

RESTRUCTURING OF THE LIVESTOCK PRODUCTION IN CENTRAL AND EASTERN EUROPEAN COUNTRIES

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Abstract

Before the transition the principal development objective for the animal production sector in the Central and Eastern European (CEE) countries was the attainment of national self-sufficiency, and, in some countries, export orientation. Increasing production costs and the low productivity were compensated through subsidies. During the first years of transition, the number of animals declined from 20 to 80 percent, due to the drastic reduction of demand (elimination of subsidies and family revenue decrease), disruption of traditional markets and rise of the cost of production. The establishment of a large number of small private farms have led to the creation of specific production systems in a number of countries. Countries which have retained large production units are confronted with needs to update technology in accordance with new requirements (market, environment). Following the request of made by CEE countries, EAAP has established a Task Force on CEE countries. The Task Force has organised seven meetings (round tables, workshops and seminars) in the period 1991-96. Some experts from CEE and Western Europe participated at these events. Over 1400 pages of studies and proceedings have been published. The Task Force has completed its tasks in 1996, when a Contact Group on CEE countries has been established to identify the major policy issues influencing animal production in CEE, to prepare and organise meetings to address these policy questions, and to promote an increase in effectiveness of linkages between CEE and Western European countries.

Key words: livestock production, Central Europe, East Europe

Introduction

Among the CEEC countries there are enormous differences in geographic location, size level of economic development and the role of agriculture in the national economy. These countries could be grouped in accordance with

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various criteria, such as geography (e.g. Baltic's, Balkan, CIS¹, CEFTA²), European economic and political integration (e.g. EU candidates³, CEFTA). For the purpose of countries covered in this paper are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia.

Only data of these 10 potential members of EU is presented in this paper. The main source of statistical data is "EU-Commission DG VI" and OECD.

The paper also discusses the need for a more in depth analysis of changes in and prospects of animal production systems, and presents activities of EAAP in support of restructuring of the animal production sector in CE countries and proposals for future international co-operation in this field.

The challenge of time has surprised many farmers, the organisation of private and state owned farms has met many problems. Policy is looking for different models of agricultural policy, usually trying to find solution in imitation of protection model by the Common Agricultural Policy (CAP) in European Union (EU). Most CEEC countries want to become a member of EU. Timing, way and consequences of likely accession to EU are still point of negotiations between EU and new Eastern European partners.

CEEC livestock production in transition

Macroeconomic Background and Resources

CEEC-10 represent from geographical and demographical point of view an important part of Europe. These countries have approximately one third of population and area comparable to EU. Their structure of agricultural land is better as they have twice as much arable land per capita as EU members. Their economic importance is still low; on average they achieve 11% of GDP per capita of EU. Czech Republic and Slovenia as the most developed countries in this region are currently somewhere on the level of Greece and Portugal (GDP per capita). Crisis of economic transition achieved the lowest point in 1993. In 1994 and 1995, new economic growth is observed in most of CEEC-10 countries.

Agriculture is much more important in most CEEC countries than in EU. This is particularly true for Romania and Bulgaria, followed by the Baltic states. Some countries are traditional food exporters (e.g., Hungary and Bulgaria); to some extent also Poland and Romania.

¹The Commonwealth of Independent States-countries which belonged to the former USSR

²Czech Republic, Hungary, Poland, Slovakia, Slovenia

³Czech Republic, Estonia, Hungaria, Poland, Slovenia

The importance of agriculture during transition declines, particularly due to falling prices and production levels. Employment rate has quite a different pattern. As a "buffer" on the labour market it even raised in some countries (Romania, Bulgaria; also Poland and Slovenia). As a consequence there is still important part of labour force employed in agriculture and with 9.5 mio agricultural workers it exceeds agricultural labour force in EU-15 (8.2 mio). Productivity of agricultural workers in CEEC-10, measured by GDP undeveloped production per employer, is one third of average employer in these countries. Reasons for this can be found, inter alia, in lower production of milk and meat per animal caused by a lower genetic potential of animals and inadequate production technologies (systems).

Table 1. - CEEC IN COMPARISON WITH EU (1994)

| | Population (mio) | Total area (mio ha) | Agric. area | | GDP (bio ECU) | GDP p. c. | |
|---------------|---------------------|------------------------|-------------|-----------|------------------|-----------|-----------|
| | | | (mio ha) | (% total) | (ECU) | (ECU) | (ECU PPP) |
| Poland | 38.5 | 31. | 18.6 | 59 | 73.4 | 190 | 4838 |
| Hungary | 10.3 | 9. | 6.1 | 66 | 32.5 | 315 | 5967 |
| Czech Rep. | 10.3 | 7. | 4.3 | 54 | 26.7 | 258 | 7507 |
| Slovakia | 5.3 | 4. | 2.4 | 49 | 8.7 | 134 | 6367 |
| Slovenia | 1.9 | 2. | 0.9 | 43 | 9.8 | 501 | 7697 |
| Romania | 22.7 | 23. | 14.7 | 62 | 21.8 | 96 | 2941 |
| Bulgaria | 8.5 | 11. | 6.2 | 55 | 9.4 | 111 | 3754 |
| Balkan | 31.2 | 34. | 20.9 | 60 | 31.2 | 100 | 3163 |
| Lithuania | 3.8 | 6. | 3.5 | 54 | 2.3 | 62 | n.a. |
| Latvia | 2.6 | 6. | 2.5 | 39 | 2.2 | 85 | n.a. |
| Estonia | 1.6 | 4. | 1.4 | 31 | 1.5 | 93 | n.a. |
| Baltic states | 7.9 | 17. | 7.4 | 43 | 6.0 | 75 | n.a. |
| CEEC-10 | 105.5 | 107. | 60.6 | 56 | 188.3 | 178 | n.a. |
| Croatia | 4.7 | - | 2.3 | 41.0 | 11.8 | 257 | n.a. |
| EU-15 | 369.7 | 323. | 138.1 | 43 | 5905.1 | 1597 | 15879 |
| CEEC/EU | 29% | 33 | 44% | | 3% | 11 | |

