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# HUNGARY IN THE DECADE PRIOR TO EU ACCESSION, ANALYSING THE DATA (1990-2002)

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# Introduction

Public opinion has always keenly followed the convergence of the economic and social role of agriculture. This is especially true nowadays when adverse opinions are expressed in terms of the worth of the sector. Agricultural society is divided and evaluates the process in a contradictory manner, based on different political, economic and emotional identities. As a result, we consider it reasonable to utilise a rich database to truly illustrate and evaluate the converged condition. We hope that experts dealing with agro-economic, economic and social policies will receive a realistic view of the changes that characterised the country between the years of 1990-2002.

The agricultural economy, due to its distinct traits, continues to provide balance in the Hungarian national economy. The assertion that Hungary has been socially and economically more stable thanks to her advanced agriculture when compared to historically similar countries also holds true for the period prior to the examined period. The validity of this assertion, however, has decreased. A responsible agricultural policy cannot put at risk the traditional or emerging values without significant sacrifices.

The current situation of agriculture (ownership structures, production, investment, profitability, market-situation, financing etc) needs an objective review because Hungarians must face their disadvantages and advantages prior to EU accession. Unfortunately this has not taken place in agricultural research during the past decade.

We will try to summarise all the data and information which characterise the conditions of the Hungarian economy including agriculture, food industry, forestry, hunting and fishing as well as the primary wood industry between the years of 1990 and 2002. The study is mainly descriptive and its objective is not to analyse the reasons for the events, even if the authors could not avoid expressing their opinions regarding certain tendencies. The introduction of the facts is mainly based on a great deal of statistical data as well as earlier publications from the Research and Information Institution For Agricultural Economics (AKII). A great difficulty to overcome during the study was the fact that data for a longer period and with identical content were not always available. As a result we had to stray from our basic objective of detailing the period 1990-2002 and the application of the years of 1989,1990 at the calculation of percentages and indexes, in the case of some of the tables.

# 1. Hungarian agro-economy's share of the world production, compared to the production of the EU-15

Due to the relatively small size of Hungary, it can only produce a tiny portion of the world's production. Because of a lack of comparative data, we will illustrate this partially based on its share of external trade and partially on the indices of agriculture. Hungary represents less than one percent of the world's agricultural exports even though, being a net exporting country, the share of Hungary's exports exceeds that of our portion of production. The country's share of world exports was 0.58 percent in the year of 2001. Unfortunately this share has shown a decrease over the past decade. It was 0.75% in the year 1989 and it reached its minimum of 0.8 % in the year of 1991. Hungary's share of the world's agricultural import varies between 0.17 and 0.27 percent.

Analysing the agricultural indices available regarding Hungary and the rest of world, we observe that considering the average of 1989-1991 one hundred, the world's agricultural production had increased by 27,2% by 2002. However, Hungarian agricultural production decreased by 24.9% over the same period. It's obvious that the share represented in world production decreased to barely half the amount Hungary started out with.

Table 1

**The indices of agricultural production in Hungary and the world**

| Year | 1989-1991=100 | | | Prior year = 100 | |
|------|------|---------|-------------------------------------------------|------|---------|
|      | **World** | **Hungary** | **Hungary-the world differences in terms of rate, %** | **World** | **Hungary** |
| 1989 | 98. 1 | 102. 7 | 4.6 | .. | .. |
| 1990 | 100.7 | 96.5 | -4.2 | 102.7 | 94.0 |
| 1991 | 101.2 | 100.8 | -0.4 | 100.5 | 104.5 |
| 1992 | 103.5 | 78.6 | -24.9 | 102.3 | 78.0 |
| 1993 | 104.1 | 71.1 | -33.0 | 100.6 | 90.5 |
| 1994 | 107.1 | 71.8 | -35.3 | 102.9 | 101.0 |
| 1995 | 109.3 | 70.8 | -38.5 | 102.1 | 98.6 |
| 1996 | 113.7 | 76.0 | -37.7 | 104.0 | 107.3 |
| 1997 | 116.6 | 78.3 | -38.3 | 102.6 | 103.0 |
| 1998 | 118.2 | 78.1 | -40.1 | 101.4 | 99.7 |
| 1999 | 121.4 | 74.4 | -47.0 | 102.7 | 95.3 |
| 2000 | 122.8 | 67.5 | -55.3 | 101.2 | 90.7 |
| 2001 | 126.3 | 90.6 | -35.7 | 102.9 | 134.2 |
| 2002 | 127.2 | 75.1 | -52.1 | 136.5 | 83.4 |

