

TERRITORIAL DIFFERENCES IN ACCESSING RURAL DEVELOPMENT FUNDS TO SUPPORT THE MODERNIZATION OF AGRICULTURAL HOLDINGS IN ROMANIA BETWEEN 2000 AND 2020

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Abstract

One of the main tools for enhancing the competitiveness of the Romanian agricultural holdings is the measures to address their modernisation. However, up to date, little attention has been paid to the evolution and structure of these support measures in Romania. The article aims to present the configuration of the operation of funds designated for the modernization of the agricultural holdings in all the programming periods since Romania started to receive European funds: 2000-2006, 2007-2013 and 2014-2020. Through the evaluation of the available official data, we will infer the evolution of the funds absorbed by Romania, through NUTS 2 regions (development regions) and by NUTS 3 regions (counties). We have conducted this research using statistical data published on the Agency on Financing Rural Investment platform, Open Data platform from the same agency and Eurostat. During the last three programming periods (2000-2006, 2007-2013 and 2014-2020), the Common Agricultural Policy of the European Union has supported the modernization of agricultural holdings in Romania through three specific financing measures, supporting over 8,000 projects.

Key words: *programming period, Common Agricultural Policy, support measures, modernization of agricultural holdings*

INTRODUCTION

The support of agricultural holdings is a measure of the common agricultural policy (CAP), oriented to supporting agricultural production efficiency and enhancing agricultural farm competitiveness [2]. Still, there are other significant benefits related to greater cooperation [9].

EU agriculture development is clearly determined by technical progress [3]. Furthermore, the agricultural sector is influenced by the constant need for investment activities, mainly in agricultural holdings. Given the societal importance of agricultural investment activities and other economic sectors, the national programmes that support agricultural holdings investment are well established in the European Union [6]. Therefore, over the last three programming periods, SAPARD (Special Accession Program for Agriculture and Rural Development), 2000-2006, NRDP (National Rural Development Program) 2007-2013 and NRDP 2014-2020, the CAP enhanced EU

farms' modernization through three financing mechanisms, respectively 3.1 Investments in agricultural holdings, measure 121 Modernization of agricultural holdings and sub-measure 4.1 Investments in agricultural holdings.

The paper aims to overview how European funds that support the modernization of agricultural holdings have been absorbed from a territorial point of view in Romania. Thus, it can be seen which development regions have greater success in attracting such funds, how many projects, what amounts they have attracted, and which development regions still have to recover in terms of attracting such support.

MATERIALS AND METHODS

This article is a comparative analysis between the three programming periods through which Romania could access European funds to support its rural development projects, respectively SAPARD 2000-2006, NRDP 2007-2013 and NRDP 2014-2020.

The data used for this study were extracted from Eurostat, from the Afir.info platform (regarding SAPARD projects) and Opendata.afir.info (regarding the projects within the other two programming periods) database. After that, the data was processed, and we made calculations and drew our own interpretations to achieve the desired results. The growth rate of the financing of the regions was analyzed in relation to the growth rate of the total financing using the following formula:

$$\text{Growth rate} = (\text{Present-Past})/\text{Past} \times 100.$$

The reasons behind the support focused on specific regions could be determined by some indicators, namely economic size (SO), labour size (AWU) and agricultural size of holdings. Moreover, the gross value added (GVA) indicator was analyzed to have a first picture regarding the efficiency of the funds attracted by those regions. The gross value added indicator is characterized by Veveris (2014) as being "the main result indicator according to the EU evaluation methodology and is the basis for the calculation of impact indicators"[8].

RESULTS AND DISCUSSIONS

SAPARD 2000-2006

SAPARD program, intended for the acceding states, is the first scheme in which Romania could access European funds. The total

number of projects funded through the SAPARD program in the acceding states amounts to almost 40,000 funded projects [7]. Almost 21,000 projects were supported through this investment measure [5]. Within this funding mechanism, Romania has submitted 4,451 projects. Approximately 43% are represented by the projects focused on the modernization of agricultural holdings through measure 3.1, these being in a number of 1925. The difference from 1924 projects to 1925 projects is caused by an error generated by inserting the data in the processing document. Due to the lack of data regarding the period of submission and completion, we cannot make a complete temporal interpretation of the submitted projects. Thus, we can only consider the amount related to this project in the total amount.