Source: EU Commission DG VI (1995) & Schneider

Food in many CEEC countries still presents the most important part of household expenses (40-60% in Balkan and Baltic states, 30% in CEFTA); a process which diminishes the range of possibilities available to producers to increase food prices.

Table 2. - AGRICULTURE IN THE NATIONAL ECONOMY IN THE CEEC AND EU (1994)

| | Agric. production | | Agric. employment | | Agric. trade | | Food exp. |
|---------------|-------------------|--------|-------------------|----------------|---------------|---------------|----------------|
| | (bio ECU) | (%GDP) | (000) | (% tot. empl.) | (% tot. exp.) | (% tot. imp.) | (% hh. income) |
| Poland | 4.648 | 6.3 | 366 | 25.6 | 12.2 | 11. | 30 |
| Hungary | 2.068 | 6.4 | 39 | 10.1 | 21.8 | 7. | 31 |
| Czech Rep. | 0.871 | 3.3 | 27 | 5.6 | 7.7 | 9. | 32 |
| Slovakia | 0.512 | 5.8 | 17 | 8.4 | 5.9 | 9. | 38 |
| Slovenia | 0.250 | 4.9 | 9 | 10.7 | 4.7 | 8. | 28 |
| CEFTA+ | 8.349 | 5.5 | 459 | 22.1 | | | |
| Romania | 4.500 | 20.2 | 353 | 35.2 | 6.8 | 9. | 60 |
| Bulgaria | 1.131 | 10.0 | 69 | 21.2 | 20.7 | 10. | 48 |
| Balkan | 5.631 | 18.0 | 423 | 32.9 | | | |
| Lithuania | 0.259 | 11.0 | 39 | 22.4 | 12.8 | 10. | 58 |
| Latvia | 0.232 | 10.6 | 22 | 18.4 | - | - | 45 |
| Estonia | 0.266 | 10.4 | 8 | 8.2 | 11.0 | 16 | 39 |
| Baltic states | 0.757 | 10.7 | 71 | 19.4 | | | |
| CEEC-10 | 14.700 | 7.8 | 954 | 26.7 | | | |
| Croatia | 1.0 | 9.0 | 26 | 13.0 | n.a. | n.a. | n.a. |
| EU-15 | 208.800 | 2.5 | 819 | 5.7 | 8 | 9. | 22 |

Source: EU Commission DG VI (1995) & Schneider (1995)

Farm Structure of CEEC Agriculture and Animal Production

Before a process of economic transition, agricultural land has been mainly in the hand of agricultural production co-operatives and the state farms. The only two exceptions were Poland and Slovenia, where traditionally family farms were kept but they were discriminated against. In all CEEC countries there were in general very small households with agricultural production intended for self consumption purposes only. These structures have also defined the animal production systems.

After the first phase of transition there is still a process of restitution and privatisation of land going on. Concepts between countries are not comparable, which is shown from the data above. It is obvious that there is persistent process of formation of trimodal farm structure:

- large enterprises, previous state farms and co-operatives which are now organised as business firms and modern co-operatives; they are smaller and more efficient in animal production than before,
- bigger family farms with the production organisation similar to those of American or Australian farms; they dominate in crop production and in some extensive form also in animal production,
- small agricultural households and small part time farms, involved in self consumption production and in production for local markets with small number of animals per farm.

Table 3. - FARM STRUCTURE IN CEEC-10

| | Share in total agricultural area (%) | | | | | |
|------------|--------------------------------------|---------|----------------|---------|----------------|---------|
| | Cooperatives | | State farms | | Private farms | |
| | Pre-transition | Current | Pre-transition | Current | Pre-transition | Current |
| Poland | 4 | 4 | 19 | 18 | 77 | 78 |
| Hungary | 80 | 55 | 14 | 7 | 6 | 38 |
| Czech Rep. | 61 | 48 | 38 | 3 | 1 | 49 |
| Slovakia | 68 | 63 | 26 | 16 | 6 | 13 |
| Slovenia | | | 8 | 7 | 92 | 93 |
| Romania | 61 | 35 | 14 | 14 | 25 | 51 |
| Bulgaria | | 41 | 90 | 40 | 10 | 19 |
| Lithuania | | 35 | 91 | 1 | 9 | 64 |
| Latvia | | 17 | 96 | 2 | 4 | 81 |
| Estonia | | 33 | 96 | | 4 | 67 |

