

## STUDIES ON THE LEVEL OF 'AGRO-ENVIRONMENT AND CLIMATE' COMPENSATORY PAYMENTS GIVEN TO ROMANIAN FARMERS

Veronica LUNGU<sup>1</sup>, Daniel Valeriu ULIU<sup>1</sup>, Marius VLADU<sup>2</sup>

<sup>1</sup>University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Marasti Blvd, 011464, Bucharest, Romania, Phone: +40799743938, +40766287579, E-mails: lunguveronica103@gmail.com, daniel\_uliu@icloud.com

<sup>2</sup>University of Craiova, Faculty of Agronomy, Department of Agricultural and Forestry Technology, 19 "Libertății" Street, Craiova 200583, Dolj County, Romania, Phone: +40744870085, E-mail: mariusvladu@yahoo.fr

**Corresponding author:** daniel\_uliu@icloud.com

### Abstract

*Agri-environment and climate payments represent a key element necessary for the integration of environmental protection issues into the Common Agricultural Policy. In Romania, this measure aims to encourage farmers (users of agricultural land) to adopt, on a voluntary basis, agricultural practices that ensure the maintenance of the environmental value of rural areas, the maintenance of specific habitats of agricultural land important for priority wild species, the sustainable use of natural resources and the preservation of traditional landscapes. This paper presents the situation of accessing the agri-environment and climate compensatory payment measure for adaptation to the effects of climate change on agricultural land, in Romania, between 2015 and 2019, where a total of 212,413 beneficiaries were registered, with a total eligible area of 1,799,820 hectares and the eligible value of compensatory payments was 231,563,125.73 euros.*

**Key words:** climate change, payments, agro-environment, common agricultural policy, sustainable agriculture, sustainable development, biodiversity

### INTRODUCTION

Agri-environment payments are necessary to support the sustainable development of rural areas and to meet society's increasing demand for environmental services. The payments granted by this measure must encourage farmers to serve society as a whole by introducing or continuing the application of agricultural methods compatible with the protection and improvement of the environment, the landscape and its characteristics, natural resources, the soil, as well as with the maintenance of genetic diversity [8].

The promotion of traditional, extensive agricultural practices, based on a reduced use of inputs, is necessary to support the sustainable development of rural areas, contributing to the conservation of biodiversity (wild species and their habitats, local animal breeds), soil and water protection, reducing emissions of greenhouse gases and ammonia, carbon sequestration in

biomass, reducing the risk of intensification, but also to a sustainable management of natural resources [12].

In December 2019, the European Commission issued a communication on the European Green Deal strategy, which was to launch new international actions to achieve ambitious climate and environmental goals [13].

Farmers are aware of the problems caused by the effects of climate change and are willing to adapt by implementing the necessary solutions [6].

The regions with the highest share in the consumption of mineral fertilizers in Romania, in descending order, are: West, South Muntenia, South West Oltenia, North East, South East and North West regions, and agro-environment and climate measures would be a potential solution to reduce the consumption of these substances [9], as well as the reduction of polluting substances in agriculture [5].

Research has examined the impact of green payment programs on agricultural and

economic outcomes such as agricultural productivity and farm income, improving their yield [4].

Agriculture is a sector of the economy that depends a lot on the climate. The final impact of climate change on agriculture depends on the resilience of ecosystems, as well as on the measures taken by the authorities, collectively and individually. Also, the natural resistance of ecosystems influences the effect of climate change on them [2].

EU farmers are subject to mandatory cross-compliance measures, which require them to meet environmental conditions to be eligible for public support. These obligations strengthen the incentives for farmers to change their behavior towards the environment [3].

Policymakers aiming to reduce pollution from agriculture should consider the increasing use of precision agriculture techniques and their varying effects on agri-environmental policy [11].

The value of agricultural production increases through better management of farms and through the financial support granted according to the PAC of the EU and the Romanian Government [10].

## MATERIALS AND METHODS

The European Ecological Pact (Green Deal) which is part of the new Common Agricultural Policy, respects the requirements of the European Commission, which aim to tighten the conditions for climate and environmental objectives, respectively maintaining continuity for sustainable development and ensuring the continuity of environmental protection. Adapting to the effects of climate change on agricultural land by reducing greenhouse gas emissions, as well as the efficient and sustainable management of natural resources such as air, water and soil, as well as the preservation of biodiversity, landscapes, habitats, all of these ensure sustainable development.

