

## **Cattle production trends in the region of ex Yugoslavia**

*I. Stokovic<sup>1</sup>, A. Ekert Kabalin<sup>1</sup>, D. Karolyi<sup>2</sup>, V. Sakic<sup>3</sup>, B. Miscevic<sup>4</sup>, J. Daud<sup>5</sup>, J. Staric<sup>6</sup> & G. Bunevski<sup>7</sup>*

<sup>1</sup> *University of Zagreb Faculty of Veterinary Medicine, Department of Animal Husbandry, Heinzelova ulica 55, 10000 Zagreb, Croatia*

<sup>2</sup> *University of Zagreb Faculty of Agriculture, Department of Animal Science, Svetosimunska cesta 25, 10000 Zagreb, Croatia*

<sup>3</sup> *University of Sarajevo Faculty of Veterinary medicine, Department of Animal Husbandry, Zmaja od Bosne 90, 71000 Sarajevo, Bosnia and Herzegovina*

<sup>4</sup> *Institute for Animal Husbandry, Department of cattle production, Belgrade-Zemun, Autoput 16, 11081 Zemun, Serbia*

<sup>5</sup> *Croatian livestock reproduction centre, Planinska ulica bb, 10 000 Zagreb, Croatia*

<sup>6</sup> *University of Ljubljana Veterinary Faculty, Clinic for ruminants with ambulatory clinic, Gerbiceva 60, 1115 Ljubljana, Slovenia*

<sup>7</sup> *Cyril and Methodius University in Skopje Faculty for Agricultural sciences and Food, Department of animal science, Bul. Aleksandar Makedoniski b.b., 1000 Skopje, The Former Yugoslav Republic of Macedonia*

### **Abstract**

The region of ex-Yugoslavia consists of six former federal republics, now six independent states: Republic of Slovenia, Republic of Croatia, Bosnia and Herzegovina Federation, The Former Yugoslav Republic of Macedonia, Serbia and Montenegro (due to lack of information about Montenegro, the data contained in the paper are predominantly about Serbia). Unfortunately, the separation of the Yugoslav states did not happen peacefully. The transition period, and the war in some states, affected cattle production directly and indirectly. Even before the separation period, cattle production was for the most part organized on small private households. These small households often kept various species and also carried out crop production. Nowadays, the situation in some states is still the same apart from the obvious trend of farms getting bigger and specialized. For example, in Croatia the majority of cattle (66.02%; CLC, 2006) are kept in small households with less than 6 cows. In 2000 (CLSC, 2001), 5.22% of cows were kept in households containing more than 10 cows, while in 2005, 12.3% (CLC, 2006) of cows were kept in households containing more than 11 cows. The increase in animal numbers moves relatively slowly and more or less successfully. Numerous farmers change from raising Simmental to Holstein, which leads to various problems. The percentage of Holstein cattle has increased from 20.03% in 2002 (CLSC, 2001) to 21.50% in 2005 (CLC, 2006). While some farmers increased herd size over time, others took loans to buy animals and build stables. Farmers are facing various problems, e.g. lack of information and knowledge, land problems (ownership structure and small properties), price and subsidy problems, and many others.

*Keywords: cattle, small households*

## Introduction

Cattle production in the region of ex-Yugoslavia has a long history. Before the introduction of foreign breeds, moderate breeding efforts were made with domestic breeds like Busha and others. First cattle imports were made a long time ago. For example, the first import of Simmental cattle to Croatia was made in 1885 and the first Simmental cattle breeders' association was established in 1906 in Velika Gorica. The organized and planned introduction of the foreign breeds in Bosnia and Herzegovina started in 1886 - the year in which stations for the improvement of animal production were established in various parts of the country (Modrica, Gacko, Prnjavor, and Livno). Imports of different foreign breeds continued through the years (Pinzgauer, Brown and Grey breed) but only the Simmental breed spread throughout the entire ex-Yugoslavia region. Lately, the Holstein-Friesian breed has spread quickly.