Table 1 presents the submission process, quantified in the number of projects and the financing value of these projects.

Romanian farmers started submitting these files from 2003 to 2006. In 2006 there were registered 1,208 files. Thus, the active period of file submission is 2003-2006, with an increasing trend, with a maximum in 2006, when the contracted amount's value was approximately 150 million euros.

The county with the most significant number of projects for the SAPARD 2000-2006 program is Constanța, with 151 projects worth approximately 13 million euros, representing 5.6% of the total amount.

Table 1. Total projects submitted measure 3.1.

Year of submission	Measure	Number of projects submitted	Proportion (% of projects)	Contracted value (euro)	Proportion (% of value)
2003	3.1	1	0.05	205,271.60	0.08
2004	3.1	223	11.5	21,542,627.87	9.4
2005	3.1	492	25.5	56,377,240.75	24.6
2006	3.1	1,208	62.7	150,781,775.42	65.6
2007	3.1	0	0	0	0
2008	3.1	0	0	0	0
2009	3.1	0	0	0	0
Total	3.1	1,924	100	228,906,915.64	100

Source: own calculations based on AFIR.info [1].

It is followed by Timiș County, with 119 projects and the highest projects' value at the county level, around 18 million euros, representing 7.9% of the total EU funds.

Another county that has accessed many projects is Călărași, with no less than 99 projects with a value of approximately 12 million euros, representing 5.1% of the total

amount of inflow. Other counties where a large number of projects have been submitted are Arad (84), Iași (80), Galați (78), Brăila (76) and Tulcea (73) (Table 2).

Table 2. Total projects measure 3.1 by development regions

No.	Development regions	Number of projects	Contracted amount	Value per project
1	Reg. N-E	306	33,932,253.59	110,889.72
2	Reg. S-E	476	44,952,368.48	94,437.75
3	Reg. S	364	52,436,236.36	144,055.59
4	Reg. S-W	120	15,578,564.42	129,821.37
5	Reg. West	234	29,756,227.46	127,163.37
6	Reg. N-W	242	28,794,255.73	118,984.53
7	Reg. Center	162	20,245,120.25	124,969.88
8	Reg. B-IF	21	3,220,608.66	153,362.32
9	Total	1,925	228,915,634.95	118,917.21

Source: own calculations based on AFIR.info [1].

Regarding the total projects completed at the level of development regions (Table 3), it can be seen that the first two regions regarding the number of projects are the South-East Development Region (Brăila, Buzău, Constanța, Galați, Tulcea and Vrancea), and the development region South - Muntenia (Argeș, Călărași, Dâmbovița, Giurgiu,

Ialomița, Prahova and Teleorman). Together, these two regions total 44% of the projects submitted under this first financing period analysed, attracting a total of 43% of the amounts contracted under this measure. These are also the two main regions where farms focused on their modernization.

Table 3. Total projects on measure 121 by development regions

No.	Development regions	Number of projects	Contracted amount	Value per project
1	Reg. N-E	331	80,716,422.60	243,856.26
2	Reg. S-E	824	173,328,189.88	210,349.75
3	Reg. S	570	133,708,303.99	234,575.97
4	Reg. S-W	247	47,871,475.96	193,811.64
5	Reg. West	333	90,103,652.14	270,581.54
6	Reg. N-W	349	78,668,093.11	225,410.01
7	Reg. Center	261	75,742,223.38	290,200.09
8	Reg. B-IF	15	65,651,633.20	4,376,775.55
9	Total	2,930	745,789,994.26	254,535.83

Source: own calculations based on AFIR open data [1].

Regarding the projects' value, it is observed that the highest value per project is found in the Bucharest - Ilfov Development Region, where on average, a project was financed with approximately 153 thousand euros.

