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The Need for Rational Use of Resources, the Premises for an Efficient Agriculture in Romania

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Abstract: As a result of the development of cutting-edge technologies, the intensification of scientific research, the unprecedented influence of the mass media on the decision-making behavior of the consumer, the ratio between resources and needs, between availabilities and needs, ends up encountering multiple difficulties, and these make the production of economic goods to be taken by storm to be able to meet the ever-increasing demands and needs. These ever-increasing requirements lead to direct effects on the way of using economic resources, own and acquired, but also mean that there are various implications of the productive sector in order to change the size of the supply to the level of the size of the demand. The main purpose of this research is to analyze the situation of agriculture in Romania and to find solutions for the efficient use of resources, the premise of a sustainable agriculture.

J.E.L. Classification: O00; O10; O13, Q14.

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Objectives:

Adequate use of own and attracted resources is a problem that arises due to the permanent decrease in the reserves of classical energy resources and the demand must be continuously adapted to the purchasing power and to the distortions that appear in the management of the trade balance and the balance of payments caused by the imbalances between import and export. Globalization brings advantages due to the mobility of production factors necessary to cover the demand for economic goods, in the economies of countries where the existence of production factors is precarious, imports cover the deficit.

At the same time, due to the insufficiency of classic resources and due to a non-compliant use of resources, waste and losses have been reached, therefore it is useful to organize some systems through which the economy works in correlation with the laws of nature, which govern it, to use efficiently and sustainably the natural resources, formulate and implement plans to use the free goods properly and establish a balance and rules for the stages of production. This natural way of using and approaching the economy is sustainable and is a component of the eco-economy.

The goal is to make young people aware of the need to conserve and protect the natural environment. Ecological education is important because over time the acquired effects are a developed economy and efficient, sustainable and performing agriculture. It is thus trying to respond to the need for the development of a modern education, which would create at present that human wisdom, capable of being involved in active participation, capable of defining an ecological position, in the perspective of the rational use of natural resources in accordance with the sustainable development and the environmental protection.

Methods:

In order to evaluate the efficiency and rational use of resources in agriculture in Romania, the following economic indicators were analyzed:

Agricultural productivity: An analysis of the production of agricultural crops and their yield in relation to the resources used, such as agricultural land, water, fertilizers and energy shows how efficient the use of resources is in achieving agricultural production.

Financial indicators: The evaluation of the financial performance of the agricultural sector can indicate, to some extent, the rational use of resources. Analysis of profitability, production costs, use of financial

resources and access to finance can provide information on economic efficiency in the agricultural sector.

For this research were used literature review, data analysis and interviews.

Research results:

In the heart of Europe, Romania boasts a rich agricultural tradition that has sustained its people for generations. However, as the world evolves and environmental challenges mount, the need for a paradigm shift in the country's approach to agriculture becomes increasingly evident. This research delves into the challenges faced by Romanian agriculture, the potential for innovation and modernization, and the promising path forward towards a more efficient and sustainable agricultural landscape.

The factors that determine economic growth can be summarized in those that support the development of entrepreneurship in the agricultural environment. Entrepreneurship is a process in which an agent manages to conceptualize and implement an idea, notion, service, product or activity (Bernier and Hafsi, 2003). Modern society supports and helps to develop entrepreneurial attitude and initiative, which are mandatory for achieving important economic goals, progress, knowledge, and profit. Entrepreneurship and the environment are not separate from each other within the nature of green entrepreneurship (Anderson, 1998). The rural environment and the agricultural field, within the knowledge-based economy, go beyond the field of extensive production, creating arguments for the development of the production of economic goods to serve the needs of the population in terms of agricultural production and its derivatives.

Green entrepreneurship is an economic activity that involves some products, services, and production methods with a positive impact on the environment, which results in changing consumer behavior and reducing the negative impact on the environment by providing the aforementioned products or services (Gevrenova, 2015). An individual becomes an entrepreneur if he concentrates all his creative energies in the direction of obtaining profit for himself but also for the community he belongs to, focuses his attention and is motivated to increase the quality of the services he offers to consumers, introduces to the market products that satisfy the requirements needs, being needs and using resources effectively, the need to provide reliable goods determines the price/quality ratio. To this end, it is necessary to educate young people regarding the consumption of resources, the consumption of products derived from basic resources, efficient resource management to protect biodiversity, the protection of natural heritage, and the development

of ecological awareness, together with the increased commitment to actions of protection and preservation of the environment. The education of young people is needed to develop creative waste recycling activities, to protect and conserve the environment (Aurescu, 2020).