The purpose of this work is to present the situation of access to Measure 10 – Agroenvironment and Climate in Romania [7], in the period 2015 – 2019.

The data were extracted from the database of the Payments and Intervention Agency and processed as follows: the number of beneficiaries, the areas and the value eligible for package 1 - meadows with high natural value, package 4 - green crops and package 8 - raising farm animals from local breeds in danger of abandonment.

## RESULTS AND DISCUSSIONS

It is highlighted that at the beginning of this study, i.e. in 2015, the smallest area was declared for these compensatory payments related to package 1, namely 151,802 hectares, with a total of 17,621 beneficiaries, and the total compensatory value paid was 12,996,017.75 euros. The farmers who applied for package 1 were very many in 2016, there were a total of 32,307 beneficiaries, which represented a total eligible area of 254,121 hectares, where the total value of compensatory payments was 23,777,005.39 euros. Also, in the following year, 2017, the number of beneficiaries who applied for measure 1 increased, reaching 42,713, with a total eligible area of 345,421 hectares, and the value of compensatory payments for this year was 48,572,464.67 euros. The increase in the area declared with package 1 was also maintained in 2018, where 500,472 hectares were declared, with a number of 57,845 beneficiaries, and the value of compensatory payments for this package was 69,698,330.89 euros. The number of farmers who benefited from compensatory payments through package 1 of Measure 10 – Agro-environment and Climate, increased constantly, until 2019, where 61,927 farmers were registered, with a total area of 548,004 hectares, and their total value was 76,519,307.03 euros (Table 1).

Table 1 shows that in the period 2015 - 2019, in Romania, the value of the compensatory payments of package 1 (high natural value meadows) from Measure 10 - Agroenvironment and Climate of the 2014 - 2020 PNDR, were 231,563,125.73 euros, with a total number of beneficiaries of 212,413 and a total area of 1,799,820 hectares.

Table 1. The situation of accessing package 1 of measure 10, in the period 2015 – 2019, in Romania

<i>Year</i>	<i>No. beneficiaries</i>	<i>Area (ha)</i>	<i>Value (euro)</i>
<b>2015</b>	17,621	151,802	12,996,017.75
<b>2016</b>	32,307	254,121	23,777,005.39
<b>2017</b>	42,713	345,421	48,572,464.67
<b>2018</b>	57,845	500,472	69,698,330.89
<b>2019</b>	61,927	548,004	76,519,307.03
<b>Total</b>	<b>212,413</b>	<b>1,799,820</b>	<b>231,563,125.73</b>

Source: Own calculation based on APIA data [1].

Table 2. Value of the budget allocated to package 1 of measure 10 and the percentage of absorption, in the period 2015 – 2019, in Romania

<i>Year</i>	<i>Specification</i>	<i>Value (euro)</i>		<i>% absorption</i>
		<b>EAFRD</b>	<b>National Value</b>	
<b>2015</b>	<b>Total</b>	12,338,957.71	657,060.04	91.82
	<b>EU budget</b>	12,996,017.75		
<b>2016</b>	<b>Total</b>	22,194,075.11	1,582,930.28	94.63
	<b>EU budget</b>	23,777,005.39		
<b>2017</b>	<b>Total</b>	40,596,426.99	7,976,037.68	96.68
	<b>EU budget</b>	25,124,988.81		
<b>2018</b>	<b>Total</b>	58,163,246.50	11,535,084.39	98.10
	<b>EU budget</b>	69,698,330.89		
<b>2019</b>	<b>Total</b>	63,855,350.12	12,663,956.91	98.33
	<b>EU budget</b>	71,046,664.22		
<b>Total value of compensatory payments</b>		231,563,125.73		97.14
<b>Total EU budget</b>		238,383,749.82		

Source: Own calculation based on APIA data [1].

Table 3. The situation of accessing package 4 of measure 10, in the period 2015–2019, in Romania

<i>Year</i>	<i>Beneficiary</i>	<i>Area</i>	<i>Value (euro)</i>
<b>2015</b>	590	30,690.04	3,837,218.78
<b>2016</b>	961	46,504.29	5,655,716.77
<b>2017</b>	1,735	81,707.25	10,364,987.79
<b>2018</b>	2,099	114,305.40	13,433,440.20
<b>2019</b>	2,121	125,822.81	15,684,111.29
<b>Total</b>	<b>7,506</b>	<b>399,030</b>	<b>48,975,474.83</b>

Source: Own calculation based on APIA data [1].

