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Serbian Academy of Sciences and Arts
Board for Village



Serbian Association
of Agricultural Economists

AGRI-FOOD SECTOR IN SERBIA

STATE AND CHALLENGES

Edited by

Academician Dragan Škorić
Danilo Tomić
Vesna Popović

Belgrade, 2013

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CHANGES IN THE STRUCTURE OF FARMS AND PRODUCERS ASSOCIATIONS IN THE REPUBLIC OF SERBIA¹

Miladin M. Ševarlić

INTRODUCTION

Previous studies of structural changes of farms in Serbia have traditionally analysed three forms of farms that are recognisable in legal and organisational-economic sense: *family farms (FF)*, *agricultural enterprises (AE)*, and *agricultural cooperatives (AC)*.

Based on the initial results of the Census of Agriculture from 2012 [2] – adjusted with the number of legal entities that did not have an active status at the time of the Census conducting and that disposed with land surfaces and other corrections made by the Statistical Office of the Republic of Serbia (SORS) after publishing of the results of the Census from 2012² and based on the share in the total number of all forms of registered farms (631,818 farms) and registered total surface of utilised agricultural land in Serbia (3,430,755 ha) the following was found:

- Traditionally dominant are family farms (99.4% of farms and 82.2% of land) with a very small land size (4.55 ha);
- They are followed by agricultural enterprises (0.2% of farms and 10.0% of land) with the largest average land size (335.00 ha), and
- Agricultural cooperatives (0.1% of farms and 1.4% of land) also with relatively larger land size (170.51 ha) (Table 1).

Farms	All farms		“Landless” farms			Utilised agricultural surface		
	Number	%	Number	%	Share	ha	%	ha/farm
FF	28,311	99.4	9,415	88.6	1.5	2,818,545	82.2	4.55

¹ The paper is the result of the research within the Project 179028 financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia [1]

² Thanks to supplementary activities of the Statistical Office of the Republic of Serbia in the period following the publishing of the publication titled Census of Agriculture in 2012 – the initial results [3] until July 16th, 2013.

AE	1,358	0.2	331	3,1	24.4	344,041	10.0	335.00
AC	421	0.1	144	1.4	10.6	47,231	1.4	170.51
OLEandE	1,728	0.3	731	6.9	42.3	220,939	6.4	221.60
Total	631,818	100.0	10,621	100.0	1.7	3,430,755	100.0	5.55

Table 1. Main indicators of certain forms of farms in Serbia (2012)

In addition to legally and organisationally clearly differentiated two forms of farms with the status of “legal entities” (agricultural enterprises and agricultural cooperatives), the Statistical Office of the Republic of Serbia registered the *farms belonging to other legal entities and entrepreneurs (OLEandE)* [3: 43-44], which were not the subject of separate studies in previous agro-economic bibliography.

Since the number of farms of other legal entities and entrepreneurs is both absolutely and relatively significant (1,728 farms, or 0.3% of the total number of all farms in Serbia), namely that it is almost equal to the sum of the total number of agricultural enterprises and agricultural cooperatives (1,779 farms), that this group of farms uses 6.4% of total agricultural surface (almost five times more than agricultural cooperatives, namely 64.2% of the surface used by agricultural enterprises) and that the average farm size makes 221.60 ha, their structural characteristics were analysed as a special group of farms registered in Serbia (2012). According to the information obtained by author, this is the first paper in the available agro-economic reference bibliography in Serbia that analyses separately, due to the above-mentioned absolute and relative indicators of their potential significance for agriculture of Serbia, the land size structure of farms belonging to other legal entities and entrepreneurs.

In previous agro-economic analyses of structural characteristics of farms in Serbia we can distinguish two types of papers: a) those dealing with family farms, and b) those dealing with agricultural enterprises and agricultural cooperatives.

Structural changes of family (individual) farms have been analysed much more compared to two other forms of farms in Serbia – agricultural enterprises and agricultural cooperatives. These differences in frequency of the study are conditioned by objective reasons, namely available databases on Censuses encompassing certain forms of farms.

Namely, before the last Census of Agriculture from 2012 – when all forms of farms were registered, the last complete Census of Agriculture was conducted in the remote 1960, and based on a sample in 1969 as well. This classifies Serbia, namely formerly Yugoslavia, as the country where Censuses of Agriculture, as the elemental database for creating of agrarian and rural policies, used to be neglected for half a century.

That is why it is not possible to present the analysis of structural changes of different forms of farms of legal entities and entrepreneurs (agricultural enterprises, agricultural cooperatives, and farms belonging to other legal entities and entrepreneurs) in the period from 2002 to 2012 but only the analysis of their structure per land size groups in the year of the latest Census of Agriculture (2012).

Contrary to that, family farms used to be registered within the Census of Population, Households and Housings (1971, 1981, 1992, and 2002) based on a supplementary questionnaire for “households possessing individual farms”. Hence, the demographic Censuses provided the data on the number of households possessing family (individual) farms and their main agricultural funds (individual and rented land, number of heads of cattle, poultry and beehives, number of tractors).

In addition to the Introduction and Conclusion, the present paper is divided into four topic based parts:

- Changes in the land size structure of family farms (2002-2012);
- Land size structure of farms belonging to legal entities and entrepreneurs, with a special analysis of characteristics of land size structure of agricultural enterprises, agricultural cooperatives and farms belonging to other legal entities and entrepreneurs (2012);
- Capacities of cattle breeding production and level of equipping with tractors at farms, and
- Agricultural producers associations.

The research methods were listed in Chapters containing structural indicators of certain forms of farms.

Sources of data for the year 2012 that are the subject of analysis in this paper are the initial results of the Census of Agriculture (2012) – as adjusted until

July 16th, 2013, while the data and calculated indicators that were presented for the Republic of Serbia (RS) refer to the territories of two macro-regions – Central Serbia (CS) and Autonomous Province of Vojvodina (APV), for which the regional analysis was carried out.

In addition to data from the Census of Population, Households and Housings (2002) and Census of Agriculture (2012) we used other data and publications of the Statistical Office of the Republic of Serbia, Serbian Business Registers Agency (SBRA), chambers of commerce (CC), cooperative unions (CU) and reference bibliography.

1. CHANGES IN THE LAND SIZE STRUCTURE OF FAMILY FARMS

Family farms are traditionally exceptionally dominant in agriculture of Serbia. Their domination is evident in the years of both Censuses (2002 and 2012), in both the total number of all forms of farms and in the total size of agricultural land they use, but simultaneously with a significantly smaller average land size compared to other forms of farms (enterprises, cooperatives, and farms belonging to other legal entities and entrepreneurs).

Due to a difference in the definition of *individual farms* according to the Census of Population, Households and Housing from 2002 [4] and *family farms* according to the Census of Agriculture from 2012 [3], the data of two Censuses referred to above are not entirely comparable.

Namely, the Census of Population, Households and Housing from 2002 registered the households that own *individual farms* – which are defined as “any household, which at the time of the Census:

- a) Used at least 10 a (1 a = 100 m²) of arable land, as well as
- b) Households using less than 10 a of arable land but possessing at least: one cow and a calf, or one cow and one bullcalf, or one cow and two grown head of small cattle, or five grown sheep, or three grown pigs, or four grown heads of sheep and pig together, or fifty grown poultry, or twenty beehives”. [4: 15]

However, the Census of Agriculture from 2012 defined the *family farm* as “any family or other community of persons who live together and spend their income together on satisfying the basic necessities for living (including a single-member households), whose members (one or more) are involved in agricultural production, either as their primary or secondary activity, which has a unified management, uses the means for production (land, machinery, facilities) and labour of its members jointly, whose holder is a physical person, and which also:

- a) Cultivates – uses 50 a and more of agricultural land where they perform agricultural production irrespective if such production is designated to the market or not; or
- b) Cultivates – uses less than 50 a of agricultural land but performs intensive field, fruit growing, grape growing, and vegetable production and flower production (including production in greenhouses and heated lanes), mushroom production and cattle breeding production, namely performs agricultural production that is designated to the market; or
- c) Grows at least: two heads of cattle, or one head of cattle and two heads of small cattle (pig, goat, sheep - together), or five sheep and five goats, or three pigs, or four heads of small cattle (pigs, goats, sheep – together), or fifty small poultry, or twenty bee communities.” [3:18]

Despite the above-mentioned differences in definition of individual, namely family farms according to Censuses from 2002 and 2012, as well as with respect of the size and category of use of land (10 a of utilised arable land, namely 50 a of utilised agricultural land) and according to characteristics of agricultural activities and number of household members who perform them (primary and secondary activity of one or more household members) and purpose of production (for their own needs and with the land size exceeding 50 a of utilised agricultural land), the essential difference in the size of utilised land has been practically eliminated with fully equalized number of heads of certain cattle breeds, poultry and beehives that are grown at farms of households with cattle, poultry and bees.

Some aspects of methodological issues relating to *households that own farm and individual farms (IF)* in agriculture of Serbia, which were analysed based on the Census of Population, Households, and Housing

(2002), have been considered more comprehensively in other papers elaborated by the author of this paper [5, 6, 7].

Furthermore, structural changes of family farms in Serbia in the period that ended with the Census of Population, Households, and Housing in 2002, were analysed in individual and co-signed papers elaborated by the author of this paper [8, 9, 10] and papers of other authors [11, 12, 13, 14].

Finally, due to a relatively short time that has elapsed from the publishing of the initial/preliminary results of the Census of Agriculture from 2012 [2], the analysis of land size structure of family farms in Serbia (and agricultural cooperatives) based on the data contained in that Census is available in only one paper elaborated by the author of this paper [15].

Considering all the above, we can conclude that certain comparability of data for the analysis and interpretation of calculated indicators for the family (individual) farms was provided based on the Census of Population, Households, and Housing from 2002 and Census of Agriculture from 2012.

