

ANALYSE OF THE STRUCTURE OF THE AGRICULTURAL FARMS BY SIZE AND THE SHARE OF THE LIVESTOCK AMONG THEM. AN ARGUMENT FOR MORE HELPING FOR THE SMALL FARMS

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Abstract

The paper analyse the structure of the agricultural farms by size especially the distribution and density of animals for each group of exploitation in order to establish the financial system of supporting them. That because more than 70% from the small households are now unfinanced but more than 90% of cattles, sheeps, goats, horses are bred in the small farms. At present in Romanian agriculture there is a tendency to develop great and very great farms taking into account the advantages of the scale economy. At the other pole there are over than 3.8 million small exploitations unfinanced or economically nonsustainable. Paradoxically the small individual peasant exploitations are those wich are preserving Romania`s livestock (all of it that it left): 91.7% of the cattle, over 97% of the sheeps and goats, between 62 and 65% of the pigs and poultry. Taking account that almost all livestock of romanian agriculture is bred in the small farms and the density per 100 hectare in these farms is more than ten times greater than in the very big farms is necessary to help prioritarly the small farms in order to rise their income and performaces.

Key words: agriculture, distribution, farm size, livestock, performance

INTRODUCTION

The exaggerated crumbling of the lands, as well as the existence of a number of almost four million so-called agricultural exploitations are considered to be the main causes for the lack of performance within Romanian agriculture. In terms of market economy, the performance signifies a large output per hectare and per animal, significant a high work productivity and a production destined for sale.

However, this appreciation is strictly economical, there being certain aspects which are neglected, such as the social role and the importance of individual households in sustaining, from an economic point of view, one of the most numerous rural populations among the European Union`s countries.

The data presented in this paper reflect this situation and allow for the observation of certain trends as far as the future evolution of Romanian agriculture is concerned.

MATERIALS AND METHODS

As far as the material is concerned, we used statistical data concerning the numerical and

dimensional evolution of agricultural exploitations during the period of transition towards a market economy, as well as data pertaining to the last agricultural census (2010). The method we used is the one used within economic research, which is based on statistical data: research of data according to the established goal, selection, analysis, grouping and commenting of the results, synthesis and conclusions.

RESULTS AND DISCUSSIONS

The agricultural exploitations in Romania. Juridical status and dimension

According to data provided by APIA (The National Agency for Payments and Interventions in Agriculture), in 2010 in Romania there were 3,856 thousand agricultural exploitations, among which 2,740 thousand represented 71.1% out of the total and were not financed.

This first, most numerous categories comprise over a third of the country`s agricultural lands. However, they do not ensure the income necessary for the sustaining of a

family but rather only play a very important social role in the economical sustainability of a rural population which represents almost a half of the country's total (Lup, 2012).

The second type of exploitations (over one million and with an average surface of around 3 hectares – from 1 to 10 hectares) is represented by the subsistence and semi-subsistence farms; representing 27.1% of the total, they own slightly more than 21% of the country's agricultural surface.

The next category includes commercial farms of over 10 ha which are economically viable (according to their profile) and which, although representing only 1.8% of the number of exploitations, own combined over 44% of the agricultural lands (table 1).

Table 1. The structure of agricultural exploitations in according to size and juridical status

Type of exploitation	Size class ha.	Number Thousands	%	Surface Thousands ha.	%	Average size ha.
Unfinanced households	under 1 ha	2,74	71.1	5,073	34.5	1.8
Subsistence and semi-subsistence farms	1-10 ha	1044	27.1	3,108	21.2	2.89
Commercial farms	over 10 ha	72	1.8	6,504	44.3	90.33
among which: - family	10-50 ha	(60)	(1.5)	(1,494)	(10.2)	(24.9)
- commercial societies	over 100 ha	(12)	0.3	(5,010)	(34.1)	(417.5)
TOTAL exploitations	-	3,856	100.0	14,685	100.0	3.81

Source: APIA, 2001 (5).

Within this category we noticed the subcategory comprising family farms, with surfaces varying between 50 and 100 ha and sizes compatible with the farms in the countries of the European Union. However, their number is the smallest, 1.5% of the total, while the used surface barely surpasses 10% of the country's fields.

As concerns the farms of over 100 ha, their status being, in general, that of commercial societies, they are quite negligible as number (0.3% of the total), but they exploit over a third of the agricultural surface of the country. This category also has subcategories according to the surface, there being five of them, the last two of which exploiting from 2,000 to 5,000 ha and over 5,000 ha (table 2).

