

THE SCENARIOS OF LIVESTOCK MOVEMENTS ON THE CITY OF BELGRADE AREA

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Due to a better review of possible agricultural development of the city of Belgrade area, in regard to the middle-term period from 2009 to 2015, the analysis gave predicted two possible scenarios of future movements of livestock in this paper. The first approach tries to give an answer to the question: What could happen? The second approach tries to give reply to: What should happen, if we tend to realize specific strategic goals? The starting point of the scenario analysis is not to expect big annual changes in livestock number movements, until they are not be real. Projecting the number of livestock in the city of Belgrade area had been done till 2015, according to available statistical data for the period from 1995 to 2005. Thereby, the analysis had been done for the most important types of livestock, observing the number and the economic significance (cattle, pigs, sheep and poultry). Taking into consideration that the number of horses and goats in the area of the city of Belgrade is insignificant, the motion trends of these livestock types number were not determined.

Key words: scenario analysis; number of livestock; the city of Belgrade

СЦЕНАРИЈА ЗА ДВИЖЕЊЕТО НА СТОЧНИОТ ФОНД ВО ОКОЛИНАТА НА ГРАДОТ БЕЛГРАД

Заради подобра прегледност на можниот земјоделски развој во белградската област, согласно со среднорочниот период 2009–2015, анализата во овој труд предвидува две можни сценарија за понатамошен развој на сточарството. Првиот пристап овозможува пронаоѓање на одговор на прашањето: Што би можело да се случи? Вториот пристап реплицира на: Што би се случило ако имаме тенденција за реализација на специфичните стратешки цели? Појдовната точка на сценариото за анализа не е очекување на големи годишни промени во движењето на бројот на сточниот фонд сè додека не се реални. Проектиран е број на сточниот фонд во белградската околина до 2015 година согласно со достапните статистички податоци за периодот од 1995 до 2005. Анализата е направена за најважните видови стока, опсервирајќи ги бројот и економската сигнификантност (говеда, свињи, овци, живина). Земајќи го предвид фактот дека бројот на коњи и кози во областа на градот Белград е ирелевантен, движечките трендови за бројот на овие сточни типови не се детерминирани.

Клучни зборови: сценарио анализи; бројна состојба на сточниот фонд; град Белград

INTRODUCTION

In the process of more intensive directing to market economy, sector changes, as well as a factor of social-economic progress, indicate necessity of activities expansion, which will lead to competitiveness increase. This project of agrarian economic development represents a component of a

strategy, anticipating not only goals of mid-term development, but a possible scenario, according to which it may be realized.

The basic goal of this document is perception of the state and possible developmental directions, which represents precondition for defining goals and instruments of new strategy development and adjust-

ment of agriculture in the city of Belgrade area. In that context, in order to plan certain measures, as well as to enounce forms and future support to agriculture and rural areas development, there is a necessity of giving expert evaluation on possible trends in agriculture, which refer to land, production and investments. Taking into consideration the significance of agriculture for the total economic development of the area of the city of Belgrade, projections of livestock trends till 2015 was done.

Most of prognoses, which have created leading world institutions, have been based mostly on two kinds of scenarios: pessimistic and optimistic. On the other hand, FAO uses methodology based on one basic scenario, but with two variants: optimistic and pessimistic, or more precisely – one scenario with intervals in plus, i.e. with intervals in minus. For anticipating the livestock trends in future, the analysis given in this research included two possible scenarios.

MATERIAL AND METHODS

The projections have been done according to statistical data for the period from 1995 to 2006, i.e. 12 years lasting data. Taking into consideration that the prognoses have been done until 2015, the time period for which they had been done is 9 years.

In order to get more complete insight in possible future trends in agriculture on area of the city of Belgrade, three types of functions were used: *linear, logarithmic and exponential*. Quoted functions are widely used, in theory and in practice, and can get very useful information for overcoming similar problems. Their results will provide, in the first place, the insight of the expected maximal and minimal size of some products production, as well as getting average values, i.e. the most realistic to achieve.