The land size structure of family farms is characterised by numerous and very important changes that have occurred within the last decade of transition changes in Serbia. The main characteristic of these changes is the continuation and acceleration of the trend of decrease in their total number (by 150,580 farms or by 19.8%), which means that every fifth FF in Serbia were "extinguished" within the last decade of transition changes. In all that, the dynamics of reduction in the number of FF was significantly faster than the reduction in their overall utilised land size (by 50,455 ha, or by only 1.8%) (Table 2). This indicates that processes of increase of the average land/estate size³ are also present in this group of farms from 3.68 to 4.49 ha, namely by 0.81 ha or 21.8% although with mutually contrary trends per macro-regions: reduction of the land size in Central Serbia (from 3.70 ha to 3.41 ha, namely by 0.29 ha or 7.8%) and, in parallel, significant increase in the land size in the Autonomous Province of Vojvodina (from 3.65 to 8.04 ha, namely by 4.39 ha or 2.2 times).

	Family farms (FF) according to the size of utilised land	Total
--	--	-------

³ *Average land size* is calculated as the indicator of the ratio between the utilized surface of overall (2002), namely utilized agricultural land (2012) and the number of "farms with land", i.e. excluding the "landless" farms" – which do not use land but only breed the minimum prescribed number of heads of cattle (certain species or their combinations), poultry and beehives.

	Landless	< 2 ha	2-5 ha	5-10 ha	10-20 ha	> 20 ha	
Republic of Serbia (2002)							
Number of FF	6 288	354 029	244 064	131 438	36 772	6300	778 891
Structure (%)	0.8	45.5	31.3	16.9	4.7	0.8	100.0
Land (ha)	0	347 252	854 366	957 719	503 358	206 305	2 869 000
Structure (%)	0.0	12.1	29.8	33.4	17.5	7.2	100.0
Central Serbia							
Number of FF	2 828	248 150	197 273	100 935	25 038	3 192	577 416
Structure (%)	0.7	46.7	32.4	14.7	4.4	1.0	100.0
Share of CS (RS=100)	45.0	70.1	80.8	76.8	68.1	50.7	74.1
Land (ha)	0	258 563	699 739	736 384	344 788	95 130	2 134 604
Structure (%)	0.0	12.1	32.8	34.5	16.2	4.5	100.0
Share of CS (RS=100)	0,0	74.5	81.9	76.9	68.5	46.1	74.4
Autonomous Province of Vojvodina							
Number of FF	3460	105 879	46 791	30 503	11 734	3 108	201475
Structure (%)	1.7	52.6	23.2	15.1	5.8	1.5	100.0
Share of APV (RS=100)	55.0	29.9	19.2	23.2	31.9	49.3	25.9
Land (ha)	0	88 689	154 627	221 335	158 570	111 175	734 396
Structure (%)	0.0	12.1	21.1	30.1	21.6	15.1	100.0
Share of APV (RS=100)	0,0	25.5	18.1	23.1	31.5	53.9	25.6
Republic of Serbia (2012)							
Number of FF	9 415	297 715	182 109	88 631	32 056	18 385	628 311
Structure (%)	1.5	47.4	29.0	14.1	5.1	2.9	100.0
Land (ha)	0	273 188	594 713	614 044	431 937	904 663	2 818 545
Structure (%)	0.0	9.7	21.1	21.8	15.3	32.1	100.0
Central Serbia							
Number of FF	3547	229 276	153 935	69 796	20 614	4 876	482 044
Structure (%)	0.7	47.6	31.9	14.5	4.3	1.0	100.0
Share of CS (RS=100)	37.7	77.0	84.5	78.7	64.3	26.5	76.7
Land (ha)	0	224 967	502 332	480 189	272 448	163 269	1 643 205
Structure (%)	0.0	13.7	30.6	29.2	16.6	9.9	100.0
Share of CS (RS=100)	-	82.3	84.5	78.2	63.1	18.0	58.3
Autonomous Province of Vojvodina							
Number of FF	5868	68 439	28 174	18 835	11 442	13 509	146 267
Structure (%)	4.0	46.8	19.3	12.9	7.8	9.2	100.0
Share of APV (RS=100)	62.3	23.0	15.5	21.3	35.7	73.5	23.3
Land (ha)	0	48 221	92 382	133 855	159 489	741 393	1 175 340
Structure (%)	0.0	4.1	7.9	11.4	13.6	63.1	100.0
Share of APV (RS=100)	-	17.7	15.5	21.8	36.9	82.0	41.7

Table 2. Land size structure of family farms in Serbia, per macro-regions, in 2002 and 2012

Source: Author's calculation based on the data from Censuses conducted in 2002 [4] and 2012 [2]⁴.

The reduction in the number of family farms is typical for all land size groups of the analysed farms and for all three regions that were studied

⁴ The initial/preliminary results of the Census of Agriculture from 2012, adjusted until July 16th, 2013.

(Republic of Serbia, Central Serbia, and Autonomous Province of Vojvodina) with a diverse intensity – except for two antipodes: “landless” farms – their number has increased by 49.7%, and in particular the farms with a land size of over 20 ha – their number has increased by almost three times (index of 291.8%). This indicates that the group of family farms in Serbia (2002-2012) is experiencing intensive processes of differentiation to:

- Landless and small farmers with the land size of up to 2 ha – their share in the total number of FF has increased from 46.3% to 48.9% with simultaneous reduction in their share from 12.1% to 9.7% in the overall utilised land size, on the one hand; and
- Large market oriented farms with a land size exceeding 20 ha – their share in the total number of FF has increased from 0.8% to 2.9% with a simultaneous very fast increase of their share from 7.2% to even 32.1% in the overall utilised land size, on the other hand.

Contrary to the Census from 2002, when all relatively larger individual farms were stated in the aggregate land size group marked as “farms with the land size exceeding 20 ha” due to a more widely spread phenomenon of emerging of larger farms within the last decade of the transition period, in particular in the territory of the Autonomous Province of Vojvodina, such land size group can be divided into six land size groups in the Census from 2012, including currently the largest land size group (1,000 – 2,500 ha) where four family farms are registered with the average land size of around 1,400 ha (Table 3).

Relatively small number (2.93%) of family farms with the land size exceeding 20 ha that organise their production at almost one third (32.1%) of overall utilised land size in Serbia (2012) is largely the result of synergy between two agrarian-political measures:

- Changes and amendments to the Law on Agricultural Land (2006) [16] that enabled family farms to rent public agricultural land of unlimited surface, and owners of cattle breeding farms to be given the priority in public land renting (1 ha of arable land per conditional head of cattle), on the one hand, and
- Enabling the family farms to obtain subsidies for 100 ha of plough land size, including the rented public land in addition to their own land – in the surface of up to 100 ha of plough land in total, on the other hand.

	Farms with > 20 ha according to the size of utilised land	Total	Total
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	20-50	50-100	100-300	300-500	500-1000	1000-2500	>20 ha	
Republic of Serbia								
Number of farms	12 833	4 245	1 201	74	28	4	18 385	628 311
Structure (%)	2.04	0.68	0.19	0.01	0.00	0.00	2.93	100.00
Land (ha)	383 212	303 119	167 552	28 233	17 161	5 386	904 663	2 818 545
Structure (%)	13.6	10.8	5.9	1.0	0.6	0.2	32.1	100.0
Central Serbia								
Number of farms	4 369	428	72	3	3	1	4 876	482 044
Structure (%)	0.91	0.09	0.01	0.00	0.00	0.00	1.01	100.00
Share of CS (RS=100)	34.0	10.1	6.0	4.1	10.7	25.0	26.5	76.7
Land (ha)	120 618	27 906	10 472	1 171	1 932	1 172	163 269	1 643 205
Structure (%)	7.3	1.7	0.6	0.1	0.1	0.1	9.9	100.0
Share of CS (RS=100)	31.5	9.2	6.3	4.1	11.3	21.8	18.0	58.3
Autonomous Province of Vojvodina								
Number of farms	8 464	3 871	1129	71	25	3	13 509	146 267
Structure (%)	5.79	2.65	0.77	0.05	0.02	0.00	9.24	100.00
Share of APV (RS=100)	66.0	91.2	94.0	95.9	89.3	75.0	73.5	23.3
Land (ha)	262 594	275 214	157 081	27 061	15 229	4 214	741 393	1 175 340
Structure (%)	22.3	23.4	13.4	2.3	1.3	0.4	63.1	100.0
Share of APV (RS=100)	68.5	90.8	93.8	95.8	88.7	78.2	82.0	41.7

Table 3. Land size structure of family farms with the land size exceeding 20 ha in Serbia, per macro-regions in 2012

The emerging of this group of “transition winners” has been made possible mainly to a part of large family farms in the territory of the Autonomous Province of Vojvodina where the dominant part of public agricultural land is to be found. Their production and economic strengthening has also been facilitated by the so-called “legal voids” in the Law on Agricultural Land and decrees on subsidies in plant production, which enabled several members of practically the same household to register a larger number of “their” farms (RF) and such a way multiply as a family the rented surfaces of public plough land and obtaining of annual subsidies from the agricultural budget based on that. Furthermore, there have been cases in practice, that “services” of economically deprived farmers in whose name the public plough land was rented fictionally (*de jure*) and subsidies paid from the budget for agriculture, in addition to a larger number of members of their households, and with appropriate financial or other fees (services of agricultural machinery without payment of the fee) were used for such “manipulations” in favour of *de facto* owners of large farms.

We point out the following facts related to the impact of the lobbying groups on creating of *ad hoc* measures of agricultural policy:

- In 2004, when a new concept of payment of subsidies per hectare and all other forms of incentives was hastily applied without the appropriate previous promotion among the farmers only for registered family farms (RFF), the actually highest agrarian budget amounting to 5% of the overall budget of Serbia was distributed to only 38,000 RFF, or 4.9% of the total number of RFF (according to the Census from 2002), more than 95% of which were from the territory of the Autonomous Province of Vojvodina;
- In the period from 2009 to 2011, when a “new” condition for utilisation of subsidies per hectare of plough land was set so that the owner, or “holder”⁵ of a RFF has to hold a pension-disability insurance as agricultural producer (which was unprofitable for farms with up to 5 ha of plough land), there were only around 75 thousand of RFF with the right to this type of subsidy (less than 10% of the total number of family farms according to the Census from 2002), while even 76% of subsidies that were paid in total on such basis were allocated to RFF in the territory of the Autonomous Province of Vojvodina – where around 40% of the overall arable land owned by RFF in Serbia can be found.⁶

Based on post-socialist “primary accumulation of capital” in agriculture of Serbia that has been carried out in such a way, without reducing even to a lesser extent the purchase of land by foreign economically stronger farms and contribution of restitution of land to the heirs of physical persons it had been taken away from after the World War II [17], that has not been completed yet, as well as other entrepreneurial capacities of owners of larger farms, more than 18 thousand family farms were created in Serbia during the last decade (mainly in the Autonomous Province of Vojvodina) that will be able to become relatively competitive to highly subsidised farms in the European Union in the period of our forthcoming integration into the EU-28.