| | Average size (ha) | | | | | |
|------------|-------------------|---------|----------------|---------|----------------|---------|
| | Cooperatives | | State farms | | Private farms | |
| | Pre-transition | Current | Pre-transition | Current | Pre-transition | Current |
| Poland | 335 | 400 | 3140 | 2000 | 6.6 | 6.7 |
| Hungary | 4179 | 1702 | 7138 | 1976 | 0.3 | 1.9 |
| Czech Rep. | 2561 | 1430 | 6261 | 498 | 4.0 | 16.0 |
| Slovakia | 2654 | 1665 | 5162 | 2455 | 0.3 | 1.0 |
| Slovenia | | | 470 | 303 | 3.2 | 4.1 |
| Romania | 2274 | 170 | 5001 | 2002 | 1.5 | 1.8 |
| Bulgaria | | 750 | 13000 | 1100 | 0.4 | 0.6 |
| Lithuania | | 450 | 2773 | 124 | 0.5 | 2.6 |
| Latvia | | 706 | 3000 | 547 | 0.5 | 5.8 |
| Estonia | | 567 | 3500 | | 0.5 | 2.1 |

Source: EU Commission DG VI (1995) & Schneider (1995)

Changes in Production Systems⁴

The establishment of a large number of small private farms have led to the creation of specific animal production system in a number of countries.

Some elements of structural changes, such as a tendency towards the establishment of larger commercial units could be observed even in this short period. Although some elements significant for this type of the small-scale production systems could be traced back to the pre-collectivisation period, development, which took place during the last 4-5 decades, influenced adaptation of historical patterns to the new situation.

This is particularly true for changes in the land use (e.g. disappearance of public pastures, ban or restrictions regarding the access to forestry feed resources), the type of animals (higher feed requirements of new breeds) and new social patterns (smaller families, part time farming).

The traditional agrarian structures⁵ which can be found in a number of countries in the subregion are experiencing developments similar to those which took place in Western Europe some decades ago (emergence of larger commercial production units, reduction in number of small farms) and consequent changes in production systems.

Countries, which have retained large production units, are confronted with the need to update technologies and to adjust production systems to market requirements.

Livestock Production in Transition

In most CEEC countries agricultural production decreased drastically after 1989. Decline was most obvious in animal production. An important turn around is observed in 1994 - first in crop production. Causes for these changes are different, from market break-downs, declining demand, falling prices, inflation, abolishment of subsidies, inefficient food industry breakdown of the production support systems and services, liberalisation and increase in input of cheaper (subsidised) products and the suppression of many well managed state herds and the establishment of large member of small holdings with low level of technology also contributed to there decline and market channels to growing

⁴ In this paper, the production system is defined as a set of relationship involving ecological, technical, economic and sociological components, and activated by a farmer for the purpose of earning an income.

⁵ In former Yugoslavia, private farmers were not allowed to possess more than 10 ha of land, and the process of concentration of land and the establishment of larger more productive private units was halted.

input prices. Outstanding crisis in animal production is caused by the fact that the consumption of products of animal origin (particularly meat) was extremely high comparable to average income in Communist era. Investments were at least partially financed by state, inputs were subsidised, some farms were too big with low efficiency of labour and capital employed. This is particularly true for state owned farms, where changes in economical conditions were most painful.

Table 4. - EVOLUTION OF LIVESTOCK PRODUCTION IN CEEC-10 (numbers)

| | Total cattle | | | Cows | | | Pigs | | | Sheep, Lamb and Goat (000) | | |
|---------------|--------------|-------|-------|-------|-------|--------|--------|--------|-------|----------------------------|-------|-------|
| | (000) | (000) | (000) | (000) | (000) | (000) | (000) | (000) | (000) | (000) | (000) | (000) |
| | 1989 | 1996 | 1998 | 1989 | 1996 | 1998 | 1989 | 1996 | 1998 | 1989 | 1996 | 1998 |
| Poland | 10100 | 7193 | - | 4738 | 3555 | - | 20169 | 20343 | - | 4336 | 608 | - |
| Hungary | 1690 | 928 | - | 663 | 421 | - | 8327 | 5032 | - | 2216 | 977 | - |
| Czech Rep. | 3506 | 1989 | 1690 | 1236 | 751 | 644 | 4790 | 4016 | 3995 | 471 | 134 | 94 |
| Slovakia | 1594 | 929 | - | 568 | 355 | - | 2698 | 2076 | - | 657 | 453 | - |
| Slovenia | 546 | 496 | 484** | 230 | 212 | 207** | 576 | 592 | 589** | 24 | 28 | 73** |
| Romania | 6416 | 3496 | 3284 | 2758 | 1983 | 1769** | 14351 | 7960 | 7133 | 17288 | 11086 | 9647 |
| Bulgaria | 1636 | 645 | - | 659 | 379 | - | 4119 | 2140 | - | 9045 | 4216 | - |
| Lithuania* | 2435 | 1384 | - | 850 | 678 | - | 2708 | 1196 | - | 105 | 40 | - |
| Latvia* | 1472 | 551 | - | 543 | 312 | - | 1555 | 501 | - | 197 | 86 | - |
| Estonia* | 819 | 463 | 313 | 300 | 227 | 162 | 1099 | 424 | 301 | 100 | 50 | 36 |
| Baltic states | 4726 | 2398 | - | 1693 | 1217 | - | 5359 | 2121 | - | 402 | 176 | - |
| CEEC-10* | 30459 | 18646 | - | 11557 | 8848 | - | 58963 | 42718 | - | 33352 | 18884 | - |
| Croatia | 823 | 461 | - | 503 | 311 | - | 1655 | 1197 | - | 743 | 427 | - |
| (% EU) | 35 | 24 | - | 32 | 26 | - | 58 | 39 | - | 33 | 19 | - |
| EU-15* | 85845 | 78747 | - | 36009 | 33617 | - | 101841 | 110937 | - | 101439 | 97753 | - |

