

Economics of agriculture

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## THE CONDITION AND PERSPECTIVES OF POULTRY PRODUCTION DEVELOPMENT ON MUNICIPALITY LAJKOVAC AREA<sup>1</sup>

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### Abstract

*The paper points out to a current state, perspectives and possibilities of poultry production development in municipality Lajkovac. It is separated in two parts: 1) Brief review of potential in agriculture and agriculture development level in area of Lajkovac municipality and 2) Poultry production in the Republic of Serbia and perspectives of this production development in Lajkovac municipality. In the first part is given the state review in agriculture of Lajkovac municipality, more accurate, a review of existing resources and level of agricultural development. In the second part, the accent was put on analysis of the state, i.e. on problems and perspectives of poultry products' market development in the Republic of Serbia. In the second part is especially pointed out also to development possibilities of poultry production in the sector of individual agricultural producers, i.e. in cooperation with the firm „Vindija“ Lajkovac.*

**Key words:** *Municipality Lajkovac, agriculture, poultry farming, cooperation with individual sector, technology transfer.*

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## Introduction

The municipality Lajkovac is characteristic after long tradition in dairy cattle breeding, after numerous mixed or non-agricultural husbandries (most of husbandries members are full time employed in MB „Kolubara“), as well as after the firm „Vindija“ Lajkovac, as a part of business system „Vindija“, located in Croatia. The plans of the firm „Vindija“, as one of the biggest food industries in the region, will surely influence to further agriculture development in the municipality. As this enterprise invests in big capacities in the field of poultry production and processing, along with development of planned cooperation with individual agricultural producers, the poultry production will surely get great perspective for future development.

### Brief review of potentials in agriculture and level of agriculture development in area of Lajkovac municipality

The municipality Lajkovac, with 18 cadastral municipalities and 15,828 inhabitants (active agricultural population amounts 1,410), belongs to Kolubara district of the Republic of Serbia.

The municipality has favourable climatic conditions, favourable hydro-geology, huge agricultural areas (74.5% of total area of the municipality), quality agricultural land of various types, long tradition in agricultural production, especially in dairy cattle breeding, as well as built objects for livestock fattening. For example:

- According to data of RSO of Serbia (municipalities in Serbia, 2009, page 180-181) – agricultural area of Lajkovac municipality amounts 13.869 ha, out of that ploughs and gardens amount 9,643 ha, meadows 2,081 ha, pastures 1,404 ha, and orchards 719 ha (under vineyards is only 1 ha).

*Table 1: Basic data on Lajkovac municipality*

Total area in km <sup>2</sup>	186
Proportional participation of agricultural areas in total area	74.5%
Number of settlements	19
Number of cadastral municipalities	18
Total number of inhabitants (on 30.06.2008.)	15,828
Number of inhabitants on km <sup>2</sup>	85

*Source: Municipalities in Serbia 2009, RSO*

- According to data got in Real Estate Cadastre of Lajkovac Municipality (Republic Geodetic Authority), total agricultural land in the municipality amounts 13,710 ha (under ploughs 9,992 ha), and the biggest agricultural areas are in places: Jabučje (4,513 ha), Vračević (1,579 ha), Bajevac (1,473 ha) and Nepričava (1,296 ha).
- Land resources are high-quality, and in zone around major watercourses (river Kolubara) the land is mostly in I and II worthiness class. High-quality agricultural land is especially in places Jabučje, Vračević, Stepanje, Nepričava, Bajevac, Pepeljevac and Strmovo, Donji Lajkovac.
- However, there should emphasize that, according to data of the Centre for Agriculture Lajkovac, the land is characterized by small percent of humus (due to low manure input and decline of livestock fund), and the land lacks with phosphor (especially villages Jabučje, Nepričava, Stepanje), as for disrespect of crop rotation, as well as during fertilization with only one type of fertilizer. The soil acidity, which was a problem, was partly lessen in 2003, when came to higher input of lime.
- It is important to emphasize also a reduction of agricultural land due to enlargement of MB „Kolubara“ open pits. For example, the places Mali Borak and Skobalj, which have high-quality agricultural land, owing to enlargement of open pits („Tamnava-Zapadno polje“) are moving to the territory of the village Jabučje.