The next from this point of view is the South-Muntenia Development Region, with a value per project of approximately 144 thousand euros.

A possible hypothesis for this could be a more extensive specialization in accessing EU funds with a higher value. Also, the presence of bigger farms could be another reason.

The national average of the projects is 118 thousand euros per project accessed under measure 3.1.

NRDP 2007-2013

During this period, the modernization of agricultural holdings was supported under the NRDP 2007-2013 by measure 121 - Modernization of agricultural holdings.

As indicated by the database "Open data AFIR"[1], for the programming period 2007-2013, through measure 121 of the NRDP, a number of 2,930 projects were accessed, with

a contracted value of approximately 745 million euros.

Quantifying the number of projects per county, Tulcea has the largest number of accessed projects, 307 in number, with a contracted value of approximately 59 million euros, representing 8% of the total sum accessed by Romania. On the second place of the most active counties in terms of the number of projects is Constanța, with a number of 200 projects, with a contracted value of approximately 38 million euros, representing 5.2% of the total amount.

The third county is Timiș, with 171 projects with a contracted value of 48 million euros, representing 6.5% of the total amount. Other counties with a high number of submitted projects are Ialomița (141), Dolj (130), Brăila (120) and Teleorman (113).

Table 5 highlights the first two regions regarding the number of projects. Those regions are the South-East Development Region (Brăila, Buzău, Constanța, Galați, Tulcea and Vrancea), with a total number of 824 projects and South - Muntenia Development Region (Argeș, Călărași, Dâmbovița, Giurgiu, Ialomița, Prahova and Teleorman), with 570 projects. In terms of the amounts attracted, the South-East Development Region absorbed the most considerable amount of money with approximately 173 million euros, followed by the South-Muntenia Development Region with around 133 million euros attracted.

Those are the main regions in which farmers focused on their farm modernization.

It is highlighted that the highest value per project is found in the Bucharest - Ilfov Development Region, where on average, a project was financed with approximately 4.3 million euros.

The reason for this situation is that the headquarter of a non-banking financial institution is placed in Bucharest. This company accessed alone over 52 million euros as a credit guarantee fund. From the data provided by AFIR, this financing appears as a single accessed project [1].

Next from this point of view is the Region Development Center, with approximately 290 thousand euros value per project. The national average of the projects is 254 thousand euros per project accessed through measure 121.

NRDP 2014-2020

During 2014-2020, the modernization of agricultural holdings was supported by NRDP 2014-2020, through sub-measure 4.1

Investments in agricultural holdings. The total value of the sub-measure for the whole programming period was 1.2 billion euros. Table 4 presents the annual situation of the projects at the level of sub-measure 4.1.

Thus, the data provided by the AFIR Open Data platform allow visualizing the evolution of the first four years in which funds were accessed for this sub-measure. From here, it can be seen that approximately 80% of the funds available for this sub-measure were absorbed during the first four years.

Table 4. Total projects accessed on sub-measure 4.1

Year of submission	Measure	Number of projects submitted	Proportion (% of projects)	Contracted value (euro)	Proportion (% of value)
2015	4.1	598	14.51	116,077,355.78	12.00
2016	4.1	1,406	34.11	364,839,963.25	37.71
2017	4.1	1,549	37.58	206,948,189.45	21.39
2018	4.1	569	13.80	279,719,954.24	28.91
Total	4.1	4,122	100	967,585,462.72	100

Source: own calculations based on AFIR open data [1].

The county where the sub-measure 4.1 has the most significant number of projects is Tulcea, with about 381 projects with a value of approximately 64 million euros, representing 6.7% of the total amount.

It is followed by Constanța County, with 354 projects. In this county, the highest value of these projects at the county level is about 78 million euros, representing 8% of the total amount.

Another county that has attracted many projects is Dolj, with a number of 346 projects worth approximately 50 million euros, representing 5.3% of the total amount.

Other counties where a large number of projects have been submitted are Olt (256), Călărași (228), Teleorman (205), Bihor (191) and Timiș (188).