The projections, which substantially stand out from real possible in the observed period, will reject easily, by comparing the results got using specific function types. During the results analysis (got by using specific function types), there must be taken into consideration that the projections were done on the basis of disposable statistical data (or according to the current use of agricultural surfaces, trends of specific productions size and investments in fixed capital).

In future, for sure, the movement of the livestock number will depend not only on its current

state, but also on the social-economic situation. Accordingly, here comes to the projection of the live-stock number, depending on *external and internal* factors.

The most important external factors are:

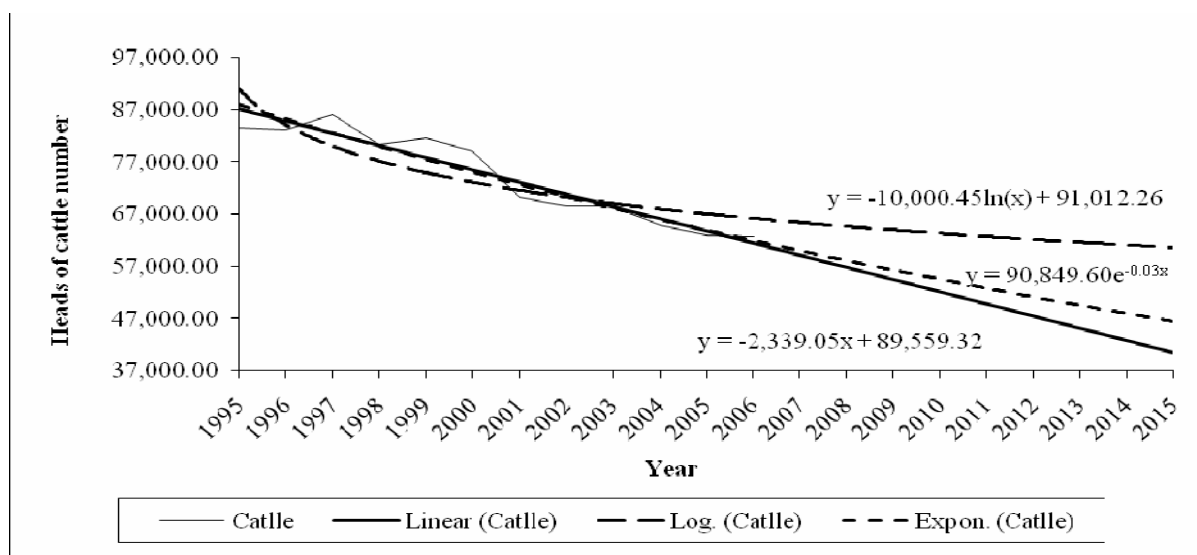
- trends and tendencies on food market in the region, the European Union and on global market;
- accomplished negotiation level within the World Trade Organization concerning global liberalization in food trade;
- condition of market in our region and condition of bilateral agreements, signed by the Republic of Serbia and already being applied (CEFTA);
- trade liberalization within expected accession of Serbia to WTO;
- trade liberalization within upcoming Agreement on Stabilization and Accession to the European Union.

The most important internal factors are:

- demonstrated trends and achieved production level in the previous period in the most important sectors;
- dynamics and achieved level of specific branches modernization;
- competitiveness level of important agricultural products;
- changes in macro-economic frame, trends in economy, on state level and on level of the city of Belgrade, and their influence on the population standard, which will reflect on changes in supply and demand of agricultural products on domestic market;
- development of tourism, as a significant factor of inducing demand for domestic products;
- relation of consumer toward locally produced food.

RESULTS AND DISCUSSION

Expected number of *cattle* in 2015 depends on the applied trend type (Graph 1). Major number of cattle is expected in the projection by using logarithm function (61,567 heads of cattle), and some more using exponential trends (49,708 heads of cattle). Considering that milk production is the most important in cattle breeding, such decrease of the total heads number can be, to a certain extent, compensated by projected growth of cows milking capacities.



