STUDY ON THE COMMON AGRICULTURAL POLICY INFLUENCE ON PHYSICAL AND ECONOMICAL DIMENSION OF AGRICULTURAL HOLDINGS (CASE STUDY IN THE SOUTH OF GALAŢI COUNTY)

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Abstract

If before 1989, Romania was one of the countries with the largest physical size of farms, after 1989 it became one of the countries with the lowest physical size of these holdings. In 2007, the first year after EU accession, the physical size of farms was 3.5 ha, our country being on the penultimate place in the EU 27 (exceeded only Malta whose total area was only 11 000 ha). The opposite stood the Czech Republic, with 89.3 ha per holding. Putting the two former socialist countries on diametrically opposed positions is the following of different applied policy in the transition of agriculture to a market economy. While Romania has pursued restoration of what was formerly in agriculture, in the Czech Republic was considered foreshadowing the future of agriculture. Consequently, in Romania has resulted atomization of agricultural holdings and fragmentation of land which exceeds what was about 50-60 years before, in the interwar period and the Czech Republic - a concentration of agricultural holdings land that placed it at the forefront of EU countries.

Romania's agricultural policy during the accession to the EU was facing, no doubt, at the enterprise or farm size, measured by the single criterion of land surface in use or existing livestock, some acts showing the orientation sided, narrow and exclusive. Thus, by the provisions of Emergency Ordinance no. 108 / 27 June 2001 on commercial farms, farms are considered only agricultural units which have at least 110 ha of arable land in the plain (ie 50 hectares in hilly area) or 15 cows or 5,000 meat poultry or 100 pigs etc.

The criteria for sizing of large, medium or small farms don't have a unified approach to economic theory. However, the most commonly used are the following two criteria established by: **the attracted resources in production** (in physical units), with reference, first, on the average size of holdings land and, secondly, at livestock, tractors and agricultural machinery and other elements of the production factors; **the results achieved** (expressed in physical or monetary units), with reference to the quantities of final products or proceeds.

The literature, in the majority inclined to physical parameters or reflects the inputs or results.

In Galati, characteristic of farms distribution by physically class size, is very large share of farms under 5 ha - 97.23% of all farms in the southern of Galati county, against 96.57% in the county of Galati and higher share of holdings with 50 and over 50 hectares - 0.88% against 0.56% in Galati county.

The authors have proposed, using a case study, to highlight the common agricultural policy impact on physical and economic size of farms in the southern of Galati county.

Key words: agricultural policy, economic dimension, agricultural holdings

According to recent estimates, combined with the results of agricultural censuses, currently the defined segment of the agricultural unit includes a number of the 10,000 farms, less than 0.5% of the total number of farms over one hectare that is using 37 - 38% of the agricultural area of Romania. All these elements of evolution in Romania were in the structure of social transformations throughout Central and Eastern European countries (Mateoc-Sîrb Nicoleta, 1998).

Develop an effective agricultural policies requires knowledge / clear identification of the types of existing production entities, because the manifest differences between them can not / and should not be neglected in political and economical decision-making sphere. Various production entities have their own characteristics, so requires the application of differentiated instruments (Davidovici I. et al., 2002.)

Achieving a reasonable level of concentration of agricultural production, enabling in the same time, the turning of obvious advantages of concentration (ability to use more efficient the means of mechanization, the reduction of specific consumption of resources, crop rotation,

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etc.) and avoid the shortcomings of this form of organization (the ability to overcome the managers, increase risk and others) is a major goal of any farm. To express the concentration of the elements necessary for production in a firm and the result itself, the current terminology of our country uses the notion of **enterprise size**. Along with this, are frequently used the term **dimension** (Bold. I. et al, 1995; Dima Fl.M. et al., 2008).

Usually, the notion of size reflects the qualitative aspect of the process of concentration of production (the result), and the dimension reflects the quantitative side. Between the two concepts, is interposed, the **intensively concept** of production, which shows the degree of recovery of basic resources by successive capital investments. Farm size is expressed primarily by **land area** (territorial dimension) or **livestock** (Chiran A. et al, 2000; Chiran A. et al, 2007).