Table 5. Total projects sub-measure 4.1 by development regions

Nr. Crt.	Development regions	Number of projects	Contracted amount	Value per project
1	Reg. N-E	294	61,289,271.01	243,856.26
2	Reg. S-E	1,197	227,018,001.78	210,349.75
3	Reg. S	844	154,518,819.88	234,575.97
4	Reg. S-W	681	137,260,528.04	193,811.64
5	Reg. West	364	107,059,035.29	270,581.54
6	Reg. N-W	393	169,128,376.22	225,410.01
7	Reg. Center	325	110,420,613.97	290,200.09
8	Reg. B-IF	24	890,816.53	4,376,775.55
9	Total	4,122	967,585,462.72	254,535.83

Source: own calculations based on AFIR open data [1].

Analysing the total projects at the level of development regions (Table 5), it is noted that most projects were carried out in the South-East Development Region (Brăila, Buzău, Constanța, Galați, Tulcea and Vrancea), with a total number of 1,197 completed projects. On the following positions as project

numbers, are the South - Muntenia Development Region (Argeș, Călărași, Dâmbovița, Giurgiu, Ialomița, Prahova and Teleorman), with 844 projects and the South-West Oltenia Development Region (Dolj, Gorj, Mehedinți, Olt and Vâlcea), with a number of 681 projects.

Table 6. Growth rate per development regions and programming periods

Development regions	Contracted amount (P1) 2000-2006	Contracted amount (P2) 2007-2013	Contracted amount (P3) 2014-2020	Rate of increase in P2 compared with P1	Rate of increase in P3 compared with P2	Compared with total rate of increase	Compared with total rate of increase
Reg. N-E	33,932,253.6	80,716,422.6	61,289,271.0	137.88 %	- 24.07%	↘	↘
Reg. S-E	44,952,368.5	173,328,189.9	227,018,001.8	285.58 %	30.98%	↗	↗
Reg. S	52,436,236.4	133,708,304.0	154,518,819.9	154.99 %	15.56%	↘	↘
Reg. S-W	15,578,564.4	47,871,476.0	137,260,528.0	207.29 %	186.73 %	↘	↗
Reg. West	29,756,227.5	90,103,652.1	107,059,035.3	202.81 %	18.82%	↘	↘
Reg. N-W	28,794,255.7	78,668,093.1	169,128,376.2	173.21 %	114.99 %	↘	↗
Reg.Center	20,245,120.3	75,742,223.4	110,420,614.0	274.13 %	45.78%	↗	↗
Reg. B-IF	3,220,608.7	65,651,633.2	890,816.5	1938.49 %	- 98.64%	↗	↘
Total	228,915,635.0	745,789,994.3	967,585,462.7	225.79 %	29.74 %		

Source: own calculations based on AFIR open data [1].

In terms of the highest inflows, most of the money in the period 2014-2020, for sub-measure 4.1, was attracted by the South-East Development Region with approximately 227 million euros attracted, followed by the North-West Development Region with 169 million euros attracted.

Analysing the growth rate of the regions, we can see that in P2 (2007-2013) compared to P1 (2000-2006), there are significant increase rates between 137% and 1938%.

The regions above the total increase rate are the South-East Region, the Center Region, and the Bucharest-Ilfov Region. Regarding the period P3 (2014-2020), compared to P2 (2007-2013), there are regions with values lower than the total increase rate and regions with values above, such as the South-East Region, South-West Oltenia, North-West and Center. Thus, it is noticeable how certain regions have had an upward evolution from one period to another in attracting funds.

Table 7. Contracted amount per UAA in Romania by NUTS 2 regions (Euro/ha)

Development regions	Financial support/UAA (Euro/ha)	Financial support/UAA (Euro/ha)	Financial support/UAA (Euro/ha)
	2000-2006	2007-2013	2014-2020
Reg. N-E	16.69	42.07	31.95
Reg. S-E	20.90	79.69	104.37
Reg. S	22.55	56.79	65.63
Reg. S-W	8.74	29.2	83.72
Reg. West	16.99	52.76	62.69
Reg. N-W	14.83	44.09	94.78
Reg. Center	11.61	43	62.68
Reg. B-IF	18.11	906.79	12.3
Total	16.46	55.6	72.13

Source: Eurostat, UUA (utilised agricultural area) [4].

