

Agriculture over large areas, agriculture modernization premise of Călărași County

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ABSTRACT

Calarasi County is one of the counties with the most modern agriculture in Romania . Technological progress has also marked the agricultural field, so in addition to new technologies to improve soil fertility, new agricultural machineries of high efficiency have been brought, with extremely important role in increasing agricultural productivity. Currently, in Calarasi County are 574 farms, each one operating over 100 hectares of arable land, all of them exploiting aprox. 330.000 hectares, respectively 85 % of the arable land of the county, utilizing aprox. 59 % of the county farming machinery. Agriculture over large areas was possible mainly by exploiting the leased land, and the largest contribution to the modernization of agricultural production was possible by accessing the European Funds, in this process, belonging to a cooperative structure such "farmers group ", being an advantage for scoring projects.

***Keywords:** large areas, modern agriculture, Calarasi*

Calarasi county is one of the counties with the most modern agriculture methods in Romania. The total area of the county is 414.752, 71 hectares and out which only 405.297,96 hectares is used for agriculture. The plough land is 387,513,36 hectares.

Making a comparison between the data of the land measurements in 2002 and those in 2010 it is revealed a drop of 4 % in the number of agricultural exploitations, a growth of plough land from 357.125,3 hectares to 387.513,36 hectares. It is also noticed the growth of the number of agricultural exploitations over 100 hectares from 457 in 2002 to 574 in 2010 and also the growth of the exploited areas in big exploitations over 100 hectares from 301.818,66 hectares in 2002 to 329.509,48 hectares in 2010. The total number of tractors used in 2002 were 5.333, as compared to 4.236 in 2010 and 4164 in 2012 out which 235 owned in 2010 by owners of exploitations over 100 hectares and 550 in 2012.

Overall, it is established the enforcement of some conditions required for a growth in the efficiency of the agriculture land, modernizing being a step as big as necessary in the process of growing the economical performances for the agricultural economics purpose.

The modernization is a general target and a condition of efficiency. Modernizing agriculture means among the others purchasing new tractors, new seeders, harvesters, machines, equipments, accessories, special software, building or modernizing the buildings in use for agricultural production at the level of the farms, building or modernizing the internal road communication or the access to the agricultural district, usability and any equipment needed for the production, investments for processing agricultural products to the level of the farms,

including equipments for sales of these, etc. (121 Measurement, *The Modernization of the agricultural exploitations*) and also specialized consultancy in all the problems the farmers are facing, from the funding of cultures, their health till the insurance and the putting in circulation of the goods in the most advantageous conditions. The modernization costs, its advantages at least on the economic level are beyond doubts.

The intensive process of modernization of agriculture in the county Calarasi began in 2004 with the starting of the Special Program of Free Federation for Agriculture and Rural Development SAPARD, when the measure 3.1- Investments in agricultural exploitations was implemented 147 projects of an irredeemable value of 133.616.000 lei.

According to this program, there were purchased the following: "tractors, harvesters, machines, agricultural equipments, calibrating, selection and conditioning and storage of agricultural products obtained and processing at the farm, irrigation systems, equipments for processing the vegetal rests. "

According to SAPARD Program there were financed projects of a global total value between 5000 and 500.000 each of them. Only maximum 50% of the total costs eligible of the project would represent the irredeemable contribution and only minim 50% should represent the own contribution, the rest meaning the co-funding necessary to the solicitor"(according to the materials of the presentation of the project).

The beneficiaries of these 147 of projects implemented are in 90% de great exploitations, over 100 hectares, taking into consideration the necessity of ensuring a level of a load of minimum 70 hectares per tractor purchased for the profitability of the project with the purpose of creating the necessary conditions for obtaining a minimum profit.

After adherence to UE, through PNDR, the Romanian Agriculture benefited of new opportunities to achieve the aim of modernizing trough 1.2.1 measure – Modernization of agricultural exploitations- they went very well for the necessities and the possibilities of big exploitations, the rest, according to the Solicitor's Guide could purchased: "tractors, seeders, machines, equipments, etc. the rest ensures the growth of the work productivity, the improvement of the quality of the agricultural products, the introduction of new performing technologies, the improvement of the working conditions, building and/or modernization of the operational buildings the rest lead to the insurance of the conformity to the communitarian standards, diversification of the productivity according to the demands of the market, creation of the new products and introduction of the new technologies".