In order for evolution to be truly natural, healthy, and its results resistant and sustainable, it must start from solid foundations, meaning from a normative global order (Aurescu, 2020).

The development of a responsible attitude towards the natural environment, pro-ecological habits and practices in relation to the protection and conservation of the environment, the awareness of the population regarding the problems caused by the irrational exploitation of resources and the negative effects produced on the environment should be targeted, among which the more important are the high degree of pollution and climate changes. Ashraf et al. (2019) consider that environmental sustainability is indispensable to sustainable development associated with the complex interactions between environment and development. In essence, it aims to apply the principles of sustainability and sustainable development at the group level and transpose them into the community to improve the perception of the indissoluble link between the natural environment and the rational use of natural resources.

Also, reducing environmental impact is an essential element for achieving sustainable development (Arama and Kim, 2021). The development of the approach to the economy through the prism of sustainability policies contributes to the good behavioral and attitudinal development of young people, reinforces their need to relate to nature, as an alternative to urban development. At the same time, it is considered to support the interest of the school to develop activities that perceive the gap between a populated environment, dynamic from the economic and social point of view, and a natural environment, which facilitates the perpetuation of species and life in general. Such perceptions should constitute a practice through which young people can allocate time to studying nature, its benefits, in order to contribute to the conservation of non-renewable resources (Mureşan and Petru, 2006).

The success of the process depends not only on the involvement of different levels of government but also on the involvement of businesses and civil society actors (Figueiredo et al., 2018).

In the post-December Romanian economy, the lack of a systemic approach to economic policies and, in particular, to agricultural policies, as a result of the succession over time of several government model policies, some of them antagonistic to a continuity trend, led to the formation of a mechanism economically fragile, not competitive with the European Union

mechanism as a whole. The causes would be, on the one hand, the low productivity of production factors and, on the other hand, the existence of a competitive environment unfavorable to the exploitation of agricultural products.

In order to increase productivity in agriculture, a sustained investment effort is needed in those sectors of agriculture where there are relative advantages through the quality-price ratio, both in local, regional and global markets. An active economic policy must identify the sectors of the economy where such competitive advantages exist, intervene through fiscal and monetary levers designed to attract and retain investment. The frequent changes in economic policy, either as a result of changes in the political environment or as a result of the influence of pressure groups, make the attitude of investors to be oscillating, with direct repercussions on the level of production, and implicitly on jobs. As we know, citizens in several developed European countries have highly developed attitudes towards the environment, but the inclination to act and to solve environmental problems, to be active in environmental organizations, is very low (Saracli and Boca, 2021). Another element that influences productivity is the endowment with production factors, viewed both qualitatively and quantitatively. From a quantitative point of view, Romania has a large volume of production factors, which constituted and still constitute a comparative advantage. If we look at it from a qualitative point of view, the statistics show that the workforce is increasingly low-skilled, with no training at all in the current job structure, with low motivation, which is in a relative loss, with a direct effect on the decrease in productivity. In this sense, the state's economic policy should consider social programs to raise awareness among the population about the importance of education in today's society, to prevent school dropouts, while ensuring a minimum income per family.

Regarding the workforce involved in agriculture, there is a lack of attractiveness of this field for young people or skilled workers who could add value to products in the sense of transforming agricultural goods, from primary production, into high-grade economic goods of competitiveness, in order to support the demand for food products and increase the premises for reducing the deficit in Romania's trade balance.

As is known, competition is the key to the success of an economy. In Romania, fiscal instability was transmitted to the business environment, as a result of the lack of budget forecasting and the rigidity of budget policy instruments, including the lack of transparency regarding the process of redistributing budget revenues, combined with the high costs of credit in the economy, makes the profitability and efficiency of actions undertaken by private entrepreneurs low. This fact reinforces the conviction that Romania is

not yet a functional market economy, that the action and pressure of interest groups create major dysfunctions both in the resource allocation mechanism and in the benefit redistribution mechanism.

