



The place of Croatian livestock production in European agriculture

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ABSTRACT

Livestock production is a very significant economic branch of Croatian agriculture, particularly the production of cattle and pigs. The recent years have been characterised by considerable changes in the structure of Croatian agricultural production. The importance of livestock production has decreased, such that in 1997 livestock production represented only 32.8% of the total value within the structure of Croatian agricultural production, while in 1992 it accounted for 44.4% of total agricultural production. The total number of cattle had decreased by 378,000 (45.6%) by 1997; i.e., from 829,000 in 1990 to 443,000. Trends in the numbers of other livestock species show situations which are not less unfavourable. According to official statistical data, in 1997 the total number of pigs was 1,176,000, 25.2% fewer than in 1990; that of sheep 453,000, 39.7% fewer; and that of poultry 10,954,000, 36.0% fewer. At the same time, in 1997 cattle production was 54,000 tonnes (1991: 76,000 tonnes), pig production 166,000 tonnes (1991: 185,000 tonnes) and poultry 85,000 tonnes (1991: 98,000 tonnes). Cow's milk production in 1997 was 603 million litres (1991: 749 million litres) and hen's egg production 804 million (1991: 885 million). Livestock production on the family farms in Croatia dominated in 1997, and still has the significant role. The proportions accounted for by the family farms within the total number of livestock in 1997 were 88.7% for cattle, 74.7% for pigs, 96% for sheep and 60.8% for poultry, these figures remaining the same in 1998. According to the results of the analysis and comparison of the basic characteristics of livestock production in Croatia and in the EU-15 the average number of cows per farm in the EU-15 countries is, at approximately 20, more than 3.5 times that in Croatia. In milk production (milk being the most important product in the EU market) Croatian production is about 2300 litres per cow per year (on family farms about 3100 litres), while in EU-15 average annual milk production is about 5000 litres per cow. EU-15¹ attains 7,969,000 tonnes in cattle production annually, while in Croatia this was only 54,000 tonnes in 1997. EU-15² achieves 15,960,000 tonnes in pig production annually, Croatia only 85,697 tonnes in 1997.

(Keywords: Livestock production, structure and index of production, family farms, EU-15)

¹ For EU-15 data for 1995, sources: EUROSTAT, FAO, European Commission

² For EU-15 data for 1995, sources: EUROSTAT, FAO, European Commission

ZUSAMMENFASSUNG

Position der kroatischen Tierproduktion in der europäischen Landwirtschaft

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Die Tierproduktion ist ein wichtiger Produktionszweig der kroatischen Landwirtschaft, besonders die Rinder- und Schweineproduktion. Die Struktur der kroatischen Agrarproduktion hat sich in den letzten Jahren bedeutend verändert. Die Bedeutung der Tierproduktion nahm ab: 1997 betrug der Anteil der Tierproduktion an der gesamten Agrarproduktion 32,8%, wobei dieser 1992 noch auf einer Höhe von 44,4% lag. Im Vergleich zu 1990 verringerte sich die Rinderzahl bis 1997 um 45,6% (Rinderbestand 1990: 829.000; 1997: 443.000 – also eine Verminderung um 378.000 Tiere). Auch in den anderen Bereichen der Tierproduktion ist diese Tendenz zu beobachten. Laut der statistischen Angaben betrug 1997 der Schweinebestand 1.176 tausend Tiere, 25,2% weniger als im Jahre 1990; der Schafbestand 453 tausend Tiere, 39,7% weniger als 1990, der Geflügelbestand 10.954 tausend Tiere, 36% weniger als 1990. 1997 erreichte die Rinderproduktion 54.000 t (1991: 76.000 t), die Schweineproduktion 166.000 t (1991: 98.000 t), die Kuhmilchproduktion betrug 603 Mill. l (1991: 749 Mill. l) und die Hühnereierproduktion betrug 804 Mill. Stück (1991: 885 Mill. Stück). In den kroatischen Familienbetrieben spielt die Tierproduktion eine große Rolle. 1997 und 1998 hatten die Familienbetriebe folgenden Anteil gegenüber dem Landesbestand: Rinder 88,7%, Schweine 74,7%, Schafe 96% und Geflügel 60,8%. Analyse und Vergleich zur Tierproduktion in EU-15 zeigt: Die durchschnittliche Anzahl der Kühe in Kroatien liegt unter 3,5 (EU-Durchschnitt: 20). Jährliche Milchleistung im kroatischen Landesdurchschnitt ist 2.300 l/Kuh (in Familienbetrieben: 3100 l, im EU-Durchschnitt: 5000 l/Kuh). 1997 betrug die Rindfleischproduktion in Kroatien 54.000 t (EU-Durchschnitt: 7969.000 t), die Schweinefleischproduktion nur 85.697 t (EU-Durchschnitt: 15.960 tausend t)