The very large exploitations, of over 2,000-3,000 ha, raise certain concerns even for the European Commission, as they represent the main hindrance for the creation of reasonably sized farms which could be economically sustained at a family level.

Table 2. Commercial farms according to size

Size category, ha.	Number	%	Used surface thousands ha.	%	Average size, ha.
100-500	9,735	79.2	2140,0	42.3	220
500-1,000	1,697	13.8	1176,3	23.2	699
1,000-2,000	639	5.2	868,5	17.2	1,359
2,000-5,000	184	1.5	524,5	10.4	2,850
> 5,000	35	0.3	351,7	6.9	10,048
Total	12,290	100.0	5061,0	100.0	412

Source: APIA, 2010 (5).

There is even a proposal that states that from a certain size upwards these exploitations should not receive any more subventions, given the fact that their economic power is sufficiently large for them to be able to "manage" while realising decent profits without subventions.

Obviously, the supporters of such large exploitations dislike the idea and state that this measure might jeopardise the competitiveness of Romanian agriculture and that they themselves are those who pay the taxes and contribute to the growth of the state's income. One should bear in mind the fact that only 35 such genuine units own almost 352 thousand ha (an average of over 10,000 ha), among which there are also a few which exploit several tens of thousands each. **Livestock importance in Romania's agriculture**

By consuming the grass in meadows and pastures, as well as a significant part of the main and secondary cereal production, in the branch of livestock breeding there are obtained aliments with a nutrient value superior to that of vegetal ones and which must account for at least 1/3 of the human daily diet.

From an economical point of view, the transformation of the vegetal production into products of animal origin, the latter being indispensable in the human diet, animal husbandry has many advantages.

That is why its ratio, in relation to the total agricultural production, is considered to be an indicator of the intensification of agriculture, in the end being capitalised in a superior manner the land resource. It is the case of most states with a developed agriculture, where the weight of animal production surpasses 50%.

In many countries, among which Romania as well, increasing the weight of animal husbandry for it to surpass 50% of the total agricultural production represents a strategic objective.

During the planned economy, the highest weight of animal production in terms of economic value was recorded in 1987, the ratio being 49.5%. In the period following 1989, the highest weight of animal husbandry was recorded in 2009 – 39.6%. In the years which are favourable to vegetal production, this ratio can drop to below 30%.

Taking into account the large surface of natural meadows (over 4.8% million ha) and Romania's agricultural profile mostly based on the production of cereals, the increasing of the weight of animal husbandry still remains a strategic objective which may be realised by increasing both the number of animals, as well as their productivity. At present, the values of both these indicators are among the lowest in the European Union. Our density of cows per 100 ha of field is 10 times lower than in the Netherlands, while the milk production per cow is 2.5 times smaller.

The structure of the livestock according to its owners in Romania

During the socialist agriculture (1962-1989) there were made considerable efforts in order to increase animal husbandry by increasing both the number of animals, as well as their productivity; the latter goal was to be achieved by improving the races of all the main species: cattle, sheep, pigs and even poultry (table 3).

Table 3. The distribution of the main species of animals according to the economic and social sectors in the years 1989 and 2010

Specification		Cattle	Pigs	Sheep	Goats	Poultry	Horses
0		1	2	3	4	5	6
1989							
TOTAL	Thousands of heads	6,291	11,671	15,435	1,017	113,968	663
	among which: - national units	1,144	6,087	2,730	0	57,737	64
	%	182	52.5	17.7	0	50.7	9.7
- agricultural cooperative farms	Thousands of heads	3,065	2,250	5,516	0	14,849	172
	%	48.7	19.2	35.7	0	13.0	25.9
0		1	2	3	4	5	6
- households of the population	Thousands of heads	2,082	3,334	7,189	1,017	41,382	427
	%	33.1	28.6	46.6	100.0	36.3	64.4
2010							
TOTAL	Thousands of heads	1,985	5,387	8,386	1,237	78,867	604
	among which: - public sector %	170	1,833	234	27	30,273	6
	%	8.6	34.8	2.8	2.2	38.4	1.9
- individual exploitations	Thousands of heads	1,815	3,554	8,152	1,210	48,594	598
	%	91.4	65.2	97.2	97.8	61.6	98.1
- individual in comparison to 1989	Thousands of heads	-267	+220	+963	+193	+7,212	+171
	%	-12.2	+6.6	+13.4	+18.9	+17.4	+40.0
Density per 100 ha, public sector	Heads	2.9	31.1	4.0	0.46	-	-
	Density per 100 ha, individual sector	25.0	25.2	112.2	16.6	-	-

Source: Yearbook of Romania 1990 and 2011 (4).