Today, in Croatia there are 73.84% Simmental cows and 21.50% Holstein-Friesian cows in the entire recorded population (CLC, 2006). The two breeds pushed out autochthonous breeds like Busha, Istrian and Slavonian podolian cattle and others. In Bosnia and Herzegovina, first Wiptal cattle and later the heavier Oberinntal (Tyrolean Grey) cattle were introduced from Austria. Later on, Montafon and Simmental breeds were introduced, while the last one to be introduced was the Holstein-Friesian breed. Before the war, the Simmental breed and its crosses with Busha and other breeds represented over sixty percent of the total number of cattle in Bosnia and Herzegovina. Approximately at the same time, the Alpine breeds Messkirch, Merctal, Algai, Pinzgau, Oberinntal and Montafon were imported to Serbia for crossing with domestic Busha cattle. In 1899, the first import of Simmental breed to Serbia was recorded.

The majority of cattle in Croatia (66.02%; CLC, 2006) are kept in small households with less than 6 cows. Owners of small households are mostly old people. Not many young people are prepared to stay on family farms because they cannot see their future in cattle production. In 2000, the percentage of households with more than 10 cows was 5.22% (CLSC, 2001). In 2005, there were 12.3% (CLC, 2006) households with more than 11 cows. Positive trends and increasing numbers of animals are generally observed, with more or less success on various farms. Breed composition is the following: 73.84% Simmental, 21.50% Holstein-Friesian, 3.68% Brown and 0.99% other breeds.

In Slovenia, most of the cattle are kept in herds of 10 to 50 heads (57.25%; Statistical office of the Republic of Slovenia, 2005). Moreover, 25.99% of cattle are kept in herds with 1 to 9 heads and 16.76% in herds of more than 50 heads. Slovenia is also particular as far as the breed structure of dairy cattle is concerned. A significant number of Simmental dairy cows remained stable during the past 10-15 years, mainly due to fair milk production, good adaptation to current breeding conditions and the possibility of economically feasible rearing of calves for meat.

At present, in Bosnia and Herzegovina the percentage of modern family cattle farms with 10-50 heads is very small (5-7%). Only 3 cattle farms keep more than 300 milk cows and produce 5.500 to 7.500 kg of milk.

In Serbia, agricultural firms or cooperatives own 6.3% of cattle whereas private farms own 93%. Regarding the breed composition, 71.0% are productive breeds (Domestic Spotted breed of Simmental type, Simmental breed and Black-White cattle) and 29.0% are primitive breeds and transitory crosses.

At present, in The Former Yugoslav Republic of Macedonia most of the cattle are kept in small households. Breed composition is as follows: 54% Busha and its crosses, 19.95%

black and white cattle (Holstein-Friesian), 12.7% Simmental, 12.8% Brown and 3% Grey Tyrolean. Other breeds are present in very small percentages.

The number of cattle in the ex-Yugoslavia region is declining (Table 1). Traditional breeds are replaced by more productive ones. At the same time, while the number of cattle is decreasing, milk production is increasing (Table 2).

**Table 1.** Cattle stocks (head) in ex-Yugoslavia region in last decade.

Cattle Stocks (Head)	Year		
	1995	2000	2005
Bosnia and Herzegovina	518.700	461.928	440.000
Croatia	493.418	426.570	471.025
Macedonia, The Fmr Yug Rp	281.336	270.000	265.000
Serbia and Montenegro	1.950.000	1.427.000	1.230.000
Slovenia	477.400	471.425	451.136

Source: FAOSTAT data, 2006

At the same time, while milk production is increasing, the production of beef and veal is decreasing in most of the ex-Yugoslav republics (Table 3). Several facts can give an explanation for such trends: the number of cows is decreasing, more milk producing breeds are introduced, and the traditional way of consuming young beef (even calves) and traditional bull fattening system break down.