Source: FAO Production Yearbook, 2000, Rome,
http://apps.fao.org/page/collections?subset=agriculture

Table 2

**The agricultural external trade of the World, the EU and Hungary,
million USD, Export**

| Year | World | EU-15 | EU-15 towards third countries (extra-EU) | Hungary | Hungary/ the world % | Hungary-EU-15 (extra-EU) % |
|------|-------|-------|------------------------------------------|---------|---------------------|---------------------------|
| 1989 | 302553 | 128258 | 34326 | 2179 | 0.72 | 6.35 |
| 1990 | 326244 | 148669 | 38773 | 2324 | 0.71 | 5.99 |
| 1991 | 329213 | 153756 | 37987 | 2624 | 0.80 | 6.91 |
| 1992 | 358012 | 169707 | 41285 | 2644 | 0.74 | 6.40 |
| 1993 | 339113 | 154075 | 42126 | 1969 | 0.58 | 4.67 |
| 1994 | 388826 | 172686 | 47101 | 2310 | 0.59 | 4.90 |
| 1995 | 443648 | 192382 | 54503 | 2900 | 0.65 | 5.32 |
| 1996 | 465819 | 199093 | 56928 | 2679 | 0.58 | 4.71 |
| 1997 | 457997 | 188785 | 57078 | 2800 | 0.61 | 4.91 |
| 1998 | 438113 | 186470 | 53943 | 2707 | 0.62 | 5.02 |
| 1999 | 417355 | 184541 | 51217 | 2256 | 0.54 | 4.40 |
| 2000 | 413140 | 175226 | 56412 | 2179 | 0.53 | 3.86 |
| 2001 | 412176 | 169328 | 56412 | 2394 | 0.58 | 4.24 |

Source: FAO database

Looking at the share of production, one gets a more favourable picture if one compares Hungary's production to that of the EU. The value of EU agricultural production was 151,380 million Euro in the year 2001, while the Hungarian data was 2374 million EUR[1]. This means that Hungarian agricultural production is 1.6 percent of the EU production. Another reason why it is feasible to compare Hungary's production to that of the EU is because the Union plays a very important role in both Hungarian agricultural imports and exports. It entailed 49.9% of Hungarian exports in 2002, and 49 % of Hungarian imports. The importance of the EU will further increase with accession, even though, the tendencies of the past 10 years indicate that the significance of the EU is increasing in terms of imports within the agricultural sector, rather than in the form of exports. In order to reverse this unfavourable tendency, the Hungarian agricultural and food industry must find its niche in the EU economy and become competitive with the Member States and later with candidate countries joining the EU. A realistic way of achieving this is to better adjust to the demand of the market and to expand market supplies. In order to find those segments of the market where Hungary could break in or strengthen its position, Hungary must adapt and innovate its products based on the results of thorough marketing research.

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[1] currency: 527.7 billion HUF 243.0 HUF/€ (Euro)

Table 3

**The agricultural external trade of the World, the EU and Hungary**
**million USD, Import**

| Year | World | EU-15 | EU-15 from third countries (extra-EU) | Hungary | Hungary/ the world % | Hungary/EU-15 (extra-EU) % |
|------|-------|-------|----------------------------------------|---------|----------------------|-----------------------------|
| 1989 | 328426 | 144451 | 48762 | 728 | 0.22 | 1.49 |
| 1990 | 353148 | 165113 | 53191 | 738 | 0.21 | 1.39 |
| 1991 | 354742 | 171334 | 52122 | 662 | 0.19 | 1.27 |
| 1992 | 387729 | 184611 | 52463 | 676 | 0.17 | 1.29 |
| 1993 | 356778 | 156431 | 47872 | 818 | 0.23 | 1.71 |
| 1994 | 405110 | 180381 | 57950 | 1096 | 0.27 | 1.89 |
| 1995 | 462227 | 197574 | 64826 | 1005 | 0.22 | 1.55 |
| 1996 | 479705 | 202014 | 64179 | 967 | 0.20 | 1.51 |
| 1997 | 467767 | 191396 | 61544 | 1115 | 0.24 | 1.81 |
| 1998 | 456924 | 194183 | 60444 | 1182 | 0.26 | 1.96 |
| 1999 | 442382 | 187893 | 55236 | 985 | 0.22 | 1.78 |
| 2000 | 434853 | 171995 | 54767 | 1026 | 0.23 | 1.87 |
| 2001 | 435719 | 172677 | 54767 | 1063 | 0.24 | 1.94 |