*Table 2: USED AGRICULTURAL AREA, 2009.  
Companies, cooperatives and family holdings - in ha -*

	Agricultural area	Ploughs and gardens					Orchards and vineyards	Meadows and pastures
		total	out of that					
			wheat	Ind.plants	Vegetable plants	Fodder crops		
Lajkovac	13,869	9,643	5,648	37	839	2,307	720	3,485
	Participation of Lajkovac municipality in agricultural areas of Kolubara district, Central Serbia and R.of Serbia							
Kolubara district (=100)	8.12	9.48	11.07	2.64	6.83	7.60	3.88	6.96
Central Serbia (=100)	0.42	0.55	0.62	0.10	0.40	0.59	0.26	0.26
Republic of Serbia (=100)	0.27	0.29	0.29	0.01	0.30	0.50	0.24	0.24

*Source: Municipalities in Serbia 2009, RSO*

However, despite of favorable conditions for agriculture development, massive number of working population is employed in the field of minerals and stone

exploitation (32.3%) and food industry (23.5)<sup>5</sup>, where are more favorable possibilities to earn, especially taking into consideration republic average salaries<sup>6</sup>.

It is inevitable to excel extremely expressed dependency of the municipal population on one enterprise **MB „Kolubara“**, which is the most powerful link in Serbian electric power industry. Most of population (working) works in this enterprise, and **deals with agriculture as additional or aside activity**. They mostly deal with agriculture in order to satisfy their own needs (natural husbandries) or some surplus brings out to a market (semi-natural husbandries). **There is extremely small number of goods (market) agricultural husbandries with permanent and significant market surpluses**. There are following data:

- According to data of Statistical Registration of Agriculture 2002, 3,164 husbandries in the municipality area, in accordance to the resources of income, only 12% of husbandries belong to purely agricultural husbandries, according to income resources. Even 69% belongs to non-agricultural husbandries, mixed 15%, and the husbandries without income – 3.5%<sup>7</sup>.
- According to data of the Net for Support to Rural development (Regional office Ljig, Branch office Lajkovac), approximately (superior) agricultural household in the village Bajevac cultivates 5-10 ha of land and has only about 3-10 heads of neat cattle (economic power of these husbandries is mostly determined by members' salaries, mainly employed in MB „Kolubara“).
- According to data of the Centre for Agriculture Lajkovac, only 18 households have realized a regression in 2010 for totally 146 heads of registered cows, by MAFWM of RS (due to Regulation on Allocation and Use of Incentives for Genetic Improvement of Livestock Breeding in 2010, Official Gazette of RS, No. 17/10)<sup>8</sup>. A condition for this regression is a possession of, at least, 5 heads of breeding cows and paid pension and disability insurance. Only 87 husbandries have realized a right to use incentives of Lajkovac municipality in 2010, in dairy cattle breeding.

The husbandries which deal with agriculture (agricultural husbandries and/or mixed husbandries) are mostly directed to<sup>9</sup>:

- **Cattle production** (production of meat and milk), and especially in places Jabučje, Vračević, Pepeljevac, Donji Lajkovac; it is about extensive cattle breeding and combination of stable and pasture breeding.

5 Municipalities in Serbia, 2009, page 130.

6 For example, in the field of minerals exploitation – salaries without taxes and contributions (period January-December 2008) have amounted 49.818 RSD, which is 52% above the republic average of 32.746 in the same period for total economy.

Source: Municipalities in Serbia 2009, pages 140-142.

7 Statistical registration of agriculture 2002, page 388-389.

8 <http://www.minpolj.gov.rs/postavljen/126/4827010.0065.11-1.pdf>

9 Data of the Centre for Agriculture Lajkovac and Net for Support to Rural Development, Regional office Ljig, Branch office Lajkovac.

- Second most important is **fruit production**, for which are favourable natural conditions, but it is insufficiently developed in relation to the potentials (the most bred are plum and apple); there are no purely fruit husbandries (fruit growing is additional activity, besides cattle production, for about 100-200 husbandries); the average of orchards is small (around 40 a), and only one producer has 2.5 ha under fruits (plum and apple).
- **Crop production** is directed to production of animal feed (especially maize and lucerne) and is not market-oriented; there is small number of wheat producers, although the wheat sows as for tradition (providing own flour), as well as providing straw in livestock breeding.

There is expressed the tendency that new generations more and more determine for work of MB „Kolubara“ and state government, where salaries are significantly higher than the one in agriculture field, as well as that young are not interested to deal with agriculture, for the same reason<sup>10</sup>. Besides, the problems in agriculture are bulky and additionally distract from work in this field, and one of the greatest problems, characteristic for whole area of the Republic of Serbia, is placement. Unorganized and uncontrolled placement, often „black market“ placement, is followed by high business risk, as regarding anticipation of purchasing prices, as well as regarding recognition of purchase conditions and payments terms. Besides, low prices of agricultural products in purchase (especially during 2010 has been expressed a dissatisfaction of farmers, caused by price of milk) – additionally discourage dealing with agricultural production, and especially those farmers who have fragmented properties, obsolete mechanization, low productivity, low investments. Such farmers are the most numerous in the Republic of Serbia, and also in Lajkovac municipality.