In terms of the contracted amount per utilised agricultural area (for the modernisation of the agricultural holdings), in Table 7 it is noticed a constant increase of the amounts from the first period to the last, with a maximum of 104 EUR/ha in the South-East Region in 2014-2020 period (906.79 from B-IF Region it is an anomaly as it is explained above).

Figure 1 presents the share of the amounts in each region during all three supporting periods.

The period 2014-2020 was the most prolific regarding the amounts. The majority of regions have an upward trend, the value of attracted funds being bigger from period to period. This could be translated into a deeper specialization for Romanian farmers working with European projects and absorbing more money.

The analysis of business indicators such as the economic size, labour size or agricultural size of holdings gives more explanations for these territorial differences between development regions in Romania in attracting EU funds to modernise the agricultural holdings. From the economic perspective, it can be observed that the most significant value of standard output (represented in euro) is in South – Muntenia with over 2,1 billion euros.

Due to a large number of small holdings (less than 2 hectares), the smallest economic indicators per agricultural holdings are in South-West and North-East regions. Regarding the number of big farms (100 ha and over), the largest share is in two regions, respectively South – Muntenia and South-East, accounting for about 47% of the total number of large farms. Given the gross value

added from 2007, compared with 2017, there is an increase of this indicator for the agricultural holdings from the South-East

and South-Muntenia regions, most probably due to the funds absorbed and the large number of projects implemented.

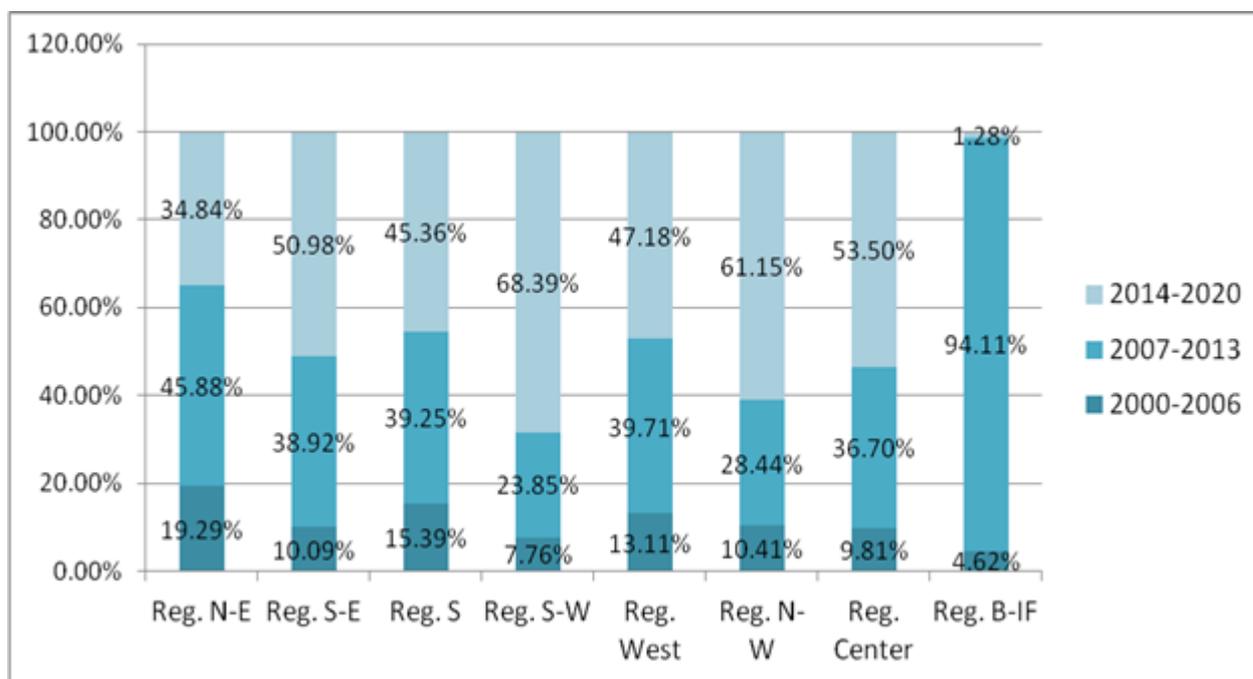


Fig. 1. Share of the amounts per period
 Source: own calculations based on AFIR open data [1].

