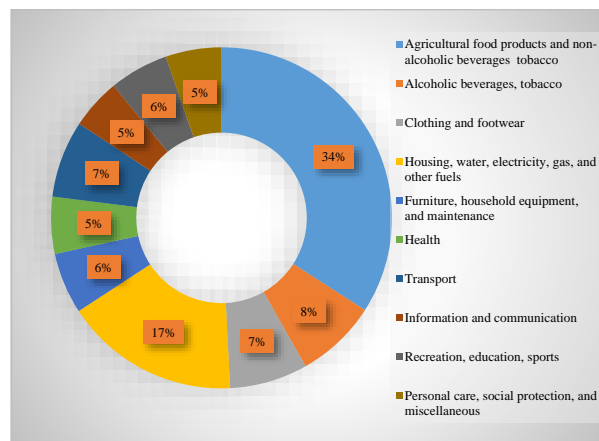


Fig. 3. Expenditure Distribution at the National Level  
 Source: Authors' by using [11] (2023).

Agri-food items and non-alcoholic drinks account for a substantial segment (34.1%) of household spending across the nation, underscoring the pivotal role that food plays within their financial planning.

Spending on living quarters: electricity, gas, water services, and additional fuels represents 16.6%. Nationwide, the sum of these primary categories surpasses 50% of the total outlays, command a substantial share of the budget, leaving a smaller proportion for other needs. Expenditures on the purchase of alcoholic beverages and tobacco account for 7.7%, reflecting a higher inclination of households towards these products compared to even the amounts allocated for health, which represent a smaller share, at only 5.4%.

Another interesting aspect is that only 4.8% of the household expenditure budget is allocated to resources for technology, information, and communication. This may indicate an increased need for education and awareness of the benefits of these products and services. In the lower part of the ranking are expenses related to recreation, education, sports, personal care, social protection, and various other services.

The structure of total expenditures, at the national level, is influenced by several factors such as income levels, cost of living, cultural habits, and individual preferences.



Government policies, including subsidies for certain categories or taxes, can influence how households allocate their budgets. These policies can encourage or discourage certain types of expenditures.

By comparing the expenditure structure in agricultural households with that at the national level, differences in how farmers allocate their financial resources can be observed (Figure 4).

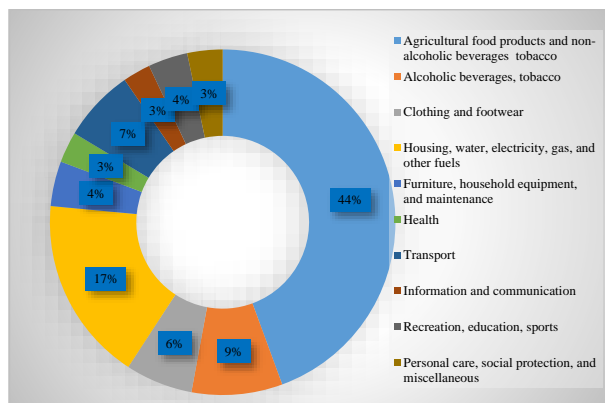


Fig. 4. Distribution of Expenditures in Agricultural Households  
 Source: Authors' by using [11] (2023).

According to the data, it can be observed that the needs of farmers can be influenced by the specific requirements of agricultural activities. These include the purchase of products for personal consumption, along with the requirement for investments in farming machinery and technological advancements.

In relation to costs for housing and services, this specific sector of farmers sets aside 17.3% of their overall budget. The variation compared to the national benchmark could be associated with the specific housing needs in rural areas. Higher costs may be due to factors such as limited access to services and infrastructure.

Farmers spend 8.5% of their budget on alcoholic beverages and tobacco. Regarding health, they allocate a smaller percentage of 2.9% of their budget, compared to the national average of 5.4%. This situation may be determined by limited access to medical services in rural areas and may indicate a need to increase investments in this sector. Other expenditure categories have relatively similar proportions, with small differences between farmers' households and the national average.

The activities of farmers encourage consumer behavior directed towards domestic consumer goods and influence the distribution of total income. This aspect has also been analyzed by Silviu S., who has concluded that the development of the segment of domestically marketed products represents one of the most evident changes in consumer behavior and acquisitions at both the European and national levels [13].

It is useful to analyze and promote education and training programs for farmers to help them make more informed financial decisions and improve their agricultural practices to enhance the sustainability of these activities.

## CONCLUSIONS

During the period 2018-2022, a significant increase in average monthly household incomes was recorded both nationally and among farmers. The increase in national incomes was approximately 52%, while that of farmers was even higher at 57.25%, indicating an overall improvement in the financial situation. The analysis revealed significant differences among the development regions of Romania. The Northwest development region recorded the highest average monthly incomes, while the Southwest Oltenia had the lowest values. These differences reflect regional economic inequalities. The disparities between regions indicate the need for the development of equitable regional development tools to reduce economic inequalities and ensure balanced economic growth across the country. The Central and South-Muntenia regions experienced significant increases in incomes for agricultural households, signaling positive economic developments. Despite agricultural households earning below the national mean, their income growth rate exceeded that of the national standard average. An accelerated increase in household expenditures relative to income levels can suggest a convergence trend between available income and expenditure levels.

The high percentage of agri-food product expenditures out of total household income highlights the global issue of food waste and

loss. Increased consumption and higher food demand, coupled with inadequate consumer education and lack of information, result in one-third of global food production being wasted, while people worldwide face hunger and malnutrition [12].

Farmers play a significant role in the national economy, and the increase in their expenses can support rural development and the local economy. Economic and social policies must consider the needs of different social groups and regions to ensure economic development. Research results can serve as a basis for developing impact strategies to enhance economic growth and raise living standards. Additionally, they can contribute to reducing inequalities and ensuring balanced economic growth throughout the country.

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