**As for the enterprises in area of Lajkovac agriculture**, there are very important plans and investments of big enterprise „Vindija“ from Varazdin (Republic of Croatia), especially in the field of poultry production. Among this enterprise, in Lajkovac works one cooler, one mill-baking enterprise, several private mills, one private dairy and one enterprise in the field of production of seedlings and components for flowers and ornamental plants growing.

**Cooperatives and associations** - The municipality has no agricultural cooperative (cooperative Lajkovac was established in 1955 and was stopped working in 2000), ; there is especially important Association of breeders of Simmental cattle breed „Kolubara“ Lajkovac, which is active and gathers around 350 members, mostly from the territories of municipalities Mionica, Lajkovac, Ljig, part of Ub, part of Valjevo. Beside this association, in the municipality works successfully also the Association of bee keepers, and the Association of fruit growers Lajkovac, established in 2008, was never active. For agriculture of Lajkovac is especially significant existence of Centre for Agriculture Lajkovac, which basic activity is controlled development of cattle, through genetic improvement and preservation of existing genetic resources.

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10 Development strategy of municipality Lajkovac 2006-2016, page 19.

## **Poultry production in the Republic of Serbia and perspectives of this production development in Lajkovac municipality**

The sector of poultry farming is important for food safety of the country and offers great possibilities for providing quick, cheap and high-quality food (poultry meat, processed poultry products and eggs). In the Republic of Serbia, the production of pork is quantitatively the highest, and cattle breeding have the highest participation in total value of livestock production (due to higher meat price and value of heads, as well as for a fact that many heads use for milk production). The participation of poultry meat production in total meat production in Serbia, according to data of RSO of Serbia, ranges from 14.8% to 17.5% in period 2007-2009 (table 3). According to the same source, Serbia dispose with 17.188 thousand poultry units in 2008, i.e. 22,821 thousand units in 2009 (the highest number of fattening chickens, or broilers and hens and roosters)<sup>11</sup>.

Generally, the poultry production in Serbia is characterized by production sufficient for own needs, short and unorganized market chain, fragmented production, non-introduced standards and impossibility to export poultry products in the EU, as well as low level and assortment of industrial processing of poultry meat.

*Table 3. Production of meat in RS in period 2007-2009.*

	Meat production in thousand tons				Participation in total meat production, in %			
	Beef	Sheep meat	Pork	Poultry	Beef	Sheep meat	Pork	Poultry
2007	95	20	289	70	20.0	4.2	61.0	14.8
2008	99	23	266	76	21.3	5.0	57.3	16.4
2009	100	25	252	80	21.9	5.5	55.1	17.5

Source: <http://webrzs.stat.gov.rs/axd/poljoprivreda/indexs4.php>

The poultry production realizes on farms for poultry fattening in industrial slaughter houses, as well as in sector of individual agricultural producers.

- **Farms for poultry fattening in industrial slaughter houses**, i.e. enterprises. According to data of MAFWM of RS<sup>12</sup>, Serbia disposes with 31 slaughter houses for poultry meat (none of slaughter houses have license for export), than with 29 combined objects (slaughtering, cutting and processing of poultry), out of which

<sup>11</sup> All statistical data about number of units and meat production in poultry production is necessary to take with caution, considering that significant part of this production in Serbia is in zone of "black economy", which will be discussed later on. <http://webrzs.stat.gov.rs/axd/poljoprivreda/indexs21.php?ind=1&baza=2>.

<sup>12</sup> National program of agriculture of Serbia 2010-2013, May 2010, page 79.

only one object has license for export into the EU and with 5 objects which deal only with processing of poultry meat (none of objects have license for export into the EU). The most significant, big industrial slaughter houses, with high participation on poultry meat and its processed products market are „Topiko“, Backa Topola<sup>13</sup> and „Agroziv“.<sup>14</sup> Besides big slaughter houses, the fattening of poultry is represented also in slaughter houses with lower capacities.

- **Fattening on individual agricultural sector.** It is about the production in numerous small producers, who are unorganized, uncompetitive and unqualified for export. Their production is not continuous and basis on satisfying own or local market needs. According to data of MAFWM of RS, the biggest part of meat production realizes in small family holdings, which are goods producers with about ten bullocks, about one hundred pigs and sheep and **thousand chickens in fattening**<sup>14</sup>. The sector of individual agricultural producers prevail when it is about the production of consumer eggs (about 2/3 of total egg production is linked to numerous small producers).