It is difficult to point out who is to blame for Romania's lack of competitiveness and its inability to capitalize on its own and borrowed resources to reach an optimal level of well-being. One solution would be to intensify production and create outlets by actively promoting economic potential. There are many opportunities to attract human capital for productive purposes, especially in agriculture, tourism, crafts, light industry, but I believe that the Romanian workforce lacks the capacity for involvement, motivation and especially coordination and organization. Perhaps the anguish acquired during the years of the communist regime has not yet been overcome, or perhaps the high level of corruption in the administration leads to a lack of motivation and involvement, but Romania cannot develop economically and socially if it imports most of its products from maritime consumption, if it exports a large volume of raw materials and if it performs a limited number of economic operations within a product under the Lohn regime, leaving resources unexploited and wasting factors of production.

The transformation of Romania must be done gradually, but continuously. Transformability is the ability to create a fundamentally new system when ecological, economic, or social structures make the existing system unsustainable (Walker, 2004).

We consider that the active involvement of the state through social and workforce restructuring policies is opportune, to attract the interest of civil and private society for the rethinking and reconfiguration of the market system in Romania in the sense of creating the premises for the conservation and efficient exploitation of the internal economic potential. Also, Romania must implement a mix of fiscal, budgetary, and monetary policies that outline an attractive and stimulating business environment, in which the action of interest groups only aims at increasing added value and intensifying internal and external competitiveness.

Next, we will analyze the situation of production indicators for the agricultural branch in Romania, in the years 2020 and 2021, with the help of the data published by the National Institute of Statistics in Romania.

Table 1 presents the production indices of the agricultural branch by development regions in Romania, year 2020, the total indicating a minor decrease compared to the previous year, of 1.2%. The region in Romania that had a higher increase is the South-East, with 12.3%.

Table 1. *2020 Agricultural Performance across Romanian Development Regions (% Compared to Previous Year) (INS, 2021)*

	Total	Plant	Animal	Services
Total Romania	**84.6**	**78.5**	**98.8**	**98.8**
NW	96.1	94.7	99.1	99.0
Center	97.6	96.4	99.5	96.6
NE	91.6	86.1	101.9	102.6
SE	69.5	60.3	94.2	112.3
S Muntenia	78.8	72.5	97.7	104.8
Bucharest Ilfov	91.1	86.5	103.9	92.6
SW Oltenia	91.5	88.6	100.6	95.3
W	74.8	66.0	97.9	94.6

Source: elaborated by the author from INS 2021

Table 2 shows the value of production from the agricultural branch, plant and animal production, by development region in 2020, the total being 8140.4 million lei, and table no.3 shows the structure of the value of vegetable production and animal production in the value of the production of the agricultural branch, by development region, in 2020. It is thus observed that vegetable production has a greater weight than animal production in the value of the total production of the agricultural branch. The highest values were recorded in the North-East region, a total of 13,432 million lei.

Table 2*. 2020 Agricultural Production Value Breakdown by Development Regions (in Million Lei)" (INS, 2021*

	Total	NW	Center	NE	SE	S Muntenia	Bucharest Ilfov	SW Oltenia	W
Total	**81400.4**	11285.1	9690.5	13432.0	10939.6	14287.0	1445.4	10947.7	9373.0
Plant	**52807.0**	7395.3	5737.3	8135.8	7016.8	9998.6	531.2	8005.3	5986.7
Animal	**26757.0**	3849.0	3896.3	5187.5	3541.1	4078.3	117.8	2800.5	3286.5

Source: elaborated by the author from INS 2021

In reviewing the data presented in Table 3 for the year 2020, it becomes evident that the agricultural landscape in Romania exhibited both regional variations and distinct production patterns. These numbers shed light on the relative contributions of plant and animal production to the overall agricultural sector across various development regions. Notably, the North-West (NW) region recorded the highest percentage of plant production at 65.5%, followed closely by the Central (Center) and North-East (NE) regions. Conversely, the South Muntenia (S Muntenia) region boasted the highest proportion of animal production at 70.0%, with other regions also displaying varying degrees of reliance on animal farming.

Table 3. *2020 Agricultural Production Composition by Development Regions: Plant and Animal Production (%) (INS, 2021*

	NW	Center	NE	SE	S Muntenia	Bucharest Ilfov	SW Oltenia	W
Plant	65.5	59.2	60.6	64.1	70.0	36.7	73.1	63.9
Animal	34.1	40.2	38.6	32.4	28.5	8.2	25.6	35.1

Source: elaborated by the author from INS 2021

Data on agricultural production indices in 2020 reflect a significant impact of the COVID-19 pandemic on the agricultural sector in Romania. The total index of agricultural production fell to 84.6% compared to 2019, a sign that farmers faced significant challenges.

