STUDIES ON THE CURRENT LEVEL OF INVESTMENTS FUNDED BY THE NATIONAL RURAL DEVELOPMENT PROGRAM FOR MEAT PROCESSING IN THE DEVELOPMENT CENTER REGION

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Abstract

The National Rural Development Program is a program coordinated by the Ministry of Agriculture and Rural Development, in consultation with representatives of bodies, organizations and social partners active in this field and approved following consultations with the European Commission, which provides European non-reimbursable funds for investments private and public projects that ensure the development of rural areas in Romania. Sub-measure 4.2. - "Support for investment in the processing / marketing and / or development of agricultural products", falls within measure 4 - Investments in physical assets. It is necessary to concentrate support for investments in modern production spaces and technologies, the development of new products, the application of innovative practices and technologies in the meat industry The main purpose of this paper is an analysis of the investments with European funds regarding the development of meat processing in the Region of the Development Center of Romania in the period 2015-2017. In this paper, we propose to follow the influence of support under sub-measure 4.2 on the dynamics of investments in meat processing, at the level of the Centre Region, which have an eligible value of 14,837,922 euros, and the public value is 6,482,196 euros, in relation to nationally funded projects with an eligible value of 70,435,100 euros and a public value of 32,501,225 euros and a number of 30 projects.

Key words: *eligible value, processing, meat, public funds, financing, livestock unit, project, measure*

introduction

At the moment, the consumer must be provided with food safety by observing the quality and hygiene standards of the products and eliminating from the market counterfeits and products for which harmful additives may be used so that their health is not affected. This helps to increase consumer confidence in the quality of food consumed. [14]
In recent years, interest in meat authenticity has increased. Many consumers are concerned about the meat they eat and accurate labelling is important to inform consumer choice. [9]
The vulnerability of food supply chains to fraud/adulteration is growing as a result of globalisation, which is expanding the scope and scale of the incidence of food fraud/adulteration. [6]
Animal production, as an economic branch destined to provide mainly organic animal raw material for the preparation and production of human food, but also for other fields: the textile industry, the leather industry, etc., is subject to the conditions imposed by the two requirements of the contemporary society: food security and food safety [14].
There are increasing concerns of society towards the consumption of animal products

which have been produced and transformed in a sustainable manner. This trend influences consumer purchasing decision making, particularly in developedcountries.[7] The use of EU subsidies within the Common Agricultural Policy community has had a positive impact on accelerating output growth in the meat industry. [8]

In Romania, the agricultural product processing sector needs investment to create new processing capacities, upgraded equipments and technologies, technology flows to meet new Community standards and improve productivity. Also, in order to absorb part of the surplus labor force from semi-subsistence farming and to capitalize on the growth potential of the agri-food sector, it is necessary to create jobs in this sector. These needs highlight the fact that the Romanian food industry still has significant gaps in the added value of agricultural products in relation to the production capacity of indigenous agricultural products. [10]

Investments for food needs of the country's population must be made after a well-defined analysis, so the state must support the production of meat and meat products through efficient methods to help the producer. [13]

The European Union (EU) is the world's third largest producer of beef. This contributes to the economy, rural development, social life, culture and gastronomy of Europe. The diversity of breeds, animal types (cows, bulls, steers, heifers) and farming systems (intensive, extensive on permanent or temporary pastures, mixed, breeders, feeders, etc) is a strength, and a weakness as the industry is often fragmented and poorly connected. [3] Romania is a net exporter of bovine meat, but the highest share in the export structure belongs to bovine live weight (84.4%). [11]

Romania is an net exporting country of sheep meat, as long as it has a surplus, and the domestic consumption is low. Romania has a high potential for producing more meat for the internal market and export. [12] The potential for meat production of Romanian Tsigai sheep breed depends on the fattening technologies applied. Improving the carcass and meat quality can be achieved by crossing of Tsigai breed, as maternal genotype, with specialized sires for meat production. [4]