Source: FAO database

Hungary produces several types of horticultural products, which in terms of world production is less important but represents a greater volume in comparison with EU production. Maize and wheat are the two products with the greatest volume in terms of crop production. The world's wheat production has varied between 583 and 613 million tons in the last five years, but tending toward modest decline. EU wheat production varied similarly also, between 92 and 105 tons. Hungary's wheat production is more varied, therefore its share in the world production ranged between 0.45%, (in 1999) and (0.89% in 2001). In comparison to the EU, Hungary reached 2.7 and 5.6 percent during the same period. World maize production varies, and the same thing could be said about EU and Hungarian maize production as well. While Hungary only represents 1% of the world's maize production, this value almost reaches 20% of EU production in certain years.

The rate of sugar beet production is relatively small in comparison with both the world and EU production. Our share of world production is only 1 percent, while it makes up 2-3 percent of the total EU production. Contrary to this sunflower seed production (even though it often fluctuates) makes up 2-3 % of the world production and up to 15-28 percent of the EU's. (In the year 2002, it reached 28 percent)

Table 4

**The production of main crops and industrial plants in comparison to that of the EU and the world**

| Denomination | Year | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| **Wheat production (thousand tons)** | | | | | | | | | | | | | |
| World | 592341 | 546619 | 565265 | 564543 | 527459 | 550597 | 584839 | 613342 | 591632 | 583624 | 584994 | 582692 | 572879 |
| EU-15 | 88981 | 93995 | 87796 | 84051 | 85608 | 87712 | 99724 | 94715 | 103866 | 97766 | 105490 | 91713 | 104798 |
| Hungary in the % of the world | 1.05 | 1.10 | 0.60 | 0.54 | 0.92 | 0.84 | 0.67 | 0.86 | 0.84 | 0.45 | 0.63 | 0.89 | 0.68 |
| Hungary in the % of the EU | 6.97 | 6.39 | 3.90 | 3.59 | 5.69 | 5.26 | 3.92 | 5.55 | 4.79 | 2.70 | 3.50 | 5.64 | 3.72 |
| **Maize production (thousand tons)** | | | | | | | | | | | | | |
| World | 483177 | 494333 | 533652 | 476664 | 569126 | 516579 | 588572 | 586410 | 614003 | 600418 | 592999 | 609182 | 602589 |
| EU-15 | 24216 | 28911 | 31184 | 31704 | 29590 | 30368 | 35483 | 39386 | 36248 | 37460 | 38774 | 40531 | 40624 |
| Hungary in the % of the world | 0.93 | 1.57 | 0.83 | 0.85 | 0.84 | 0.91 | 1.02 | 1.16 | 1.00 | 1.18 | 0.84 | 1.26 | 1.01 |
| Hungary in the % of the EU | 18.58 | 26.79 | 14.13 | 12.76 | 16.09 | 15.41 | 16.88 | 17.34 | 16.95 | 18.98 | 12.85 | 18.96 | 14.98 |
| **Sugar beat production (thousand tons)** | | | | | | | | | | | | | |
| World | 309187 | 284250 | 280981 | 281395 | 254354 | 264816 | 265929 | 268248 | 260886 | 263020 | 245420 | 234245 | 246476 |
| EU-15 | 118814 | 107408 | 117587 | 117839 | 107253 | 111922 | 113841 | 121227 | 115023 | 118569 | 114789 | 104014 | 116026 |
| Hungary in the % of the world | 1.53 | 2.06 | 1.04 | 0.78 | 1.33 | 1.59 | 1.76 | 1.38 | 1.29 | 1.10 | 0.81 | 1.24 | 0.91 |
| Hungary in the % of the EU | 3.99 | 5.46 | 2.49 | 1.85 | 3.14 | 3.75 | 4.11 | 3.04 | 2.92 | 2.45 | 1.72 | 2.79 | 1.94 |
| **Sunflower seed production (thousand tons)** | | | | | | | | | | | | | |
| World | 22533 | 22949 | 21664 | 19973 | 21846 | 26367 | 24661 | 23481 | 24834 | 28476 | 26169 | 20903 | 23851 |
| EU-15 | 4376 | 4222 | 4090 | 3619 | 4053 | 3340 | 3918 | 3959 | 3496 | 3064 | 3332 | 3121 | 2800 |
| Hungary in the % of the world | 3.03 | 3.54 | 3.53 | 3.41 | 3.06 | 2.99 | 3.52 | 2.30 | 2.89 | 2.79 | 1.85 | 3.20 | 3.27 |
| Hungary in the % of the EU | 15.62 | 19.25 | 18.70 | 18.84 | 16.47 | 23.63 | 22.16 | 13.65 | 20.55 | 25.94 | 14.53 | 21.40 | 27.82 |

