

## OPPORTUNITIES FOR THE DEVELOPMENT OF AGRICULTURAL FARMS IN NE REGION BY ATTRACTING EUROPEAN FUNDS

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### Abstract

The paper aims to present a synthesis of data from the literature on the situation of Romanian agriculture in the European context, emphasizing the concept of agricultural farm development by attracting European funds. The research aimed at the diagnostic analysis of the results obtained by agricultural farms and the impact of European funds in the context of integration into the European Union. It is found that, after Romania's accession to the European Union, the possibilities for the development of agricultural farms have increased, as a result of their advantage of accessing European funds, with a fairly large share of their non-reimbursement. In this context, the research started from the economic-financial analysis of the situation of agriculture in the North-East Development Region, according to which to proceed to adopt measures that will lead, first of all, to the increase of agricultural production and, in secondly, to make it more efficient by attracting European funds. The need to reorganize this sector according to European Union standards requires the adoption of a new model of planning, organization, motivation, coordination and control at the level of all its mechanisms. From the point of view of the measures offered in support of the European Union, it should also be mentioned that, atypically, for the EAFRD, it was not the aggressive media coverage that determined the placement of certain counties in the first positions, but rather the capital inflows that penetrated the last period in these counties, in conjunction, most likely with open management by the local authorities involved. Research methodology was based on the investigation of information from official documents, but also from technical-economic analysis, SWOT analysis and case studies. The results obtained through the research undertaken can be models for farmers to develop their agricultural activity and improve the technologies used, both in plant production and in animal husbandry.

**Key words:** tools, financing, agriculture, objectives, strategies

The integration of Romanian agriculture in the structures of the European Union was a difficult process, due to the dysfunctions faced by this economic sector, and which are maintained today, such as excessive fragmentation of property, predominance of subsistence and semi-subsistence farms, characterized by self-consumption. high and marginal links with the market, poor economic, social and ecological efficiency, high share of the rural population in the total population, extremely low income of agricultural producers, persistence of significant disparities in economic, social and infrastructural, between rural and rural areas. the urban one etc.

In this context, the accession of our country to the agrarian structures of the European Union required sustained efforts on economic, social, ecological, institutional and legislative levels, an important aspect being the integration in the European single agricultural market.

The modulation mechanism "seeks a better allocation (distribution) of Community support between market policy and rural development policy in order to meet Community requirements and concerns regarding the environment, food security and animal health and comfort. It was thus decided to reduce payments for large farms through a "modulation" mechanism and as a result the amounts in question will support rural financing. The modulation mechanism consists of cutting the amounts for a Member State by the end of 2012 (EC Regulation No 1782/2003)".

For the period 2007-2015, the MMF set six points with CAP expenditure (Conservation and Management of Natural Resources) which is the most important section of the EU budget (ranging from 43-51% of its total). In Romania, especially in the period 2010-2012, such an expense being the most important in EU national funding (over 60%).

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## MATERIAL AND METHOD

The methodological and scientific support in this paper was based on a series of direct and indirect documentation such as: observation, analysis (qualitative, quantitative, and historical), synthesis, comparison, systemic, monographic, statistical, figures and tables in the full and complex exposure and rendering of phenomena and economic processes studied.

The theoretical support of the research focused on the study of important scientific papers in the field of economy and management, with reference to the fiscal administration and the current problems in the public finances

## RESULTS AND DISCUSSIONS

Supporting agriculture through the Common Agricultural Policy in 2014-2020, is a continuation of the rural development process and the distribution of direct payments to active farmers, a process that began with the period of Romania's pre-accession to European Union structures (Giurcă D. *et al*, 2006; Fintîneru G. *et al*, 2010).