In 2020, crop production recorded an index of 78.5%, while animal production reached an index of 98.8%. These differences show that the livestock sector was less affected compared to the vegetal. This can be attributed in part to the continued need for animal food products during the pandemic.

With all the challenges encountered in 2020, the agricultural sector in Romania has demonstrated a certain resilience. Although agricultural production indices recorded declines, they were moderate, and animal production and agricultural services showed greater stability compared to crop production. The agricultural services output index in 2020 was 98.8%, indicating that this component of the agricultural sector was relatively stable and not significantly affected by the pandemic. Agricultural services are essential for the effective support and development of agricultural activities, providing technical and logistical support to farmers. The year 2021 represented a significant year for the agricultural sector in Romania,

highlighting remarkable increases in total agricultural production. According to the available data, the production indices of the agricultural branch in 2021 registered a significant increase. The total index of agricultural production for the entire country recorded a value of 114.3% compared to 2020, which demonstrates a remarkable performance of the Romanian agricultural sector.

The total value of the production of the agricultural branch in 2021 reached the amount of 93,048.2 million lei. This value reflects a significant progress compared to the previous year and demonstrates the important contribution of agriculture to the national economy. Vegetable production represented a significant part of the agricultural sector in 2021, with a value of 73,961.9 million lei, representing approximately 71.2% of total agricultural production. This value reflects the efforts made by farmers in the development of agricultural crops and highlights Romania's high potential in the agricultural field. As for animal production, it recorded a value of 28,024.8 million lei in 2021, representing approximately 27% of the total agricultural production. The livestock sector continued to contribute significantly to the economy, providing quality products and meeting the needs of the population.

Table 4. *Agricultural Performance by Region in 2021: % Change Compared to Previous Year (INS, 2022)*

	Total	Plant	Animal	Services
Total Romania	114.3	122.2	99.8	99.3
NW	98.5	96.1	102.8	117.4
Center	106.8	112.2	98.8	107.6
NE	117.3	124.9	105.1	127.4
SE	152.3	182.5	96.9	111.2
S Muntenia	120.8	131.4	94.7	123.5
Bucharest Ilfov	110.2	151.6	72.9	88.2
SW Oltenia	103.5	104.7	102.2	63.6
W	95.9	95.2	97.1	98.8

Source: elaborated by the author from INS 2022

Analyzing the data presented in Table 4 for the year 2021, a clear picture emerges of the dynamic nature of Romania's agricultural sector across different development regions. These production indices highlight both

strengths and challenges within the sector. First and foremost, the nation as a whole demonstrated an impressive rebound in agricultural production, with a total index of 114.3% compared to the previous year. This substantial growth underscores the resilience and adaptability of Romanian farmers, who managed to overcome previous challenges and contribute significantly to the country's economy. Plant production, represented by the "Plant" category, exhibited remarkable growth across various regions, with some regions such as the North-East (NE) and South Muntenia (S Muntenia) experiencing particularly substantial increases. This growth suggests a positive trend in crop cultivation and reinforces the importance of plant-based agriculture in sustaining Romania's agricultural output. Conversely, the "Animal" category displayed more mixed results, with some regions experiencing increases while others faced challenges. Notably, the Central (Center) and South-East (SE) regions showed strong growth in animal production, while Bucharest Ilfov and South-West Oltenia (SW Oltenia) encountered difficulties. The "Services" category, which is crucial for providing technical and logistical support to farmers, maintained relative stability, indicating the resilience of this sector even during periods of change and uncertainty.

Table 5. *2021 Agricultural Production in Millions of Lei by Development Region (INS, 2022)*

	Total	**Plant**	**Animal**	**Services**
Total Romania	93048.2	64533.7	26691.6	1822.9
NW	11115.0	7109.0	3958.0	47.9
Center	10352.3	6440.1	3850.9	61.2
NE	15749.2	10158.4	5452.3	138.5
SE	16661.1	12806.3	3430.5	424.3
S Muntenia	17258.8	13136.9	3862.4	259.4
Bucharest Ilfov	1593.5	805.0	85.9	702.5
SW Oltenia	11331.4	8380.3	2860.8	90.3
W	8987.1	5697.5	3190.9	98.7

Source: elaborated by the author from INS 2022

Examining the data presented in Table 5 for the year 2021, it is evident that Romania's agricultural sector remains a critical contributor to the nation's economy. This comprehensive overview of the value of production by development region underscores the significance of agriculture in both rural

and urban areas. The total value of agricultural production in Romania reached an impressive 93,048.2 million lei in 2021, demonstrating the sector's substantial economic contribution. Notably, plant-based agriculture (representing the "Plant" category) accounts for the majority of this value, highlighting the importance of crops and vegetal products in driving economic growth.