Source: EU Commission DG VI (1995) & Schneider (1995)

A decline in animal production is even more apparent if we take into account number of animals by species (Table 5). Decline was most evident for number of cattle herds and sheep flocks (40% in average, up to 80% for sheep in Poland), and less obvious for total number of cows (approx. 20%). This process is most painful in Baltic states, previously oriented to Russian market. In comparison to EU-15).

Table 5. - MILK YIELD IN CEEC-10 (YIELD PER COW, kg/year)

| | 1989 | 1994 | 1997 |
|---------------|------|------|-------|
| Poland | 3358 | 3083 | |
| Hungary | 5043 | 4762 | |
| Czech Rep. | 4064 | 4057 | 4454 |
| Slovakia | 3647 | 2253 | |
| Slovenia | 2473 | 2676 | 2895 |
| CEFTA+ | 3595 | 3275 | |
| Romania | 1950 | 2000 | 2897 |
| Bulgaria | 3523 | 2709 | |
| Balkan | 2363 | 2155 | |
| Lithuania | 3808 | 2448 | 3104 |
| Latvia | 3637 | 3003 | |
| Estonia | 4252 | 3401 | 3809* |
| Baltic states | 3832 | 2768 | |
| CEEC-10 | 3382 | 2960 | |
| Croatia | 1871 | 1724 | 1842* |
| EU-15 | 4562 | 5156 | |

Source: EU Commission DG VI (1995) & Schneider (1995)

Average production per animal is in most CEEC countries smaller than in EU-15. The highest average level of production have Hungary, Czech Republic, Slovakia and Baltic states. Average milk yield per cow is presented in table below. Similar outputs are common also on previous state farms in Poland and Slovenia. In most countries average production per animal declined after 1989 due to problems with input supply, reorganisation of farms and as a consequence of difficult economic situation.

Livestock Prices and Measures

After first very turbulent years (i.e., a period immediately after the reform) more effort for stabilisation in agriculture is observed in all CEEC countries. Measures of agricultural intervention are different from state to state. Some countries (mostly CEFTA) have gradually built similar intervention system as is the EU Common Agricultural Policy, some others still practice administrative price and market channel control. CEFTA countries protect first

of all market of their staple commodities (cereals, sugar, milk, beef and pork), but this support is far to achieve the level of protectionism in the EU or EFTA countries. With PSE of 35% (Producer Subsidy Equivalent, OECD Protectionism measures) the highest level of protection has Slovenia, the CEFTA countries have PSE between 10 and 25%.

Other CEEC countries have prices that are under the world prices level and applying PSE criteria have no or even negative protection. Some countries such as Czech Republic, Slovakia and Slovenia have established special programs for disadvantaged areas.

Prices of agricultural products in CEEC countries are far below to those in EU, with important differences between countries. In Romania, Bulgaria and to some extent also in Baltic states prices are lower than on the world market and, as such, are also lower than long term production costs. Relatively the highest prices are in Slovenia, where some farm products are even more expensive than in EU.

In CEFTA countries cereals are cheaper than in EU, but prices of pork and poultry are on the EU level, which points at the low efficiency levels of white meat production in this area. Milk and beef prices in CEFTA countries are in contrast to pork prices under the world price levels, where it is difficult to cover material costs. Beef is more or less a by-product from combined cattle race Specialised beef races in CEEC countries are scarce.

Table 6. - FARM GATE PRICES FOR LIVESTOCK PRODUCTS IN CEEC-10, 1994

| | Milk (% EC) | | | Beef (% EC) | | | Pork (% EC) | | |
|------------|-------------|------|------|-------------|------|------|-------------|------|------|
| | (ECU/t) | 1994 | 1997 | (ECU/t) | 1994 | 1997 | (ECU/t) | 1994 | 1997 |
| Poland | 103 | 33 | - | 1240 | 40 | - | 1320 | 103 | - |
| Hungary | 220 | 70 | - | 1630 | 52 | - | 1260 | 98 | - |
| Czech Rep. | 172 | 54 | 65 | 1850 | 59 | 71 | 1200 | 94 | 83 |
| Slovakia | 164 | 52 | - | 1580 | 50 | - | 1130 | 88 | - |
| Slovenia | 292 | 92 | 90 | 2510 | 80 | 99 | 1710 | 134 | 113 |
| Romania | 179 | 57 | 93 | - | 42 | - | - | 109 | 111 |
| Bulgaria | 114 | 36 | - | 750 | 24 | - | 680 | 53 | - |
| Lithuania | 66 | 21 | 40* | 680 | 22 | 43* | 1040 | 81 | 78* |
| Latvia | 83 | 26 | - | 560 | 18 | - | 980 | 77 | - |
| Estonia | 83 | 26 | - | 360 | 12 | - | 550 | 43 | - |
| EU | 316 | - | - | 3130 | - | - | 1280 | - | - |