⁵ The person in whose name the family farm is registered – in the case when the owner of such RFF works outside the farm or is retired.

⁶ Author’s calculation based on documentation of the Department for Payments in Agriculture of the Ministry of Agriculture, Forestry and Water Management of the Republic of Serbia.

Considering the presented changes in the land size structure of family farms in Serbia (2002-2012) and the dominant majority of smaller (up to 2 ha and 2-5 ha) and (for our conditions) medium farms (5-10 ha), their sustainability in the future depends highly on:

- Changes in production structure in favour of fruit, grape, and vegetable production where it is possible to achieve higher value and profit in production per hectare and/or conversion of production from conventional into organic agriculture;
- Development of programmes from complementary activities “around agriculture” aimed at diversification of sources of their revenues (household activities, rural tourism, etc.); [18]
- Providing of services of agricultural consultancy service and founding of production on knowledge based economy, [19] and
- Their merging into cooperatives and other forms of cooperation aiming at utilisation of organisational and economic advantages, namely enhancing of competitiveness through reduction of costs in procurement of production material, joint utilisation of agricultural machinery and joint placing of their market surpluses – with eliminating or bringing numerous intermediaries to the minimum in production processes, from procurement of inputs, via production (in the field, orchard, vineyard, and stable) and processing, up to placing of agricultural-food products to consumers. [15]

2. LAND SIZE STRUCTURE OF FARMS BELONGING TO LEGAL ENTITIES AND ENTREPRENEURS

According to the Census of Agriculture from 2012 there are 3,507 entities in total in the group of farms belonging to legal entities and entrepreneurs (Table 4). This group consists of 13 individually systematised legal forms of farms among which only two sub-groups of farms used to be analysed in accordance with the previous approach to study of land size structure of this group of farms:

- *Agricultural enterprises (AE), and*
- *Agricultural cooperatives (AC).*

Farms	All farms		“Landless” farms			Utilised land size		
	Number	%	Number	%	Share	ha	%	ha/farm
Total	631 818	100.0	10 621	100.0	1.7	3 430 755	100.0	5.52
∑LEandE	3 507	0.56	1 206	11.4	34.4	612 211	17.8	266.06
Farms belonging to legal entities and entrepreneurs								
AE	1 358	0.21	331	3.12	24.4	344 041	10.0	335.00
AC	421	0.07	144	1.36	34.2	47 231	1.4	170.51
OLEandE	1 728	0.27	731	6.88	42.3	220 939	6.4	221.60

Table 4. Main indicators for farms belonging to legal entities and entrepreneurs in Serbia (2012).

However, considering that the sub-group of *other farms belonging to legal entities and entrepreneurs* (OLEandE) - which includes: a) the "entrepreneurs" – individuals (physical persons) registered for the acquisition of agricultural income, and b) other forms of "legal entities" engaged in agricultural activities as their primary or supplementary activities, [3: 43-44] - makes a significant sub-group according the number of farms (0.27% of all forms of registered farms, or nearly identical to the aggregate number of AE and AC) and the area of utilised land (6.4% of total utilised land of all forms of registered farms, or 5.5 times higher than in AC or 2/3 of that of AE), as well as that the average size of their land is relatively large (221.60 ha), for the first time in our agro-economic bibliography we have shown their land size structure according to the Census of Agriculture from 2012.

2.1. Land size structure of agricultural enterprises

Due to the temporal distance of half a century since the last (complete) Census of Agriculture conducted in 1960, and Census of Agriculture (conducted based on a sample) conducted in 1969, as well as numerous institutional and organisational changes in the sector of legal entities in agriculture of Serbia during that period, it is not objectively possible to analyse changes of this type of land size structure of this form of farms in the period 2002-2012.

Therefore, in this paper we analyze only the characteristics of a land size structure of agricultural enterprises in Serbia based on the data from the Census of Agriculture from 2012 per macro-regions (Central Serbia and

Autonomous Province of Vojvodina), which has been analogously applied in the following thematic areas related to the land size structure of agricultural cooperatives and farms belonging to other legal entities and entrepreneurs.

The sub-group of *agricultural enterprises*, based on the methodological instructions for the Census of Agriculture from 2012 [3], consists of five legal forms of organising in agriculture in Serbia:

- *Partnership* - "a company of two or more partners who are jointly and severally liable for the company's obligations with their entire assets, without limitations";
- *Limited Partnership* - "a company that has at least two members, of which at least one shall bear unlimited solidary liability (general partner), and at least one shall bear a limited liability to the amount of the unpaid, or non-deposited share (limited partner)";
- *Limited liability company* - "a company in which one or more members have stakes in the share capital of the company, but the members are not liable for the obligations of the company, except in certain cases defined by the applicable Company's Law [20]";
- *Joint stock company* - "a company whose share capital is divided into shares, owned by one or more shareholders who are not liable for the company's obligations, unless in cases defined by the applicable Company's Law. Joint stock company is liable for its obligations with its entire assets," and
- *Public company* - "a company that performs activities of general interest, established by the state or local self-government unit, or autonomous province." [3: 44]

During the last decade, agricultural enterprises have undergone numerous and significant changes typical for post-socialist transition, the focus of which was the transformation of *social property* – a specific form of property typical only for the SFR Yugoslavia (until 1991), namely FR Yugoslavia (1992-2006).

The process of transformation of social property in all forms of farms with different legal forms was based on two laws: Law on Conditions and

Procedures of Transformation of Social Property into Other Forms of Property [21] – which referred to all legal entities in all industries and fields, and the Law on Transformation of Social property at Agricultural Land into Other Forms of Property [22] – which referred practically to all forms of farms with the status of legal entities. Both laws are striking examples of enforcement of *lex specialis* – since they were enacted at the time when according to Constitutions, as highest legal documents of former states of SFR Yugoslavia and FR Yugoslavia, social property was guaranteed as constitutional category – all until its elimination as a form of property in the Constitution of the Republic of Serbia (2006).

However, although it was *de jure* left out of the Constitution of the Republic of Serbia (2006), social property has remained *de facto* as post-socialist recidivism in the property structure of numerous legal entities that have not completed their property transformation of that form of property until today, as it is the case with agricultural enterprises that are still undergoing the re-privatisation process – after the termination of unfulfilled contracts on first unsuccessful privatisation and returning of such legal entities into the portfolio of the Agency for Privatisation of the Republic of Serbia. According to the data of the Agency for Privatisation at the end of 2011 there were 27 agricultural enterprises in Serbia that were in the process of restructuring with 5,312 employees. During that year they recorded the loss amounting to 1,591,260,000 RSD (around 15.2 million Euros – according to the medium exchange rate of the National Bank of Serbia as of December 31st, 2011). [23]

We should point out in particular that the above-mentioned laws enabled the transformation of social property “into other forms of property” – which implied, in addition to private, both co-operative and public property although in practice their implementation could be brought down exclusively to privatisation of majority of entities in agribusiness of Serbia and re-privatisation of some agricultural companies with unsuccessful first privatisation.

During the privatisation procedure, the largest number of agricultural enterprises was privatised in a "package" as one economic entity and with the entire available assets, but there were also examples of the division of assets of certain agricultural enterprises in parts for which there were interested buyers - as is the case with the sale of agricultural land of a group of agricultural enterprises in re-privatisation (the so-called "Green

Pool") to agribusiness company from the United Arab Emirates on the basis of the signed inter-state agreement (2013).

Also, parts of some agricultural enterprises have been the subject of a new cycle of sale between the first privatisation owners, namely legitimate "transition speculators" and the subsequent buyers of these assets, which is not the subject to further analysis in this paper.

According to the number of farms, utilised agricultural land size and production-economic potential, agricultural enterprises are the most important form of farms in the group of farms of all forms of legal entities and entrepreneurs in Serbia, and the analysis of their land size structure (2012) suggests the following conclusions:

- Out of the total of 1,358 agricultural enterprises that dispose with 344,041 ha of utilised agricultural land, the largest number of enterprises can be found in the territory of agriculturally developed Vojvodina (57.9%), with exceptionally dominant share (81.3%) in the overall size of utilised agricultural land of this group of farms;
- The share of agricultural "landless" enterprises is very large in Serbia (24.4%), with significantly higher presence of "landless" enterprises in Central Serbia (33.2%) than in the AP Vojvodina (17.9%);
- Excluding from the "landless" enterprises, the average land size of agricultural enterprises in Serbia is 335 ha, while regional differences also show significantly larger land size of enterprises in the AP Vojvodina (434 ha) than in Central Serbia (168 ha);
- The dominant share of agricultural enterprises with a small farm size (up to 50 ha), both in Serbia (47.9%) and in two the macro-regions - with some differences in terms of their lower share in the AP Vojvodina (43.3%) than in Central Serbia (54.4%);
- The enterprises with the land size exceeding 500 ha make 12.9% of the total number of enterprises in Serbia and they dispose with 87.6% of the total utilised agricultural land, with some differences in the macro-regions.