Developing an appropriate, focused strategy for the allocation of EU funds is only the first, though perhaps the most important step in implementing the EU cohesion policy. The The successful implementation of EU co-funded projects is contingent not only upon the effectiveness of these countries' administrative systems, but also on the activity of the potential beneficiaries. [1] Using cohesion policy funds gave an opportunity to fulfil UE demands. One of the sectors which needed that support was agriculture and rural areas. [5]

Sub-measure 4.2 "Support for investment in the processing / marketing of agricultural products" is in line with Regulation (EU) 1305/2013, Art.17, Measure 4 - Investing in physical assets - and contributing to the two areas of intervention as follows: (1) individual and / or collective investments leading to the development and upgrading of agricultural processing and marketing capacities, compliance with European standards, including modern technologies, new innovations and ideas, as well as facilities for increasing the efficiency and productivity of businesses and the added value of agricultural products, investment in storage and packaging facilities, quality management systems, environment-friendly systems, labelling, promotion and marketing within food chains; investments to modernize and expand collection and conditioning systems, combined with marketing and product quality enhancement; (2) investments that will contribute to the creation of new local agricultural processing units and the promotion of integrated food chains, actions that will have the direct effect of creating jobs, thus contributing to the promotion of employment. [2]

MATERIALS AND METHODS

In this paper, a statistical study was carried out to highlight the investments made under Sub-measure 4.2 of NRDP for the study period 2015-2017, regarding the projects financed for the development of the meat

processing units in the counties of Alba, Brasov, Covasna, Sibiu, Mures, Harghita which make up the Center Development Center (Transylvania). Also, the number of consultancy firms has been consulted on the speciality site. The situation of the financed projects was carried out by consulting the selection reports published by the contracting authority on the site www.afir.info.

The livestock (bovine, swine, sheep, poultry) were converted into livestock unit by multiplying the number of animals by the conversion factor specific to each species.

The value of the conversion factor by species is the following one: Bovine 1.00, Swine 0.30, Sheeo 0.15, Poultry 0.03.

Several correlations and polynomial functions have been made to see if there is a link between the terms (eligible value, livestock unit, number of consulting firms) by using the formulas below:

- *the equation for the correlation coefficient*:

$$r = \frac{\sum (x_i - \overline{X})(y_i - \overline{Y})}{\sqrt{\left(\sum (x_i - \overline{X})^2\right)\left(\sum (y_i - \overline{Y})^2\right)}},$$

where:
$\overline{X}$ and $\overline{Y}$ - are the averages for samples, AVERAGE (matrix1) and AVERAGE (matrix2).

-polynomial function:
Polynomial - the n order polynomial model:

$$y = a_0 + a_1 x^1 + a_2 x^2 + \ldots + a_n x^n.$$

RESULTS AND DISCUSSIONS

In the period 2015-2017, in the Center Region, through sub-measure 4.2, there financed 6 projects, representing 20% of the total number of projects financed at national level so far (30 projects), which represents a relatively good score for this region. Of the 6 projects, 1 was financed in Covasna County in 2016, 1 in Harghita county in 2017, and 4 in Mures County, of which 1 financed in 2016 and 3 financed in 2017, and in the counties of Alba, Brasov and Sibiu there was no project funded by the NRDP 2014-2020 in the development of meat processing units (Table 1).

The total value of selected projects in the Center Region is EUR 14,837,922, representing the eligible value and the public value being of EUR 6,482,196.

At the national level, the total value of the selected projects is EUR 70,435,100 representing the eligible value and the public value being 32,501,225 euros, for the projects financed between 2015-2017 in the development of meat processing capacities.

It can be noticed that the counties, which attracted European funds or the development of storage capacities, are: Covasna, Harghita and Mures. Surprisingly, in Alba, Harghita and Sibiu counties, there is no project financed by European funds in the development of meat processing capacities, although they have a high potential in meat production (Table 2).

