

LONG-TERM TRENDS IN SERBIAN AGRICULTURE

DUGOROČNE TENDENCIJE U POLJOPRIVREDI SRBIJE

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Abstract: In this paper will be presented long term trends (1986-2000-2006) and changes in production capacities and achieved agricultural production in Serbia, as well as relevant factors that designated direction and intensity of manifested trends.

Apstrakt: U radu su prikazane dugoročne tendencije (1986-2000-2006) i promene u kapacitetima i ostvarenoj proizvodnji u poljoprivredi Srbije, kao i relevantni faktori koji su determinisali smer i intenzitet konstatovanih promena.

Key words: trends, factors, agriculture, development, Serbia.

Ključne reči: tendencije, faktori, poljoprivreda, razvoj, Srbija.

INTRODUCTION

Serbia is significantly different comparing to other post-socialistic countries, and that:

- positively, in ex-SFRJ pre-disintegration period, concerning higher level of market economy development comparing to other contemporary socialistic countries;
- negatively, in the period of ex-SFRJ disintegration and in post-socialistic transition period, concerning market loss of agricultural and food products in formal YU republics, negative consequences of economic sanctions introduced by Security Council of the UN (1992-1996) – which caused record hyperinflation that according to DINKIĆ M. (2000:1) lasted over 12 months (1993-1994) – with record monthly rate of $3,13 \times 10^8$ in January 1994, security problems in Kosovo and Metohija province (1997-1999) – which culminated in NATO bombing (24.03.–10.06.1999) and positioning this province under international protectorate, political instability which resulted with October 2000 changes, gaining independent of Republic Montenegro (2006), and uncertainty of current negotiations concerning final status of Kosovo and Metohija.

Such dramatic economic, security, political and territorial changes in relatively short period of time had avoidable negative consequences on economic situation in Serbia, where according to ĐURIČIN D. (2007:15) in the end of 2006 were achieved only 64% of GDP level of pre-transition 1989, and foreign debt was 19.7 billion USD or about 2/3 of achieved GDP. According to PORTER M. et al. (2005) Index of global competitiveness of World Economic Forum for 2005-2006¹ puts Serbia on 85th place between 117 analyzed countries.

In such Serbian economy ambient, agriculture had significant role comprising from providing population food security and gaining so called social peace (1992-2000) to assuring positive foreign trade balance in agricultural and food products (2005 and 2006).

Paper analyses long term trends in Serbian agriculture (1986-2005), respecting previously given factors, with special emphasis on 2000 when agricultural production in Serbia achieved minimum level, afterwards process of revitalization have started based on:

- EU, Japan and USA donations,
- ownership transformation apropos privatization of so called social owned agricultural companies through auction or tender sale, and
- attracting foreign investment in enlarging existing and realization of new agribusiness programs.

MATERIAL AND METHOD

Comparative analysis in this paper work is based on official statistic documentation and research results of major number of agricultural economists – whose bibliographic references are listed in literature.

RESULTS AND DISCUSSION

1. Trends in capacity changes in Serbian agriculture. Four groups of capacities in Serbian agricultural production were analyzed in this paper and they manifested mutually confronted trends.

1.1. Agricultural land. In two decades comprehended in this paper, agricultural area in Serbia was reduced for only 49,000 ha or for 0.9% (Table 1), which is consequence of their compilation to non-agricultural necessities – mainly for house construction for number of refugees from other ex-YU republics (mainly Serbs). However, analyzing areas under some categories of land use, it was established that on the contrary of general decreasing trends which are characteristic for arable land (for 52,000 ha or for 1.5%), vineyards (for 15,000 ha or for 18.5%) and orchards (for 13,000 ha or for 5.2%), areas under economically lower significant categories of land use were increased: meadows (for 9,000 ha or for 1.5%) and pastures (for 10,000 ha or for 1.2 %). This indicates that non-quality parts of arable land, orchards and vineyards stop being cultivated and transformed into economically less relevant categories of land (meadows and pastures).