(Schlüsselwörter: Tierproduktion, Produktionsstruktur, Produktionsindex, Familienfarm, EU-15)

INTRODUCTION

Since Croatia attained independence great changes have occurred in the country, particularly political and economic ones. The process of transition from a centrally planned to a market economy, changes in the structure of agriculture, liberalisation of the domestic market and aggression in Serbia with all its consequences have strongly influenced the whole of the Croatian economy, and also agriculture, particularly livestock production.

Croatian integration into some of the international trade and economic associations such as the WTO³, EU⁴ and CEFTA⁵ has raised the key question of the adjustment of Croatian agriculture and livestock production not only to European but also to world integration processes.

³ World Trade Organisation

⁴ European Union

⁵ Central European Free Trade Association

Objective of the paper

This paper, as its title suggests, has the following objectives:

- to describe the current position in livestock production in Croatia, and to point out the main problems;
- to stress the relevant features of livestock production within family farms;
- to compare the situation in livestock production in Croatia with that in the European Union.

Data sources

Alongside the well known present limitations to gathering data for agriculture, particularly for livestock production, data from the State Bureau of Statistics of the Republic of Croatia are used in this paper, together with data (partly out of date) from the 1991 Census, as well as results from research on the social and economic characteristics of family farms performed by the Institute of Agricultural Economics of the Faculty of Agriculture.

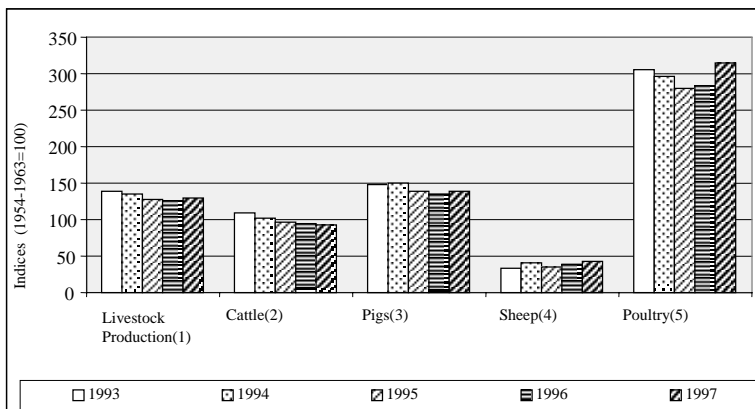
RESULTS AND DISCUSSION

Recent changes in Croatian agriculture

Livestock production in Croatia shows a considerable lag in the total value of agricultural production in relation to the previous period, and also in comparison with the more developed European countries. Therefore, considerable changes are present in the structure of agricultural production in Croatia. The importance of livestock production has diminished, livestock production within the structure of agricultural production in 1997 amounting to only 32.8% of the total value, while in 1992 livestock production represented 44.4% of the total value of Croatian agricultural production.