Source: EU Commission DG VI (1995) & Schneider (1995)

Outlook on milk, beef and pork market and changes in production systems

Methodological Remarks

Trends and scenarios of the expected development for three animal products (milk, beef and pork) for the period between 1989 and 2000 have been prepared by one of authors of this paper (E. Erjavec) and have been published in REU Technical Series No 47 (Breeding Strategies for Central and East European Countries, FAO 1997). Possible evolution has been outlined by applying the model of the FAO food balances using the production and the foreign trade data set. On the same basis, trends and scenarios for 2004 have been prepared for the present paper. Data on production and consumption and the balance between the two are presented in tables bellow. The same data were also used for simple estimation of per capita meet consumption. According to the scenario and methodology applied, it could be expected that the 10 CEE countries as a group will have a surplus of milk, beef and pork. However, some countries will remain net importers of pork.

Positive trends in the economical development for CEFTA and Baltic states between 4 and 5% were projected (lower in Hungary and Slovakia). For Romania and Bulgaria a slower development was assumed. Real income was expected to raise, parallel with it also food demand. The land reform will be finished at the end of the period. The agricultural support will not increase strongly comparable with the middle of 90s. It will be restricted by the budget constraints and with obligations of the GATT agreement. Some countries (CEFTA in particular) will continue to adjust their policy for future membership in EU, what despite some other possible conclusions imply systematic investments in agricultural infrastructure, including stabilisation of up- and down-stream industries. Some positive evolution signals have been already observed. Agricultural producers will improve the utilisation of inputs, which will in most countries result in the increase of production. However, the price gap between the CEEC and the EU will be reduced further. The demand is likely to rise faster than supply.

Milk Production

The CEFTA and the Baltic states are traditional net milk exporters. The most important products are butter, milk powder and cheese. Due to reducing number of dairy cows and falling milk yields, a supply is smaller than demand.

In the middle nineties the situation has been stabilised and milk yields have started rising again.

Milk production is likely to remain one of the most protected sectors in the CEEC. The issue of milk surpluses will not be resolved, however, the level of production in 1989 is not likely to be achieved again. The only exception is probably Slovenia.

Problems and Expected Changes in Milk Production Systems

Relatively low per cow milk production in CEE countries in comparison with the EU has been attributed to several key factors, such as

- low genetic potential of dairy herds;
- inadequate nutrition and shortage of feed;
- inadequate milking technology and low quality of milk;
- shortage of capital for investment in technology improvements;
- insufficient managerial skills both in fields of technology and economy of production.

Table 7. - MILK FOOD BALANCES

| | Production (000t) | | | | Domestic (000t) | | | | Balance (000t) | | | |
|------------|-------------------|--------|-------|------|-----------------|--------|--------|------|----------------|------|------|------|
| | 1989 | 1994 | 2000 | 2003 | 1989 | 1994 | 2000 | 2003 | 1989 | 1994 | 2000 | 2003 |
| Poland | 16404 | 11920 | 14000 | - | 15741 | 12320 | 13825 | - | 663 | -400 | 175 | - |
| Hungary | 2862 | 2000 | 2670 | - | 2806 | 2060 | 2448 | - | 56 | -56 | 222 | - |
| Czech Rep. | 4991 | 3197 | 3014 | 2736 | 3570 | 2589 | 2764 | 2486 | 1421 | 608 | 250 | 250 |
| Slovakia | 2055 | 820 | 1276 | - | 1446 | 1068 | 1166 | - | 609 | -248 | 1110 | |
| Slovenia | 601 | 562 | 634 | 663 | 437 | 486 | 537 | 557 | 164 | 76 | 97 | 106 |
| Romania | 3323 | 3000 | 5170 | 5292 | 3329 | 3019 | 3150 | 5321 | -6 | -19 | -37 | -29 |
| Bulgaria | 2135 | 1135 | 1575 | - | 2135 | 1135 | 5207 | - | 0 | 0 | 45 | - |
| Lithuania | 3235 | 1660 | 2209 | 2172 | 2300 | 1247 | 907 | 980 | 935 | 413 | 1081 | 1192 |
| Latvia | 1976 | 937 | 1187 | - | 1215 | 969 | 1148 | - | 760 | -32 | 39 | - |
| Estonia | 1277 | 772 | 694 | 785 | 950 | 667 | 670 | 758 | 327 | 105 | 24 | 27 |
| EU-15 | 127032 | 120002 | 19431 | - | 119002 | 113957 | 112634 | - | 8030 | 6045 | 6797 | - |

Source: EU commission DG VI (1995) & Schneider (1995)

In addition, it should be noted that the environmental and animal welfare aspects have been, in general, neglected in the existing milk production systems, particularly in large scale dair operations.

Future scenarios and developments in milk production systems will certainly be country specific and will depend on socio-economic conditions and policies. However, some general aspects of possible changes have been identified by various authors, including those who contributed to Round Tables and Workshops organised by EAAP and its Task Force and Contact Group on CEE countries. It is necessary to discuss at such Annual Meetings on the possible impact and influence of various factors on changes in milk production systems and, consequently on the total milk production in Europe.