Other indicators, like the number of personnel or equipment indicators (volume of operating capital, the number of tractors and agricultural machinery etc.), indirectly characterizes the size of agricultural units (Alecu I.N. et al., 2001; Ciani A. et al., 1998, Ţiclea Al. el al, 1992).

MATERIAL AND METHOD

The study was conducted in the southern part of Galati County, and aimed the highlighting of the agricultural policies community influence on physical and economical size of farms since 1 January 2007, when Romania was admitted to the European Union. As a research methodology has been applied the classical methods, such as: comparison, analysis of specific indicators, the economic dimension optimization method, the method of variants calculation etc.

The series of statistical data covered the period 2009-2010, with reference to all Galati County, but especially in the southern part of Galati county.

RESULTS AND DISCUSSIONS

In the EU, the size of farms is characterized by two indicators: *physical size*, expressed in hectares of agricultural used area (**AUA**) and *economic size*, expressed in the number of economical dimension units (**EDU**). A unit of economical dimension corresponds to a certain amount of standard gross margin (**SGM**), expressed in the single currency (EURO). This amount is updated periodically with the inflation.

For example, in 1980, 1 EDU worth 1000 Euro, in 1982, 1100 Euro, and now, 1200 Euro. Basically, an EDU equals approximately 3.5 hectares of wheat.

SGM per hectare or per animal is defined as production value per ha / cap, minus the cost of variable inputs. The services that manage the Farm Accountancy Data Network (RICA) set every two years for each region, the amount unit of MBS for all vegetal and animal production. Thus, according to the total agricultural area and livestock you, every farm of EU can determine the total amount of MBS.

Depending on the number of EDU, farms are classified into six classes of economic size as follows:

- Class I: 0 - <4 EDU, Class II: 4 - <8 EDU, Class III: 8 - <16 EDU, class IV: 16 - <40 EDU, class V: 40 - <100 EDU; Class VI:> = 100 EDU.