Taking into account the obligations incumbent on Romania as a result of the commitments assumed under the Treaty of Accession to the European Union as well as the need to complete the financial measures on the allocation of pre-financing and co-financing from the state budget to the institutions involved in managing European funds. The common

agricultural policy, in order to accelerate and streamline the implementation process of the National Rural Development Program 2007-2013, required the modification of the Emergency Ordinance no. 67/2006 on the management of non-reimbursable funds intended to finance the common agricultural policy allocated from the European Community, as well as of the co-financing and pre-financing funds allocated from the state budget by Emergency Ordinance no. 120/2007. This amendment established the "general financial framework for the management of the non-reimbursable financial assistance allocated to Romania as a member state of the European Union, as well as the pre-financing and co-financing related to this assistance, in order to ensure an efficient financial management of European Guarantee Fund funds. and the European Agricultural Fund for Rural Development"(Article 1). This will be complemented by a series of GDs that can be found in the PNDR Progress Report for that year (2007).

The 2014-2020 IMF, approved in November 2014 (Council of the European Union, 2014), reveals a reduction in agricultural policy spending over the coming period. The amount allocated to the CAP amounts to 362.8 billion euros, 37.8% of the total EU budget (less than 47.1% in 2007-2014). Thus, in 2020, the CAP budget will account for 35% of EU spending, 5% less than in 2014 (*table 1*).

Table 1

CAP expenses for the period 2014-2020 (2014 constant prices)

CAP expenses	2014	2014	2015	2016	2017	2018	2019	2020	Total
Competitiveness for growth and jobs	18.0	15.6	16.3	16.7	17.7	18.5	19.7	21.1	125.6
Economic, social and territorial cohesion	52.4	44.7	45.4	46.0	46.5	47.0	47.5	47.9	325.1
Sustainable growth: natural resources	59.6	55.9	55.1	54.3	53.4	52.5	51.5	50.6	373.2
Security and Citizenship	2.5	2.1	2.1	2.2	2.2	2.3	2.4	2.5	15.7
Global Europe	9.1	7.9	8.1	8.3	8.4	8.6	8.8	8.8	58.7
Administration	0.0	8.2	8.4	8.6	8.8	9.0	9.2	9.4	61.6
Compensation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grand total	141.6	134.3	135.3	136.1	137.1	137.9	139.1	140.2	960.0
CAP spending in the EU budget -%	<b>40.3</b>	<b>40.5</b>	<b>39.6</b>	<b>38.8</b>	<b>37.9</b>	<b>37.0</b>	<b>35.9</b>	<b>35.0</b>	<b>37.8</b>
<b>EAGF - %</b>	<b>72.4</b>	<b>74.4</b>	<b>74.4</b>	<b>74.5</b>	<b>74.5</b>	<b>74.5</b>	<b>74.4</b>	<b>74.4</b>	<b>74.5</b>
<b>FEADR - %</b>	<b>23.3</b>	<b>23.0</b>	<b>22.9</b>	<b>22.8</b>	<b>22.7</b>	<b>22.7</b>	<b>22.6</b>	<b>22.6</b>	<b>22.8</b>

Source: Rural Development 2014-2020, based on data from the European Commission

The Commission's Multiannual Financial Framework confirms that the structure with two pillars of the CAP is retained by EUR 277.8 billion allocated for direct payments and market measures in Pillar I, while EUR 84.9 billion is earmarked for rural development expenditure under Pillar 2. The Commission proposes and another € 3.5 billion for agricultural crisis management measures to be financed outside of the multiannual financial

framework. This leads to the establishment of an emergency mechanism to combat crisis situations in order to provide immediate support to farmers in an accelerated procedure.

At the level of the European Union, in the period 2014-2020, Romania has allocated a value of 8,128 million euros, which represents 8.18% of the total funds allocated by the EAFRD for the current financial year (*table 2*), while Bulgaria

receives a almost three times lower, a value of 2,366.7 million euros. However, the aim of the study is to identify those agricultural sectors that could benefit from EU integration, provided that producers are able to make the most of the opportunities that arise. Hence, it follows that the model seeks to identify possible changes that may occur in production in the agricultural sector and in the economy as a whole, rather than accurate predictions of likely changes in income. Regarding the coefficient of elasticity of the imported goods

considered here, the sensitivity tests performed revealed that it provides the model with references to structural parameters.