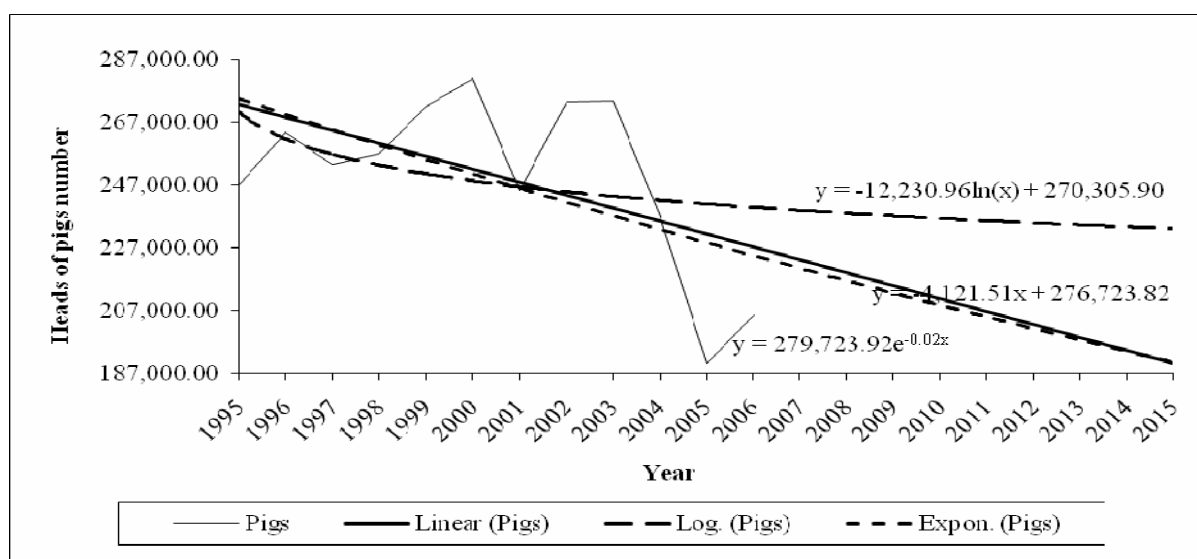
Graph 1. Total number of cattle

Source: Zavod za informatiku i statistiku (2003–2007): Statistički godišnjak Beograda (2002–2006). RS RZS, Beograd.

Prognoses under influence of external and internal factors obtrude stabilization of market opportunities and continuance of vertical integration strengthening between more and more perspective meat industry and the primary sector. Stable development of this sector requires additional investments and a stronger budget support, considering that this is where substantially multifunctional character of agriculture and tight correlation with rural development reflect. Additional incentive for the meat production growth also represents a more pronounced development of the dairy sec-

tor. There are possible expectations concerning cattle number increase (for around 16.52%), in order to achieve the total number of 73,070 heads of cattle, which would represent significant progress.

The total number of pigs shows a decreasing trend (Graph 2), where major heads of cattle in 2015 were projected by the logarithm function (234,292 heads). However, the most realistic to expect is that the number of pigs will be approximately 198,061, while almost equal results are got by the linear (198,415 heads) and the exponential function (197,705 heads).