**Table 2.** Whole fresh cow milk production in ex-Yugoslavia region in the last decade.

Cow Milk, Whole, Fresh Production (Mt)	Year		
	1995	2000	2005
Bosnia and Herzegovina	316.000	540.000	580.000
Croatia	593.856	606.816	728.000
Macedonia, The Fmr Yug Rp	132.819	220.244	215.000
Serbia and Montenegro	1.946.500	1.803.219	1.825.000
Slovenia	608.270	629.736	654.000

Source: FAOSTAT data, 2006

As the old production system broke down, most of the meat industries imported calves or beef meat from neighboring countries, like Hungary and Romania. Recently, the price of livestock in these countries increased and the industry is turning back towards various systems of domestic calves production (traditional, cow-calf and others).

**Table 3.** Beef and veal production in the ex-Yugoslavia region in the last decade.

Beef and veal production (Mt)	Year		
	1995	2000	2005
Bosnia and Herzegovina	15.900	12.500	14.000
Croatia	25.838	27.854	25.000
Macedonia, The Fmr Yug Rp	6.900	6.300	10.000
Serbia and Montenegro	226.600	194.200	175.000
Slovenia	51.200	43.300	45.500

Source: FAOSTAT data, 2006

In some former republics, transition from one political context to the other proved more devastating than war. During that period, lots of farmers took loans that they could not pay back, while some milk companies disappeared. These examples caused uncertainty among farmers and the transition from small to bigger farms slowed down. Herds remained small. Nowadays, the situation is changing rapidly and the number of larger farms is increasing.

The organizational frame is changing too. Farmers are getting organized in breeders' associations and they are becoming an important partner in decision making. Moreover, breeders' associations are included in the formation of breeding programs and other activities connected with breeds of interest. Unfortunately, lots of farmers still cannot perceive their prosperity within the framework of such associations and therefore their awareness should be raised. In addition, there is still a lack of courses for farmers, which could provide additional education and support for them. Scientists and experts should participate in the organization of such courses and receive training in order to be able to provide necessary support to the farmers.

## **Success stories from the countries of ex-Yugoslavia**

### **Slovenia**

In Slovenia, cattle breeding is becoming more and more intense thus enabling profitability and a competitive position of cattle products on the European market. Due to the unfavorable mountainous and hilly landscape in many parts of Slovenia, cattle breeding is very labor intensive, but has the advantage of ecologically friendly production in unpolluted environment. Beside intensive cattle farming, farmers should be encouraged and supported to get involved in organic cattle farming, which contributes higher added value to cattle products especially in mountainous areas, like in our northern neighbor country Austria.

All expert work concerning cattle breeding, analyzing data about production, reproduction, pedigree managing, milk and meat controls, laying breeding goals, registration of animals etc. is coordinated by the Cattle Service of Slovenia, which is financed by the State and involves many organizations. Cattle breeders' associations (like the Association of Simmental cattle breeders of Slovenia, the Association of brown cattle breeders of Slovenia, the Association of Holstein-Friesian breed breeders of Slovenia, the Association of breeders of cattle for meat production, the Association of breeders for the conservation of Cika breed cattle in Slovenia, and the Association of cattle breeders of Slovenia) represent one part of the

service, while the other one is presented by professional institutions, like the Agricultural institute of Slovenia, the Zootechnical department of the Biotechnical faculty, the Veterinary faculty and the Faculty for agriculture Maribor. The third part of the service is represented by the Agricultural and Forestry Chamber of Slovenia, which also manages insemination centers with pedigree bulls. In this way, knowledge is circulated between breeders and professionals.

There are many success stories among Slovenian cattle breeders, mainly due to hard work and willingness to breed cattle. The majority of breeders are involved in breeders' associations, though they do not currently see much benefit from membership. Farmers are currently getting different subsidies for land cultivation and also for some types of cattle breeding.

Family farm Z. was initially a cattle breeding farm. They were selling milk at the food market in Kranj already in the 1920s. In 1960 they focused on milk production only and in 1978 they built a new barn with cubicle housing, which they populated with 12 Simmental cows. They had began to buy Holstein-Friesian cows already at the end of the 1970s and today they have a herd of 50 Holstein-Friesian cows. Apart from the State support to finance the purchase of a milking machine in 1990, everything else was financed by the farm itself. Current milk production is 10.000 kg per cow. Milk is sold through an agricultural cooperative, mostly to Italy. Future plans include the enlargement of the barn for 100 dairy cows.