Without disputing the usual emphasis on the advantage of "economies of scale", which is accomplished by larger agricultural enterprises and

agribusiness companies, some authors tend to emphasise the significance of potential contribution of small and medium agricultural enterprises to the reduction of poverty and sustainable development of local communities in rural areas of Serbia. [24]

Agricultural enterprises (AE) according to the size of utilised land (ha)														
	Without land	<2 ha	2-5	5-10	10-20	20-50	50-100	100-300	300-500	500-1000	1000-2500	2500-5000	>5000 ha	Total
Republic of Serbia (RS)														
Number of AE	331	232	126	98	88	107	74	98	35	55	82	28	4	1358
Structure (%)	24.4	17.1	9.3	7.2	6.5	7.9	5.4	7.2	2.6	4.1	6.0	2.1	0.3	100.0
Land, ha	0	212	428	757	1249	3457	5631	16 981	14010	39601	134276	102881	24558	344041
Structure (%)	0.0	0.1	0.1	0.2	0.4	1.0	1.6	4.9	4.1	11.5	39.0	29.9	7.1	100.0
Central Serbia (CS)														
Number of AE	190	121	70	40	40	40	21	17	8	5	12	7	1	572
Structure (%)	33.2	21.2	12.2	7.0	7.0	7.0	3.7	3.0	1.4	0.9	2.1	1.2	0.2	100.0
Share of CS (RS=100)	57.4	52.2	55.6	40.8	45.5	37.4	28.4	17.3	22.9	9.1	14.6	25.0	25.0	42.1
Land, ha	0	102	236	296	582	1343	1629	2822	3 086	3 911	21024	23 813	5396	64240
Structure (%)	0.0	0.2	0.4	0.5	0.9	2.1	2.5	4.4	4.8	6.1	32.7	37.1	8.4	100.0
Share of CS (RS=100)	-	48.1	55.1	39.1	46.6	38.8	28.9	16.6	22.0	9.9	15.7	23.1	22.0	18.7
Autonomous Province of Vojvodina (APV)														
Number of AE	141	111	56	58	48	67	53	81	27	50	70	21	3	786
Structure (%)	17.9	14.1	7.1	7.4	6.1	8.5	6.7	10.3	3.4	6.4	8.9	2.7	0.4	100.0
Share of APV (RS=100)	42.6	47.8	44.4	59.2	54.5	62.6	71.6	82.7	77.1	90.9	85.4	75.0	75.0	57.9
Land, ha	0	109	192	461	667	2115	4001	14160	10924	35690	113253	79067	19161	279800
Structure (%)	0.0	0.0	0.1	0.2	0.2	0.8	1.4	5.1	3.9	12.8	40.5	28.3	6.8	100.0
Share of APV (RS=100)	-	51.4	44.9	60.9	53.4	61.2	71.1	83.4	78.0	90.1	84.3	76.9	78.0	81.3

Table 5. Land size structure of agricultural enterprises in Serbia per macro-regions (2012)

2.2. Land size structure of agricultural cooperatives

According to Methodological instructions for the Census of Agriculture from 2012, *agricultural cooperatives* include the sub-group of economic entities that is defined as “a form of organising of physical persons (cooperative members) within which they fulfil their interests by acting on cooperative principles of voluntariness and solidarity, democracy, economic interest, equal management rights, independence, cooperative education and inter-cooperative co-operation.” [3: 44]

Independently from the rich tradition – Central Union of Serbian Agricultural Cooperatives was one of 11 founders of the International Cooperative Association (London, 1895), agricultural cooperative organising in Serbia was not only under a “political bell” during the

epoch of socialism but it was entirely ostracized from the reform processes during the post-socialist transition period.

This is also confirmed by the fact that the Law on Cooperatives from 1996, in addition to eight unsuccessful attempts of different proponents of the draft of this law (from the Cooperative Union of Vojvodina to the competent Ministries of Economy) is still in force – except for Article 95 that refers to the return of cooperative assets that was taken over without any compensation in the period after July 1st, 1953. [25]

A special concern arises from the absence of political will to implement in Serbia the experience from the Republic of Slovenia that comes from the same political and economic environment as a former Yugoslav republic and that enacted the Law on Cooperatives (1992) immediately after their independence. According to this Law, Slovenia implemented *de jure* in practice its *lex specialis* and transformed all the assets that used to be the social property into cooperative property.

Long-term efforts of author of this paper at scientific meetings, in front of the General Meeting of the Cooperative Union of Serbia and in the public media to enact *lex specialis* [27] for *de jure* social and *de facto* cooperative property in agricultural cooperatives in Serbia and resolve the most important property “Gordian knot” in the cooperative sector of our economy, in particular agricultural, have been left without an echo among all competent Ministries of Economy and Agriculture in numerous coalition Governments of the Republic of Serbia during the transition period.

The analysis of the situation and proposals of measures for revival of agricultural cooperatives can be found in papers of cooperative supporters [28, 29], Monograph titled “Stavovi direktora zadruga i zadrugara o zemljoradničkom zadrugarstvu u Srbiji” (“Attitudes of directors of cooperatives and cooperative members on agricultural cooperatives in Serbia”) [30], and in particular in the document titled “Strategija razvoja zemljoradničkog zadrugarstva u Republici Srbiji” (“Strategy of development of agricultural cooperatives in the Republic of Serbia”) [31] – the elaboration of which, as well as the team consisting of 14 co-authors (six of them from abroad) were managed by the author of this paper and financed by the World Bank. In that context, it is necessary to point out two very important activities of the Board for Rural Communities of the Serbian Academy of Science and Art aimed at affirmation of agricultural cooperatives: free of charge dissemination of a popular publication titled “Zašto i kako se organizovati u zadruge” (“Why and how to organise into

cooperatives”) (with the circulation of 50,000 copies) [32] and in particular the organising of the Round Table on the topic titled “Cooperative – the factor of sustainable development of agricultural and rural communities in Serbia” – where examples of best practice in association of farmers into agricultural cooperatives in Serbia were pointed out. [33]

However, agricultural cooperatives in Serbia have undergone significant changes that are manifested through more and more striking devastation of cooperative property during the post-socialist transition, which culminated with the “property euthanasia” in the period of validity of the Law on Insolvency [34] (2010 – July 2012) – until passing of the Decision of the Constitutional Court of the Republic of Serbia on proclaiming certain provisions of that Law unconstitutional [35]. This meant the winding up of 736 cooperatives – to make this nonsense even larger, the remaining cooperative assets were made “state property” by being placed at the disposal of the Department for Property of the Republic of Serbia [15] upon the completion of (il)legal winding up procedures.

In such institutional and economic environment, only 421 cooperatives that fulfilled the methodological criteria to be registered as agricultural cooperatives were registered within the Census of Agriculture from 2012 out of 1,585 agricultural cooperatives that were registered according to the data of the Agency for Company’s Registers from April, 2011. [31: 8]

Based on the analysis of the main characteristics of the land size structure of agricultural cooperatives the following conclusions can be formulated:

- Almost one third (34.2%) out of 421 cooperatives in Serbia in total are landless, while there are 80% of such cooperatives in the territory of Central Serbia;
- The landless cooperatives are followed by cooperatives with small (up to 2 ha) and cooperatives with relatively small (2 to 5 ha and 5 to 10 ha) land size, which makes 30.2% of their total number. They dispose with only 341 ha, or 0.8% out of the total of 47,231 ha of utilised agricultural land in agricultural cooperatives;
- Out of 47, or 11.1% of cooperatives with larger land size (more than 300 ha), which dispose with 80.6% of the total utilised agricultural land of this group of farms, all of them (except one) are in the territory of the AP Vojvodina;
- Only one cooperative with the land size of 2,160 ha manages 49.3% of overall utilised agricultural land in the cooperative sector of the Central Serbia, while, on the other hand, 17.1% of the total number of

cooperatives manages approximately the same land size and they own from 10 to 300 ha of land each in the above-mentioned macro-region.

Based on the conclusions related to the land size structure of agricultural cooperatives stated above, it can be said that cooperatives in the Central Serbia can base their economic sustainability practically only on providing intermediation services between the cooperative members and co-operators as buyers of production materials and sellers of market surpluses of agricultural produce, on the one side, and suppliers of production material and buyers of agricultural produce, on the other side.

Contrary to central Serbia around 50 cooperatives that dispose with around 35,000 ha of agricultural land in the territory of the AP Vojvodina have the potential of being relatively recognisable local and regional producers of agricultural produce, in addition to intermediating in the supply with production material and buy up of agricultural produce in the name and on behalf of cooperative members and co-operators.

In the end, we should emphasise in particular that, in addition to the examples of cooperative practice among the “old” complex cooperatives (AC “Beška“ - Beška, AC “Tisa“ - Bačko Petrovo Selo, ...), specialised cooperatives are particularly important for more successful development of the cooperative sector – among which we can single out the following as the examples of good cooperative practice: AC “Vočko“ - Tavankut, AC “Slankamenka“ - Slankamen, AC “Zelena bašta“ - Saraorci, ...