Source: FAO statistical data

If one compares the harvested areas of the same plants to world data, one can see that in the case of Hungary we get subsequently lower values, since Hungary's harvested production average is constantly higher than that of the world average. In the case of wheat, this means that while the harvested territory in Hungary makes up only 0.5 percent of the similar data of the world, our production averages exceed world average by 1.3-2 percent. The share is the inverse compared with the EU. Territorial data represent 6-7 percent while Hungarian wheat production makes up 60-80 percent of the EU average. This tendency is decreasing; in 1990 Hungary was about to reach the EU production average.

In the case of maize, with the exception of the bad harvest in 2000, our revenue constantly exceeds that of the world's average. At the same time, compared with the EU, our harvested production average makes up only 56-72 percent of the EU average. As a result of strong fluctuations in Hungarian harvested production average, it will either fall way below the world average or will highly exceed it, and the same holds true to the comparative data with the EU. In the case of sunflower seed production, Hungarian production averages continually exceed both the production averages of the world and the EU. One exception was the year 2000, when Hungary reached an average value of production average while the EU reached an outstanding value.

Hungary's vegetable and fruit production does not show a similar statistical proportion with the above data either when compared with that of the world or the EU. Hungary only represents 0.26 percent of the world's vegetable production, and this tendency is decreasing.

Hungary's share of EU production is 3-4 percent. In terms of fruit production its share of the world's production is 0.3-0.4% and is also 3% of the EU production. Hungary's share of apple production is remarkable. Even though it constitutes 2.3 percent of the world's production (a statistic that is steadily decreasing), the figure of 7% in 2001 is still considered significant. Regarrding fruit and vegetable production, one may conclude that Hungary usually exceeds the world average, but it is very far from reaching the production average of the EU.

Table 5

## The comparison of harvested land covered by industrial plants and main crops with that of the world and the EU

| Denomination | Year | | | | |
|---|---|---|---|---|---|
| | 1990 | 1995 | 2000 | 2001 | 2002 |
| **Wheat: harvested land (thousand hectares )** | | | | | |
| World | 231285 | 219838 | 213709 | 213817 | 210599 |
| EU-15 | 17352 | 16618 | 18022 | 16727 | 18004 |
| Hungary in the world's % | 0.53 | 0.50 | 0.48 | 0.56 | 0.53 |
| Hungary in the EU % | 7.04 | 6.67 | 5.68 | 7.20 | 6.17 |
| **Maize: harvested land ( thousand hectares)** | | | | | |
| World | 131323 | 136383 | 138739 | 137597 | 138755 |
| EU-15 | 3665 | 3824 | 4228 | 4614 | 4449 |
| Hungary in the world's % | 0.82 | 0.76 | 0.86 | 0.89 | 0.87 |
| Hungary in the EU % | 29.53 | 27.02 | 28.21 | 26.44 | 27.00 |
| **Sugar beat: harvested land (thousand hectares)** | | | | | |
| World | 8657 | 7905 | 5969 | 5979 | 6041 |
| EU-15 | 2230 | 2137 | 1894 | 1892 | 1903 |
| Hungary in the world's % | 1.52 | 1.58 | 0.96 | 0.73 | 0.93 |
| Hungary in the EU % | 5.89 | 5.85 | 3.03 | 2.30 | 2.94 |
| **Sunflower seed: harvested land (thousand hectares)** | | | | | |
| World | 17039 | 20956 | 21081 | 18398 | 18934 |
| EU-15 | 2698 | 2503 | 1907 | 1908 | 1660 |
| Hungary in the world's % | 2.04 | 2.34 | 1.41 | 1.84 | 2.21 |
| Hungary in the EU % | 12.86 | 19.63 | 15.62 | 17.72 | 25.18 |