In Calarasi county, on this measure, in October 2013 95 contracts were being implemented of a total value of 64.100 lei, 33.250 being from European funds, 134 projects already been finalized of 13.400 lei (according to the data provided by APDRP Calarasi). As in the case of the projects implemented through the measure 3.1, in the case of the measure regarding the modernization of the agricultural exploitation through PNDR, the great majority of the winning projects is detained by the exploitations over 100 hectares, out of the economical reasons the rest make the majority of farms below 100 hectares to hectares a limited access to the obtaining of some credits big enough to allow the purchased through some projects of some machines and equipments of high-tech, of modern technology.

Here are some examples of projects of modernization of agricultural exploitations in the evidence of APDRP Calarasi:

1. AGRO SUD SRL, project: " Modernization of agricultural exploitation SC AGRO SUD SRL OLTENITA" , eligible value of 2.604.699 euros, exploitation of 847 hectares;
2. GRIVCO AGRO SRL, project : " Modernization of agricultural exploitation with the purchasing of tractors, machines, agricultural performing equipments and a

- new oil press for obtaining vegetal oil out of raw material coming from the own farm(Perisoru)”, eligible value of 1.999.963 euros, exploitation of 1.970 hectares;
3. AGROFARM PROD SRL, project: “ Modernization of agricultural exploitation SC AGROFARM PROD SRL” , eligible value of 1.992.114 euros, exploitation of 2.020 hectares;
 4. ILDU SRL project: “ Purchasing the machines and agricultural equipments at SC Ildu SRL, Vilcelele, Calarasi county”, eligible value of 1.850.675 euros, exploitation of 1.135 hectares;
 5. ALGAP SRL project: “ Modernization of vegetal farm with purchasing of agricultural specialized transport at S.C. Algap SRL, Modelu, Calarasi county” ”, eligible value of 1.731.639 euros, exploitation of 2.350 hectares;
 6. CHIREA 2000 SRL project “ Modernization of vegetal agricultural farm in Stefan Voda, Calarasi county”, eligible value of 821.690 euros, exploitation of 1.486 hectares;
 7. IZOCON MC SRL project “ Modernization of agricultural exploitation from Modelu, Calarasi county, with purchasing new agricultural machines ”, eligible value of 747.838 euros, exploitation of 1.063 hectares;
 8. SC DENCAR SRL project “Modernization of agricultural exploitation from Modelu, Calarasi county, with purchasing new agricultural machines ”, eligible value of 666.476 euros, exploitation of 1.106 hectares;
 9. SC AGROEUROSERV SRL” project :” Modernization of vegetal farm belonging to SC AGROEUROSERV SRL Slobozia, in Dor Marunt, Calarasi county, with the purchasing of new machine and agricultural equipments”, eligible value of 628.115 euros, exploitation of 1.406 hectares;
 10. AMYGO M.T.S.R.L. project: “ Purchasing new machines and agricultural equipments at AMYGO M.T. S.R.L., Nana, Calarasi county”, eligible value of 597.080 euros, exploitation of 880 hectares.

For benefiting of a plus of points, the great majority of those who applied for accessing European funds with the measure 1.2.1. and not only with it, called into a subscription as a member in a associative form.

The bank policy regarding crediting the agriculture proved to be a prohibitive one for the majority of the little farmers, the required guaranties not allowing to those to access big enough credits for purchasing hi-tech, if we bring in discussion either machines or agricultural equipments useful or necessary in the process of agricultural production. In consequence, “the task” of modernizing the agriculture rests upon exclusively big farmers and the agricultural exploitations bigger than 100 hectares, financial force and material ground enough to fulfill the conditions required in the moment of obtaining the loans(it must be mentioned in the present there are bank products of financing and loaning that at individualization of the loan take into account the total amount of the subventions according to the schedule of unique payment on a area, so those working a bigger area of land are being advantaged).

In 2013, in Calarasi county, the modernization of the agriculture through the technology and the use of specialized consultancy in maintaining the crops is obvious at the majority of the big exploitations, over 100 hectares.

From the point of view of technology of agriculture, it is useful to mention the evolution of the working force in the agriculture of Calarasi county. So, the population involved in agriculture represented 49,5% at the end of 2011, a lot over the national percentage. The number of employees from agriculture represented 8,5% from the total, at the level of South Muntenia- 3,6% and at national level it hectares been maintained 2% for 10 years.