Figure 1

Indices of livestock production

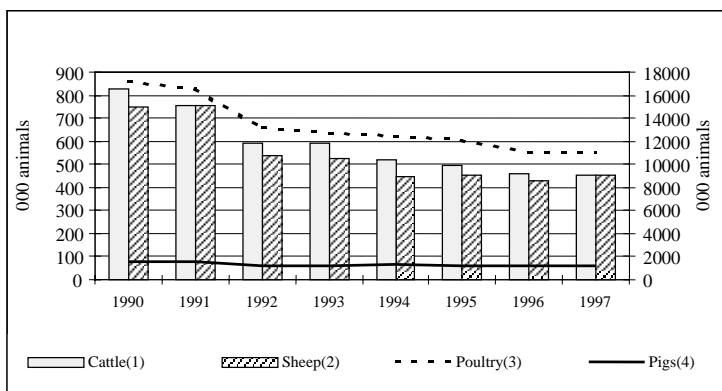


1. Abbildung: Angaben zur Tierproduktion

Tierproduktion(1), Rinder (2), Schweine(3), Schafe(4), Geflügel(5)

Figure 2

Number of livestock in Croatia



2. Abbildung: Entwicklung der Tierbestände in Kroatien

Rinder(1), Schafe(2), Geflügel(3), Schweine(4)

In the period 1990-1997 the number of basic livestock species decreased continuously. By 1997 total cattle number had diminished by 378,000 (45.6%): from 829,000 (in 1990) to 443,000. A similarly unfavourable situation can be observed in the numbers of other livestock species. According to official statistical data, in 1997 the total number of pigs was 1,176,000, 25.2% fewer than in 1990; that of sheep 453,000, 39.7% fewer; and that of poultry 10,954,000, 36.0% fewer than in 1990.

At the same time, in 1997 cattle production increased to 54,000 tonnes (in 1991 76,000 tonnes), pig production 166,000 tonnes (in 1991 185,000 tonnes), poultry 85,000 tonnes (in 1991 98,000 tonnes); 603 million litres of cow's milk (in 1991 749 million litres) and 804 million hen's eggs (in 1991 885 million) were produced.

In 1997 cattle production accounted for 15% of total livestock production. During the past few years the increase in pig production has been a little above one third of total livestock production (the figure 1997 being 38.1%). By 1997 the importance of poultry production had increased in relation to the preceding years, making up 23.4% of total livestock production. The proportion occupied by the quantity of cow's milk produced within the structure of livestock production has changed slightly, with a value of about 19% in 1997. Among the remaining livestock products the production of hen's eggs commands comparatively minor importance, the relative share of this being below 1% of total livestock production. All the above figures show clearly that none of the branches of livestock production reached pre-war levels in 1997.

The Republic of Croatia is very heterogeneous in its relief, geological structure and substances, climate and socio-economic characteristics, so regional differences are very distinct. In consequence of this, and taking into consideration the administrative and territorial organisation, three *agricultural and ecological regions* can be distinguished in the Republic of Croatia: the Pannonian region, the Mountain region and the Mediterranean region. Until now Croatia has had no defined regionalisation of

agricultural areas. Data on these agricultural regions are taken from the documentation of the Ministry of Agriculture and Forestry of the Republic of Croatia, Strategy of Agricultural Development, Zagreb, 1995.

Table 1

Number of livestock in 1991

Animals(1)	Croatia (2) (Total)	Mountain Region (3)	Percentage out of total - Croatia (%) (4)
Cattle (5)	756,813	138,942	18.36
Sheep (6)	753,267	338,018	44.87
Horses (7)	36,810	12,701	34.5
Total	1,546,890	489,651	31.65

Source (*Quelle*): 'SLJH-93', pages 132-133, Central Bureau of Statistics of the Republic of Croatia; "Stočarstvo" 49:1995 (1-2) page 31 (*Knežević, Stipić, Havranek*)

1. Tabelle: Tierbestände im Jahre 1991

Tierart(1), Kroatien(2), Berglande(3), % gegenüber ganz Kroatien(4), Rinder(5), Schafe(6), Pferde (7)

Although agriculture is an important branch of the economy, as stated above, Croatia has had no defined regionalisation of agricultural areas until now. Unfortunately, the agricultural policy has therefore so far not taken into consideration regional differences in a greater measure, and has not used selective measures to allocate production in specific areas. The new Act on Financial Incentives and Regresses (NN 29/99) anticipates special financial subsidies for the so-termed strategic Croatian regions.