There are many written studies on this topic that have used the AGE method to solve the problems that have arisen with the enlargement of the European Union and its impact on the agricultural sector in countries with economies in transition (Liapis and Tsigas, Acar, Herok and Lotze, Kuhn and Wehrheim, Maliszewska, Frandsen).

Table 2

Total funding for 2014-2020	€ million
Health, demographic change & wellbeing	7 472
Food security, sustainable agriculture and forestry, marine/maritime/inland water research and the bioeconomy	3 851
Secure, clean & efficient energy	5 931
Smart, green & integrated transport	6 339
Climate action, environment, resource efficiency & raw materials	3 081
Inclusive, innovative & reflective societies	1 310
Secure societies	1 695

Source: Processing by: Rural Development 2014-2020, <http://ec.europa.eu/agriculture/rural-development-2014-2020/country-files/>

The provisions of the Europe 2020 Strategy, for the period 2014-2020, the CAP will invest almost 20 billion euros in the agricultural sector and in rural areas in Romania. Key policy priorities, defined at EU level, include jobs, sustainability, modernization, innovation and quality. Romania has the flexibility to adapt both direct payments as well as rural development programs to its specific needs.

The ex-ante analysis of the National Rural Development Program 2014-2020, Pillar 2 of the CAP, revealed a number of 6 major priorities in rural development for the period 2014-2020. These were materialized in areas or areas of intervention, subclassified into measures and sub-measures.

Priority P1 Encouraging knowledge transfer and innovation in agriculture, forestry and rural areas comprises 3 areas of intervention DI:

Area of intervention DI 1A) Encouraging innovation, cooperation and the creation of a knowledge base in rural areas responds to the priority P1 identified at the level of NRDP through the following rural development measures:

- Measure M01 - Actions for knowledge transfer and information actions, according to Article 14 of Regulation (EU) no. Regulation (EC) No 1305/2013 of the European Parliament and of the Council of 17 December 2013 on support for rural development by the European Agricultural

Fund for Rural Development (EAFRD) and repealing Regulation (EC) no. 1698/2005 of the Council;

- Measure M02 - Advisory services, farm management services and on-farm replacement services (Article 15 of R (EU) No 1305/2013)

- Measure M16 - Cooperation (in response to Article 35 of R (EU) No 1305/2013).

The related measures and sub-measures aim at increasing the existing knowledge and skills at the level of agricultural and forestry holders (SMEs), as well as employees in the agri-food and forestry fields as a premise for increasing their competitiveness and market proximity (Giurcă D. *et al*, 2006; Fîntîneru G. *et al*, 2010).

Area of Intervention DI 1B) Strengthening the links between agriculture, food production and forestry, on the one hand, and research and innovation, on the other hand, including for the purpose of better environmental management and improved environmental performance also in response to priority P1 of the RDP, and its implementation is proposed to be achieved through measure M16 Cooperation, in accordance with Article 35 of R (EU) 1305/2013. This area of intervention aims to facilitate and strengthen the links between agriculture, food production and forestry, on the one hand, and research and innovation, on the other, including for the purpose of better environmental management and improved environment by supporting the establishment and

operation of operational groups for the development of pilot projects, new products, practices, processes and technologies in the agricultural, agri-food and forestry sectors).

Evaluation of the technical and scale efficiency of the agricultural exploitations with financing through Pillar II

The evaluation of the technical and scale efficiency of the agricultural holdings under study was performed by the DEA method starting from the financial-accounting statements of the holdings taken as case studies (E1- Sc Trifesti, E2-Agri-Pe,; E3- Agrimarvas, E5-AVE Agromer, E6-Arhonda with 500-1000 ha; E7-Criscom, E8- Mobil MFM, E9-Panifcom with over 1000 ha). The DEA (Data envelopment analysis) method of analyzing the relative efficiency of agricultural holdings according to the weighted ratio of inputs and outputs requires the construction of the database for the analysis period 2005-2014. Also, as a support for this analysis it was necessary to use

econometric models based on the regression method and the correlation method to establish the causal relationships and the meaning of the correlations between the variables used, but also to find out the forecast trend. This approach will allow us to prioritize agricultural holdings taken as a case study according to the technical efficiency and scale of all holdings.