Table 1. Numerical situation of selected projects in Region 7 - Center Region

Year	County						Total	Total national
	Alba	Brasov	Covasna	Harghita	Mures	Sibiu		
2015	0	0	0	0	0	0	0	4
2016	0	0	1	0	1	0	2	8
2017	0	0	0	1	3	0	4	18
Total	0	0	1	1	4	0	6	30

Source: Own calculation.

Table 2. Total value status of selected projects in Region 7 - Central Region (Transylvania)

Year	Value	Alba		Brasov		Covasna		Harghita		Mures		Sibiu		Total V. e.	Total V.p.	Total national V.e.	Total national V.p.
2015	E	0		0		0		0		0		0		0		2,185,556	
	P		0		0		0		0		0		0		0		1,092,778
2016	E	0		0		4,999,175		0		340,686		0		5,339,861		27,066,427	
	P		0		0		2,499,587		0		170,343		0		2,669,930		12,439,399
2017	E	0		0		0		2,250,773		7,247,288		0		9,498,061		41,183,117	
	P		0		0		0		900,309		2,911,957		0		3,812,266		18,969,048
Total	E	**0**		**0**		**4,999,175**		**2,250,773**		**7,587,974**		**0**		**14,837,922**		**70,435,100**	
	P		**0**		**0**		**2,499,587**		**900,309**		**3,082,300**		**0**		**6,482,196**		**32,501,225**

E – eligible value; P – public value.
Source: Own calculation.

The highest eligible value is in Mures county, amounting to 7,587,974 euros, and the public value is 3,882,300 euros, followed by Covasna with the eligible value of 4,999,175 euros and the public value 2,499,587 euros, and the last place is the Harghita County with the value publishes EUR 2,250,773 and the eligible value EUR 900,309 (Table 2).

Table 3. Livestock bovine, swine, sheep, poultry in 2015* and livestock unit

Animal category	Alba		Brasov		Covasna		Harghita		Mures		Sibiu	
	Livestock head*	Livestock unit	Livestock head*	Livestock unit	Livestock head*	Livestock unit	Livestock head*	Livestock unit*	Livestock head*	Livestock unit*	Livestock head*	Livestock unit
Bovine	63,451	63,451	59,801	59,801	37,687	37,687	70,932	70,932	70,032	70,032	37,676	37,676
Swine	105,945	31,783.5	106,139	31,841.7	45,028	13,508.4	33,659	10,097.7	120,234	36,070.2	68,517	20,555.1
Sheep	307,596	46,139.4	372,430	55,864.5	213,601	32,040.15	191,603	28,740.45	457,936	68,690.4	574,770	86,215.5
Poultry	2,657,497	79,724.9	2,459,588	73,787.64	792,243	23,767.29	758,586	22,757.58	1,663,950	49,918.5	508,360	15,250.8
Total Livestock unit	-	221,098.8	-	221,294.84	-	107,002.84	-	132,527.73	-	224,711.1	-	159,697.4

Source: * http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table (21.12.2018)

Table 4. Livestock unit, projects number, eligible value, number of consulting firms

County	Livestock unit	Projects number	Eligible value [€]	Number of consulting firms *
Alba	221,098.8	0	0	193
Brasov	221,294.84	0	0	550
Covasna	107,002.84	1	4,999,175	82
Harghita	132,527.73	1	2,250,773	155
Mures	224,711.1	4	7,587,974	329
Sibiu	159,697.4	0	0	354
Total	1,066,332.7	6	14,837,922	

Source: * https://www.topfirme.com/judet/sibiu/caen/7022/

In order to give us an idea of the raw materials situation in the region, considering that they influence the situation of the processing investments, in Table 3, there are presented the livestock unit values calculated based on the conversion ratios. The livestock values are the following: Alba - 221,098.8, Brasov - 221,294.84, Covasna - 107,002.84, Harghita - 132,527.73, Mures - 224,711.1, and Sibiu - 159,697.4.

Several correlations have been made as follows: between eligible value and projects number, between eligible value and livestock unit, between livestock unit and investment, between the number of consulting firms and investment, to see if there is a link between the raw material in the counties of this area and the investments made in the counties of this area, but also if there is a link between the consultancy firms and the investments made (Table 5).