During this period, the total number of cattle increased by 1,534 thousand heads (33.6%), the total number of pigs increased by 7,006 thousand heads (150%), the total number of sheep increased by 3,150 thousand heads (25.6%), while the number of poultry increased by 69,276 thousand heads (150%). In the same period, the milk production per foraged cow grew from 1,343 l/head to 1,892 l/head (10.6%), while the wool production grew from 2.0 to 2.4 kg/head (20%).

The lower productivity per animal was caused not only by the dysfunctions of the system, mainly the inadequate foraging and management, but also by the fact that a large number of animals could be found in the households of cooperative members or those of people in areas which had not been cooperative members. As far as the regular households were concerned, both the foraging conditions, as well as the race structure were far below the norms which permitted the obtaining of a reasonable production.

Nevertheless, the peasants, even if they did it out of necessity, deserve the credit for having preserved the livestock, unlike the commercial societies; many of these former national enterprises liquidated their livestock, opting for the field agriculture.

Leaving aside the fact that, compared to the last year of planned economy (1989), the number of livestock was greatly diminished, especially as far as the cattle were concerned (by almost three times), but also the number of pigs (by 53.5%) and sheep (by 45.7%), the peasants managed to conserve most of the country's livestock existing nowadays.

When the General Agricultural Census took place in 2010, most of the livestock – the remains of it – could still be found in individual peasant exploitations of subsistence and semi-subsistence.

The weight of this category in relation to the country's livestock in 2010 was of 91.4% for cattle, 97.2% for sheep, 97.6% for goats, and 98.1% for horses. Lower weight was recorded as far as pigs (65.2%) and poultry (61.6%) were concerned.

The explanation for the lower weight of pigs and poultry is simple: these species are mostly

bred for self-consumption, meaning that their numbers are relatively constant at a familial level, obviously higher than in the period before 1990.

On the other hand, the pigs and partially the poultry have once again become specific to mega-complexes which make use of best technologies and best genetic material; however, their production is mostly oriented towards export. The number of these societies is quite low; they own little or no land and they do not contribute whatsoever to the growth of the income of the rural population in the area because the highly developed technologies they use are characterised, among others, by a high level of work productivity.

As far as the density of the animals is concerned, in relation to the surface of agricultural lands, this density is considered to be one of the main indicators which reveal the intensity of the agriculture; the difference between the large commercial societies and the individual household is relevant but it does not favour the former. For example, as far as the cattle are concerned, while the large farms have a density of only 2.9 heads/100 ha, the individual households' density is almost 10 times larger (25 heads/100 ha). As far as the sheep and the goats are concerned, their density in small-sized individual farms is 28 times higher and 36 times higher, respectively than in large and very large exploitations.

The differentiated distribution and the different density of animals in the two types of exploitations influences not only the rational usage of foraging resources (especially the natural meadows), but also the economical sustainability of the rural population. In the large farms the animals are being bred in an overcrowded manner and placed punctually in the territory, while ignoring the distribution of natural foraging resources, the latter being much more uniform especially in hill and foothill areas.

The scale economy realised at a high technological level ensures an economic performance, but the obtained income is not distributed to include the rural population as well, but rather it remains in the possession of

the owners and of a small number of well-paid employers.

On the contrary, the small individual exploitations are situated within the territory in a much more uniform manner and in accordance to the distribution of natural foraging resources. More importantly, these exploitations practise a more diverse agricultural system by combining the cultivation of plants with gardening and livestock breeding and by using the cheapest form of labour: human workforce. Thus, such exploitations represent the pivot of the economical sustainability of a rural population of almost 10 million.

A relevant example as far as the role of the livestock in economically sustaining the rural population is concerned is the current method of distributing the livestock according to categories which refer to the size of the agricultural exploitations (table 4).

Out of the total of 3,856 thousand agricultural exploitations existing in APIA's records, 3,722 thousand (96.5%) are animal owners with one or two species. Characteristic to the peasant individual exploitations is the vegetal - animal mixed profile, which is normal for this type of exploitations whose main goal is to ensure as completely as possible the assortment of aliments necessary to the family.