The analysis in the previous chapter showed deficiencies in the exploitation activity that affected the overall profitability of the farms under study. In this context, we aimed to evaluate by econometric and non-parametric methods both the overall activity of the holdings and the operating activity.

As a scientific support of the non-parametric models of hierarchy of agricultural holdings that we want to use, we applied at the level of each holding the following econometric models (regression) based on data from 2014-2020 (*table 3*):

Table 3

Regression model specifications			
	Independent variables X	Dependent variable Y	Regression functions ( <i>where t=2005-2014 and i = holding</i> )
Model 1	Expenditure on raw materials and materials (Cm) Expenditure on external services (Ce) Staff costs (C)	Operating income (Ve)	$Ve_{ti} = a + b * Cm_{i+} + c * Ce_{i+} + d * C_i$
Model 2	Surface (S) Fixed Assets (A) Capital (own and borrowed) (K) Staff costs per employee (Cs)	Total income (Vt)	$Vt_{ti} = a + b * S_{i+} + c * A_{i+} + d * K_{i+} + e * Cs_i$

The variables required for econometric and non-parametric models are presented in and the multifactorial regression models were run through the Data Analysis program in Excel, which allows obtaining the main indicators and verifying the validity of the analyzes performed.

#### *Performance of agricultural holdings.*

The AGE model is used to simulate in another multi-sectorial static based on economic theories, which would respond to the shocks of foreign trade policies on the agro-food sectors in Romania. Consequently, it is a powerful tool for predicting the possible effects of regional integration. In addition, the simulation is an analytical model used to separate agricultural policy changes from many other factors that may occur after accession.

Regarding the structure of the model, it is built according to the standard procedures described by perfect competition, open economy theory, production functions that have a constant scale of yields, full and perfect employment, labor and capital mobility. It should be borne in mind that much more important issues, such as imperfect

competition, increasing or decreasing returns to scale, and other aspects of dynamics, have not been taken into account. In addition, the model does not contain characteristic aspects and structural constraints of a transition economy, such as: market uptake, weak infrastructure, high transaction costs and the presence of subsistence agriculture. For the period (2014-2020), in order to establish the budget and the mechanisms of the new CAP, the European Commission proposed three options: improved status quo; developing a better targeted, balanced CAP and more sustainable support; abolition of market support and revenue. Taking into account the process of gradual increase of direct payments (up to 100% in 2016) and according to the estimates regarding the budget and the future Common Agricultural Policy, it would result that Romania would benefit, in the period of future multiannual financial programming (2014 - 2020), of fairly substantial European funds for agriculture and rural development. The main impact of European funding for the period 2014-2020 will be to increase direct payments to 100% of the amount

established in the accession negotiation process (which will take place in 2016) and will increase from about 183 euro / ha to 203 EUR / ha; this will lead to the allocation of additional funds of almost

7 billion euros, an amount that is practically more than double the funds allocated for direct payments in the current financial programming period (2007-2013).

Table 4

**Evolution of the net added value per hectare and labour productivity, per sectors, for the period 2013-2018**

	2013		2018		2018/2013 (%)	
	VAN/ha	VAN/AWU	VAN/ha	VAN/AWU	VAN/ha	VAN/AWU
Field crops	312.1	3193.4	467.7	16473.0	149.9	515.8
Horticulture	5262.8	3359.2	2426.9	2804.8	46.1	83.5
Wine	1678.2	3018.7	1381.4	6041.9	82.3	200.1
Other permanent crops	1290.0	3853.8	1434.3	5446.6	111.2	141.3
Milk	1023.9	2411.5	923.6	3944.1	90.2	163.6
Other grazing livestock	565.6	1917.6	855.5	4669.4	151.3	243.5
Other granivorous animals	7774.5	5289.1	4498.7	11777.8	57.9	222.7
Mixed	499.8	1156.5	833.9	2911.7	166.9	251.8