See all data, the comparison to the situation in 2002 may be interesting. So, if regarding the population involved in agriculture the drop reflects a national trend (49,5% at the county

compared to 58% in 2002 and at national level 29% compared to 36,2% in 2002), by taking into consideration the number of employees in agriculture, a phenomenon must be remarked. If at the level of the county, the agriculture recently modernized in the last years, a drop with 5,5% in the number of employees is remarked (from 14% in 2002 to 8,5% in 2011), at the level of South Muntenia Region it is registered a slower shift of the number of those in the background of a slower development of agriculture only with 1,4 % (5% in 2002 compared to 3,6% in 2011) and the national level it remains constant to 2% the percentage of the employees in agriculture.

The conclusion is obvious, already known, but once again mentioned: the technology of agriculture determines the reduction in the salary costs by reducing the number of the employees in agriculture. This fact brings to the efficacy of the great agricultural exploitations, but causes the worsening of the social problems of the rural environment and a growth in the social discrepancy between the urban and the rural. This trend confirmed at the level of the county must be known and analyzed for the future suggestion at the national level, on the background of estimation of the growth of the development percentage of development of the Romanian agriculture especially due to its technology in the strategic period 2014-2020.

So as it was mentioned previously, in Calarasi county the number of exploitations of 100 hectares raised from 457 hectares in 2002 to 574 in 2010. In 2012, from 574 exploitations, 75 were over 1000 hectares, the others 500 being exploitations working between 100 and 1000 hectares.

The most important is to observe the evolution of the agricultural leaseholds. If in 2002 maximum 97.000 hectares were rented, 95.000 hectares by the big exploitations over 100 hectares, in 2010 the areas for which a contract was signed measure about 220.000 hectares, 211.000 hectares being rented to the big exploitations over 100 hectares.

Table no1.

	The area	The number of agricultural exploitations	The area of used plough land (hectares)	The medium plough land per exploitation (hectares)	The number of tractors in ownership	
1.	Less than 1 hectares	65.422 (65.336 G.I. 86 P.J.)	5.542,1	0,09	187	86,2% from the total of the exploitations 1,5% from the total of ploughland
2.	1 -10 hectares	8.819 (8.690G.I. 129 P.J.)	21.350,71	2,4	836	11,5% from the total of the exploitations 5,5% from the total of ploughland
3.	10-50 hectares	874 (794 G.I. 80 P.J.)	17.388,6	19,9	546	1,2% from the total of the exploitations 4,5% from the total of plough land
4.	50-100 hectares	195 (145 G.I 50P.J.)	13.718,47	70,4	187	0,3% from the total of the exploitations 3,5% from the total of ploughland
5.	Over 100 hectares	574 (163G.I. 411 P.J.)	329.509,48	574	2.480	0,8% from the total of the exploitations 85% from the total of ploughland

	The area	The number of agricultural exploitations	The area of used plough land (hectares)	The medium plough land per exploitation (hectares)	The number of tractors in ownership	
	TOTAL	75.884 G.I. 86 P.J.)	387.513,36	5,11	4236	

The data of the last general agricultural measurement indicate that in Calarasi county in big exploitations over 100 hectares, 329.509,48 hectares are labored, meaning 85% from the ploughland of the county (see table no.1), and in these conditions it can be assessed that a characteristic of this category can easily be considered a characteristic of the local agriculture. So, the modernization thanks to the technology, though easily met in big farms can be called a characteristic of the agriculture of Calarasi county.

The number of tractors was 4236 in 2010, owned by agricultural units from Calarasi county, being used 4720 for the labors (table no. 2). The medium load per a used tractor was 82 hectares of ploughland and on a used tractor owned by the agricultural exploitations in Calarasi 91,4 hectares of ploughland(table no 2).