Source: FAO statistical database

Table 6

**The comparison of the average production of major crops and industrial plants with that of the world and the EU**

| Denomination | Year | | | | |
|---|---|---|---|---|---|
| | **1990** | **1995** | **2000** | **2001** | **2002** |
| **Wheat: production average (t/ha)** | | | | | |
| World | 2.5611 | 2.5046 | 2.7373 | 2.7252 | 2.7202 |
| EU-15 | 5.1279 | 5.2783 | 5.8533 | 5.4831 | 5.8209 |
| Hungary in the % of the world | 198.23 | 166.27 | 131.68 | 157.71 | 128.92 |
| Hungary in the % of the EU | 99.00 | 78.89 | 61.58 | 78.39 | 60.24 |
| **Maize: production average (t/ha)** | | | | | |
| World | 3.6793 | 3.7877 | 4.2742 | 4.4273 | 4.3428 |
| EU-15 | 6.6076 | 7.9409 | 9.1707 | 8.7836 | 9.1305 |
| Hungary in the % of the world | 113.00 | 119.58 | 97.77 | 142.30 | 116.71 |
| Hungary in the % of the EU | 62.92 | 57.04 | 45.57 | 71.72 | 55.51 |
| **Sugar beat: production average (t/ha)** | | | | | |
| World | 35.7134 | 33.5006 | 41.1173 | 39.1777 | 40.7980 |
| EU-15 | 53.288 | 52.3694 | 60.5982 | 54.9679 | 60.9785 |
| Hungary in the % of the world | 101.07 | 100.26 | 83.80 | 169.87 | 98.44 |
| Hungary in the % of the EU | 67.74 | 64.13 | 56.86 | 121.07 | 65.86 |
| **Sunflower seed, production average (t/ha)** | | | | | |
| World | 1.3224 | 1.2582 | 1.2413 | 1.1362 | 1.2597 |
| EU-15 | 1.622 | 1.3343 | 1.747 | 1.6356 | 1.6864 |
| Hungary in the % of the world | 149.05 | 127.64 | 130.75 | 173.93 | 147.94 |
| Hungary in the % of the EU | 121.52 | 120.36 | 92.90 | 120.82 | 110.51 |