Family farm P. has a tradition in cattle breeding since the beginning of the 20<sup>th</sup> century, when they had only 2 Simmental cows in the barn. In 1975 they began to give milk to the milk collector and since 1992 they have a milk tank. In 1994 they built a new barn with cubicles. They bought first Holstein-Friesian cows in 1983 and today they have 27 dairy cows, Holstein-Friesian and Simmental. They have never got financial support from the State for investments in the barn. They would like to expand their farm, but they cannot do so due to land limitation (mountainous area). They sell milk through an agricultural cooperation and are currently satisfied with milk prices.

Family P. has been breeding cattle since the establishment of the farm in 1954. In 1990 they built a new barn and populated it with 10 Simmental cows and also bought a milk tank. In 1994 they reached milk production of 120 l per day which was the minimum for milk tanker to collect at the farm. At that time they also bought the first Holstein-Friesian cows. Six out of 11 Simmental cows were elite bull mothers. Before February 2004, they had 140 Simmental and Holstein-Friesian cows on the farm, when they bought a State dairy farm near Postojna with 200 Holstein-Friesian dairy cows and 200 young animals. To date they have not received any financial support for investments in the farm from the State. At present, the family would like to improve milk yield to reach 4.000 kg milk per day. They are happy with demand and prices for milk. In the future, they would like to build a new barn for replacement stock and machinery shed. Milk quotas represent a limitation in expanding their herd. The only serious actual problem is the repayment of the loan.

## **Croatia**

Cattle production in Croatia has a history and a future. At present, the market is more or less stable but the main problem is which way to take in the future. There are possibilities to move into two different directions: one is towards big farms with intensive cattle production and the other is towards smaller farms with less intensive production. The decision has to be taken as soon as possible, with the involvement of all interested parties. Until now, producers have not been involved enough in decision-making about breeding programs or cattle production strategies. This problem could be solved through the involvement of breeders' associations.

There are only a few breeders' associations in Croatia: CroSim (Simmental breeders association - 760 members with 9.000 heads of cattle), UHUH (Holstein-Friesian breeders association - 200 members with approximately 4.500 cows), SUIG (Istrian podolian cattle breeders - 67 members with 180 heads of cattle), Baby-beef (beef producers - 180 members whose fatten about 85 thousands of beef cattle) and a few more. All of them are becoming important factors in setting breeding goals and strategies for the mentioned breeds. Still, they are not strong enough to take complete responsibility for the breeding process but they should be able to do so in short time. Until then, the work concerning cattle breeding, like breeding programs, analyzing data about production (milk and meat control), reproduction, registration of animals, herd book keeping etc., is coordinated by the Croatian livestock center funded by the Ministry of agriculture, forestry and fishery.

Unfortunately, not so many breeders and producers are members of these associations and they should become more active.

The State supports breeders through: subsidies, special loan possibilities (for buildings and animals) and other. Institutions like the Croatian Livestock Center and the Croatian Agricultural Extension Service help breeders and producers through education, consultation and practical assistance. Faculties, Agricultural and Veterinary, and institutes are the third part of the support chain to the farmers.

Subsidies could be classified as subsidies for conventional production (fattening animals, breeding animals, young female heads, breeding male animals), for eco-production and for endangered breeds of livestock.

The future of associations and cattle production in Croatia is based on some very good smallholders. There are examples of such success stories that should be highlighted.