Tabel no.2

	The area	The number of agricultural exploitations	The area of used ploughland (hectares)	The number of tractors in ownership	The number of used tractors	The charge on a used tractor	The charge of a tractor in ownership
1.	Less thectaresn 1 hectares	65.422 (65.336 G.I. 86 P.J.)	5.542,1	187	226	24,5 hectares	29,7 hectares
2.	1 -10 hectares	8.819 (8.690G.I. 129 P.J.)	21.350,71	836	862	24,8 hectares	25,5 hectares
3.	10-50 hectares	874 (794 G.I. 80 P.J.)	17.388,6	546	566	30,72 hectares	31,8 hectares
4.	50-100 hectares	195 (145 G.I 50P.J.)	13.718,47	187	197	69,6 hectares	73,4 hectares
5.	Over 100 hectares	574 (163G.I. 411 P.J.)	329.509,48	2.480	2.869	114,8 hectares	132,9 hectares

Compared to the situation of 2002, it is remarked a growth in the charge on a tractor (see table no.3). If in 2002, the charge on a tractor was 84 hectares/ a physical tractor, that was considered “unfavorable from the point of view of modernization and intensification of the agricultural product”, in 2010 the charge on a tractor was in average 91,4 hectares of ploughland.

Following the data in the table no.2, it is noticed that the biggest load it is found at the big exploitations, over 100 hectares, respectively 114,8 hectares/ used tractor and 132,9 hectares/ tractors found in the ownership of the exploitations in the county , and the littlest of the exploitations till 10 hectares, respectively 24,7 hectares/ used tractor and 26,3 hectares/ tractor in the ownership of the exploitations in the county. It can be drawn the conclusion that in the process of modernization of the agriculture of Calarasi county the following were stressed: the purchase of the performing machines, of great efficiency, aiming to the maximum

exploitation of their potential, these being the most important factors in the growth of the productivity of the agricultural activity.

Table no.3 The parc of tractors and agricultural machines

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Physical agricultural tractors	4931	4444 6	4504	5043	5141	5073	4897	4587	4519
Cultivator – mechanical traction	927	842	880	1124	1184	1158	1263	1076	1087
Seeders-mechanical traction	2042	2280	2278	2442	2480	2506	2729	2765	2566
Combine with auto-propulsion mechanical for straw cereals	753	748	851	811	906	924	956	960	987
Plough area for a physical tractor	84	94	92	82	81	82	85	90	91

But for the tractors, which number is in a decline, the explanation being the greater power of the new purchased tractors and their capacity of working big ploughland surfaces compared to the tractors they replace, the number of the other agricultural machines is increasing, even if not linearly, but it increases getting from 927 in 2002 to 1087 cultivators in 2010, from 2042 seeders in 2002 to 2566 in 2010, from 753 combines in 2002 to 987 in 2010.

The fluctuation of the agricultural machine number from a year to another is an indicator of the fact that new machines of high-tech replace the old ones, and the constant growth between 2002-2010 verifiable with the evolution of the number of employees in agriculture is a proof of the technology of the agriculture of the county.

The average product per hectares at the main culture (table no.5) and the value of the agricultural products / agricultural branch (table no.4) at the level of the county, knew major fluctuations between 2004-2012, because of the fact that the economic performance in agriculture is still mainly influenced by the weather. Nevertheless, it can be easily noticed that in a good agricultural year with rains and good temperature, the modernization of the agriculture thanks to the technology and mechanization can determine record productions and great revenues, the investments made to the increase productivity being justified.

Table no.4 – The value of the agricultural products / agricultural branch

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	1688465	1075564	1069440	874133	1841234	1476839	1591439	2270625	2018826

Vegetal	1218727	622070	618288	340296	1336817	767874	1080146	1717134	1429543
Animal	434646	433368	430663	497825	466876	656029	484724	506623	545745
Services	35092	20126	20489	36012	37541	52936	26569	46868	43538

Table no.5– The average product per hectare(kg/hectare)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Wheat	3742	3225	3210	1161	3883	2125	2496	4044	2878
Corn	6111	4981	4189	696	3763	3923	4957	5290	3258
Barley	3665	1940	2213	1282	4103	2514	2788	4033	3026
Sunflower	1888	1338	1572	364	1594	1483	1669	1909	1749
Rape	1975	1507	1419	765	1536	1360	2042	2042	1280

The statistics from the tables no.4 and 5, referring to the value of the production for an agricultural branch and the average production per hectare to the principal crops of our county between 2004- 2010, lead also to the conclusion that, although the great exploitations managed to bring local agricultural to a high level of modernization achieved by the technology and mechanization, the problem of the modernization is still open. Many important investments are needed to the irrigation system in order to reduce the great extend of dependence of the agriculture to the meteorological conditions as well as the creation of a consultancy system addressed to the little farmers, but also to those exploiting between 100 - 500 hectares, the latter owning the greatest part of exploitations, practicing an agriculture at a high extent in Calarasi county.