

## **THE POSSIBILITY OF ORGANIZING AN ORGANIC SHEEP BREEDING IN THE MUNICIPALITY OF ŽAGUBICA**

*Cojkić A.<sup>1\*</sup>, Savić M.<sup>1</sup>, Beckei Z.<sup>1</sup>, Dimitrijević V.<sup>1</sup>, Trailović R.<sup>1</sup>, Petrujkić B.<sup>1</sup>, Vegara M.<sup>2</sup>*

<sup>1</sup>Faculty of veterinary medicine University of Belgrade, Serbia

<sup>2</sup>Department of International Environment and Development Studies, Norwegian University of Life Sciences NMBU, Campus Ås, Aas, Norway

\*Corresponding author: acojkić@yahoo.com

### **Abstract**

Žagubica Municipality, in Eastern Serbia, is one of the most undeveloped municipalities in Serbia. It accounts for only 0.067% of the total GDP (Gross Domestic Product) of the Republic of Serbia. A large number of people migrated from this area to big cities or countries of the EU, mainly because of the economic underdevelopment and the lack of production and processing capacities. Nowadays agriculture has a major role in the economy of Žagubica, contributing to the total value created with 59.33%, which clearly speaks of its dominance, while far behind it is the manufacturing industry with 8.23% and commerce with 6.93%. Geographical position of the Žagubica Municipality, the Homolje territory, is an important natural resource of great potential, with specific characteristics of HNV (High Nature Value) region. Region of Homolje has a long tradition of sheep breeding and the quality of products has become well-known. However, depopulation of villages caused a decline in the production and closure of a number of processing facilities. The development of organic farming is one of the possible ways to revitalize the village and the development of this region rich in natural resources. This paper analyzes the strengths, weaknesses, opportunities, and threats (SWOT analysis) in the organization of organic sheep production in order to apply the necessary measures on the field for the organization of a new production system. The significant "advantages" of Žagubica Municipality are its herbal resources and the fact that the arable agricultural land makes 48.5% of the municipality area (42.9% of meadows and 26% of pastures) which is a good basis for the organization of the production. The issue of animal genetic resources is particularly analyzed and discussed. Under the "possibility" the attention is focused on various aspects of education in this field and its significance.

**Key words:** *Homolje region, organic production, rural development*

### **Introduction**

Livestock in the Žagubica Municipality has drastically decreased with the collapse of cooperatives in Serbia during the nineties. This is primarily due to the loss of opportunities for organized purchase of animals provided by the cooperatives. Another problem was an unstable market and sanctions which the community faced in the years after the collapse of the state.

The problems that the country faces today regarding the employment of people force the community to find alternative opportunities to make money. The independent production is emphasized in all fields of economy, including agriculture and animal husbandry. Special emphasis is placed on the production of healthy and organic food of plant and animal origin. The Access Fund of the Republic of Serbia in the field of agriculture facilitates an easier commencement of such production. In addition, the possibility of eventual export and sale of products to the European Union provides a secure economic benefit to producers and the state.

Serbia is faced with many challenges when it comes to marketing of products. The possible entry of Serbia into the EU would lead to reorganization of the existing production and adjustment to the criteria required by the EU for the selected production. This is certainly possible to achieve with a planned and systematic analysis of all steps in the production cycle. One of the goals is to create branded products with protected geographical origin and to encourage rural development.

### **Materials and methods**

Analysis was done regarding all opportunities that Žagubica Municipality provides and the threats which could hamper the organization of organic sheep production in Homolje region. Furthermore, all resources (strengths) and weaknesses that could make the production unprofitable were overviewed.

SWOT analysis was performed based on the results of work in the field of organization of organic production and data related to natural and economic potential of Žagubica Municipality.

### **Results and discussion**

**The strength** for developing sheep organic production are natural and human resources of Žagubica Municipality. Agriculture has the major role in the economy of Žagubica Municipality and it participates with 59.33%, which clearly speaks of its dominance. Economic underdevelopment of Homolje resulted in the preservation of a healthy environment and non-infringement of the natural beauty of this area. Water of Homolje region is a versatile potential, which is of great importance for the development of organic farming.