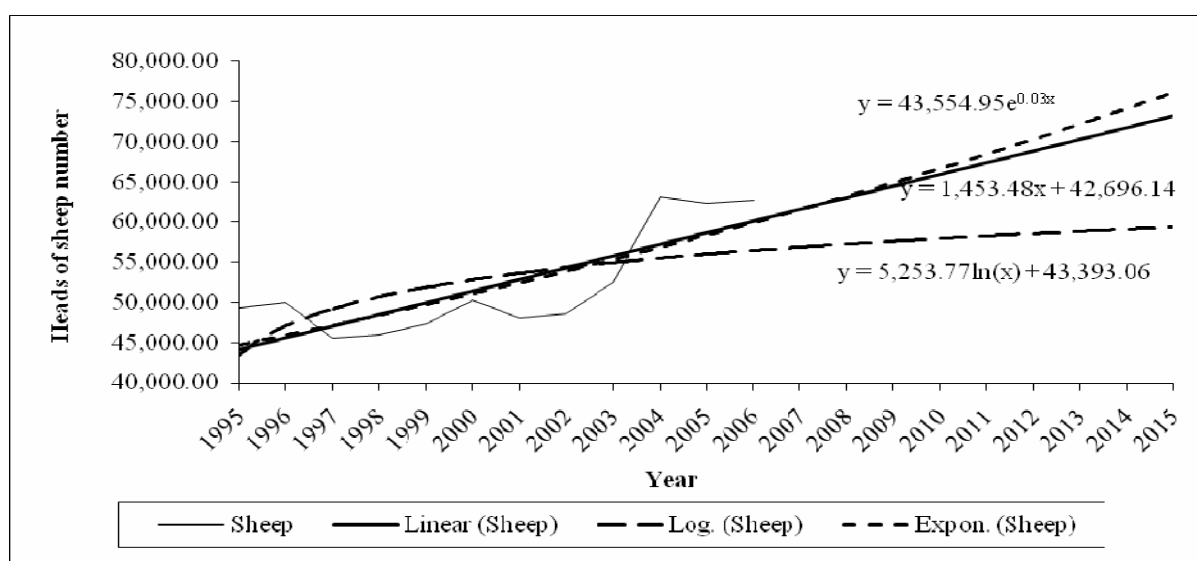
Graph 2. Total number of pigs

Source: Zavod za informatiku i statistiku (2003–2007): Statistički godišnjak Beograda (2002–2006). RS RZS, Beograd.

The condition for prognoses realization, which has been under the influence of external and internal factors, has emanated from setting up tighter correlation between meat industry and primary production. Encirclement of appropriate productive entities will contribute to it: production of concentrated fodder – farms – meat industry – commercial network. In such a scenario it is realistic to expect that, in the future period the pigs number increase will come to around

20.43%, which would stipulate fattening increase up to a level of 247,517 heads, in 2015.

Regarding the sheep number, there are very favourable trends (Graph 3). Although it is expected a very permissive growth of the total sheep number in 2015 (58,862 heads), by using the linear and the exponential function, almost totally identical more favorable projections get (70,312 heads, or 72,128 heads), so they could be considered as much more realistic.



Graph 3. Total number of sheep

Source: Zavod za informatiku i statistiku (2003-2007): Statistički godišnjak Beograda (2002-2006). RS RZS, Beograd.