1.2. Capacities in livestock breeding. Considering longer reproduction cycles and necessity of higher investment in livestock breeding, negative consequences of unfavourable social and economic ambient have been mostly manifested in this branch of agricultural production (Table 2). Analyzing separated kinds of livestock and having in mind their economic significance, it was established that severe degradation of livestock breeding in Serbia is not restrained yet. This descent is dominantly determined by reduction of cattle (for 674,000 or for 38.1%), pigs (for 1,866,000 head or for 36.7%), sheep (for 678,000 head or for 29.6%), goats (for 44,000 or for 24% in period 2000-2006), horses (for 58,000 or for 75.3%) and poultry (for 12,037,000 or for 40.2%). Contrary to overall reduction trends of all induces species of livestock, number of bee-hives in last two decades was enlarged for 46,000 pieces or for 20%, even after their decreasing on only 166,000 in 2000.

1.3. Capacities in fruit growing and viticulture. Tree number of specific types of fruits evinces mutually confronted trends in analyzed period. Data given in Table 3 show that number of apple trees is enlarged (for 1.7 millions of trees or for 11.6%), as well as peaches (for 795,000 trees or for 20%), apricots (for 53,000 trees of productive age or for 3.5%) and walnuts (for 77,000 trees or for 4.1%). On the contrary, although plum is dominant fruit in Serbia (average 5 trees per capita) their number was reduces for almost 4 million trees or for 7.8%, and this decreasing trend is characteristic for pear (for 2.5 million or for 30.9%) and with lower intensity for cherry (for 198,000 or for 9%) and sour cherry (for 381,000 or for 3.6%). Fact that causes special preoccupation is reducing production capacities in viticulture (for 156 millions of vines or for 30.5%), which caused that Serbia was transformed from former exporter to relatively significant importer of vines.

Agricultural area by categories of use in Serbia (1986-2006)

Table 1

	Agricultural area (000 ha)										
	Arable fields					Orchards	Vineyards	Meadows	Cultivable area	Pastures	Total
	Cereals	Industrial crops	Vegetable crops	Fodder crops	Total						
1986	2,216	363	276	462	3,382	252	81	589	4,303	822	5,161
2000	2,048	363	295	472	3,356	245	71	587	4,259	815	5,109
2005	1,972	414	285	461	3,330	239	66	598	4,242	832	5,112
Different 2005-1986	-244	51	9	-1	-52	-13	-15	9	-61	10	-49
Index 2005/1986	89.0	114.0	103.3	99.8	98.5	94.8	81.5	101.5	98.6	101.2	99.1

Source: Statistical Yearbook of Serbia, Statistical Office of the Republic of Serbia, Belgrade

Capacities in livestock production in Serbia (1986-2006) - in thousand heads -

Table 2

	Cattle		Pigs		Sheep		Goats*	Horses		Bee-hives**	Poultry**
	Total	Cows and heifers in calf	Total	Sows and sows of first farrow	Total	Breeding ewes		Total	Mares and fillies in foal		
1986	1,770	980	5,078	902	2,287	1,683	225	77	41	230	29,942
2000	1,272	843	4,066	887	1,611	1,233	183	37	20	166	20,372
2006	1,096	710	3,212	685	1,609	1,183	139	19	11	276	17,905
Different 2005-1986	-674	-270	-1866	-217	-678	-500	86	-58	-30	46	-12037
Index 2005/1986	61.9	72.4	63.3	75.9	70.4	70.3	61.7	24.7	26.8	120.0	59.8

* Number of goats was not recorded due to prohibition of goat breeding up to 1993.

** Bee-hives in thousands, poultry in thousand of heads.

Source: Statistical Yearbook of Serbia, Statistical Office of the Republic of Serbia, Belgrade

1.4. Capacities in agricultural machines. Intensive migration of population from agricultural to non-agricultural activities resulted in higher level of agricultural machines in agriculture in Serbia. Although age structure of these agricultural mechanization is relatively unfavourable, three basic groups of machinery was increased in number during period 1985-2001: single axial tractors and motocultivators (for 128,000 or for 94%) – which are almost totally used in small family farms, two axial tractors (for 122,000 or for 43.4%) and combines (for over 9,000 or for 58.2%). In last couple of years providing modern large and more expensive machines is also done by leasing.