Flora and fauna of Homolje is particularly rich and abundant in many plant and animal species, some of them being relict. Agricultural land covers 36,880 ha or 48.5% of the municipality area. The agriculture land consists of 42.9% meadows, 26% pasture and 31.1% arable land. Large pastures and climatic conditions in the region of Homolje are favorable for efficient sheep production.

The interaction of environmental factors and genotypes of autochthonous Zackel sheep in this region came to the forefront in the evolutionary adaptation of strains of sheep which constitutes one of the pillars in the selection of suitable breeds for organic production (Trailović R. et al., 2006; Savić M. et al., 2011 and 2013). Svrlijig type of Zackel sheep is the most common indigenous sheep breed in the territory of Municipality of Žagubica, based on the data registry office. Besides this sheep the Sjenica strain gradually appears, as well as cross-breeds by crossing with Merino breeds. The process of crossing with Merino, Wuerttemberg and Ile de France breeds is in progress now in order to improve meatiness characteristics and Romanowski breed and to increase the fertility of indigenous breed.

Well organized selection service provides the ability to monitor, preserve and improve the livestock as well as giving direct access to the manufacturer's fund of the Ministry of Agriculture for farming of animals and improvement of livestock. Producers have expressed willingness to work in sheep breeding and for continuous education about breeding animals and monitoring of new technologies, such as the introduction of organic production standards. A well-organized work of the veterinary service in the field is of great importance for the successful organization of organic production and implementation of veterinary supervision in accordance with the law of organic production.

The number of sheep did not differ significantly in the Municipality of Žagubica in the past three years, based on data from the central database for flagging domestic animals, which are based on the commission of the programme of animal health protection measures. Based on these data, the number of sheep was 10228 (2011); 10279 (2012) and 10275 (2013). This number refers only to the animals in the reproduction cycle. Homolje region has a long tradition in the production of sheep and dairy products, which are well known for quality what makes them highly competitive on the market.

**Weaknesses** in organizing the organic farming, despite the availability of significant natural resources, still exist. The climate of this area is characterized by a variability of weather conditions, the summers are rather stable, with occasional drought and uneven rainfall, while winters are quite long and cold. There is also improper use of pastures and meadows, which resulted in weed growth and soil degradation.

The Municipality of Žagubica is one of the lowest developed municipalities in Serbia. It accounts for only 0.067% of the total GDP (Gross Domestic Product) of the Republic of Serbia. Municipality of Žagubica, with other municipalities of Eastern Serbia, is demographically an old municipality, with an average age of population 45 years, indicating an unfavorable age structure of farmers. A large number of people migrated from the area to big cities or countries of the EU, mainly because of the poor economic development and lack of production and processing capacities. There is a quite small number of young, working-age population in the Žagubica Municipality.

This municipality is far behind in the development of transportation infrastructure compared to the national average. All villages are connected by the local road network that is in rather poor condition. Significant processing facilities, slaughterhouses, dairies are not functional since the time of collapse of cooperatives in Serbia during the nineties of the last century.

Long-term stagnation in technological development and the lack of farmer motivation joined into functional associations in cooperatives also hamper the proper product placement. Small possessions, as well as non updated machinery for preparing animal food and for milking, further complicate production. Sales of products such as milk, meat and wool are not organized. Nonetheless, purchasing power, low standard and poor purchasing habits play an important role (Živković, 2012) therein.

**Opportunities** for sheep organic development are based on better management of natural resources and on farmers' education. Geographical position of the Žagubica Municipality is between 44° 05' and 44° 22' north latitude and between 21° 31' and 21° 50' east longitude. Homolje territory looks like a rectangle, with east-southeast-west-northwest position, length of 35 km and width of 26 km. The border with neighbouring areas generally extends over the highest peaks of the mountain ranges. The length of Municipality of Žagubica boundaries is 136 km, of which 129 km is terrestrial and 7 km aquatic border (Miljković, 1992). The Homolje territory is an important natural resource of great potential, with specific characteristics of HNV (High Nature Value) region (Cooper et

al., 2010). The region of Homolje has a long tradition of sheep breeding and quality of product has become well-known.