These factors can be identified as follows:

- identification of national policy objectives in this sector, taking into account natural conditions, production potential, market and the external economic environment;
- improved genetic potential aimed at attaining the market oriented breeding objectives;
- redesigning production methods and implementation of animal welfare principles and sustainable environment friendly technologies for large scale dairy operations;
- improved milking technologies;
- improvements in farm management skills and practices;
- development of appropriate technologies and services (extension, A.I., input supply marketing of products) for small commercial and subsistence dairy farmers;
- provision of direct and indirect public (governmental) support for attaining social and economic policy objectives in this field.

Beef Production

Beef production in this group of countries is stemming almost exclusively from dairy herds and from combined breeds. If the milk production is to be increased due to the combined influence of two factors: recovery of per cow production and increased number of dairy cows, then it is possible to expect that the beef production will also recover from the current low level. Cross breeding with beef breeds which was a general practice in some countries, will continue. A possible reduction of number of dairy cows due to the increased per cow milk production and consequent decline in availability of calves from dairy herds for beef production still seem to be a remote scenario. Therefore, for this group of countries, contribution of beef breeds and cow-calf operations to the total beef production will remain marginal.

Production will increase in Romania and in Baltic states, but before 2000 will not have achieved the 1989 levels.

Table 8. - BEEF FOOD BALANCES

| | Production (000 t) | | | | Domestic use (000 t) | | | | Balance (000 t) | | | |
|------------|--------------------|------|------|------|----------------------|------|------|------|-----------------|------|------|------|
| | 1989 | 1994 | 2000 | 2003 | 1989 | 1994 | 2000 | 2003 | 1989 | 1994 | 2000 | 2003 |
| Poland | 637 | 450 | 550 | - | 691 | 464 | 593 | - | -54 | -14 | 15.0 | - |
| Hungary | 114 | 80 | 80 | - | 91 | 95 | 128 | - | 23 | -15 | 12.5 | - |
| Czech Rep. | 272 | 184 | 215 | 146 | 254 | 165 | 176 | 145 | 18 | 19 | 17.0 | 1 |
| Slovakia | 147 | 73 | 68 | - | 79 | 64 | 70 | - | 68 | 9 | 12.7 | - |
| Slovenia | 50 | 35 | 53 | 55 | 38 | 42 | 57 | 57 | 12 | -7 | -4 | -2 |
| Romania | 220 | 266 | 233 | 261 | 252 | 271 | 256 | 278 | -32 | -5 | -23 | -17 |
| Bulgaria | 123 | 97 | 97 | - | 138 | 106 | 106 | - | -15 | -9 | 12.5 | - |
| Lithuania | 224 | 120 | 88 | 93 | 93 | 82 | 89 | 94 | 131 | 38 | -1 | -1 |
| Latvia | 129 | 68 | 7 | - | 67 | 68 | 66 | - | 62 | 0 | 26 | - |
| Estonia | 75 | 28 | 21.5 | 23.4 | 40 | 42 | 25.3 | 25.2 | 35 | -14 | -3.8 | -1.8 |
| EU-15 | 8298 | 7857 | 8338 | - | 8136 | 7725 | 8191 | - | 162 | 132 | 21.6 | - |

Source: EU Commission DG VI (1995) & Schneider (1995)

Problems and Expected Changes in Beef Production Systems

Beef production systems varied from country to country. However, a number of problems common to the two major group of countries (collective/state large scale farms and small private farms) could be identified. These are:

- Inadequate nutrition, insufficient local production of feed and fodder crops;
- Temporary or chronic shortages of cereals and feed concentrates;
- Over-investment in housing facilities;
- Low profitability of operations;
- Low priority or disregard of etological and environmental aspects of operations.

Structural changes have already induced a search for new techniques and the emergence of specific production systems. Future developments will be strongly influenced by trends in beef consumption, and by the local and export demands. In this respect, it would be of interest to consider the following issues:

- Current beef consumption trends in WE in relation to CEE countries; consumers' perception regarding beef consumption and its possible impact on trends in beef production;

- Production potential in CEE countries (breeds, feed resources);
- Impact of the implementation of etological principles on the development of production systems in CEE countries;
- Possibilities and constraints for calf cow operation;
- Is there any space for development of small scale beef farms, problems and possible solutions.

Pork Production

The citizens of CEEC like to consume pig meat. In Poland, Hungary and Czech Republic a consumption of pork per capita is even higher than in EU. Extremely high level of consumption in Hungary does not reflect a real situation, since it includes high percentage of exported pork products. According to EU experts the supply in CEFTA countries (particularly in Poland) will stay far behind the demand. This region will remain for some period a net importer of pork.