Some of the most important problems in poultry production are<sup>15</sup>:

- Bad ownership transformation of big systems: cancellation of grandparent flocks centers and unfavourable condition of farms in technical-technological sense (obsolete equipment, uncertain existence of all zoo-hygienic and technological conditions on farms),
- Depending on genetic material import, as well as the components for animal nutrition, lack of programmed (planned) import of genetic material etc.,
- Republic of Serbia still has no Centre for Poultry Farming, which would be a carrier of this sector.
- Fragmentized production in individual sector, characterized by lack of association, non-introduced production standards, as well as unsatisfying level of technical-technological equipment of farms.
- Domination of black economy in business of firms (registration), employment of workers, sale of products etc. According to the research of Serbian Association of Employers, in turnover in black zone are the most of seasonal fruits, vegetables and poultry meat. The black economy prevails in two reasons: 1) significant tax

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13 Big Slovenian producer of poultry and processed products „Perutnina Ptuj“ is the owner of one of the biggest poultry farms in Serbia (enterprise „Topiko“ from Bačka Topola), in which was invested more than 30 million euros in last 3 years, more accurate, from privatization. The food of "Perutnina Ptuj" trade mark, together with goods group "Naravno fit" (PP, POLI i Slim&fit), has dominant position in Slovenia, Serbia, Bosnia and Herzegovina and Macedonia (significant market participation have also in the Republic of Croatia). Source: <http://www.vesti-online.com/Vesti/Ekonomija/76729/Slovinci-preuzeli-srpsko-trziste-zivine>Source. 24.08.2010

14 National program of agriculture of Serbia 2010-2013, May 2010 page 72.

15 Škorić Rade „Živinarstvo u Srbiji“, Eurofarmer no. 09-10/2006 [http://www.poljoberza.net/EU09102006\\_11.aspx](http://www.poljoberza.net/EU09102006_11.aspx)



encumbrances, on the one hand and 2) extremely long payments terms, on the other (see Table 4)<sup>16</sup>.

*Table 4. Turnover of agricultural products in RS, observed by regions*

Region	Poultry meat, turnover in %	
	Legalized	Black market
Belgrade	69	31
Vojvodina	77	23
Central Serbia	60	40
South Serbia	46	54
East Serbia	50	50
West Serbia	59	41

*Source: Conditions and encumbrances in business and collective negotiations, Serbian Association of Employers, page 6. <http://www.poslodavci.org.rs>*

- Lack of long term policy of poultry farming development,
- Impossibility to export due to non-reconciliation of legal regulations, non-introduced standards, uncompetitive and fragmented production. Taking into consideration customs liberalization, no wonder that Serbia has realized a deficit of 7,7 million USD (see Table 5),

*Table 5: Export and import of poultry meat in 2009.*

	Value in 000 USD	
	Export	Import
Poultry, uncut in pieces, fresh	1,412	10
Poultry, uncut in pieces, frozen	465	217
Poultry, cut in pieces and refuse, fresh	2,060	19
Poultry, cut in pieces and refuse, frozen	852	1,073
Poultry liver, frozen	0	26
Meat and other poultry products, ns	874	8,591

*Source: <http://webrzs.stat.gov.rs/axd/spoljna/izbor.htm>*

- Lack of incentives by the government and unfavourable general conditions of business (unfavourable business climate, especially unfavourable conditions of funding for introduction of new technologies, production standards etc.).

In order to improve the situation in the field of poultry farming, and realize a surplus in exchange in this production and domestic market settle with high-quality and controlled

<sup>16</sup> Results of survey conducted on sample of 648 economic subjects in agriculture branch point out that 58,1% of economic subjects in RS collect their claims in term longer than 120 days, and registered agricultural producers collect their claims, in average, in 133 days. Source: Conditions and encumbrances in business and collective negotiations, Serbian Association of Employers, pages 4-6.



products – the following is necessary to be done<sup>17</sup>:

- Introduce legal production,
- Enlargement of production, through associations and clusters of producers and modernization of capacities,
- Renewal of grandparent flocks centers work in order to decrease import dependence in providing productive hybrids of heavy and light type and planned import,
- Put an accent on final products supply, i.e. higher phases of poultry meat and eggs processing, with improvement and change of supply type. For example, in our supply prevails egg with eggshell and chicken body, e.g. on American market does not almost consume, so called „red“ meat, i.e. drumstick and thigh (red meat either export or further process). Serbia also has the production of consumer eggs, and does not have processing capacities (powdered eggs, liquid or some semi-products, as for industry, as well as for consumption).
- Revival of turkey, ducks and geese production, from aspect of domestic, and even more, international market,
- Revitalization and rationalization of traditional extensive, i.e. semi-intensive system of breeding poultry aiming to produce poultry meat and eggs of special quality, also from aspect of domestic, and even more, international market. In this case is possible that special place take hilly-mountainous areas.