Providing high quality, healthy and safe products of animal origin is an imperative in favoring methods of organic production with the aim of protecting specifics and taste of the indigenous animal products and diversification of products of animal origin. The introduction of standardized measures in sheep breeding, preparation and processing of animal products, the improvement of veterinary-sanitary protection in order to reduce the risk for the hygiene of product, can contribute significantly to the turnover of standardized and controlled animal products.

Special emphasis should be given to the creation of distinctive regional products and their organized participation and promotion on the market. Increasing the competitiveness can be achieved by improving the quality of agricultural products with value added products, such as organic products.

Development of the organic livestock production through continuous education of farmers, modernization of livestock production through involvement in trade of high-quality breeding animals would increase employment of young people in the animal husbandry and foster the sustainable rural development in the Žagubica Municipality. Timely applications and applying for funding, scholarships and training of staff is a planned approach to the organization and management of long-term good livestock production. Joining of the producers would allow easier access to the development funds, the implementation of rural development programs, strengthening regional connectivity and cooperation.

**The threats** for organizing the organic sheep production are mainly based on insufficient and inadequate exploitation of natural resources. There is a great need for the modernization of technology, effective production and greater market orientation, in the Municipality of Žagubica. The current process of depopulation of rural areas leads to insufficient exploitation of natural resources, reducing the population of sheep and leaving pastures and meadows unused. In regard to the quality of the pastures, the major problem is their degradation, the presence of shrub that can eventually lead to the reduction in the area for grazing animals when their growth and spread is not controlled.

Current production systems of livestock production in the Municipality of Žagubica generally do not provide a cost-effective production, so it is necessary to approach their rapid change. Solving property issues and fragmentation of possession pose a significant threat to the organization of organic production.

## **Conclusion**

Organic production provides an opportunity to foster the proper protection of animal health and welfare and to promote maximum environmental protection.

Education of producers, association of manufacturers and credit for production are the engine of development of livestock production in the region. Enlarging the possessions with the gradual construction of animal food processing facilities would lead to the implementation of sustainable livestock production.

Education of farmers and encouraging family farms engaged in sheep breeding to begin with process of conversion to organic production system is one way to revitalize the region. Production of organic products can lead to contribution of rural development and to the promotion of a whole region.

### **Acknowledgements**

This study was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia, Grant No. TR 31085 and the Norwegian Programme in Higher Education, Research and Development in the Western Balkans 2010-2014.HERD/Agriculture Project 09/1548, 332160 UA.

### **References**

1. Cooper T, Pezold T, Keenleyside C, Đorđević-Milošević S, Hart K and Ivanov S 2010. Developing a National Agri-Environment Programme for Serbia. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. 1-88 pp.
2. Miljković Lj 1992. Homolje. Geografska monografija, Univerzitet u Novom Sadu, Prirodno-matematički fakultet-Institut za geografiju, Novi Sad.
3. Savić M, Aleksić S and Živković D 2013. Breeds of choice in organic production systems. Proceedings of the 10 th International Symposium Modern Trends in Livestock Production Invited paper, Belgrade, Serbia, 298-306 pp.
4. Savić M, Jovanović S, Trailović R, Dimitrijević V and Dimitrijević B 2011. Autochthonous breeds as livestock potential in sustainable farming in Serbia. Proceedings of the 19<sup>th</sup> Internationale Congress of Mediterranean Federation of health and production of ruminants, Belgrade, Serbia 16-22 pp.
5. Trailović R, Djedović R, Bogdanović V, Jovanović S and Ćinkulov M 2006. Pramenka Breed Types of Serbia. In Catalogue of West Balkan Pramenka Sheep Breed Types [ eds Porcu K and Marković B ], pp. 74-88. Faculty of Agricultural Sciences and Food, Skopje.
6. Živković B 2012. Perspektive održivog razvoja turizma opštine Žagubica. Kulturno-prosvetni centar Jovan Šerbanović. Žagubica.