Table 9. - PIG MEAT FOOD BALANCES

| | Production (000 t) | | | | Domestic use (000 t) | | | | Balance (000 t) | | | |
|------------|--------------------|-------|------|------|----------------------|-------|-------|------|-----------------|------|------|------|
| | 1989 | 1994 | 2000 | 2003 | 1989 | 1994 | 2000 | 2003 | 1989 | 1994 | 2000 | 2003 |
| Poland | 1854 | 1609 | 1785 | - | 1866 | 1705 | 1896 | - | -12 | -96 | -111 | - |
| Hungary | 1014 | 600 | 699 | - | 882 | 598 | 714 | - | 132 | 2 | -15 | - |
| Czech Rep. | 552 | 465 | 522 | 495 | 543 | 480 | 191 | 495 | 9 | -15 | 10 | 0 |
| Slovakia | 274 | 172 | 186 | - | 232 | 177 | 76 | - | 41 | -4 | -5 | - |
| Slovenia | 62 | 48 | 66 | 69 | 67 | 73 | 87 | 88 | -5 | -25 | -21 | -19 |
| Romania | 800 | 739 | 702 | 753 | 766 | 657 | 719 | 761 | 34 | 82 | -17 | -8 |
| Bulgaria | 412 | 214 | 280 | - | 409 | 217 | 995 | - | 3 | -3 | 0 | - |
| Lithuania | 250 | 83 | 98 | 113 | 149 | 86 | 104 | 118 | 101 | -3 | -6 | -5 |
| Latvia | 154 | 54 | 77 | - | 96 | 66 | 77 | - | 58 | -12 | 0 | - |
| Estonia | 125 | 37 | 28.9 | 32.5 | 73 | 31 | 38.8 | 40.0 | 53 | 6 | -9.9 | -7.5 |
| EU-15 | 15238 | 16010 | 6569 | - | 14676 | 15029 | 16069 | - | 562 | 981 | 500 | - |

Source: EU Commission DG VI (1995) & Schneider (1995)

Problems and Expected Changes in Pig Productions Systems

Pig production in the major part of CEE countries was marked by the existence of large scale pig farms organised as a closed system, of specialised decentralised units, and a number of small subsistence farms with limited marketable surpluses. Pig farms usually were an integral part of large conglomerates encompassing the whole chain: feed industry (sometimes also

production of cereals), pig farms, processing and trade. In general, pig industry in CEE countries, with some exceptions, was marked by:

- lower productivity in comparison with West European farms;
- lower feed efficiency;
- solved problems of animal waste disposal.

Problems which have emerged in developments of production systems in the period of transition to the market economy and factors identified as key issues for the future of the pig industry relate mainly to:

- modernization of production technologies and improvements in production performance through genetic advancement aimed at higher prolificacy, better feed conversion and improved carcass quality;
- integration of pig production systems in rural development schemes, taking into account economic and social aspects (rural employment) and environmental concerns (odor, waste disposal, water and soil contamination);
- possible new roles of existing large scale units (multi-site operations versus closed systems, integrating and servicing small subsistence units);
- influence of economies of scale on new production systems;
- improved animal health and animal welfare;
- reduced use of antibiotics for animal nutrition.

Table 10. - DOMESTIC USE PER CAPITA (kg)

| | Beef | | | | Pork | | | |
|---------------|------|------|------|------|------|------|------|------|
| | 1989 | 1994 | 2000 | 2003 | 1989 | 1994 | 2000 | 2003 |
| Poland | 18.2 | 12.0 | 15.0 | - | 49.1 | 44.2 | 48.0 | - |
| Hungary | 8.8 | 9.2 | 12.5 | - | 85.0 | 58.2 | 70.0 | - |
| Czech Rep. | 24.5 | 16.0 | 17.0 | 14.0 | 52.4 | 46.4 | 49.2 | 47.9 |
| Slovakia | 14.9 | 12.0 | 12.7 | - | 44.0 | 33.0 | 34.7 | - |
| Slovenia | 20.0 | 21.4 | 24.0 | 29.0 | 5.0 | 37.6 | 38.5 | 44.5 |
| CEFTA+ | 18.7 | 12.9 | 15.3 | - | 57.8 | 46.5 | 51.9 | - |
| Romania | 10.9 | 12.0 | 12.0 | 12.0 | 33.0 | 28.9 | 31.8 | 33.0 |
| Bulgaria | 15.4 | 12.5 | 12.5 | - | 45.6 | 25.7 | 33.8 | - |
| Balkan | 12.5 | 12.1 | 12.1 | - | 37.4 | 28.1 | 32.4 | - |
| Lithuania | 25.0 | 22.0 | 24.0 | 25.5 | 40.0 | 23.0 | 27.0 | 28.9 |
| Latvia | 25.0 | 26.5 | 26.0 | - | 36.0 | 26.0 | 30.1 | - |
| Estonia | 25.0 | 26.5 | 26.0 | 18.0 | 46.0 | 20.0 | 23.0 | 28.6 |
| Baltic states | 25.0 | 24.6 | 25.1 | - | 40.2 | 23.6 | 27.4 | - |
| CEEC-10 | 18.0 | 14.3 | 15.8 | - | 52.0 | 41.5 | 46.5 | - |
| EU-15 | 22.2 | 20.8 | 21.6 | - | 40.1 | 40.5 | 42.4 | - |

Source: EU Coauniuion DG VI (1995) & Schneider (1995)

Problems of a Further Development of Livestock Production in CEEC - A General Overview

It is obvious that due to non-negligible production potential (low productivity, available resources) animal production will increase again. On the way of recovering numerous structural problems will reduce its pace. Among others the following factors seem to be the most important:

– Insufficient access to capital. Despite huge amount of investments necessary to carry out the production, there is important deficit in capital for further development. Due to poor economic situation self financing is not enough, budget funds for public support are very restricted. Due to low rentability/profitability animal production is not attractive for private investors. Unresolved ownership problems only strengthen problem of financing.