Dz. family farm, near Sisak, began with animal production in 1919, while large-scale production began in the 1970s. In the beginning, the farm was involved mainly in pig production, while later in milk and beef production too. The young generation took on the farm in 1996. R. Dz. graduated from the Veterinary Faculty University of Zagreb. At that moment, there were around 30 heads of sheep, 40 calves, 7 cows and 10 sows on the farm. They bought 100 sheep, land and equipment. Nowadays they own 110 ha of land. There are around 30 ha of fields for a variety of crop production, 50 ha for hay production, 300 ha for pasture. Pig production consists in about 200 pigs (100 Landrace and crosses, and 100 Black Slavonian - autochthonous breed). They also own 100 ewes, 20 young females, 15 rams and lambs. Cattle production is organized in two systems. Calves are kept in stables until they reach 6 months of age or 250 kg live weight (currently there are 100 of them). Other cattle (60 cows with calves) are kept on pasture throughout the year. There are also 5 donkeys and 6 horses with 3 foals. Five family members work on the farm, along with 5 hired workers. The yearly farm income is around 100.000 euro. One year ago, all cattle and sheep were electronically tagged (ruminal boluses). There is a very good cooperation with the Faculty of Veterinary Medicine and the Agricultural Faculty/University of Zagreb, and other institutions. Owners are young, educated people who are looking towards the future.

I. and Dj. I. and their family were already involved in beef (fattening 240 to 280 heads per year), vegetables and tobacco production in 1995. They were not satisfied with the existing situation, so they changed to milk production in 1996 with 4 cows and 6 heifers from fattening. In 2004 they have opened new farm with 120 heads (74 cows, 12 gravid heifers and 34 young female calves of various age). They deliver 1250 kg extra quality milk per day. They are involved in various educational programs and embryo transfer project. Most important fact is that they are willing to accept new knowledge and eager to collaborate with various experts but also ready to disseminate their knowledge and experience to the others.

Family C. began milk production 10 years ago when they bought their heifers (bank loan), with the help of one dairy plant. Now they have a new farm (72 cows: 40 Holstein-Friesian and 32 Simmental) with modern milking equipment and doubled production. They realized that a profitable future was not possible with the traditional production system, so they applied new technology and built new buildings with higher capacity. Family C. produces its own forages from 10 ha private land and 32 ha rented land. Farm investment was ca. 280.000€ and they spent 1 year dealing with bureaucracy to obtain the loan. They would like to implement other new technologies like computerized feeding and total mix ration to improve milk production.

## **Bosnia and Herzegovina**

Today, the agricultural sector in Bosnia and Herzegovina is undergoing a huge crisis due to political, organizational and technical reasons. Agriculture in Bosnia and Herzegovina falls behind neighboring countries in terms of productivity, technology, competitiveness and ability to meet domestic food requirements. Yields of main crops are low and milk yields per cow amount to only 2000 kg per year. The low level of production has been attributed to low rates of genetic improvement, as well as to the fact that only 32% of cows were covered by artificial insemination. Poor nutrition and management have been the major problems in cattle production (Sakic, 2000). In general, farmers owning cows considered them as value in terms of social and economic security rather than in terms of productivity.

Only 1.5-2% of GDP is reinvested as an incentive for agriculture in Bosnia and Herzegovina, which is far less than in other countries in the region. In EU countries, subsidies make up 30% of the farmers' income.

In 2002, the Animal Identification and Movement Control Scheme Project (AIMCS) began, based on EU standards. It marked 200.000 cows. During the war, the country's recorded data on animal performance and the nucleus herd of the endangered local cattle (Busha) were destroyed together with any other relevant documentation.

In 1996, a three-year program for the rehabilitation of the animal production sector in the Federation of Bosnia and Herzegovina was adopted. It envisaged the import of 60.000 high quality cows. During the first year of the program (1997), about 10.000 heifers were imported.

The import of some 6.500 heifers was financed from an IFAD loan and was coordinated by the Project Implementation Unit of the Federal Ministry of Agriculture. The remaining numbers were donations from some governments and humanitarian organizations. The heifers were imported from Hungary, Austria, Germany and the Netherlands. As for breeds, 75% were Simmental, 10% Frisian and Holstein, 10% Montafona (Alpine Brown) and 5% Oberinntal (Grey Tyrolean). Together with pregnant heifers, a number of doses of semen for artificial insemination were also imported.

Since then, numerous organizations were involved in the importation and distribution of animals to farmers as donations or on commercial base. Such importation of livestock is not registered in any central database, and therefore this issue is based on assumptions. Farmers who wanted to purchase the imported animals received soft loans from the Government in accordance with criteria approved by the Federal Ministry of Agriculture: over 50% of production assets of the farm destroyed and availability of land (1 cow or 5 sheep per hectare of agricultural land). In general, the policy was to give one cow to one family, but at a later stage, the option prevailed for more market-oriented production units (3-5 cows), with an interest in increasing production and raising efficiency through improved management techniques.