Source: FAO statistical database

Table 7

**Fruit and vegetable production compared to that of the EU and the world**

| Denomination | Year | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| **Vegetable production\* (thousand tons)** | | | | | | | | | | | | | |
| World | 461763 | 464512 | 479778 | 508024 | 532663 | 560758 | 591205 | 599038 | 616529 | 628747 | 691894 | 698127 | 787363 |
| EU-15 | 52075 | 52453 | 51844 | 52059 | 52339 | 51465 | 54095 | 52966 | 54158 | 55330 | 55072 | 53537 | 53788 |
| Hungary in the world's % | 0.43 | 0.41 | 0.29 | 0.26 | 0.26 | 0.29 | 0.27 | 0.26 | 0.29 | 0.28 | 0.23 | 0.23 | 0.26 |
| Hungary in the EU % | 3.78 | 3.63 | 2.65 | 2.51 | 2.65 | 3.13 | 2.97 | 2.95 | 3.36 | 3.13 | 2.93 | 3.04 | 3.81 |
| **Tomato production (thousand tons)** | | | | | | | | | | | | | |
| World | 76162 | 75647 | 74589 | 77700 | 82767 | 86771 | 92187 | 87628 | 92013 | 95127 | 101976 | 100259 | 108499 |
| EU-15 | 13519 | 13548 | 12691 | 12740 | 13588 | 13016 | 14706 | 13754 | 14680 | 16020 | 16076 | 15129 | 14535 |
| Hungary in the world's % | 0.69 | 0.62 | 0.34 | 0.26 | 0.27 | 0.27 | 0.29 | 0.25 | 0.36 | 0.32 | 0.20 | 0.23 | 0.21 |
| Hungary in the EU % | 3.90 | 3.46 | 1.98 | 1.59 | 1.65 | 1.77 | 1.79 | 1.60 | 2.25 | 1.87 | 1.27 | 1.52 | 1.58 |
| **Fruit production\*\* (thousand tons)** | | | | | | | | | | | | | |
| World | 352349 | 352790 | 383160 | 388066 | 393347 | 409175 | 427267 | 442990 | 432296 | 444651 | 466414 | 466340 | 475504 |
| EU-15 | 57273 | 50385 | 65038 | 55964 | 55528 | 52417 | 56885 | 54194 | 54545 | 59062 | 60703 | 58604 | 56226 |
| Hungary in the world's % | 0.65 | 0.59 | 0.47 | 0.48 | 0.42 | 0.30 | 0.38 | 0.36 | 0.36 | 0.34 | 0.37 | 0.40 | 0.28 |
| Hungary in the EU % | 4.03 | 4.15 | 2.79 | 3.36 | 2.99 | 2.34 | 2.89 | 2.96 | 2.86 | 2.59 | 2.87 | 3.15 | 2.36 |
| **Apple production (thousand tons)** | | | | | | | | | | | | | |
| World | 41026 | 36865 | 46942 | 49244 | 48434 | 50454 | 56175 | 57475 | 57150 | 60203 | 58961 | 60237 | 57094 |
| EU-15 | 9436 | 6892 | 12303 | 9890 | 10191 | 9126 | 9888 | 9306 | 9551 | 10516 | 10583 | 10142 | 8804 |
| Hungary in the world's % | 2.30 | 2.33 | 1.42 | 1.66 | 1.36 | 0.70 | 0.98 | 0.87 | 0.84 | 0.75 | 1.18 | 1.16 | 0.82 |
| Hungary in the EU % | 10.02 | 12.47 | 5.41 | 8.29 | 6.45 | 3.87 | 5.58 | 5.37 | 5.05 | 4.28 | 6.56 | 6.90 | 5.34 |

\* With watermelon
\*\* Without watermelon
Source: FAO statistical database

Table 8

## The comparison of harvested territories in the case of fruit and vegetable production with the world and the EU

| Denomination | Year | | | | |
|---|---|---|---|---|---|
| | 1990 | 1995 | 2000 | 2001 | 2002 |
| **Vegetable, harvested territories* (thousand ha)** | | | | | |
| World | 31003 | 36101 | 42442 | 43023 | 46964 |
| EU-15 | 2288 | 2108 | 2038 | 2013 | 2001 |
| Hungary in the world's % | 0.54 | 0.40 | 0.22 | 0.23 | 0.23 |
| Hungary in the EU % | 7.32 | 6.93 | 4.49 | 4.92 | 5.43 |
| **Tomato, harvested territories (thousand ha)** | | | | | |
| World | 2880 | 3201 | 3750 | 3745 | 3989 |
| EU-15 | 290 | 247 | 270 | 254 | 248 |
| Hungary in the world's % | 0.69 | 0.53 | 0.16 | 0.21 | 0.18 |
| Hungary in the EU % | 6.82 | 6.84 | 2.24 | 3.14 | 2.97 |
| **Fresh fruit** harvested territories (thousand ha)** | | | | | |
| World | 41058 | 46438 | 48331 | 48749 | 50431 |
| EU-15 | 6080 | 5578 | 5711 | 5384 | 5406 |
| Hungary in the world's % | 0.63 | 0.51 | 0.42 | 0.49 | 0.38 |
| Hungary in the EU % | 4.23 | 4.23 | 3.59 | 4.40 | 3.59 |
| **Apple, harvested territories (thousand ha)** | | | | | |
| World | 5115 | 6416 | 5409 | 5594 | 5675 |
| EU-15 | 426 | 379 | 350 | 351 | 345 |
| Hungary in the world's % | 0.94 | 0.70 | 0.55 | 0.89 | 0.79 |
| Hungary in the EU % | 11.27 | 11.87 | 8.56 | 14.25 | 13.04 |