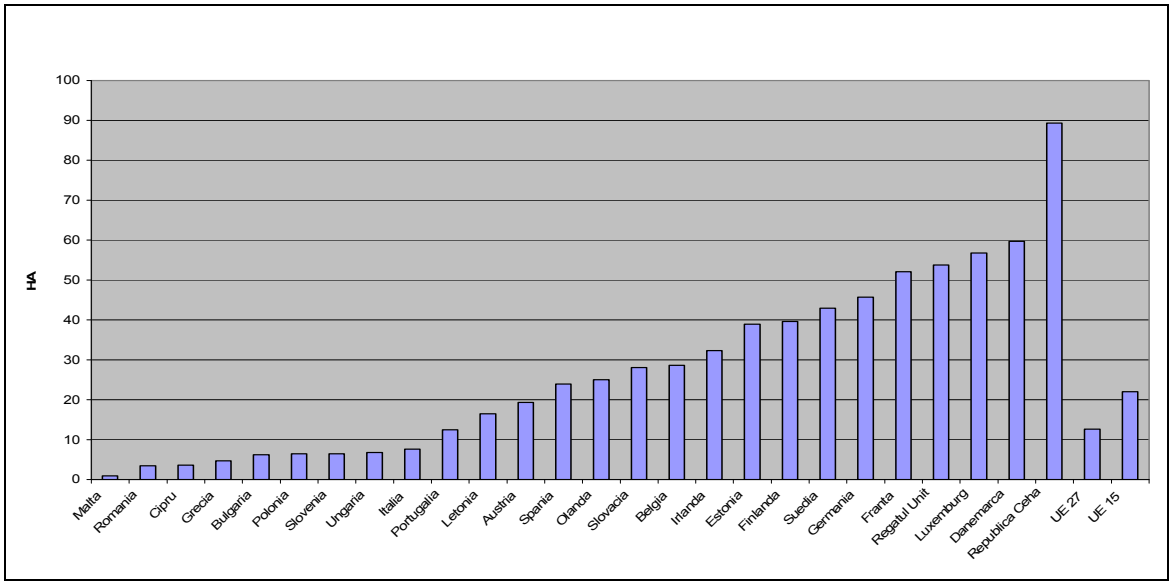

Figura 1 **The average physical dimension of farms in the EU 27 (2007)**

Holdings that exceed certain thresholds of economic size farms are considered professional and enter in the field of observation from RICA. The other farms are considered unprofessional or recreational and are not concerns of RICA. Minimum threshold of economic dimension of farms are distinct for each EU member state, reflecting the great diversity of agricultural encountered structures. For example, in 2004, economic dimension threshold was between 1EDU in Cyprus and 16 EDU in Belgium, the Netherlands and the UK.

In the European Union, the largest physical dimension of a farm meets in Czech Republic and Malta the minimum value (fig. 1).

In the EU 27, the average size of farm was 12.6 ha in 2007, being 3.5 times higher than in Romania. Such a gap is a great handicap to most other EU countries. The specified size, coupled with excessive parceling of land, farms in our country face great difficulties in practicing a competitive agriculture, crop rotations organization, specializing in certain products with high added value, using modern technical means and technologies, making products in large lots, counteracting the negative effects of disturbance factors or the functioning of markets etc.

In the area studied, the highest weight class is held by the 0-1 hectare farms, both at the county level and in the south of it (tab. 1, tab. 2).

Distribution of farms by size class must be determined in close physical connection with the distribution of utilized agricultural area: farms below 5 ha in the southern county of Galati used 33% of the agricultural area against 38.11% in Galati county, while farms with 50 and over50 ha of agricultural area, used 60.19% compared to 48.64% in Galati County, and farms with between 5 and 50 ha, use only 6.72% of agricultural land compared to 13.23% in Galati county.

Table 1

Distribution of farms in different size classes in the county of Galati compared to the south of Galati County

	Size class	Agricultural holdings					
		Number		% of total		Average size - ha	
Galaţi County	(Ha)	2009	2010	2009	2010	2009	2010
	0 - 1	101356	98707	82.43	80.30	0.90	0.93
	1-3	13369	15369	10.87	12.50	2.08	1.81
	3-5	4017	4517	3.27	3.67	4.30	3.83
	5-10	2202	2342	1.79	1.91	7.22	6.79
	10-50	1330	1332	1.08	1.08	23.73	23.67
	≥ 50	687	663	0.56	0.54	253.84	263.04
	Total	122961	122930	100	100	2.90	2.92
The south of Galati county	0-1	40756	40678	92.65	92.56	0.74	0.74
	1-3	2015	2023	4.58	4.60	3.77	3.76
	5-10	523	543	1.19	1.24	5.28	5.80
	10-50	306	319	0.70	0.73	16.44	17.01
	≥ 50	389	384	0.88	0.87	167.58	130.10
	Total	43989	43947	100	100	2.46	1.48

Source : Statistics of Galati County, D.A.D.R. Galaţi

Forms of response to farm market events are given by their dimensions, namely economic viability. Can be put in relief the following types of farms:

- **large commercial farms** (*using resources effectively, although there are still discrepancies in terms of competitiveness, which should be reduced*);

- **semi-subsistence farms** (*farm is producing mainly for own consumption, but a part of production is for trade*). The economic dimension of semi-subsistence farms can vary between 2-8 EDU;

- **subsistence farms** (*are those farms in which the ratio of labor / unit area is 63.43 annual working units /100 ha*);

Increasing physical size of farms is accompanied by ***faster growth of economic dimension***, which means that the surface increase is more important than **increasing production per unit area.**

The criteria for sizing in large, medium or small farms have a unified approach to economic theory. However, the most commonly used are the following two criteria established by:

- attracted resources in production (in physical units);

- the results achieved (expressed in physical or monetary units).