Agricultural cooperatives (AC) according to the size of utilised land (ha)												
	Without land	<2 ha	2-5	5-10	10-20	20-50	50-100	100-300	300-500	500-1000	1000-2500	Total
Republic of Serbia (RS) (2012)												
Number of AC	144	82	23	22	18	29	21	35	18	19	10	421
Structure (%)	34.2	19.5	5.5	5.2	4.3	6.9	5.0	8.3	4.3	4.4	2.4	100.0
Land, ha	0	80	81	180	266	958	1 580	6 022	7 304	13 374	17 386	47 231
Structure (%)	0.0	0.2	0.2	0.4	0.6	2.0	3.3	12.7	15.5	28.3	36.8	100.0
Central Serbia (CS)												
Number of AC	115	45	14	9	11	15	7	5	0	0	1	222
Structure (%)	51.8	20.3	6.3	4.1	4.9	6.8	3.2	2.2	0.0	0.0	0.4	100.0
Share of CS (RS=100)	79.9	54.9	60.9	40.9	61.1	51.7	33.3	14.3	0.0	0.0	10.0	52.7
Land, ha	0	40	49	82	161	501	515	878	0	0	2 160	4 386
Structure (%)	0.0	0.9	1.1	1.9	3.7	11.4	11.7	20.0	0.0	0.0	49.3	100.0
Share of CS (RS=100)	-	50.0	60.5	45.6	60.5	52.3	32.6	14.6	0.0	0.0	12.4	9.3
Autonomous Province of Vojvodina (APV)												
Number of AC	29	37	9	13	7	14	14	30	18	19	9	199
Structure (%)	14.6	18.6	4.5	6.5	3.5	7.0	7.0	15.1	9.2	9.5	4.5	100.0

Share of APV (RS=100)	20.1	45.1	39.1	59.1	38.9	48.3	66.7	85.7	100.0	100.0	90.0	47.3
Land, ha	0	40	31	98	104	458	1 065	5 144	7 304	13 374	15 226	42 844
Structure (%)	0.0	0.1	0.1	0.2	0.2	1.1	2.5	12.0	17.0	31.2	35.6	100.0
Share of APV (RS=100)	-	50.0	38.3	54.4	39.1	47.8	67.4	85.4	100.0	100.0	87.7	90.7

Table 6. Land size structure of agricultural cooperatives in Serbia per macro-regions (2012)

2.3. Land size structure of farms belonging to other legal entities and entrepreneurs

According to the Methodological Instructions for the Census of Agriculture from 2012 [3: 19-44], the group of *farms belonging to other legal entities* includes units of registration that utilised agricultural land and that are registered in the legal forms of:

- *Entrepreneur (LPE)* - "an individual who is capable of doing business in order to generate income and who is registered as such in accordance with the Law on the registration";
- *Business Association* - "legal entity set up by two companies or more companies or entrepreneurs in order to achieve common interests";
- *Institution* - "agricultural institute, veterinary institute, health facility (health centre, pharmacy, institute, clinical-hospital centre), social institution, preschool and school institution, institution of physical education, cultural institution (theatre, cultural centre, museum, library), etc.";
- *Public authority* - "Republic authority, authority of the autonomous province, county/district jail, correctional facility, etc.";
- *Local self-government unit* - "local authorities (municipalities), which are responsible for the shared land (shared meadows and pastures), which is neither rented nor allocated to another farm, but is covered by the right to the common grazing of cattle";
- *Other forms of organising* - "religious organisations", and
- *Nor classified elsewhere* - "everything that is not classified in any of the previous forms of association, e.g. civic association, bankruptcy estate, fund, etc.".

According to the indicators calculated and shown in Table 7, out of the total of 1,728 registered other legal entities and entrepreneurs in Serbia (2012), 731 legal entities or 42.3% are landless.

The remaining 997 farms, or 57.7% of the total number of other legal entities and entrepreneurs have used 220, 939 ha of agricultural land - of

which 50.7% in the territory of Central Serbia and 49.3% in the AP Vojvodina. Among them, the largest sub-group is the one with smaller land size (up to 10 ha) - 687 farms, or 39.7% of their total number, which used 1,372 ha, or only 0.6% of the total land size of farms belonging to other legal entities and entrepreneurs.

Opposite to them is a sub-group of 85 farms with large land size (over 500 ha) - neglected in the previous agricultural-economic analysis, which owned 199,959 ha or 90.5% of the total utilised land of other legal entities and entrepreneurs. Among them there are eight legal entities that used a total of 79,823 ha (average of nearly 10,000 ha), accounting for one third of the total utilised land this type of farms.

Despite the fact that a significant portion of utilised land belonging to other legal entities and entrepreneurs consist of pastures managed by local self-government units (municipalities), this group of farms, namely beneficiaries should be attributed special attention in implementation of the future programme of agricultural land utilisation in the Republic of Serbia.

	Farms belonging to other legal entities and entrepreneurs (OLEandE) according to the size of utilised land (ha)													
	Without land	<2 ha	2-5	5-10	10-20	20-50	50-100	100-300	300-500	500-1000	1000-2500	2500-5000	>5000 ha	Total
Republic of Serbia (RS)														
Number of OLEandE	731	476	137	74	63	47	53	49	13	33	28	16	8	1728
Structure (%)	42.3	27.5	7.9	4.3	3.6	2.7	3.1	2.8	0.8	1.9	1.6	0.9	0.5	100.0
Land, ha	0	354	466	552	890	1 421	3 952	8 233	5 112	23 918	42 190	54 028	79 823	220 939
Structure (%)	0.0	0.2	0.2	0.2	0.4	0.6	1.8	3.7	2.3	10.8	19.1	24.5	36.1	100.0
Central Serbia (CS)														
Number of OLEandE	275	308	104	49	45	37	25	26	7	21	18	7	4	926
Structure (%)	29.7	33.3	11.2	5.3	4.9	4.0	2.7	2.8	0.8	2.3	1.9	0.8	0.4	100.0
Share of CS (RS=100)	37.6	64.7	75.9	66.2	71.4	78.7	47.2	53.1	53.8	63.6	64.3	43.8	50.0	53.6
Land, ha	0	247	353	359	644	1 123	1 821	4 490	2 889	14 761	28 079	20 641	36 653	112 060
Structure (%)	0.0	0.2	0.3	0.3	0.6	1.0	1.6	4.0	2.6	13.2	25.1	18.4	32.7	100.0
Share of CS (RS=100)	-	69.8	75.8	65.0	72.4	79.0	46.1	54.5	56.5	61.7	66.6	38.2	45.9	50.7
Autonomous Province of Vojvodina (APV)														
Number of OLEandE	456	168	33	25	18	10	28	23	6	12	10	9	4	802
Structure (%)	56.9	20.9	4.1	3.1	2.2	1.2	3.5	2.9	0.7	1.5	1.2	1.1	0.5	100.0

Share of APV (RS=100)	62.4	35.3	24.1	33.8	28.6	21.3	52.8	46.9	46.2	36.4	35.7	56.3	50.0	46.4
Land, ha	0	107	113	193	245	299	2 131	3 742	2 223	9 157	14 111	33 387	43 170	108 878
Structure (%)	0.0	0.1	0.1	0.2	0.2	0.3	2.0	3.4	2.0	8.4	13.0	30.7	39.6	100.0
Share of APV (RS=100)	-	30.2	24.2	35.0	27.5	21.0	53.9	45.5	43.5	38.3	33.4	61.8	54.1	49.3

Table 7. Land size structure of farms belonging to other legal entities and entrepreneurs in Serbia per macro-regions (2012)

Since the Law on Incentives in Agriculture and Rural Development (2013) [36] enabled all forms of farms to be registered, namely to obtain the status of RF and utilise subsidies and other incentives from the agricultural budget starting from 2013, based on the data that have been processed until now on registration of all forms of farms, the indicators of the share of certain RF per individual forms of farms in 2013 (Table 8) have been presented for the first time in our agro-economic bibliography.

Form of farm	All farms		Registered farms (RF)		
	Number	%	Number	%	Share
FF	628.311	99,4	466.976	99.67	74.3
AE	1.358	0.2	1.032	0.22	76.0
AC	421	0.1	214	0.05	50.8
OLEandE	1.728	0,3	296	0.06	17.1
Total	631.818	100,0	468.518	100.00	74.2

Table 8. The share of registered in the total number of certain forms of farms in Serbia (2013)

Source: Author's calculation based on the data from the Census of Agriculture from 2012 and data on registered farms of the Directorate for Agrarian Payments in 2013

Given the share of small, elderly, and other non-agricultural and other households that for various reasons have not registered their family farms, the share of 74.3% in the total number of registered FF can be considered satisfactory and a record number of this form of RF from the beginning of their registration (2004). Their registration is driven by the inclusion of all categories of agricultural land utilisation (up to 100 ha) into a system of subsidies, as well as the non-limiting the number of heads of cattle, poultry and beehives in the subsidy system.

Considering a relatively large share of “landless” farms in the group of agricultural enterprises (24.4%), the share of 76.0% registered in the overall number of agricultural enterprises can also be considered their highly satisfactory response – which has been particularly motivated by possibilities for this group of farms to obtain, for the first time, the

subsidies not only with up to 100 ha of land but also for an unlimited number of animals – which is an exceptional advantage for the enterprises such as “Delta Agrar” – Belgrade with farms in Celarevo, Apatin, Stara Pazova, Banatska Topola, Banatsko Veliko Selo, Vladimirovci, and Zajecar; PC “Belgrade” – Padinska Skela, PIC “Becej” – Becej, BD “Agro” – Dobanovci, ...

However, the fact that the share of registered agricultural cooperatives is relatively very small (50.8%) is the issue of high concern since it cannot be justified with inappropriate relationship of the state towards the resolving of property-legal and other issues of relevance for sustainable business activities of cooperatives.

The smallest share (17.1%) of registered farms belonging to other legal entities and entrepreneurs is expected since this group includes the largest number of “landless” legal entities (42.3%) and it is known after the dominant share of surfaces under pastures managed by local self-governments.

3. CAPACITIES OF ANIMAL PRODUCTION AND LEVEL OF EQUIPPING WITH TRACTORS AT FARMS

The trend of reduction of the share of animal husbandry in the value of agriculture in Serbia has reached the alarming level (below 30 percent), which is inadequate for the European countries and the structure of values of our agriculture in the period before and after the disintegration of the SFR Yugoslavia. [10: 27] This was particularly contributed by the destruction of important reproduction centres and numerous larger livestock farms in the privatised agricultural enterprises during the last decade of transition changes in agribusiness of Serbia.

The analysis of livestock production capacity indicators by types of farms in Serbia, which were calculated on the basis of available data from the Census of Agriculture from 2012 (Table 9), points to the following findings:

- Family farms have traditionally been dominant in the overall number of head of all livestock species (99.0% of sheep and goats, 91.7% of cattle, and 80.1% of pigs), poultry (62.6%) and beehive communities (98.3%);

- Agricultural enterprises occupy the second place, but with significantly lower share in all sectors of animal production - ranging from the highest of 32.7% of the total number of poultry (thanks to profitability of farms with the industrial way of organising of broilers and eggs production), to 18.7% of the total number of pigs and 7.8% of the total number of heads of cattle to relatively negligible share in the total number of goats (0.8%), sheep (0.7%) and beehive communities (0.4%), and
- The share of cooperatives and farms of other legal entities in the structure of total animal production capacities is relatively modest, with the exception of their share (4.5%) in the total number of poultry at farms belonging to other legal entities and entrepreneurs – because of poultry farms that were in the bankruptcy procedure at the time of the Census.