2. Trends in agricultural production

Agricultural production in Serbia was significantly reduced in period 1986-2005. In crop production these trends are mostly reported in production decrease of basic cereals – wheat for 599,000 tones or for 23% and maize for 977,000 tones or for 12.1%. At the same time, production of cereals of lower significance was also reduces - oats for 11,000 tones or for 10.9%, or was minor increased – production of ray (for 1,800 tones or for 12.7%) and barley (for 58,000 tones or for 22.9%).

Capacities in fruit growing and viticulture in Serbia

Table 3

Number of trees		1986	2000	2005	Different 2005-1986	Index 2005/1986
		Capacities in fruit growing (000 trees)				
Apple	Total	14,852	16,148	16,580	1728	111.6
	Trees of productive age	12,967	14,265	14,805	1838	114.2
Plum	Total	51,013	47,212	47,028	-3985	92.2
	Trees of productive age	47,579	43,103	42,583	-4996	89.5
Pear	Total	7,965	6,531	5,506	-2459	69.1
	Trees of productive age	6,970	5,872	4,958	-2012	71.1
Cherry	Total	2,200	2,159	2,002	-198	91.0
	Trees of productive age	1,899	1,900	1,832	-67	96.5
Sour Cherry	Total	10,582	9,694	10,201	-381	96.4
	Trees of productive age	9,413	8,336	8,938	-475	95.0
Peach	Total	3,967	4,021	4,762	795	120.0
	Trees of productive age	3,568	3,563	3,993	425	111.9
Apricot	Total	1,840	1,844	1,816	-24	98.7
	Trees of productive age	1,530	1,544	1,583	53	103.5
Walnut	Total	1,887	2,033	1,964	77	104.1
	Trees of productive age	1,553	1,757	1,712	159	110.2
		Capacities in viticulture (millions of vines)				
Vines	Total	511	412	355	-156	69.5
	Vines of productive age	485	396	337	-148	69.5

Source: Statistical Yearbook of Serbia, Statistical Office of the Republic of Serbia, Belgrade

Agricultural machines in Serbian agriculture (1985-2001)

Table 4

	Single axial tractors and motocultivators	Two axial tractors	Combines
1985	136,086	281,738	16,063
2001	264,062	404,100	25,418
Different 2005-1986	127,976	122,362	9,355
Index 2005/1986	194.0	143.4	158.2

Source: Statistical Yearbook of Serbia, Statistical Office of the Republic of Serbia, Belgrade

In industrial crops, depression of production level was recorded on sugar cane (for 920,000 tones or for 22.9%) and tobacco (for 6,100 tones or for 35.7%), but production level of sunflower was raised (for 11,000 tones or for 3.2%) as well for soy (for 206,000 tones or for 2.3 times). The most significant increase was achieved on rape seed (even 53.5 times) but its total production in 2005 was on extremely low level (only 3,000 tones). Changes in production level of industrial crops are stipulated with ownership transformation of state owned companies in Serbian agriculture, since they are dominant bearers of this production with participation of 55.7% with soy, 54.3% with sugar beet and 39.5% with sunflower. In vegetable crops diminishing of production level can be recorded on onion (for 55,000 tones or for 29.9%), beans (for 15,000 tones or for 20.3%) and tomatoes (for 29,000 tones or for 14.6%), while production was increased for cabbage and kale (for 20,000 tones or for 6.9%), potatoes (for 64,000 tones or for 7.1%) and pepper (for 21,000 tones or for 16%). Two mutually opposite trends are present in fruits production, where reduction enclose from 30,000 tones or 29% for pear to 1,000 tones or 6.6% for cherry. On the opposite, very mild increase of 1,000 tones or 5.4% can be detected for apricot and 6,000 tones or 11.9% for peach, while more significant increase is present only in walnut production (for 8,000 tones or for 57.3%). Grape production

in 2005 was reduced for 48% comparing to 1986 or in other words it was narrowed on only 241,000 tones.