Taking as the starting point the above different criteria for determining the agricultural areas and regional distribution of agricultural production (determined by natural, pedological, economic and traditional characteristics of particular regions), more than 80% of the total cattle number is located in the Pannonian region, while in the Mountain and Mediterranean regions the total numbers of cattle are comparable (i.e., roughly equal). With respect to categories, there are no significant differences in relation to the distribution of the total cattle number.

The highest number of pigs is in the Pannonian region, mostly due to maize production. The Mediterranean and Mountain regions are not represented substantially in the total number of pigs.

The Mediterranean region contains 57% of the total number of sheep. Slightly less than one quarter are located in the Pannonian region and 18.2% in the Mountain region.

Of the total number of poultry, about 76% are in the Pannonian region, 18.4% in the Mediterranean region and only 7% in the Mountain region.

Horses are located, for the greater part, in the Pannonian region (61.3%), almost one third in the Mountain region and only 11.2% in the Mediterranean region.

At the same time, there are significant regional differences in the number of livestock per unit area. The number of cattle and pigs per hectare of agricultural land is greater in the Pannonian region (0.26 cattle and 0.81 pigs), and the number of sheep is greater in the Mediterranean region (0.24).

Average milk production is higher in the Pannonian region (2259 litres per cow) than in the Mountain region (2025 litres), the lowest being in the Mediterranean region (1651 litres). In the production of hen's eggs the Pannonian region also dominates (135 per hen), compared with the Mediterranean region (126) and the Mountain region (113).

Family farms and livestock production

Family farms are the predominant part of the agricultural structure with regards to human, land and other resources, and they account for the majority of total agricultural production. The last census, taken in 1991, recorded 534266 family farms in Croatia. These held possession of about 78% of arable land and more than 80% of the total stock of livestock. The proportions represented by the family farms in livestock production in 1991 were the following: cattle 75%, horses 100%, pigs 66%, sheep 95%, poultry 50% and bee-hives 100%. Among the livestock species the family farms rear mostly pigs (46%) or cattle (38%), rather than sheep (7.4%) or horses (4.8%).

Livestock production on the family farms in Croatia was dominant in 1997, and bears the most significant role. The proportions accounted for by the family farms within the total stock of livestock in 1997 was as follows: cattle 88.7%, pigs 74.7%, sheep 96% and poultry 60.8%. These values remained unchanged in 1998.

Considering the inherited institutional and economic system of the former state, war, occupation and war devastation, inherited underdevelopment and natural limitations in some of the agricultural areas, and comparing these with the situation with respect to the registration of statistics, research performed in the period 1991-1998 shows that great changes occurred in some aspects of the so-termed *vital* family farms. These are the results of the research into the social and economic characteristics of family farms performed by the Institute of Agricultural Economics of the Faculty of Agriculture, University of Zagreb, within regional studies and a survey on family farms within the Farmer Support Service Project (MAF). It was ascertained that these farms now have at their disposal considerable resources, together with educated, mostly younger farmers and market-oriented production.

The total stock of livestock shows great differences between farms and regions, livestock production being very important in some areas, while in others it has no great importance. In some areas beef cattle production is being deserted, alongside growing interest in sheep and goat breeding.