Table 2 shows that in the period 2015 - 2019, in Romania, the value of the compensatory payments of package 1 (high natural value meadows) from Measure 10 - Agroenvironment and Climate of the 2014 - 2020 PNDR, were 231,563,125.73 euros, which represents a absorption percentage of 97.14% of the total EU budget, from this period, with a value of 238,282,749.82 euros. The evolution of the budget allocated by the European Union for package 1 (meadows with high natural value) was increasing throughout the analysis period, reaching from 14,154,169.41 euros, in 2015, to the value of 77,816,545.28 euros in 2019. Also, the

percentage of absorption from the total budget allocated by the EU, of compensatory payments, was continuously increasing, from the value of 91.82% in 2015, to the value of 98.33% in 2019 (Table 2). Table 3 shows that in the period 2015 - 2019, in Romania, the value of the compensatory payments of package 4 (green crops) from Measure 10 - Agroenvironment and Climate from National Programme of Rural Development (PNDR) 2014 - 2020, were 48,975,474.83 euros, with a total number of beneficiaries of 7,506 and a total area of 399,030 hectares.

It is highlighted that at the beginning of this study, i.e. in 2015, the smallest area was

declared for these compensatory payments related to package 4, namely 30,690.04 hectares, with a total of 590 beneficiaries, and the total compensatory value paid was 3,837,218.78 euros. Package 4 met a special interest from farmers, where in 2016 961 beneficiaries applied, representing a total eligible area of 46,504.29 hectares, and the total value of compensatory payments was 5,655,716.77 euros. There was the same interest for this package in the following year, 2017, where there were a total of 1,735 beneficiaries, with a total eligible area of 81,707.25 hectares, where the total value of

compensatory payments for this package was 10,364,987.79 euros. The year 2018 had the largest area recorded with package 4, where there were a total of 114,305.40 hectares, representing a number of 2,099 beneficiaries, and the value of compensatory payments was 13,433,440.20 euros. The number of farmers who benefited from compensatory payments through package 4 of Measure 10 – Agro-environment and Climate, increased constantly, until 2019, where 2,121 farmers were registered, with a total area of 125,822.81 hectares, and their total value was 15,684,111.29 euros (Table 3).

Table 4. Value of the budget allocated to package 4 of measure 10 and the percentage of absorption, in the period 2015 – 2019, in Romania

Year	Specification	Value		% absorption
		EAFRD	National Value	
2015	Total	3,644,916.69	192,302.09	91.60
	EU budget	3,837,218.78		
		4,189,246.00		
2016	Total	5,117,006.10	538,710.67	84.23
	EU budget	5,655,716.77		
		6,714,969.60		
2017	Total	8,662,913.38	1,702,074.41	97.30
	EU budget	10,364,987.79		
		10,652,797.44		
2018	Total	11,209,032.97	2,224,407.23	93.72
	EU budget	13,433,440.20		
		14,333,172.39		
2019	Total	13,083,454.28	2,600,657.01	97.38
	EU budget	15,684,111.29		
		16,105,319.68		
Total value of compensatory payments		48,975,474.83		94.19
Total EU budget		51,995,505.11		

Source: Own calculation based on APIA data [1].

Table 4 shows that in the period 2015 - 2019, in Romania, the value of the compensatory payments of package 4 (green crops) from Measure 10 - Agroenvironment and Climate of the 2014 - 2020 PNDR [13], were 48,975,474.83 euros, which represents a percentage of absorption of 94.19% of the total EU budget, from this period, with a value of 51,995,505.11 euros.

The evolution of the budget allocated by the European Union for package 4 (green crops) was increasing throughout the analysis period, reaching from 4,189,246.00 euros, in 2015, to the value of 16,105,319.68 euros in 2019. Also, the percentage of absorption from the total allocated budget of the EU, of compensatory payments was continuously

increasing, from the value of 91.60% in 2015, to the value of 97.38% in 2019 (Table 4).