Optimal dimension is approached as an opportunity to achieve the production performance, quality and efficiency. Often, the optimum is replaced with "rational", "acceptable", "sufficient",

"limit", "minimum". Obviously, this diversity of approaches in terms demonstrates different views regarding the criteria, limits and procedures for determining the size of holdings. For example, we give further EU proposals, Romanian scientific research and the official established by Romanian legislation.

Table 2

Distribution of farms in different size classes and used surfaces in the county of Galati compared to the south of Galati County

	Size class (ha)	Agricultural used surfaces			
		hectares		% of total	
		2009	2010	2009	2010
Galaţi County	0 - 1	91499	91495,41	25,52	25,52
	1-3	27861.55	27861.55	7.77	7.77
	3-5	17289.23	17283.42	4.82	4.82
	5-10	15897.89	15897.89	4.43	4.43
	10-50	31561.78	31531.78	8.80	8.80
	≥ 50	174390.55	174394.95	48.64	48.65
	Total	358500	358465	100	100
The south of Galati county	0 - 1	30213.91	30213.91	27.90	27.90
	1-3	3565.32	3565.32	3.29	3.29
	3-5	2060.71	2060.71	1.90	1.90
	5-10	2237.60	2237.60	2.07	2.07
	10-50	5031.78	5031.78	4.65	4.65
	≥ 50	65187.68	65187.68	60.19	60.19
	Total	108297	108297	100	100

Source: Statistics of Galati County, D.A.D.R. Galaţi

Under the Common Agricultural Policy (CAP), by Manscholt program is proposed for the first time, measures for adjusting agricultural structure, aimed at forming rational farm size, to obtain a cheap production and removal of the culture of five million hectares to limit surpluses and conversion of agricultural labor (table 3).

Table 3

Optimal (rational) dimensions set through the Mansholt program

Production sector	Rational dimensions
Vegetal sector	80-120 ha
Dairy	40-60 heads
Cattle for meat	150-200 heads
Fattening pigs	450-600 heads

Source: Lăpuşan A., Structuri agrare, Ed. Băneasa Print, Bucureşti, 2002 (8)

These dimensions were recommended not to be considered the calculations of the economic foundation so they were not credible, which led to their non-acceptance in practice. They remain as a subject, as it reflects the unrest, the search of agricultural policy on imposing size to support the performance and efficiency in production.

An analysis of data reveals the following criteria according to which were set farms dimensions:

- *the degree of intensification,* respective, the contribution of investment factors per hectare or per animal. According to this criterion, in the agricultural industries that require more investment, of course, the farm size is smaller, with reference to vegetable growing, fruit growing and viticulture, in field crops, a farm size is greater;

- *the conditions for relief (orographic*), criteria that affect the size of cereal farms, respectively crops, which, given the greater dependence to climatic factors, natural, due to the low level of investment compared to other vegetable industry, requires that the plains farms to be larger than in hill and mountain areas;

- *adopted agricultural system*. Criterion was used in the livestock sector, where farm size is much smaller for household systems based on traditional technologies, characterized by intensive labor and minimal investment factors, respectively, higher in intensive systems, based on performance technologies.

Romanian legislative framework, represented by Law no. 166/2002 for approving the Emergency Ordinance nr.108/2001 on farms, promoted to farm sizing, a single criterion, formulated according to the destination of agricultural production. Because of this, were enacted two categories of farms: *commercial and family farms.* For the commercial ones, which raise a major concern of the agricultural policies, in grant action, the following limits were set with distinctive reference to the vegetal respectively, livestock sector (table 4. and table 5).

Table 4

Minimum size for commercial vegetal farms

The production profile	Minimum size – ha/farm
Cereal, technical and medicinal crops – plains zone	110
Cereal, technical and medicinal crops – hilly zone	50
Natural grown pastures and forage crops - the mountains zone	25
Vegetables	2
Fruit and nurseries	5
Strawberries, fruit trees	1
Noble vineyards, nurseries and hops	5
Greenhouses and solariums	0.5

Source: Law 166/2002 for approving the Emergency Ordinance 108/2001 on agricultural holdings

Unlike the first two versions, U.E. and Romanian agricultural legislation, where the formulation has been developed in terms of farm size "optimal" and the "rational", in the law, the formulation was in terms of "minimum" as a reflection of the prevalence of small farms that operates our agricultural production.