According to preliminary results it can be ascertained that among the total number of farms (N=892) 73.88% keep cows (average annual milk production 3099 litres per cow), the average number of cows per farm being 5.4. The range is wide, some farms only keeping cow, but there are also specialised dairy farms with 30 or more cows. The greatest number of farms with cows is in the Mountain region, where 92.68% of farms keep cows and produce milk. More than half of all farms rear pigs (57.51%), and 6.84% of the total number of farms keep sheep.

The situation in livestock production within the family farms surveyed (N=892), measured by number of particular livestock species, shows that the number of commercial farms is rather small. The greatest number is accounted for by those keeping several species of livestock, which suggests that production is still natural, while intensive rearing is practised on only a smaller number of farms.

Basic problems in livestock production

The level and the structure of livestock production in Croatian agriculture are determined by several factors, such as natural conditions, traditional production, the demands of the

domestic and international markets, and also the various forms and level of state intervention (incentives, prohibitions, embargoes, etc.). *What is the key problem?*

Firstly, the small size of family farms is a limitation to the number of livestock: only 4.2% of the farms have more than five cows, 5.3% more than ten pigs, and 2.6% more than 20 sheep.

Secondly, there still exists the illusion that with only slight changes and with traditional methods of production or managing systems, together with the continuous support and care of state institutions (mostly purchase and subsidies) the new circumstances for the market economy could be achieved. However, without radical reorganisation of livestock production, coupled with fundamental and qualitative changes in the field of livestock selection, it would not be possible to ensure the development of livestock production as an economic activity.

Thirdly, productivity in livestock production remains at a low level, due to inadequate diets and feeding systems, an inefficient breeding structure, difficulties in improving farm buildings, and so on.

Fourthly, there is excessive and uncontrolled import of agricultural products, and deficiencies in the market structure which would otherwise serve to satisfy the needs of producers, wholesalers and retailers, for prices to be formed on the basis of competition.

The position of Croatian livestock production within European agriculture

The integration of the Republic of Croatia into some of the international trade and economic associations, such as the WTO, EU and CEFTA, has raised the key question of the adjustment of Croatian agriculture and livestock production not only to European but also to world integration processes.

On entry into the EU Croatia will also be incorporated into a large, well-developed and in general self-sufficient market of livestock products, which will result in even greater competition for domestic livestock production.

At the same time, it is obvious that Croatian livestock production is today faced with great difficulties. Numbers of all types of livestock are decreasing, while the level of productivity is low and below the level in western Europe. Production is mostly extensive and economically inefficient.

Table 2

Farms and their size

	Croatia	EU-15*
<i>Family farms (1991) (1)</i>		
- number (thousands)	534	7.739
- decreasing the number of farms 1981-1991(%)	6.14	2.14
<i>Average family farm size (2)</i>		
- 1991 (ha of agricultural land)	2.94	16.6
- 1993 (number of livestock**)	3.5	25.8

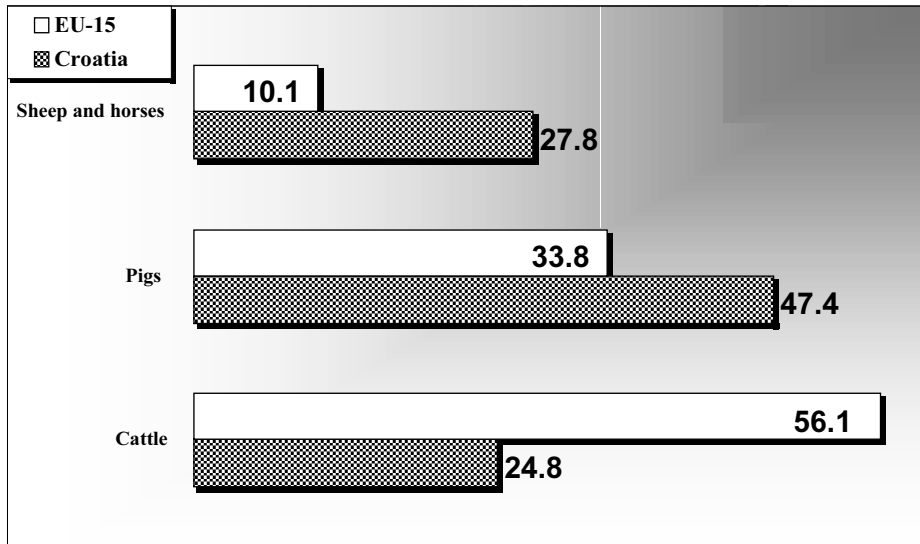
* Data for EU-15 refer to 1993 and 1983 respectively. (*Die Daten von EU-15 beziehen sich auf 1993 und 1983.*), ** Total for Croatia: cattle, pigs, sheep and horses. (*Kroatien insgesamt – Rinder, Schweine, Schafe, Pferde.*)