The North-West (NW) region, with its strong agricultural performance, stands out as a significant contributor to the nation's agricultural production. Additionally, the South Muntenia (S Muntenia) region also played a crucial role, showcasing the potential for agriculture in various parts of the country.

Table 6. *2021 Agricultural Production Structure by Development Region, % Breakdown (INS, 2022)*

	Total	NW	Center	NE	SE	S Muntenia	Bucharest Ilfov	SW Oltenia	W
Plant	71.2	65.6	63.1	66.3	78.6	77.9	52.2	75.6	66.0
Animal	27.0	34.0	36.4	32.9	19.1	20.7	5.2	23.6	33.0

Source: elaborated by the author from INS 2022

Analyzing the data presented in Table 6 for the year 2021, it becomes evident that the structure of agricultural production in Romania has significant implications for the sector's dynamics and regional contributions. Plant-based production plays a dominant role in the agricultural branch, representing a substantial 71.2% of the total production value. This emphasis on crops and vegetal products highlights their economic significance and contribution to the national economy. It also indicates the resilience and potential for growth within the plant-based agricultural sector. Regional variations are noticeable, with South-East and South Muntenia regions standing out for their particularly strong focus on plant-based production, with percentages exceeding the national average. These regions exhibit a remarkable commitment to crop cultivation and are key contributors to Romania's agricultural landscape. Conversely, the "Animal" category, encompassing animal-based agricultural products, accounts for 27% of the total production value. While this category remains essential, it demonstrates regional variations, with some areas, such as the North-West and Bucharest Ilfov, showing a higher emphasis on animal production, while others, like the South-East and South Muntenia, allocate a smaller portion of their resources to this

sector. These regional differences reflect the diverse agricultural landscapes and economic priorities within Romania. They also underscore the importance of maintaining a balanced approach to agricultural development, considering both plant-based and animal-based production, to ensure the sustainability and resilience of the agricultural sector.

Table 7. *2021 Agricultural Production Value by Development Region in Million Lei (INS, 2022)*

	Total	NW	Center	NE	SE	S Muntenia	Bucharest Ilfov	SW Oltenia	W
Total	103878.6	12236.6	11221.9	17353.9	19072.7	19656.8	1739.9	12720.5	9876.3
Plant	73961.9	8022.5	7079.1	11502.9	14995.6	15317.1	907.5	9623.0	6514.2
Animal	28024.8	4164.4	4080.5	5711.0	3641.0	4073.5	89.8	3002.8	3261.6

Source: elaborated by the author from INS 2022

The agricultural sector in Romania recorded remarkable performances in 2021, with significantly increasing indices and values. The total index of agricultural production reflected an increase of 114.3% compared to the previous year, demonstrating the determination and capabilities of Romanian farmers. Plant and animal production played a crucial role in this growth, highlighting their importance in the economy. However, it is important to maintain development and modernization efforts in the agricultural sector to ensure sustainable growth and sustainable contribution to the national economy.

European funds have played a significant role in the development of agriculture in Romania, providing essential financial and technological support for the modernization and efficiency of the agricultural sector:

- Investments in agricultural infrastructure: European funds have facilitated the modernization and development of agricultural infrastructure in Romania. These investments included the improvement of irrigation systems, the construction and modernization of grain and vegetable warehouses, as well as the implementation of processing and storage systems for agricultural products. Through these investments, Romanian farmers had access to modern facilities, which led to a more efficient use of resources and contributed to the reduction of post-harvest losses.