Table 8. Agricultural holdings by different indicators (economic size, labour size, physical size) in 2016

Development regions	Total holdings	Economic size		Labor size		Agricultural size of holdings			
		EUR of SO	EUR of SO/holding	AWU	AWU/holding	Less than 2 ha		100 ha and over	
						No	% of total	No	% of total
Reg. N-E	720,240	2,063,833,930	2,865	346,530	0.48	543,250	22.63	1,560	12.67
Reg. S-E	410,220	2,020,292,250	4,925	203,760	0.50	305,900	12.74	2,850	23.15
Reg. S	694,660	2,183,368,650	3,143	276,200	0.40	563,360	23.46	2,450	19.90
Reg. S-W	539,550	1,462,287,010	2,710	271,940	0.50	366,630	15.27	1,210	9.83
Reg. West	226,900	1,293,079,190	5,699	102,950	0.45	118,350	4.93	1,380	11.21
Reg. N-W	478,490	1,636,486,000	3,420	217,250	0.45	286,370	11.93	1,340	10.89
Reg. Center	330,950	1,367,075,010	4,131	156,270	0.47	199,300	8.30	1,430	11.62
Reg. B-IF	21,020	79,069,770	3,762	12,750	0.61	17,790	0.74	100	0.81
Total	3,422,030					2,400,930	100	12,310	100

Source: own calculations based on Eurostat data [4].
 SO (standard output), AWU (annual work unit)

To have a clear perspective about the impact of these projects, deeper analysis has to be done with data at the farms level.

Table 9. Gross value added per regions

Development regions	GVA in agriculture 2007, (EUR million)	GVA in agriculture 2017, (EUR million)
Reg. N-E	1,259.1	1,286.1
Reg. S-E	930.9	1,466.8
Reg. S	1,100.7	1,501.4
Reg. S-W	665.1	990.5
Reg. West	870.5	844.6
Reg. N-W	1,164.1	908.1
Reg. Center	1,098.9	864.3
Reg. B-IF	80.1	237.5
Total	7,169	8,099

Source: own calculations based on Eurostat data [4].
 GVA (gross value added)

CONCLUSIONS

Over the last three multiannual financial frameworks (2000-2006, 2007-2013 and 2014-2020), the EU common agricultural policy has supported the modernization of agricultural holdings in Romania through three specific financing measures. Those measures are represented by measure 3.1 Investments in agricultural holdings, measure 121 Modernization of agricultural holdings and sub-measure 4.1 Investments in agricultural holdings. Analysing the level of investments through these EU schemes to modernize agricultural holdings, it is noted that these measures were not concentrated predominantly in the same investment areas in terms of counties, but in the development regions of Romania specific to the level of NUTS 2. Thus, regarding the projects attracted at the level of regions in Romania, the data has revealed significant support concentration in two development regions, representing together about 50% of the total number of projects for the entire supported period 2000-2020. The South-East Development Region attracted 2497 projects for the period 2000-2020, followed by the South-Muntenia Development Region, with 1778 projects attracted during the same period. The same two regions managed to attract the most funds during this period, the South-East Development Region attracting the largest amount, respectively 422 million

euros, followed by the South-Muntenia Development Region, with 340 million euros absorbed over the three multiannual financial frameworks. In terms of projects accessed and funds absorbed, the main reasons behind the domination of these two regions are explained by the size of the farm-areas (SE and South-Muntenia have major agricultural holdings in Romania), the economic dimension of the farms (being one of the largest) and the highest gross value added in the last years.

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