A similar program for the Republic of Srpska set a target of 20.000 heifers to be imported in the three-year period. About 2.000 heifers were imported in 1997 through an IFAD loan. The major part of the imported heifers were Simmental, while some 20% were Montafona, Tyrolean and Frisian breeds.

Family O. farm in ZE-DO Canton is also a demonstration farm of the Veterinary faculty of Sarajevo. For the 6 members of the family, the farm represents the only source of income. In 2001 the family owned 42 Holstein-Friesian head of cattle (37 cows, 3 calves and 2 breeding bulls) with an average age of 4 years. Cows graze most of the year. Even though the family owns some land, they have to buy a quantity of feed for the animals (they produce approximately 70%). In the year 2001, the farm produced 185.000 l of milk and 26.500 kg of beef (live weight). Cows are milked in the milk parlor and hygiene is good, resulting in good quality milk. The owner often participates in educational seminars and puts emphasis on very good collaboration with various experts (veterinarians and agronomists). The owners are hoping for better times to come, as the economy of the State improves. They recommend this kind of production for everyone who is willing to do so.

## **Serbia**

Nowadays, in Serbia 52% of the total population lives in villages, while 17% of the total population is engaged in agricultural production. Also, there are over 1 million village households in Serbia, over 600.000 of which are engaged in livestock production (households with 1 cow, several pigs and sheep or households with over 10 cows and sows, etc.), whereas the average size of agricultural land belonging to a single household is approximately 3.6 ha divided in several parcels, which is good basis for the organization of valid production for the domestic market and for export. Grasslands in Serbia cover approximately 1.600.000 ha or 31.6% of the total agricultural surface. Their importance for cattle and sheep production in hilly-mountainous regions is great, since grasslands represent the major or the only source of animal feed.

From 1990 to 2002, the number of cattle in Serbia decreased. The total capacity for animal production in the public and private sector is not utilized. In the public sector, less than 50% capacity is utilized, while in the private sector the situation is better, with cow housing capacity used by 77%.

Most of the beef is produced from the Simmental breed and its crosses but production results are not satisfactory. Usually, cattle are fattened to lower finishing weights (420-450 kg) and stay longer time in fattening. Slaughter yield could be improved (now 54-57%) and meat quality is low.

Negative trends in milk production are falling; although the number of cows is decreasing, production per cow is rising. Milk production per Simmental cows in the private sector is 4100 kg and in the public sector 4.700 kg. Milk breeds in the private sector produce on average 5.500 kg of milk and in the public sector 6.100 kg of milk.

Cattle breeding is one of the most important branches of animal husbandry. This production accounts for 20% of the national income, and about 60% of agricultural exports. Therefore, this branch should receive special attention in order to achieve even better results in the future. In Serbia, 6.3% of cattle are owned by agricultural firms or cooperatives and 93% belong to private farms. In the last twenty years, the number of cattle has decreased. In 1975, there were 2.838.000 animals, while in 1995 the number was 1.894.000. From the total number of cattle, 9.45% are raised in the public sector and 90.55% in the private sector. Regarding breed composition, 71.0% are productive breeds (Domestic Spotted breed of

Simmental type, Simmental breed and Black-White cattle) and 29.0% are primitive breeds and transitory crosses.

In 1995 in Serbia, 1.887.968 t milk, that is 1.796 l per cow, were produced. The total production of beef amounted to 131.235 t. Compared to the total arable lands production, this production corresponds to 26 kg beef/ha of arable land, which is certainly insufficient. Such a drastic decrease in the number of heads of cattle is the result of ten-year sanctions, transition and economic collapse of public farms. At the same time, the number of heads in the private ownership/sector also decreased, as a result of depopulation of rural regions – only the older population remained in these regions and therefore cattle breeding was completely abandoned.