Table 4. The distribution of the main animal species according to the size of the agricultural exploitations

Size of the exploitation	U/M	Exploitations owning animals thousands of heads %	out of which:			
			cattle	sheep	goats	pigs
Country total out of which:	Thousands of heads	3,722	726	271	176	1,649
	%	100.0	100.0	100.0	100.0	100.0
below 1.0 ha	Thousands of heads	2,009	176	70	48	757
	%	54.0	24.2	25.8	27.3	45.9
1-10 ha	Thousands of heads	1,621	517	180	97	851
	%	43.5	71.2	66.4	55.1	51.6
over 10 ha	Thousands of heads	92	33	21	31	41
	%	2.5	4.6	7.8	17.6	2.5

Source: Agricultural Census 2010 (3).

On the other hand, the obtained animal products very often surpass the family's needs, meaning that the former are destined to

be sold on the local intra- or inter-community markets. However, this kind of situation is normal because the small-sized individual exploitations are, in fact, families who need money too in order to acquire numerous products which cannot be produced in the household.

From the data presented in table 2 results that most of the country's livestock is owned by small and very small family farms: 95.4% of the cattle, 92.2% of the sheep, 82.4% of the goats and 97.5% of the pigs. On the whole, out of a total of 3,722 thousand animal-owning farms, 3,630 thousand units (97.5%) are small and very small exploitations, below 10 ha. Even the very small exploitations – below a hectare – are animal owners, their number accounting for 54% of the total. These households breed more than 3/4 of the number of cattle's, sheep's and goats and almost half of the number of pigs.

An important place within the alimentary and economical sustainability of family farms is occupied by cows the latter being mostly bred in rural households by peasant families (table 5).

We can notice that almost 60% of the number of cows and heifers are being bred in small-sized family exploitations, with 1-2 cows per exploitation and that, together with the exploitations that breed an number of 3-5 cows, they basically own 4/5 of the total number of cows and heifers in the country.

Table 5. The dimensional structure of exploitations which breed cows giving milk and heifers (2010)

Size of the exploitation	Total sectors				
	Number of exploitations	% of the total	Number of animals (thousands)	% of the total	Number of animals per exploitation heads
TOTAL	761,528	100.0	1,396.9	100.0	1.8
1-2 heads	664,713	87.27	830.1	59.4	1.3
3-5 heads	77,221	10.14	263.9	18.9	3.4
5-10 heads	11,560	1.52	83.4	6.0	7.2
10-100 heads	7,737	1.03	162.9	11.6	21.1
over 100 heads	297	0.04	56.6	4.1	190.6

Source: Ministry of Agriculture and Rural Development, 2010 (6).

On the agricultural whole, the number of cows and heifers is very low, the density being of 9.5 heads/100 ha; more than 20 times lower than in some states in Western Europe.

For the national economy in general and particularly for the agriculture, this situation is totally dissatisfactory. On the other hand, the fact that most of the cows are being bred in peasant households largely contributes to the economical sustainability of this category of exploitations, which basically represents a large number of families in the rural area. With a role in the economy of agriculture and the economy of the state that can hardly be neglected, the livestock owned by peasant family farms is an important factor on which the survival of a significant part of Romania's population still depends.

CONCLUSIONS

The exaggerated crumbling of lands and the existence of a large number of almost 4 million agricultural exploitations are considered to be the main causes for the lack of technical, economical and production performance in Romanian agriculture.

The process of grouping the lands and creating exploitations of sizes which are viable from an economical point of view at a family level is relatively slow and without much potential. In the period 2002-2010 the total number of exploitations diminished from 4,485 thousand units to 3,856 thousand, while the average surface per exploitations increased from 3.11 ha to 3.45 ha.

A serious problem is represented by the situations of subsistence and semi-subsistence individual exploitations, whose number reduced during the same period from 4,462 thousand units to 3,826 units, while their average surface increased from 1.73 ha to 1.95 ha, which is totally insufficient for the economical sustainability of a family.

At the other pole there are the mega-exploitations of large and very large sizes, with an average of over 10,000 ha/unit, which realise an agriculture of a high performance, but which have no impact whatsoever upon the income of the rural population that constitutes the majority in the respective areas.

Paradoxically, the small individual peasant exploitations are those which are preserving

Romania's livestock (all of it that it is left): 91.4% of the cattle, over 97% of the sheep and goats, between 62 and 65% of the pigs and poultry.

As far as the limit regarding the economical size which would ensure a number of 12 average wages is concerned, it would be equivalent to 3.5-4.0 UDE (€1,200), fitting into the second category of economical size of the agricultural exploitations (small exploitations).

Free labour, the usage of all the household resources and the vegetal-animal mixed profile permit small-sized peasant exploitations to obtain a larger income per surface unit, the case being entirely different for larger exploitations.

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