**In Lajkovac municipality, the poultry production is not developed.**

According to data of the Centre for Agriculture Lajkovac, individual agricultural producers deal with poultry production to satisfy their own needs, and only one producer deals with this kind of production seriously.

In future period, this production in the municipality can have great perspective, thanks to investments and investment plans of the biggest enterprise in the municipality – the enterprise „Vindija“ from Varaždin, Republic of Croatia. This enterprise had bought in 2005, the cooperative dairy „Lajkovac“ from the bankruptcy, and in 2010 will start fattening of the poultry. This enterprise had built a farm for fattening broilers in the place Rubireza on around 10.5 ha, capacity of 180,000 broilers, and when the farm reaches full capacity, it plans also the construction of:

- Slaughter houses and plants for processing poultry meat (annual capacity of slaughter house would be 40 thousand tons of poultry meat, with completely automated line of high-processing level); building slaughter house is hindered and sluggish by inefficient state, i.e. administrative-legal problems (agglutination of cadastre municipalities), as well as unsolved infrastructural issues (water, electrification and similar);
- Dairies (it should process annually 124 million liters of milk), as well as
- Cooperation with individual sector regarding poultry production.

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17 See more in: Škorić Rade „Živinarstvo u Srbiji“, Eurofarmer no. 09-10/2006 [http://www.poljoberza.net/EU09102006\\_11.aspx](http://www.poljoberza.net/EU09102006_11.aspx)

The cooperation in the field of poultry production, which this enterprise plans to make, will exactly provide that more and more agricultural producers, along with transfer of technology, knowledge and all necessary inputs (food and one-day chickens) for production – start the chickens fattening in their own farms. Along with favourable credits, the purchase of total production will be guaranteed to the producers.

The municipality Lajkovac supports development of agriculture through the budget Fund for Agriculture Funding („Official Gazette of Lajkovac municipality“ no. 7/09), and in 2010, the assets for realization of the Program for Development and Improvement of Agriculture amount 7,200,000 RSD. The basic goal of funding the farmers through the budget fund for agriculture is strengthening of individual agricultural households, directing and adjusting of agricultural producers to market conditions, as well as to the rules and standards of the EU, increase of competitiveness and adoption of new skills<sup>18</sup>.

Although a budget fund for funding agriculture, for now, does not include a support to the producers in poultry farming, in the following period, together with development and strengthening of cooperation between the enterprise „Vindija“ and farmers – there can be expected setting up the supporting system to goods producers and in the field of poultry farming. There can be expected that the municipality take place in promotion of poultry products, than in activities of co-funding the participation of domestic producers on fairs or agriculture-tourist manifestations on which would promote the local products etc. Besides should point out that the municipality, in further period, plans to form a public enterprise Directorate for Agriculture, establishment of the Fund for Agriculture, as well as intensifying the activities on construction of Agribusiness centre on 3,7 ha.

## Conclusion

Although in Lajkovac municipality is not developed poultry production, it can have great perspective in future period, thanks to investments and investment plans of the biggest enterprise in the municipality – the enterprise „Vindija“ from Varaždin, Republic of Croatia. This enterprise had bought from bankruptcy the cooperative dairy „Lajkovac“ in 2005, and during 2010 will start poultry fattening in around 10.5 ha (capacity of the farms is 180,000 broilers). „Vindija“ have plans to build slaughter-houses for poultry, and plants for processing poultry meat, as well as to build dairies. Especially great perspectives for development of poultry production offer plans of „Vindija“, to develop cooperation with individual sector in future period. The cooperation will provide that many agricultural producers, along with technology, knowledge and all

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18 Major incentives are directed to cattle production, than sheep production, fruit growing, bee keeping. The municipality gives a financial support also for herbicides purchase, for analyzing the soil quality, hail protection, for improvement of farmer's professional skills etc. Program of agriculture development and improvement in Lajkovac municipality for 2010, [http://www.lajkovac.org.rs/0/program\\_poljoprivreda\\_2010.pdf](http://www.lajkovac.org.rs/0/program_poljoprivreda_2010.pdf)

necessary inputs' (food and one-day chickens) transfer, for production in „Vindija“, start to fattening poultry on own farms, and with favourable credits, the producers will be guaranteed the most important one – repurchase of total production.

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