Table 5

Production of some agricultural products in Serbia (1986-2005)

	Year			Different 2005-1986	Index 2005/1986
	1986	2000	2005		
Cereals (000 MT)					
Wheat	2,606	1,924	2,007	-599	77.0
Maize	8,062	2,938	7,085	-977	87.9
Ray	14.2	8	16	1.8	112.7
Barley	253	249	311	58	122.9
Oats	101	95	90	-11	89.1
Industrial crops (000 MT)					
Sugar beet	4,021	1,070	3,101	-920	77.1
Sunflower	340	218	351	11	103.2
Soya	162	171	368	206	227.2
Rape seed	0.056	no data	3	2,944	5357.1
Tobacco	17.1	11	11	-6.1	64.3
Vegetable crops (000 MT)					
Potatoes	906	6613	970	64	107.1
Beans	74	32	59	-15	79.7
Onion	184	101	129	-55	70.1
Cabbage and kale	291	261	311	20	106.9
Peppers	131	137	152	21	116.0
Tomatoes	198	160	169	-29	85.4
Fodder crops (000 MT)					
Lucerne	1,090	714	1,167	77	107.1
Clover	467	340	574	107	122.9
Maize for fodder	-	306	525	-	-
Forage beet	173	78	65	-108	37.6
Fruit (000 MT)					
Apple	261.0	197.0	198.0	-63	75.9
Plum	336.0	351.0	304.0	-32	90.5
Pear	77.0	58.0	47.0	-30	61.0
Cherry	21.2	21.0	19.8	-1	93.4
Sour Cherry	73.3	58.0	63.9	-9	87.2
Peach	46.1	38.7	51.6	6	111.9
Apricot	12.9	12.7	13.6	1	105.4
Walnut	13.1	22.5	20.6	8	157.3
Grape	502.0	327.0	241.0	-261	48.0
Milk (000.000 litres)					
Total	1,605	1,685	1,616	11	100.7
Cow milk	1,568	1,566	1,602	34	102.2
Sheep milk	37	19	14	-23	37.8
Meat (000 MT)					
Total	576	518	460	-116	79.9
Beef	133	103	90	-43	67.7
Pork	272	283	253	-19	93.0
Mutton	22	19	21	-1	95.5
Poultry meat	115	67	67	-48	58.3
Other products					
Wool (MT)	3,383	2,264	2,527	-856	74.7
Honey (MT)	1,658	No data	3,665	2007	221.0
Eggs (millions)	2,676	1,374	1,476	-1200	55.2

Source: Statistical Yearbook of Serbia, Statistical Office of the Republic of Serbia, Belgrade

Livestock production is distinguished with notable lower tempo of revitalization comparing to crop production. For example, production of cow milk was minor increased (for 34 million litres or for 2.2%), and most significant decrease was recorded in sheep milk production – which was reduced for 23 million litres and depressed on only 14 million litres or 37.8% of 1986 production. Decreasing of livestock fund primarily reflected on meat production – from poultry (for 48,000 tones or for 41.7%) and beef (for 43,000 tones or for 32.3%), over pig meat (for 19,000 tones or for 7%) to mutton (for 1,000 tones or for 4.5%) – which also has lower participation in total meat production in Serbia (2.4%). Decreasing trend of livestock products is also characteristic for wool (for 856 tones or for 25.2%) and eggs (for 1,200 millions or for 44.8%), while honey is the only animal products with recorded increase of production (for 2007 tones or 2.2 tones).

CONCLUSION

Long term trends in development of Serbian agriculture (1986-2005) are determinate with significantly unfavourable economic, security, territorial and political changes, which are atypical for other post-socialistic countries of Central and Eastern Europe. Two sub-periods can be noticed in analysed period: first (1986-2000) with evident reduction of agricultural production level and second (2001-2005) where started process of gradual increase of production level in Serbian agriculture due to donations and resources from privatisation. Revitalisation of crop production has higher rate than livestock production which is stipulated with reproduction cycle and level of necessary investment. Specified trends in agricultural production in Serbia have caused changes in pre-farmer and post-farmer sector of agribusiness. Today's level of agricultural production of significant crop and livestock products is still significantly under levels achieved two decades ago. This is extremely adverse base for determination of national quotas of agrarian production, in the context of upcoming negotiations of Serbian possible accession to European Union.

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