This legislative approach has major significance in terms of practical actions, of agricultural policy, because it can lead to increased interest in acquisition of farm business character of the small family farms by increasing access to funding support.

Using parallel series interdependent, we determined the optimal size of a farm in the south of the county of Galati, in terms of production of 2010.

Table 5

Minimum size for commercial zootechnic farms

Production sector	Minimum size – heads/farm
Dairy	15
Fattening bulls	50
Sheep or goats	300
Pigs	100
Other species of animals	100
Chicken for eggs	2000
Poultry meat	5000
Other species of poultry	1000
Bee families	50

To demonstrate the influence of direct payments on the optimal size of farms, we designed two versions, ie version I provided is not granted direct area payments and option II - under the provision of direct payments per area (table 6 and table 7).

From the data presented, results that the optimal dimensions from the economic point of view, is the physical one from 6.10 to 8.00 ha, for the variant without direct payments on surface, and physical dimension from 4.10 to 6.0 ha for the variant with direct payments on surface.

Table 6

Indicators of results and efficiency of different sizes farms - non-direct area payments variant

Dimension interval (ha) xi	Indicators of results and economical efficiency							
	Gross prod. (lei)	Direct payments (lei)	Total costs (lei)	Variable costs (lei)	Profit (lei)	Gross standard margin (lei)	Gross standard margin (€)	The class of ec. dimension
1.00 – 2.00	2625	-	2067.07	1860.71	557.93	764.29	178.92	-
2.10- 4.00	5250	-	4320.15	2863.41	929.85	2386.59	558.68	-
4.10 – 6.00	8750	-	7057.58	4305.69	1692.42	4444.31	1040.38	-
6.10- 8.00	12250	-	9795.01	6747.96	2454.99	5502.04	1287.99	I
8.10 – 10.0	15750	-	12532.4	9190.24	3217.56	6559.76	1535.60	I

Table 7

Indicators of results and farm efficiency of different dimensions - the variant without direct payments on surface -

Dimension interval (ha) xi	Indicators of results and economical efficiency							
	Gross prod. (lei)	Direct payments (lei)	Total costs (lei)	Variable costs (lei)	Profit (lei)	Gross standard margin (lei)	Gross standard margin (€)	The class of ec. dimension
1.00 – 2.00	2625	807	2067.07	1860.71	1364.93	1571.29	367.82	-
2.10- 4.00	5250	1614	4320.15	2863.41	2543.85	4000.59	936.51	-
4.10 – 6.00	8750	2690	7057.58	4305.68	4382.42	7134.31	1670.09	I
6.10- 8.00	12250	3766	9795.01	6747.96	6220.99	9268.04	2169.58	I
8.10 – 10.0	15750	4842	12532.44	9190.24	8059.56	11401.76	2669.07	I

CONCLUSIONS

The criteria for sizing of farms have a unified approach to economic theory, the most common being **attracted resources in the production process and results.**

In the EU, farm size is given by the **physical dimension** (*expressed in hectares of agricultural used surface (AUS)*) and **economical dimension** (*expressed in the number of* ***economical dimension units*** *(EDU))*.

In 2007, in EU-27 the average size of farms was 12.6 hectares and was 3.5 times higher than in Romania.

In the researched area, the largest share is hold by holdings from the **"class 0-1 hectares"**, both in the Galaţi county, and in the south of it.

Based on the parallel interdependent series method in terms of production of 2010, recorded in the southern of Galati county, have been designed two types of farms: V1 - without direct payments granting on the surface and V2 - the provision of direct payments on surface. The result was that the economically optimal size for the V1 - is between 6.10 to 8.00 hectares, and in the case of V2 - between 4.10 to 6.00 hectares.

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