– Agricultural structural deficits. Agriculture plays a role of the important social buffer in some transitional countries. Even additional small farms are established, and part-time farming together with other sources of income stabilise social peace in rural areas. This situation complicate further the process of modernisation. Rural population is mostly overaged, poorly educated and is not prepared to meet the market challenges:

Structural deficits in up- and down industries. Livestock production depends strongly on the accompanying industry. Food industry in many countries is in economic crisis, there is deficiency of know-how and a lack of foreign investors. International competitiveness is poor; despite the low input prices CEEC countries are expected to support export on world market. The issues discussed above represent a never-ending story in CEEC countries. Solutions are usually in the stage of “searching”, factual changes will likely to occur in a long term. These problems will define and create further agricultural development (particularly livestock sector), at least for the next 5 to 10 years. Knowledge, management, qualification and capital are dominant constraints for further development of animal production. These are also areas which need more and better defined international support.

EAAP activities on livestock production sector in Central and East Europe (CEEC)

In year 1990 during EAAP in Toulouse the members of CEEC requested for special (ad hoc) meeting on the problems of animal production sector in countries in transition. Council of EAAP accepted the wish and organized with Hungarian colleagues 1990 First Round Table in Budapest on Livestock

Production Problems in CEEC and formed Task Force composed from EAAP and FAO members.

With help of EAAP, FAO, and support of Commission of EU, WB, OIE, ISNAR and CEEC Governments there have been organised:

ACTIVITY FROM 1991 to 1998

17 different Round Tables, Workshops, Meetings and Sessions on EAAP Annual Meetings, in different CEEC and WE countries (Germany, Hungary, Poland, Croatia, Chech. Republic, Italy) with specific subjects like:

- Livestock Production in Eastern Europe as affected by current changes,
- Breeding Strategies for CEE Countries,
- Self help Organisation in Livestock Production in CEEC,
- Price Policies for Livestock Milk and Meat Products in CEEC,
- Quality Control and Requirements of Food of Animal Origin,
- Academic Education in Animal Production in CEEC,
- Organisation and Funding of Research in CEEC and others ...

12 proceedings from the round tables have been published by EAAP and FAO publications (see Literature).

NEAR FUTURE (1998-1999) there will be meetings on:

- Cattle Identification and Milk Recording in CEEC /ICAR/FAO/
- Pre-accession Strategies of CEEC in Livestock Production/Slovenia
- Quantity and Quality of Milk Production in CEEC/Berlin/Germany
- Problems of Protein Feed Supply in CEEC/INRA/France
- Academic Education/Credit System/Postgraduate Study/

New challenges and initiatives

The past policy as well as the recent initiatives of EAAP in support of CEE countries confirm that the animal production scientists from these countries, as well as representatives of governments and the private sector have been fully integrated in the EAAP programmes and that the specific problems of this group of countries have received a particular care and attention. This Session could be a good opportunity to define new directions and programmes. They may include:

- supporting joint research and technical co-operation in developing sustainable livestock technologies in market economy conditions, based on an environmentally friendly approach and animal welfare principles;

- monitoring developments in the livestock production systems;
- supporting improvements in farm management;
- promoting development of self help organisations in CEE countries and co-operation with similar organisations from eastern Europe;
- co-operation in restructuring the animal production research in CEE countries;
- preparation of an EAAP study on perspectives and prospects for livestock production in Europe for the years 2000, with special reference to CEE countries.

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RESTRUKTURIRANJE PROIZVODNJE STOKE U ZEMLJAMA SREDNJE I ISTOČNE EUROPE

Sažetak

Prije tranzicije glavni cilj razvoja u sektoru proizvodnje životinja u zemljama srednje i Istočne Europe (CEE) bio je postizanje samodostatnosti, a u nekim zemljama izvozna orijentacija. Rast troškova proizvodnje i niska produktivnost nadoknađeni su potporama. U prvim godinama tranzicije broj se životinja smanjio od 20 na 80% zbog drastičnog smanjenja potražnje (ukidanje potpora i smanjenje obiteljskih prihoda), prestanka tradicionalnog trgovanja i porasta proizvodnih troškova. Osnivanje velikog broja malih privatnih farmi dovelo je do stvaranja specifičnih proizvodnih sustava u mnogim zemljama. Zemlje koje su zadržale velike proizvodne jedinice suočene su s potrebom moderniziranja tehnologije u skladu s novim potrebama (tržište, okolina). Slijedeći zahtjeve zemalja CEE, EAAP je osnovao Skupinu za zemlje CEE. Ta je Skupina organizirala sedam sastanaka (okrugle stolove, radionice i seminare) u razdoblju od 1991. do 1996. Neki su stručnjaci iz CEE-a i Zapadne Europe sudjelovali na tim sastancima. Izdano je više od 1400 stranica radova i izvještaja. Skupina je završila svoju zadaću 1996. kad je osnovana Kontaktna skupina za zemlje CEE kako bi odredila glavna pitanja politike što utječu na životinjsku proizvodnju u CEE, pripremila i organizirala sastanke za iznošenje tih pitanja, te da potiče djelatnost veza između zemalja CEE i Zapadne Europe.

Ključne riječi: stočna proizvodnja, Srednja Europa, Istočna Europa

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