	Forms of farms				
	All	FF	AE	AC	OLEandE
<i>Number of heads of cattle</i>	907 592	831 823	70 868	3 352	1 549
Structure (all=100)	100.0	91.7	7.8	0.4	0.2
Cattle/farm	1.44	1.32	52.19	7.96	0.90
Cattle/hectare	0.26	0.30	0.21	0.07	0.01
<i>Number of pigs</i>	3 407 146	2 728 021	637 324	31 398	10 403
Structure (all=100)	100.0	80.1	18.7	0.9	0.3
Pigs/farm	5.39	4.34	469.31	74.58	6.02
Pigs/hectare	0.99	0.97	1.85	0.66	0.05
<i>Number of sheep</i>	1 735 169	1 718 027	12 547	834	3 761
Structure (all=100)	100.0	99.0	0.7	0.0	0.2
Sheep/farm	2.75	2.73	9.24	1.98	2.18
Sheep/hectare	0.51	0.61	0.04	0.02	0.02
<i>Number of goats</i>	231 754	229 333	1 856	20	545
Structure (all=100)	100.0	99.0	0.8	0.0	0.2
Goats/farm	0.37	0.36	1.37	0.05	0.32
Goats/hectare	0.07	0.08	0.01	0.00	0.00
<i>Number of poultry</i>	26 709 556	16 709 321	8 731 223	75 960	1 193 052
Structure (all=100)	100.0	62.6	32.7	0.3	4.5
Poultry/farm	42.27	26.59	6429.47	180.43	690.42
Poultry/hectare	7.79	5.93	25.38	1.61	5.40
<i>Number of beehive communities (BC)</i>	668 023	656 685	2 838	4 704	3 796
Structure (all=100)	100.0	98.3	0.4	0.7	0.6
BCs/farm	1.06	1.05	2.09	11.17	2.20
BCs/hectare	0.19	0.23	0.01	0.10	0.02
<i>Number of tractors*</i>	410 868	404 717	4 489	869	793
Structure (all=100)	100.0	98.5	1.1	0.2	0.2
Tractors/farm	0.65	0.64	3.31	2.06	0.46

Tractors/100 hectares	11.98	14.36	1.30	1.84	0.36
Hectares/tractor	8.35	6.96	76.64	54.35	278.61

Table 9. Indicators of production capacities per forms of farms in agriculture of Serbia (2012)

BC – beehive community * - own two-axes tractor

Compared to other European countries, the number of heads of all breeds of cattle per hectare of utilised land in Serbia is exceptionally small and it indicates a more extensive way of organising of animal production and inadequate utilisation of available land surfaces – excluding the number of family farms specialised in production of cow’s milk based on contracts for delivery of milk to industrial dairy plants and young bulls and pigs fattening mainly without “firm” contractual relations with slaughtering facilities that is getting smaller every year, as well a small number of agricultural enterprises that have preserved animal farms even after their privatisation (“Delta Agrar“ – in a larger number of pig and cattle farms all over Serbia: Čelarevo, Stara Pazova, Kikinda, Banatsko Veliko Selo i Zaječar; PK “Beograd“ – Padinska Skela, PIK “Bečej“ - Bečej, BD Agro - Dobanovci, PP “Sava Kovačević“ - Vrbas, ...).

Despite the unfavourable age structure, the number of two-axes tractors is over dimensioned compared to the utilised land size at family farms (6.96 ha/tractor), which points to the need of their joining in procurement and shared use of tractors and other agricultural machinery. For that purpose it is necessary to revitalise the role of agricultural cooperatives in procurement of tractors and other pieces of agricultural machinery and their economically efficient exploitation based on a modified model of “machine rings” at smaller family farms of their cooperative members and co-operators. This would provide directly for the upgrading of cooperatives and indirectly of family farms as well [36], and improve their competitiveness in the conditions of the all-present globalisation of agricultural production and liberalisation of trade with agricultural-food products.

Such commitment is also confirmed by more favourable ratio between the number of tractors and utilised land size in all three forms of farms with the status of legal entities and entrepreneurs – the farms of which are larger and better regulated, which is the main assumption for much higher economic efficiency of their use compared to family farm (Table 8)

4. ASSOCIATIONS OF AGRICULTURAL PRODUCERS

Associations of agricultural producers in Serbia differ according to the forms of farms and they have been systematised in accordance with the structure of this paper into:

- Associations of farmers – owners of family farms;
- Associations of agricultural enterprises; and
- Cooperative alliances, as well as associations of agricultural cooperatives.

4.1. Associations of farmers – owners of family farms

Associations of farmers are the most important form of organisation of owners of family farms and other persons interested in the promotion of agricultural and rural development. [37, 38, 39]

History of associating aimed at promoting agriculture in Serbia dates back to the establishment of the *Society for Rural Economy* in Belgrade (1868) – the founder of various forms of the later transformations of the current *Association of Agricultural Engineers and Technicians of Serbia* (AAETS). [40]

According to the Agency for Company's Registers (APR), there are 20,779 associations in Serbia (as of July 17th, 2013), which were established or harmonised with the Law on Associations (2009). [41] However, the APR is not classifying them according to the objectives of their establishment or fields of their activities, which would enable the conducting of the analysis of their share in agriculture or according to certain search criteria. It should be noted that the Law allows the associations to register specific activities designated to revenue earning up to the level they need to achieve the objectives of their establishment. This has fostered the establishing of new and increase of the number of different associations.

The main problem of the analysis of significance of farmers' associations is the inability to determine their representativeness at the national level. Based on the information available to the author, it could be only emphasised that the criterion of national representation is met only by the *Union of Beekeeping Associations of Serbia* (FBAS) [42], which in its membership brings together an absolute majority of local associations of beekeepers and active bee farms, namely statistically more precise, 208

municipal and other beekeepers' associations that gather 8,717 registered bee farms.

In the absence of the valid criteria and databases for methodologically correct analysis, based on the current knowledge of the author about the activities of some societies and associations of farmers in Serbia, without going into the evaluation of their statistical representativeness at the national level, we should point out in particular the importance of two complex associations:

- Previously established *Farmers' Association* (FA) - Novi Sad (2008), which was transformed from the *Association of Farmers of Vojvodina*, [43] and which currently has the largest media and political impact on the creation of measures of agricultural and rural policy in Serbia in relation to all other associations, and
- Association that is already in the foundation stage and that brings together a relatively large number of farmers – *Assembly of Serbian Agro-Economy Producers* (ASAEP) - Kraljevo (2012). [44]

In addition to these two associations, there is a large number of regional complex (*Farmers of Banat – Crepaja ...*), or production-market recognisable associations of farmers (*Farmers' Club 100P Plus – Novi Sad ...*), which have a relatively larger impact and agrarian-political significance in Serbia.

However, local associations are the most numerous:

- *Complex agricultural associations* (Agriculture Development Centre "AGROSS" - Braničevo, 2009; "Agro Perspektiva" – development and promotion of agriculture - Temerin, 2013; ...) or
- *Specialised associations of farmers* (Association of Vineyard Growers of Vrsac Wine Area "Gudurica" – Gudurica – Vršac, 2001; Association of Vineyard Growers, Wine Producers and Fruit Growers of Zupa–Aleksandrovac, 2002; Association of Vineyard Growers and Wine Producers "Oplenac" – Topola, 2005; Association of Simmental Breed Cattle "Šumadija" - Kragujevac, 2005; Association of Producers of Futog Cabbage and Futog Sour Cabbage "Futoški kupus" - Futog, 2007; Association of Cattle Breeders – Bogatić, 2009; Association of Vineyard Growers and Wine Producers "Pudar" - Sakule, 2010; Association of Sheep Breeders "Selo naše" - Vladičin Han, ...).

A special place belongs to associations for:

- *Promotion and development of the growing organic farming (Terra's - Subotica, 1990; Bioplaneta - Belgrade, 2008; Serbia Organica - Belgrade, 2009, Centre for Organic Agriculture - Uzice, 2013; ...;*
- *Promotion and development of activities "around agriculture" (Association "Rural Tourism of Serbia" - Ljig, 2002; Hunting Association "CIK" - Bačko Petrovo Selo, 2010; Innovation Centre for Promotion of Agriculture, Culture, Tourism and Networking - Novi Sad, 2013; ...) and*
- *Development of local communities or regions (Serbian Association for Rural Sociology and Sociology of Agriculture - Belgrade, 1995; Centre for Promotion of Agriculture and Rural Development "Agribusiness Centre" - Kutlovo, 2002; Association of Consultants in the Field of Agriculture, "Agrar-contact" - Vračar-Belgrade 2006; Association "I will marry the whole village" - Gornji Matejevac – Nis, 2010; Association for Agriculture, Rural Community and Information - Novi Sad, 2010; Association "Eco Village" - Dudovica, 2010; Association of Water Users "Markovici" and Association of Water Users "Bjelotići Polje" - both in the village of Lunovo, and both founded in 2013; ...*

Farmers' Association will have even greater importance and role in the future development of agriculture and rural areas, especially in the period of our accession to the EU.

4.2. Associations of agricultural enterprises

Chambers of commerce (CC) are the main form of business association of agricultural enterprises.

Chamber system in Serbia consists of the following: National Chamber of Commerce of Serbia, two provincial chambers (CC of Vojvodina and CC of Kosovo and Metohija) and 17 regional CC with registered offices in Subotica, Sombor, Kikinda, Novi Sad, Zrenjanin, Pancevo, Sremska Mitrovica, Belgrade, Pozarevac, Zajecar Kragujevac, Valjevo, Uzice, Kraljevo, Krusevac, Nis, and Leskovac. Their functioning is regulated by the Law on Chambers of Commerce (2009, 2011) [45] which, unlike previous mandatory membership of all businesses in chambers is currently based on the principle of voluntary association and membership of agricultural and other enterprises.