In order to improve the present situation, the following years should be dedicated to improving breed composition, providing quality foodstuffs and improving reproduction and health care. These measures, supported by State subsidies, should lead to the improvement of cattle production in Serbia.

### **Former Yugoslav Republic of Macedonia**

Cattle production in The Former Yugoslav Republic of Macedonia is characterized by low milk production per cow (2.140 kg). Production on farms owned by the agricultural firms is higher (4.960 kg). Cattle are slaughtered with low weights (average 135 kg). Common problems include the small size of agricultural land belonging to households (80% between 1 and 3 ha), the insufficient level of artificial insemination carried out on about 8% of cattle (before transition it was 20%), and the fact that intensive importation of milk breeds (Holstein-Friesian) is unfortunately followed by short production life (Former Yugoslav Republic of Macedonia statistical yearbook, 2005).

The reasons for this situation lie in the poor knowledge on intensive production technology, in the limited production of high quality voluminous foodstuffs, and in the governmental agricultural policy that is not developed enough to support livestock production.

The Former Yugoslav Republic of Macedonia has 636.000 ha of grazing lands with low productivity and poor botanical composition (500 kg dry matter/ha) and 54.000 ha of grasslands (1.600 kg dry matter/ha). This is the case for a hilly region where cattle production is very low. Under these conditions, only Busha and its crosses can be used, as well as sheep.

Total meat production in The Former Yugoslav Republic of Macedonia is 29.835.000 kg yearly, with 8.691.000 kg of beef (Former Yugoslav Republic of Macedonia statistical yearbook, 2004). Such meat production is a result of low slaughter weight (140-200 kg) and poor breed composition.

Regarding breeders' associations, there is the Macedonian farmers' association and, as part of it, the National association of cattle producers. Thus far there are no breeders' associations according to the breed, but there will be some in due time.

There are some successful bigger farms like "Stocarstvo" in Bogdanci (average milk production 7.000 kg per cow), ZIK "Pelagonija" in Bitolj, Veles and Strumica with over 6.200 kg milk per cow. Smallholders usually have lower production on farms with 30-50 dairy cows (over 6.000 kg per cow, with averagely 3.8% milk fat). Meat production is mainly connected to milk production farms and to cow-calf systems in hilly regions, where mostly Busha and its crosses are used. There is also one herd of 200 Herefords in central Former Yugoslav Republic of Macedonia which showed good production results.

State subsidies are destined for: herd-book keeping, farmers with more than 7 cows per farm, cow-calf system, production control, autochthonous breeds preservation and indirectly

for organic production, but not for cattle production. Unfortunately the budget will be probably cut down in the next year.

Last year, the cattle breeding committee was founded, comprising experts from University, farmers, from the Ministry and from the Agency for cattle production development, but unfortunately with little actual influence.

## **Conclusion**

In general, the number of cattle in the region is decreasing. Meat production has a negative trend while milk production is positive. The most widely spread breed of cattle is Simmental. The number of animals in traditional cattle breeds is decreasing, while in more productive breeds it is increasing (especially Holstein-Friesian). This change leads to various problems. Most of the problems are connected with the farmers' lack of knowledge. Cattle production is concentrated mostly on small farms, which are expanding but with different dynamics (Slovenia is far ahead). A large proportion of small households (small farms) are owned by older people. However, there is a growing number of younger farmers and success stories are connected with these family farms. The future of the cattle sector lies in the hands of these young, educated, motivated and open-minded people.

At this stage, small households need an encouraging political (laws, subsidies, etc) and organizational (breeding organizations) context, in order to be able to compete on EU market.

The role of the government is still significant through various means of support (subsidies, agencies, etc). This role should change with the change of the organizational frame.

All of these changes are affecting not only traditional breeds but also the traditional way of life. Various social problems are being faced, not to mention the loss of biodiversity and questionable sustainability of modern livestock production systems. We could say that the structure of our farms (small households) is an advantage and not a disadvantage.

Small households are capable of rapid changes and ready to accept and apply new knowledge and technologies. The responsibility of experts and scientists for helping farmers to produce adequate support is crucial.

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