Table 5. Correlations value

Correlation	r	R^2 Polynomial function grade 2	R^2 Polynomial function grade 3	R^2 Polynomial function grade 4	R^2 Polynomial function grade 5
Eligible value – Projects number	0.92	0.92	1	-	-
Eligible value – Livestock unit	- 0.11	0.78	0.81	-	-
The number of consulting firms– Investments	- 0.31	0.11	0.31	0.52	1

Source: Own calculations.

There is a close link between the eligible value and the number of projects submitted, this being shown by the values of r = 0.92 and R2. The values of R^2 were as follows: 0.92 - Grade 2 polynomial function and 1 - Grade 3 polynomial function. (Table 5 and Figure 1).
There is no correlation between the eligible value and the livestock unit production, as it results from the value of r = -0.11, these two variables correlate starting with polynomial grade 2 and polynomial grade 3 (0.78 and 0.81 respectively) as follows Table 5 and Figure 2. This correlation shows that the investments were made randomly and did not take into account the raw material in the respective counties.
In the case of the correlation between the number of consulting firms and the

investments made in the development of processing capacities, this can be confirmed starting with the 5th degree (R^2 - 1)

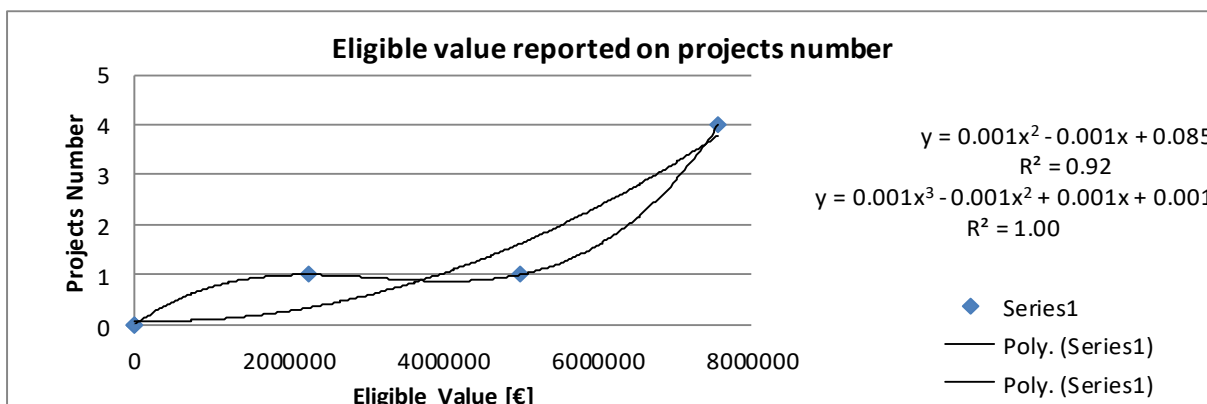polynomial function, as shown in Table 5 and Figure 3.

Fig. 1. Correlation between eligible value and projects number
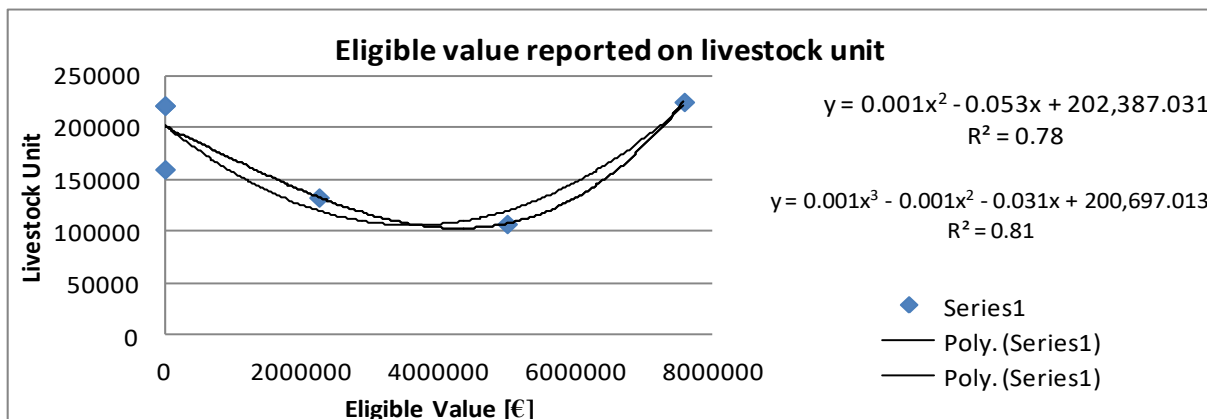Source: Own design.