Two most important forms of internal organisation of the chamber system for chamber members are as follows - associations and groups. More specifically, for agricultural enterprises it is the *Association for Agriculture, Food and Tobacco Industry and Water Management*, composed of 20 sectoral groups, namely: 1) water management, 2) feed manufacturers, 3) food testing laboratories, 4) livestock production and processing of livestock products, and 5) slaughter industry - production, processing and preserving of meat and meat products; 6) dairy industry – milk producers and processing plants, 7) poultry meat and eggs producers, 8) beekeeping and honey production; 9) fisheries, 10) producers and manufacturers of medicinal, aromatic and spice plants, 11) producers of ornamental plants and flowers, 12) organic production; 13) producers of cereals, milling and bakery products and pasta, 14) manufacturers of dietary foods and baby foods; 15) manufacturers of vegetable oils, 16) production, processing and sale of fruits, vegetables, berries and fruit seedlings, 17) viticulture and enology, 18) manufacturers of grapevine grafts and fruit trees; 19) producers of confectionery products, and 20) tobacco producers and processing plants. [46]

In addition to the Chambers of Commerce - that mandatory membership in the socialist socio-economic system "reputed" to be the *de facto* "para-state institutions" for implementation of the current policy, certain agricultural enterprises team up with each other or with other forms of agricultural farms and in other forms of associations such as:

- *Business communities*: Business community for fruits and vegetables - Belgrade, Business community for industrial plants - Novi Sad, Poultry Community - Belgrade, "Žito Vojvodine" - Novi Sad, ...;
- *Clusters*: "Šumadija Flower" - Kragujevac, "Alco Cluster of southern Serbia" - Leskovac, Cluster "Fruit Land" - Subotica, Agriculture Cluster "Agro-South" – Nis, Cluster "Pannonian Spirits" Fruška Gora cluster of vineyard growers and wine producers "Alma Mons" - Sremski Karlovci, 2010; ..., [48, 49, 50]
- *Associations*: Association of primary agricultural producers "Vojvodina Agrar" - Becej [51], "Seed Industry Association of Serbia" - Novi Sad [52], ...

4.3. Cooperative alliances

Association of agricultural cooperatives in cooperative alliances at national and international level has historically long and rich tradition in Serbia, with occasional ups and downs of the cooperative organisation in our country and our (non) participation in the International Cooperative Union (ICU, 1895 - London, and Geneva) and Cooperative Union of Europe (Brussels).

Since the establishment of the first agricultural-credit cooperative (Vranovo, 1894), through the formation of the Central Serbian Union of Agricultural Cooperatives (CSUAC, Smederevo, 1895) and the participation of its President, Professor. Mihail Avramovic with 11 national cooperative alliances in constituting of the International Cooperative Union (ICU, London, 1895), to the present activities in the cooperative sector and the cooperative movement, we are approaching the 120th anniversary of cooperatives in Serbia.

The changes that have accompanied agricultural cooperatives in the post-socialist transition period inevitably affected the organisation and operations of the cooperative alliances in Serbia. [52]

At the beginning of the transition period in Serbia two national alliances operated:

- Cooperative Union of Serbia (CUS) - founded by the two provincial alliances (Cooperative Alliance of Vojvodina - CAV - with regional cooperative alliances in Pancevo, and Sremska Mitrovica; and Cooperative Alliance of Kosovo and Metohija - CAKM) and ten regional and district cooperative alliances in Central Serbia – with registered offices in Belgrade, Pozarevac, Zajecar Negotin, Nis, Leskovac, Jagodina, Kraljevo, Uzice and Valjevo, and
- Cooperative Union of Yugoslavia (CUY) - which, after the disintegration of the Federal Republic of Yugoslavia (1992), constituted the Cooperative Union of Serbia and Cooperative Union of Montenegro (CUS and CUMG).

First, due to bombardment by NATO (1999), the head office of the Cooperative Alliance of Kosovo and Metohija moved to Zubin Potok, and its activities were largely confined to a relatively small number of cooperatives in the municipalities of Zubin Potok, Kosovska Mitrovica, Leposavic and Zvecan.

After that, the Cooperative Union of Yugoslavia practically ceased to function due to withdrawal of representatives of the Cooperative Alliance of Serbia (2004) and employees of the CAY continued maintaining membership in the CCU and live on the resources earned by renting the business premises in the registered office of the CUY in Belgrade. The same has been later revitalised through the establishment of the Convention of the CUY consisting of representatives of cooperative alliances in currently two independent countries (Serbia and Montenegro) and election of the Managing Board and the President of the CUY (2012) without public profiling whether it is the matter of ‘international’ or ‘co-ordinating’ cooperative union of two countries and without recognisability of its role and activities in the cooperative sector and cooperative movement in Serbia.

Despite the collision with Article 54 of the Rules of the Cooperative Union of Serbia (which is also limiting and opposite to the international cooperative principle on freedom of association) and without the approval of the CUS [54], two cooperative alliances have been established:

- Cooperative Association "Agrojaeren" in Gospodjinci (2009) [55], which was established with the support from the Norwegian Foundation Jaeren Produktutvikling by eight agricultural cooperatives (AC "Gospodjinci" – Gospodjinci, AC "Brazda" – Rusko Selo, AC "Srbobran" – Srbobran, AC "Zadrugar" – Bac, AC "Resnik" - Resnik, AC "Agro-Raca" - Raca, AC "Zadrugar" - Gornje Jarušice, and AC "Sebečevo" - Sebečevo) was aimed at promotion of the business model of association of the above-mentioned cooperatives and their cooperative enterprise "Samvirke" Ltd. based in Kragujevac, and
- Cooperative Association of Pirot, Dimitrovgrad, Bela Palanka Babušnica - Pirot (2013) [56], which was established by 12 cooperatives (AC "Arbinje Pirot" – Dojkinci, Craft cooperative carpets and souvenirs manufacture "Lady's Heart" - Pirot, AC "Class" - Pirot, AC "Bobolovac"- Blato, AC "Prelesje"- Dimirovgrad, AC "Nova mala"- Pirot, AC "Temac"- Pirot – Temska, AC "Barje"- Barje Čiflik, AC "Topli Do" – Topli Do, AC "Krupac" – Krupac, and AC "Poljska Ržana" - Poljska Ržana).

Contrary to that, despite the existence of the Cooperative Association of Belgrade, which is the founder of the Cooperative Union of Serbia and which was subsequently registered in the APR (2013) - because of inconsistencies in mutual communication, the CUS has approved the establishing of another "parallel" Municipal Co-operative Alliance of

Agricultural Cooperatives of Belgrade in Belgrade - Borca (2012), which was founded by three cooperatives (AC "Zemljoradnik" - Borca, AC "Buducnost" - Dobanovci, and AC "Avala" - Beli Potok). [57]

Furthermore, during the transition period, independently from the approval of the CUS and outside the CUV several branch cooperative associations were established, including seven in the 2005: Cooperative Alliance "Fruit Land - the land of fruits" - Subotica (wound up in 2013.), Cooperative Alliance of Livestock and Agricultural Cooperatives "Banmlek" - Kikinda, Livestock and Agricultural Cooperatives Alliance "Federacija stocara Banata" - Vrsac, Union of Agricultural and Mushroom Growing Cooperatives "Pecurka" - Veliko Srediste, Cooperative Union of Agricultural and Beekeeping Cooperatives "Vojvodjanska pcela" - Veternik, Union of Vegetable Growing and Agricultural Cooperatives "Zeleno Polje" - Gospodjinci, and Union of Vegetable Growing and Agricultural Cooperatives "Povrtarska Unija" - Begeč) and Union of Agricultural and Livestock Cooperatives "Uzgajivaci svinja" - Tomaševac in 2006. [58] However, the results of their activities are not yet recognised in the cooperative sector of the AP Vojvodina and Serbia.

Finally, the winding up of two regional cooperative associations in the areas with favourable conditions for agricultural production: District Co-operative Alliance of Srem in Sremska Mitrovica (2011) - which was the founder and a member of the Cooperative Union of Vojvodina, and the Cooperative Union of Sumadija and Pomoravlje County ("symbolically" on January 12th, 2012 on the day of the celebration of the International Year of Cooperatives) - which was the founder and a member of the Cooperative Union of Serbia, but later (May 28th, 2012) re-registered under a "new" name - Cooperative Union of Šumadija and Morava Basin in Jagodina.

The main problems in the functioning of the cooperative associations/alliances include: the lack of cooperative statistics on cooperatives - members and based on that of an objective assessment of the representativeness of each alliance; absence or irregular payment of membership fees of cooperative necessary for functioning of the alliances; loss of conditions for functioning of CUY, CUS, and CUV as auditing cooperative unions and the absence or extreme irregularity of cooperative auditing in cooperatives and in particular in cooperative unions; majority representation of directors of cooperatives and non-cooperative representatives in the cooperative unions; the tendency of centralisation activities of the CUS and CUV and acting based on "top-down" approach

rather than in accordance with the international cooperative principles and on the "bottom up" principle - from cooperatives through district, namely regional and provincial to the CUS; the absence of a common national cooperative association as the association of all professional and territorial cooperative alliances and exercising of unity of cooperative organisation at the national level; functioning of cooperative unions as "quasi-state" and "political" institutions rather than as business association of cooperatives and cooperative enterprises; exclusion of the CUS from the activities of the ICU and Cooperative Union of Europe; absence of activities of international cooperative unions in the programmes of activities of the CU of Serbia; ...

Based on the above, it can be concluded that cooperative unions are going to be faced with significant restructuring in accordance with more intensive inter-cooperative co-operation with the International Cooperative Union and in particular the Cooperative Union of Europe. At the same time, we need to continue and expand all forms of co-operation with the newly established states in the territory of former SFR Yugoslavia and the neighbouring region (Hungary, Romania) - which is particularly developed by the Cooperative Union of Vojvodina. Otherwise, the trend of rapid establishment of a greater number of "local" or "mini-branch" cooperative associations will continue and it will be very difficult to unify their individual activities into a unique general national cooperative movement.