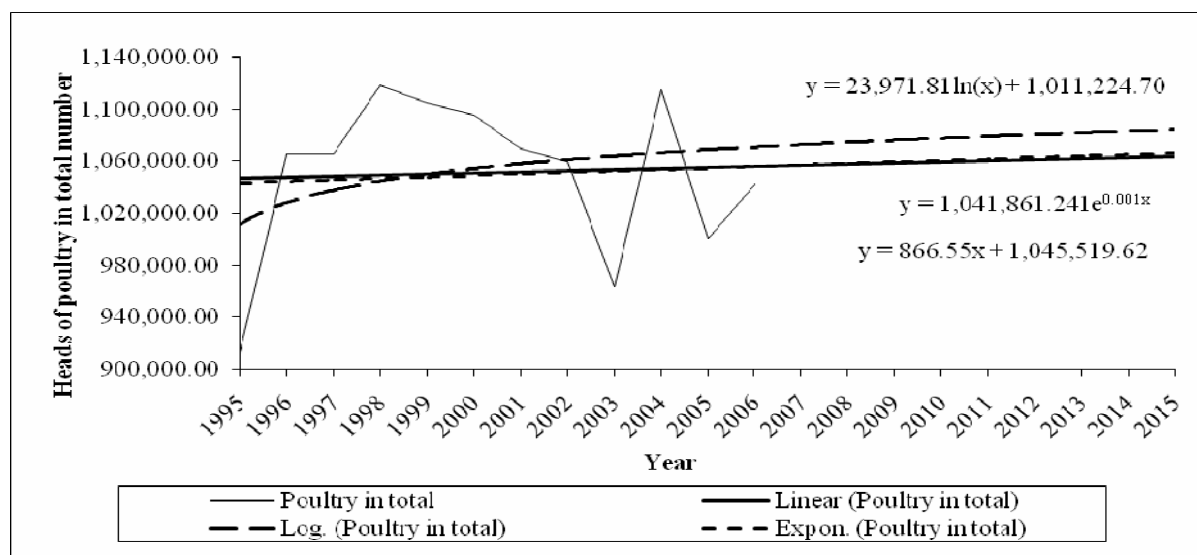
The assumptions of the scenario analysis, which depend on external and internal factors, are as follows:

- sustaining positive trend of the sheep number and increasing number of heads in bigger herds;
- competitive price of the lamb meat;
- positive tendencies in tourism, hotel industry and catering industry (through the affirmation of domestic cuisine and consumption of lamb meat);
- recondition of abattoir facilities and applying the standards for export, continuance of the budget support for the sheep-breeding production.

This scenario anticipates increase of the heads number for 8.65%, which means growth up to 68,174 sheep.

Concerning poultry, a more significant change is expected in the number in the further period (Graph 4), and using all three variants of trend we get very close results (linear function 1,016,465 heads, exponential function 1,021,079 heads and logarithm function 1,070,584 heads).

Due to the scenario, which depends on external and internal factors, poultry production in the next period (2009–2015), will get positive trends, along with increasingly better competitiveness of products and promotion of meat (as fresh and cooled down) consumption. The possible growth will also be conditioned by increasing consumption of this kind of meat, as well as eggs. In regard to the current level, in the anticipated period, increase of the poultry number (for around 4.64%) is realistic as well as increase of the total number up to 1,090,567.58 pieces.



Graph 4. Total number of poultry

Source: Zavod za informatiku i statistiku (2003-2007): Statistički godišnjak Beograda (2002-2006). RS RZS, Beograd.

Taking into consideration availability of incoming (statistical) data, there were not enclosed the scenarios referring meat, milk, eggs, honey and wool production, by this analysis. The prognosis for trends of goats, horses and hives number was not given.

CONCLUSION

If the trend of all sorts of livestock total number is observed, there could be determined very unfavourable trends, i.e. increase of the number of cattle and pigs (as the most important sorts of livestock on the territory of the city of Belgrade). Although sheep production, at the moment, has no significance for agriculture on the territory of the city of Belgrade, there is an expected increase of heads of cattle number and therefore more significant participation in the total agricultural production size. As for poultry, there are not expected any major changes in the number, i.e. their number will stay on approximately same level as in the previous period (1995–2006).

Priority measures, which agrarian policy must undertake, aiming at improvement of livestock production toward market requirements, are follows:

- increase of productivity in cattle production;
- intensifying production in pig breeding;
- intensifying and increase of production in sheep- and goat-breeding, in accordance with increasing market demand;

- improvement of poultry production;
- improvement of supporting system for livestock breeding development;
- developing mechanism for monitoring the implementation of support and control of the results;
- improvement of coordination and synchronization in implementing incentive measures among various levels (republic, city, municipality) etc.

According to the significance of meat, milk, eggs and honey (and their manufactured products) in providing food safety (at first, in satisfying food industry needs), there should insist to achieve an increasing trend of the cattle number, in the term as short as it is possible.

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