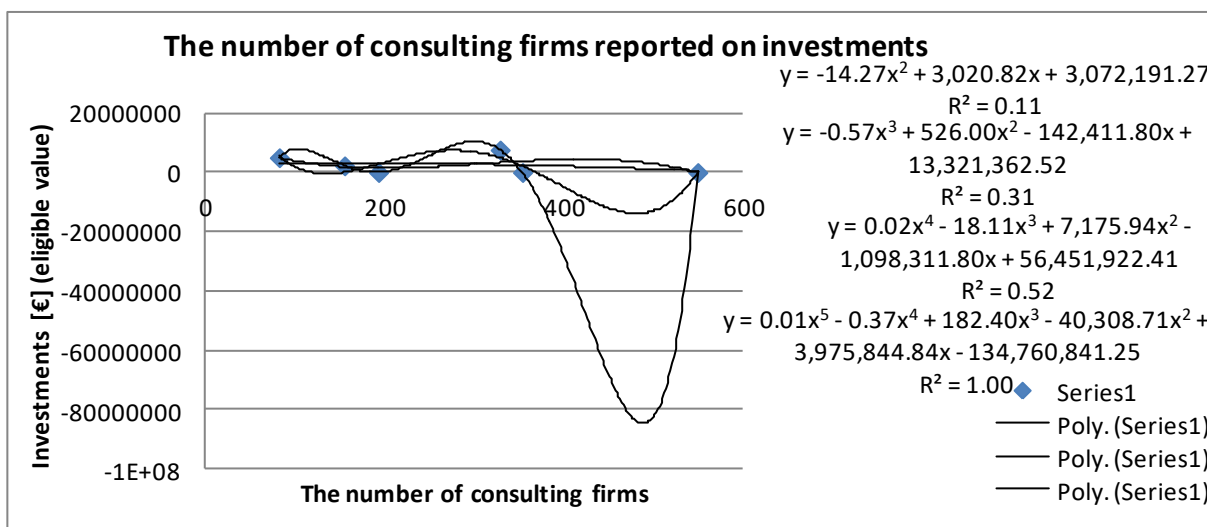Fig. 2. Correlation between eligible value and livestock unit
Source: Own design.

Fig. 3. Correlation between the number of consulting firms and investment
Source: Own design.

Neither consultancy firms in the counties in this area have influenced investments in the development of meat processing capacities between 2015-2017 through the 2014-2020 NRDP.

CONCLUSIONS

At the level of the Center Region, under sub-measure 4.2 "Support for investments in the processing / marketing and / or development of agricultural products", in the period 2015-2017, 6 projects were financed in the development of meat processing units, representing 20% of projects funded at national level so far (30 projects).

Projects selected in the Center region have an eligible value of EUR 14,837,922 and public value is EUR 6,482,196, while at national level, the total value of the selected projects is EUR 70,435,100, representing the eligible value and the public value being EUR 32,501,225 , projects funded between 2015-2017, through NRDP 2014-2020, in the development of meat processing capacities.

It is concluded that there is no correlation between the investments made in the development of the meat processing capacities and the livestock unit being shown by the correlation coefficient r = - 0.11, and that the investments in this field were made randomly without taking into account the raw material.

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