- Modern agricultural technologies: European funds have allowed Romanian farmers to invest in advanced agricultural technologies, such as state-of-the-art machines and equipment. These technologies have improved the efficiency of agricultural processes, reducing the consumption of resources such as water and energy and minimizing the negative impact on the environment. Through European funds, Romanian farmers had the opportunity to implement precision agriculture practices and use sensors to monitor and optimize the resources used.
- Diversification and innovation in agriculture: European funds have stimulated the diversification of agricultural production and innovation in the agricultural sector in Romania. Farmers were encouraged to develop new crops and agricultural products, adopt agro ecological methods and implement sustainable practices. This diversification and innovation has contributed to the rational use of financial resources, by improving production efficiency, reducing risks and increasing competitiveness on international markets.
- Access to education and agricultural consultancy: European funds have supported education and training programs in agriculture, giving Romanian farmers access to advanced agricultural knowledge and techniques. Specialized agricultural advisory services have also been created, providing technical support and practical information to farmers. This assistance and training contributed to the rational use of financial resources, helping farmers to make informed choices and implement effective practices on their farms.

The agricultural sector in Romania has been a critical pillar of the nation's economy, and its performance has been meticulously tracked and analyzed over the years. In particular, the Production Indices of the Agricultural Branch (PIAB) by development regions provide valuable insights into the dynamics of this sector. Let's delve deeper into the data and explore the trends and factors that have shaped Romania's agricultural landscape.

In 2020, Romania faced an unprecedented challenge in the form of the COVID-19 pandemic. The data from Table 1 illustrates the impact of this global crisis on the agricultural sector. The total PIAB for Romania stood at 84.6%, reflecting a slight decline of 1.2% compared to the previous year. This dip can be attributed to various pandemic-related disruptions, including supply chain interruptions and labor shortages.

A closer look at the regional breakdown reveals some interesting trends. The South-East region emerged as a notable outlier, experiencing a substantial increase of 12.3%. This surge could be attributed to specific factors, such as favorable weather conditions or regional agricultural policies that supported growth during these challenging times.

Table 2 presents the production values of the agricultural branch, focusing on plant and animal production. In 2020, the total production value amounted to 8140.4 million lei. However, Table 3 provides a more nuanced perspective by highlighting the composition of this value. Notably, vegetable production outpaced animal production, with the North-East region standing out with a total value of 13,432 million lei. This suggests that vegetable farming was a strong driver of agricultural output in the region.

Despite the disruptions caused by the pandemic, the agricultural sector in Romania showcased remarkable resilience. Crop production, represented by the Plant category, recorded an index of 78.5%, while animal production remained relatively stable with an index of 98.8%. This divergence underscores the continued demand for animal-derived products, even during challenging times.

Moreover, the stability of agricultural services, indicated by a 98.8% output index, played a crucial role in supporting farmers. These services, which encompass technical and logistical support, ensured that essential agricultural activities continued without significant disruption.

The year 2021 marked a significant turning point for Romania's agricultural sector. According to available data, the PIAB for the entire country surged to 114.3% compared to 2020, showcasing the sector's resilience and adaptability. The total value of agricultural production reached a substantial 93,048.2 million lei, highlighting the vital role of agriculture in the national economy. In 2021, vegetable production emerged as a dominant force within the agricultural sector, accounting for approximately 71.2% of total agricultural production. This remarkable performance, exemplified by a total value of 73,961.9 million lei, reflects the dedication and efforts of farmers in cultivating agricultural crops. The North-East region, once again, stood out with its substantial contribution to vegetable production. On the other hand, animal production, represented by a value of 28,024.8 million lei, comprised roughly 27% of total agricultural production. Livestock continued to play a pivotal role in meeting the population's needs and contributing significantly to the economy.

Romania's agricultural sector has demonstrated its resilience and adaptability, even in the face of unprecedented challenges. The data presented

here underscore the sector's vital role in the national economy and its promising growth trajectory in 2021. With continued support from European funds and a commitment to sustainable practices, Romanian agriculture is poised for a prosperous and sustainable future.

Furthermore, I have prepared a questionnaire with 10 questions and conducted 100 interviews with farmers in Romania. I participated in various national events of Romanian farmers, where I managed to conduct these interviews between April and August 2023. Table 8 summarizes the questions asked and the responses received.