CONCLUSIONS

In the dual structure of the total number of all forms of farms (631,818) and overall utilised land surface (3,430,755 ha) in Serbia, according to the initial results of the Census of Agriculture from 2012 that have been adjusted until now, family farms are traditionally dominant (99.4% of farms and 82.2% of land) with a very small average land size (4.55 ha), on the one hand, and agricultural enterprises (0.2% of farms and 10.0% of land) with the largest land size (335 ha), agricultural cooperatives (0.1% of farms and 1.4% of land) with a relatively larger land size (171 ha) and farms of other legal entities and entrepreneurs (0.3% of farms and 6.4% of land) with larger land size (222 ha), on the other hand.

Changes in the land size structure of family farms (2002-2012) indicate that accelerated tendency of reduction in their overall number has continued – the “extinguishing” of almost every fifth farm during the last decade of transition changes, with simultaneous mutually opposite trends

of changes in the utilised land surface per macro-regions: reduction in the Central Serbia (by 491,399 ha or by 23%) and emphasised increase in the AP Vojvodina (by 440,944 ha or 60%). This has conditioned mutually opposite tendencies in changes of their average size of utilised agricultural land per macro-regions: reduction in the Central Serbia (from 3.72 to 3.43 ha or by 7.6%) and simultaneous significant increase in the AP Vojvodina (from 3.71 to 8.37 ha or by even 2.26 times). We should point out particularly that “landless” farms and those “with the land size of up to 2 ha” have increased their share in the overall number of FF (from 46.3% to 48.9%), but with the simultaneous reduction in their share from 12.1% to 9.7% in the overall utilised land size – which points to accelerated processes of their impoverishing. Contrary to that, the farms “with 20 and more ha” have increased their share from 6,300, or 0.8% to 18,835, or 2.9% of the overall number of FF, and particularly the share in their overall utilised land size in Serbia (from 206,305 ha, or 7.2% to 904,663 ha, or 32.1%), with emphasised regional differences, in particular in the AP Vojvodina – where this group makes 9.2% of farms and uses up to 63.1% of FF land. More detailed analysis of the FF group “with 20 and more ha” indicates that they can be classified into six land size sub-groups in 2012 – from the sub-group with “20 to 50 ha” to the sub-group with even “1,000 to 2,500 ha), where we can currently find four farms being larger than the land size of 97.6% of the overall number of agricultural cooperatives and 91.6% of the overall number of agricultural enterprises in Serbia according to the utilised land size.

In all three sub-forms of farms belonging to legal entities and entrepreneurs there is a relatively high share of “landless” farms, which is typical for 24.4% enterprises, 34.2% of cooperatives, and 42.3% of farms of other legal entities and entrepreneurs.

Agricultural enterprises in Serbia are characterised by (un)successful model of privatisation during which social property over this group of farms was transformed into private by implementing two laws in the form of *lex specialis*, significant dismissing of employees and liquidation of the cattle fund at their farms, with the advantage that the sales price of land was hundred times lower some ten years ago compared to the price by which the land of such quality and such level of land cultivation could be bought today – this could be characterised as the “largest speculation operation with the state’s blessing” during the transition period in the sector of agriculture. We can still find 27 larger enterprises among them where re-privatisation process is in progress, after the

unsuccessful initial privatisation conducted within the previous period of transition and devastation of their property.

The land size structure of agricultural enterprises in Serbia (2012), excluding the group of “landless” farms with the largest share (24.4%), is characterised by polarisation of 47.9% small enterprises in five land size groups (up to 50 ha), which use only 1.4% of their land surface, on the one side, and smaller number (12.4%) of enterprises with larger land sizes (from 500 to 5,000 ha), which use even 87.6% of agricultural land of all enterprises, on the other side. Looking at macro-regions, the average size of utilised agricultural land in the AP Vojvodina is 2.6 times larger (434 ha) and significantly better cultivated compared to the Central Serbia (168 ha). In addition to more than 5,500 larger FF with the land size ranging from 50 to 2,500 ha, this group of AE is most important in technological-technical and production sense for sustainable competitiveness of agriculture of Serbia compared to highly subsidised farms in the EU-28 in the forthcoming full liberalisation of domestic/national market of agricultural-food products.

During the transition period, agricultural cooperatives have been left outside the reform processes and cooperative sector in agriculture was characterised by: absence of political will to find the final solution for the paradox of *de jure* “social” property that is *de facto* cooperative property and failure through eight attempts to pass a new law on cooperatives during the transition period; winding up of a significant number of cooperatives – 736 cooperatives were wound up pursuant to the Law on Insolvency (2009) despite the fact that Constitutional Court of Serbia proclaimed some of its provisions unconstitutional (July, 2012); different forms of devastation of assets of “old” cooperatives, as well as turning of their assets that remained after bankruptcy procedures into public property and placing the same at the disposal of the Republic Directorate for Assets; establishing of new specialised cooperatives – primarily in fruit and vegetable growing; passing of the Strategy of Development of Cooperatives in Agriculture in the Republic of Serbia – which has remained a “dead letter on a paper” until now since there is no interest in its implementation either in the competent Ministries (of agriculture and economy) or in associations of cooperatives – starting from regional to Cooperative Union of Serbia; ...

The land size structure of agricultural cooperatives in Serbia (2012), excluding again the group of “landless” cooperatives with the largest

share, is characterised by polarisation of 46.4% cooperatives with small land size (up to 100 ha), which use only 6.7% of land, on the one side, and 6.8% of cooperatives with larger land size (from 500 to 2,500 ha), which use even 65.1% of land of all cooperatives, on the other side. Looking at macro-regions, except for only one cooperative in the Central Serbia with the land size of 2,160 ha, 14.0% of cooperatives with the land size exceeding 500 ha that utilise 66.8% of land of all cooperatives in the AP Vojvodina could offer agricultural produce with recognisable cooperative trademark to the local and regional markets. Compared to the average size of utilised land per cooperative in Serbia (171 ha), the differences per macro-regions are exceptionally high and they range from 41 ha/cooperative in the Central Serbia to 252 ha/cooperative in the AP Vojvodina. Considering that characteristics of the land size structure of cooperatives in Serbia, the majority of them are directed to primary cooperative activity when it comes to sustainable business – intermediation between their cooperative members and co-operators, on the one side, and suppliers of production material and means for work, or buyers of cooperative agricultural produce, on the other side.

Farms of other legal entities and entrepreneurs are also characterised by exceptionally high share of “landless” legal entities and polarisation of 49.2% of farms using only 3.5% of agricultural land, on the one side, and only 4.9% of farms with larger land size (from 500 to 5,000 ha), which use even 90.5% of the overall agricultural land of this group of farms on the other side. This group of farms deserves a special study once the Statistical Office of the Republic of Serbia publishes the final results of the Census of Agriculture from 2012, as well as a special programme of utilisation of their relatively significant size of agricultural land (220,939 ha).

The impossibility to compare the data on individual forms of farms with the status of “legal entities and entrepreneurs” provided by the Agency for Company’s Registers, Statistical Office of the Republic of Serbia and Directorate for Agrarian Payments imposes the need for urgent harmonisation of their data bases and creating of unique classification for systematisation of different forms of legal entities and entrepreneurs, in particular those that do not belong to agricultural cooperatives and entrepreneurs.

Family farms are traditionally dominant in the structure of the overall number of heads of all breeds of cattle (99.0% of sheep and goats, 91.7%

of cattle, and 80.1% of pigs), poultry (62.6%), and bee communities (98.3%). The second place is occupied by agricultural enterprises, with significantly smaller share in all branches of animal production – from 32.7% of the overall number of poultry, through 18.7% of the overall number of pigs and 7.8% of the overall number of heads of cattle, up to relatively negligible share in the overall number of goats (0.8%, sheep (0.7%) and bee communities (0.4%). Finally, the share of agricultural cooperatives and farms belonging to other legal entities in the structure of overall capacities of animal production is relatively modest. Compared to other European countries, the number of heads of all breeds of cattle per hectare of utilised land in Serbia is exceptionally small and it indicates a more extensive method of organising of animal production and inadequate utilisation of available land surface in all forms of farms in Serbia.

Despite the unfavourable age structure, the number of two-axes tractors is over dimensioned compared to the utilised land size at family farms (6.96 ha/tractor), which points to the need of their joining in procurement and shared use of tractors and other agricultural machinery. More favourable ratio between the number of tractors and utilised land size that is found among cooperatives (54.4 ha/tractor) and enterprises (76.6 ha/tractor) – the holdings of which are larger and better regulated – is the assumption of their more economically efficient use compared to family farms.

Associations of citizens – which include the associations of agricultural producers as well – are very numerous and diverse, but the Agency for Company's Registers does not classify them according to the objectives of establishing and fields of activities they are dealing with. In addition to the Association of Beekeeping Organisations of Serbia, which has the legitimacy of representative national association, there are other associations with certain agrarian-political significance and impact although they are not representative ones at a national level (Association of Farmers – Novi Sad, Club 100 P Plus – Novi Sad, Farmers of Banat – Crepaja, Convention of Agribusiness Producers of Serbia – Kraljevo...). The largest number of complex or specialised associations that are directed towards the development of agriculture and rural areas are still of local or regional significance.

Agricultural enterprises are associating into chambers of economy/commerce (hierarchically organised starting from regional, through provincial to Chamber of Economy of Serbia), namely their associations

of agriculture with several sectoral groups, while agricultural cooperatives are associating in an analogue way into district, provincial and Cooperative Union of Serbia. The main characteristic of the chamber and cooperative system is their para-state status and relatively small (chambers) up to practically negligible agrarian-political impact (cooperative associations) on the competent government institutions. That is why certain agricultural enterprises are linking in other forms of associations (clusters, business associations, etc.), while cooperative link into cooperative associations that are not under the auspices of the Cooperative Union of Serbia (Agrojaeren – Gospodjinci, 2009; Zadružni savez Pirota, Dimitrovgrada, Bele Palanke i Babušnice – Pirot, 2013; ...).

Despite the above-mentioned changes in agriculture of Serbia during the transition period, it is evident that are agriculture and rural development are going to be faced with significant changes in the period of pre-accession negotiations of Serbia and harmonisation with the concept of the Common EU Agrarian (and Rural) Policy.

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