Table 5 shows that in the period 2015 - 2019, in Romania, the value of the compensatory payments of package 8 (breeding of farm animals from local breeds at risk of abandonment) from Measure 10 - Agro-environment and Climate from PNDR 2014 - 2020 [13], were 801,361.18 euros, which represents an absorption percentage of 70.14% of the total EU budget, from this period, with a value of 1,142,476.22 euros. The total values of the compensatory payments for each species are 17,150.22 euros for goats, 470,194.00 euros for sheep, 96,161.00 euros for cattle, 154,162.36 euros for pigs and 63,693.60 euros for equids.

Table 5. Value of the budget allocated to package 4 of measure 10 and the percentage of absorption, in the period 2015 – 2019, in Romania

Year	Specification	Value (euro)										% absorption
		Goats		Sheep		Cattle		Suines		Horses		
		FEADR	BN	FEADR	BN	FEADR	BN	FEADR	BN	FEADR	BN	
2015	Total every species	401.18	78.82	39,170.12	3,693.57	17,653.17	3,177.83	3,392.12	558.20	8,470.00	623.60	44.18
		480.00		42,863.69		20,831.00		3,950.32		9,093.60		
	Total Package 8	77,218.61										
	EU budget	174,798.35										
2016	Total every species	3,188.92	626.48	71,457.56	12,476.95	8,227.53	1,592.47	5,937.68	982.64	9,760.38	1,055.62	57.17
		3,815.40		83,934.51		9,820.00		6,920.32		10,816.00		
	Total Package 8	115,306.23										
	EU budget	201,694.40										
2017	Total every species	3,276.46	643.76	98,723.72	19,398.05	19,056.24	3,743.76	26,057.42	5,119.22	9,528.12	1,871.88	76.09
		3,920.22		118,121.77		22,800.00		31,176.64		11,400.00		
	Total Package 8	187,418.63										
	EU budget	246,324.34										
2018	Total every species	3,477.36	689.64	99,821.67	19,796.87	15,521.70	3,078.30	41,540.56	8,238.40	13,168.41	2,611.59	74.43
		4,167.00		119,618.54		18,600.00		49,778.96		15,780.00		
	Total Package 8	207,944.50										
	EU budget	279,364.83										
2019	Total every species	3,978.57	789.03	88,169.52	17,485.97	20,119.81	3,990.19	52,019.48	10,316.64	13,856.04	2,747.96	88.84
		4,767.60		105,655.49		24,110.00		62,336.12		16,604.00		
	Total Package 8	213,473.21										
	EU budget	240,294.30										
	Total every species	17,150.22		470,194.00		96,161.00		154,162.36		63,693.60		70.14
	Total Package 8	801,361.18										
	Total EU budget	1,142,476.22										

Source: Own calculation based on APIA data [1].

The evolution of the budget allocated by the European Union for package 8 (breeding of farm animals from local breeds in danger of abandonment) was increasing until 2018, reaching from 174,798.35 euros, in 2015, to the value of 279,364.83 in 2018. And in 2019, the budget allocated for package 8 decreases to the value of 240,294.30. Also, the absorption percentage of the total budget allocated by the EU, of compensatory payments, was continuously increasing, from the value of 44.18% in 2015, to the value of 88.84% in 2019 (Table 5).

## CONCLUSIONS

In the period 2015 - 2019, in Romania, the value of the compensatory payments of package 1 (high natural value meadows) from Measure 10 - Agroenvironment and Climate of PNDR 2014 - 2020, were 231,563,125.73 euros, with a total number of beneficiaries of 212,413 and a total area of 1,799,820

hectares, and the absorption percentage is 97.14% of the total EU budget of 238,282,749.82 euros allocated to this package.

In the period 2015 – 2019, in Romania, the value of the compensatory payments of package 4 (green crops) from Measure 10 – Agroenvironment and Climate of PNDR 2014 – 2020, were 48,975,474.83 euros, with a total number of beneficiaries of 7,506 and a total area of 399,030 hectares, and the absorption percentage is 94.19% of the total EU budget of 51,995,505.11 euros allocated to this package.

In the period 2015 - 2019, in Romania, the value of the compensatory payments of package 8 (breeding of farm animals from local breeds at risk of abandonment) from Measure 10 - Agroenvironment and Climate from PNDR 2014 - 2020, were 801,361.18 euros, which represents an absorption percentage of 70.14% of the total EU budget, from this period, with a value of 1,142,476.22

euros. The total values of the compensatory payments for each species are 17,150.22 euros for goats, 470,194.00 euros for sheep, 96,161.00 euros for cattle, 154,162.36 euros for pigs and 63,693.60 euros for equids.

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