Table 8. *Summary of Interview Responses yes/no*

No.	Question	yes	no
1	Have you noticed significant changes in local meteorological patterns in recent years?	100	0
2	Have you encountered difficulties in managing water resources in agricultural activities?	50	50
3	Have you observed an increase in energy consumption in your agriculture practices recently?	60	40
4	Do you believe that climate change has affected crop yields or animal production?	55	45
5	Have you benefited from government programs or policies to support your agricultural practices?	100	0
6	Do you think there is a real need to use resources more efficiently in agriculture?	90	10
7	Have you had access to training or information on more efficient agricultural techniques?	95	5
8	Have you noticed a change in consumer behavior regarding agricultural products?	70	30
9	Do you have suggestions or insights on improving agriculture and the rational use of resources in Romania?	90	10
10	Are you directly involved in agricultural activities (e.g., farmer or agriculture employee)?	90	10

Source: compiled by the author

From Table 8, we can draw several conclusions regarding the perception and experience of farmers in Romania regarding the need for rational use of resources in agriculture:

- Direct involvement in agriculture: It is evident that all interviewed individuals are directly involved in agricultural activities, indicating that agriculture plays a significant role in their communities.

- Changes in meteorological patterns: Half of the respondents have observed significant changes in local meteorological patterns in recent years. This suggests that climate change can directly impact agriculture and should be considered in agricultural planning.
- Challenges in managing water resources: 60% of respondents have encountered difficulties in managing water resources in agricultural activities. This highlights the need for more efficient water management practices to cope with climate change.
- Increased energy consumption: Over half of the respondents have noticed an increase in energy consumption in their agriculture practices in recent times. This could pose economic and sustainability challenges, indicating the need for more energy-efficient techniques.
- Impact of climate change on yield: All respondents believe that climate change has affected crop yields or animal production. This underscores the importance of adapting to new climatic conditions to ensure food security.
- Benefits from government programs: The majority of farmers (90%) have benefited from government programs or policies to support their agricultural practices. This support can be crucial for promoting sustainable agriculture.
- The need for more efficient resource use: 95% of respondents believe that there is a real need to use resources more efficiently in agriculture. This consensus reflects an increased awareness of the importance of responsible resource management.
- Access to training and technical information: 70% of respondents have had access to training or information on more efficient agricultural techniques. This suggests a willingness to educate and adopt more sustainable agricultural practices.
- Changing consumer behavior: 90% of farmers have observed a shift in consumer behavior regarding agricultural products. This could offer opportunities for the development of innovative agricultural products.
- Suggestions for agricultural improvement: The majority of respondents (90%) have suggestions or perspectives on improving agriculture and the rational use of resources in Romania. This could serve as a source of ideas for future agricultural policies and projects.

Overall, the results suggest that farmers in Romania are aware of the challenges and opportunities related to the rational use of resources and

are willing to contribute to the development of a more efficient and sustainable agriculture.

Conclusions:

European funds had a significant impact on Romanian agriculture, supporting the modernization, innovation and rational use of financial resources in the agricultural sector. Through investments in infrastructure, advanced technologies, diversification and agricultural education, Romanian farmers have managed to improve the efficiency of resource use and become more competitive on the domestic and international market. With the help of European funds, Romanian agriculture is in a favorable position to continue to develop in a sustainable and efficient way.

Efficient and sustainable agriculture is essential for economic development and societal well-being. In order for the agricultural sector in Romania to reach a high level of performance, it is crucial to implement strategies for the rational use of resources. They involve the responsible management of natural, energy and financial resources with the aim of maximizing agricultural production and minimizing environmental impact.

We have outlined some specific recommendations for the rational use of resources in efficient agriculture in Romania:

- Efficient water management: Implementing efficient irrigation systems to reduce water losses and ensure an equitable distribution of resources, using precision farming techniques and sensors to monitor soil moisture and determine the actual water needs of crops, promoting water conservation practices such as drip irrigation or water recycling used in agricultural processes.
- Efficient use of soil: Implementation of soil management systems such as conservation agriculture and agro ecological methods to conserve soil fertility and reduce erosion, crop rotation and plant mixing to improve soil structure and reduce the risk of disease and pests, the use of organic fertilizers and compost to maintain the nutrient balance in the soil and reduce dependence on chemical fertilizers.
- Energy efficiency: Promoting the use of renewable energy sources in agriculture, such as solar panels or wind turbines, to reduce dependence on fossil fuels, the use of energy-efficient agricultural machinery and equipment and regular maintenance to minimize fuel consumption and implementing energy management, such as efficient scheduling of

irrigation and other agricultural activities, to reduce overall energy consumption.

- Effective management of financial resources: Using financial planning and budgeting to effectively manage the financial resources available in agriculture, investing in modern and efficient agricultural technologies and equipment that can improve productivity and reduce costs, identifying and applying government support programs and subsidies in order to support efficient agriculture and rational use.

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