Source: FADN processing (RICA)

The analysis of economic performance shows that in 2013 without receiving subsidies the farms in the field crops and granivores would have lost, while the wine sector had a negative income rate due to the unfavourable climatic conditions (Table 5). In 2014, the income ratio varied between

26.5% in horticulture and 85.5% in the dairy cow sector, while without subsidies the income rate reached only 22.1-62.6%. Major increases in economic performance compared to 2013 were recorded mainly in the livestock sector and in the wine sector.

Table 5

**Evolution of income rates, per sectors, for the period 2013-2018**

	2013		2018		2018/2013 (+/-) Percentage points	
	Income rate (%)	Income rate without subsidies (%)	Income rate (%)	Income rate without subsidies (%)	Income rate	Income rate without subsidies
Field crops	19.0	-5.6	56.7	28.1	37.7	33.7
Horticulture	55.1	49.1	26.5	22.1	-28.6	-26.9
Wine	-9.2	-12.7	40.5	26.9	49.7	39.7
Other permanent crops	45.7	38.8	73.0	62.6	27.3	23.8
Milk	85.5	65.6	85.5	60.8	0.0	-4.8
Other grazing livestock	55.8	40.2	81.3	60.6	25.6	20.5
Other granivorous animals	7.8	-12.5	64.8	44.7	56.9	57.3
Mixed	42.9	30.8	69.1	52.1	26.1	21.3

Source: FADN processing (RICA)

The analysis of the subsidy structure in 2018 highlights that the most important subsidies were direct payments for the plant and livestock sector, followed by support for rural development and other subsidies, while in the livestock sector other subsidies were important, complementary national payments and support for rural development.

## CONCLUSIONS

The Community Agricultural Policy proved to be one of the most successful communitarian policies, having also a high degree of complexity. Exactly this success shall determine the difficulty of the reform, considering the changes in the initial conditions that represented the fundament of its elaboration. The need to increase the

competitiveness on the European Agricultural Market, the creation of an integrated rural development program to accompany the reform process, the simplification of the legislative framework at the European level and the substantial decentralization in implementing the measures shall lead to a reform in phases, whose effects shall mark the entire European construct.

The analysis per types of production of the separation per sources of incomes, revealed us that the support through Pillar I – subventions for the vegetal and animal production – was more equally distributed among farms. The contribution of the income sources to forming the total income emphasized that the value of the agricultural production leads to around 67.1% of inequity, the remaining being under the influence of subventions. Among these, the most important

contribution was determined by the free payments (21.3%), these being followed by subventions for intermediary consumption and other subventions. The assessment of the effect of the modification of the income sources on the total income:

Incomes from the agricultural production and other subventions lead to the increase of inequity among farms that obtain different products (grains, wine, horticultural products, etc.); increase with 1% of the incomes from the agricultural production leads to the inequity increase with 5.76%;

The subventions lead, generally, to the decrease of inequity between them, especially subventions for the animal production (decrease of 3.33%) and direct payments (with 2.17%);

The analysis per types of specialized farms. The European model has often been compared to agricultural support systems in other countries, highlighting both the weaknesses and the advantages of this organizational model. The United States has often been taken as a benchmark, with deep reforms in the country allowing a small number of farmers to ensure sufficient production at fair prices.

Integration in the European Union was one of the key priorities of Romania's foreign policy. As a substantial part of this strategy, Romania has had to gradually adopt an agricultural policy and an institutional framework fully compatible with the European Union's common agricultural policy (CAP). The two pillars of the European Union's Common Agricultural Policy are market and income support and rural development, and their financing is achieved through the EAGF and the EAFRD, respectively. The obtained results show us that a modification with 1% of the subventions

granted through Pillar I: they have a negative effect leading to the increase of inequalities between different size farms; they have a positive effect leading to the reduction of disparities between the farms from different sectors or specialized on certain products.

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