2. Tabelle: Farmen und ihre Größe

Familienfarmen(1), Durchschnittliche Größe einer Familienfarm(2)

Figure 3

The structure of the number of certain livestock species (1993)



3 Abbildung: Struktur einiger Tierbestände (1993)

Schafe und Pferde(1), Schweine(2), Rinder(3)

In livestock production in Croatia the majority of farms lag behind those in the EU by all criteria and measures, but there are a number of farms which, in terms of their structure and production results, are already at the level of livestock production of the EU.

On consideration of the results of the analysis and comparison of the basic characteristics of livestock production in Croatia in relation to those in the EU-15, the following should be highlighted.

- The average number of cows per farm in the EU-15 is more than 3.5 times that in Croatia (the average in the EU-15 being about 20 cows per farm).
- In the production of milk, the most important product on the EU market, Croatia produces about 2300 litres per cow per year (on family farms about 3100 litres), while in the EU-15 average annual milk production is about 5000 litres per cow.
- The EU-15⁶ attains 7,969,000 tonnes in cattle production annually, while in Croatia this was only 54,000 tonnes in 1997.
- EU-15⁷ achieves 15,960,000 tonnes in pig production annually, Croatia only 85,697 tonnes in 1997.

⁶ For EU-15 data for 1995, sources: EUROSTAT, FAO, European Commission

⁷ For EU-15 data for 1995, sources: EUROSTAT, FAO, European Commission

From the above it is evident that Croatian access to world trade integration, and further liberalisation of domestic markets for agricultural and food products, leading to increased competition and additional decreases in prices, will result in an even more difficult position for livestock production in Croatia.

Agricultural policy has a considerably important impact on the level and position of livestock production. As distinguished from the agricultural policy of the EU countries, in Croatia these measures have been considerably less complete, successful and transparent. This is particularly evident in the market share of Croatia in relation to the EU, where the livestock market is protected by various aims, mechanisms and agricultural policy measures with a clearly defined market order.

CONCLUSIONS

The future of livestock production will depend primarily on changes in the economic environment, and its ability to adjust to the new conditions. Therefore growing competition has become the precondition for the existence of this important activity, particularly production within family farms.

The stagnation and further decline in livestock production are not acceptable, for more than one reason. This is primarily because of the importance of this branch for the total Croatian economy, as well as for ensuring employment and optimal use of the existing resources. Besides increasing competition and environmental and economic aspects there are other reasons, primarily geopolitical and demographic, for which it is necessary to stop the decline and enable redevelopment in livestock production. No less important is the role of livestock production in sustainable development and environmental preservation.

Croatia has favourable preconditions for livestock production, particularly in the hilly or mountainous areas, which have considerable raw material resources for the development of cattle production and livestock production in general. For the revitalisation of livestock production the economic preconditions are crucially important, so in searching for the solution to this problem Croatia has to act as western European countries have done, particularly by granting adequate subsidy payments and financial support. Additional attention has to be paid to special valorisation of the so-called production elements in the hilly or mountainous regions, which could enable export of a smaller number of livestock products, recognisable by their characteristics and top quality, according to the demands of European consumers.

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