* With watermelon
** Without watermelon
Source: FAO statistical database

Table 9

## The comparison of the production average in the case of vegetables and fruits with that of the world and the EU

| Denomination | Year | | | | |
|---|---|---|---|---|---|
| | **1990** | **1995** | **2000** | **2001** | **2002** |
| **Vegetable production average\* (t/ha)** | | | | | |
| World | 14.8942 | 15.5330 | 16.3022 | 16.2267 | 16.7654 |
| EU-15 | 22.7591 | 24.4112 | 27.0258 | 26.5952 | 26.8775 |
| Hungary in the world's % | 78.81 | 71.01 | 108.25 | 101.45 | 112.49 |
| Hungary in the EU % | 51.57 | 45.18 | 65.30 | 61.90 | 70.17 |
| **Tomato production average (t/ha)** | | | | | |
| World | 26.4467 | 27.1066 | 27.1922 | 26.7699 | 27.2024 |
| EU-15 | 46.6661 | 52.7887 | 59.4940 | 59.4503 | 58.6831 |
| Hungary in the world's % | 100.80 | 50.46 | 123.69 | 107.40 | 114.88 |
| Hungary in the EU % | 100.80 | 50.46 | 56.53 | 48.36 | 53.25 |
| **Fresh fruit, production average (t/ha)** | | | | | |
| World | 8.5818 | 8.8111 | 9.6504 | 9.5661 | 9.4289 |
| EU-15 | 9.4201 | 9.3965 | 10.6299 | 10.8845 | 10.4002 |
| Hungary in the world's % | 104.46 | 59.06 | 88.29 | 81.59 | 72.63 |
| Hungary in the EU % | 95.16 | 55.38 | 80.15 | 71.71 | 65.72 |
| **Apple, production average (p/ac)** | | | | | |
| World | 8.0208 | 7.8642 | 7.7076 | 10.7674 | 10.0601 |
| EU-15 | 22.1640 | 24.0770 | 30.2096 | 28.8990 | 25.5050 |
| Hungary in the world's % | 245.57 | 99.74 | 212.38 | 130.02 | 103.82 |
| Hungary in the EU % | 88.86 | 32.57 | 76.64 | 48.44 | 40.95 |

\* With watermelon
\*\* Without watermelon
Source: FAO statistical database

In terms of livestock, with the exception of sheep, there has been an increase in every type of livestock (cattle, pigs, chicken) during the past years while the volume of livestock has drastically declined in every kind of animal in Hungary. Hungarian data show a decrease in Hungary in comparison with the rest of the world and the EU's share of livestock. The breed constituting the lowest value was cattle in 2002, which only made up 1% of the EU share, followed by sheep at 1.1%, chicken at 3.4% and pork at 4%.

Table 10

**The share of animal livestock in comparison to that of the world and the EU**

| Denomination | Year | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1990** | **1991** | **1992** | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** | **2001** | **2002** |
| **Cattle livestock (thousand heads)** | | | | | | | | | | | | | |
| World | 1296148 | 1297185 | 1302573 | 1305019 | 1318511 | 1320299 | 1329274 | 1322696 | 1334611 | 1338201 | 1346430 | 1351792 | 1366664 |
| EU-15 | 91718 | 90389 | 87108 | 84905 | 84018 | 84353 | 85180 | 84685 | 83530 | 83101 | 82490 | 81415 | 80780 |
| Hungary/ world % | 0.12 | 0.12 | 0.11 | 0.09 | 0.08 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.06 | 0.06 | 0.06 |
| Hungary/ EU% | 1.74 | 1.74 | 1.63 | 1.37 | 1.19 | 1.08 | 1.09 | 1.07 | 1.04 | 1.05 | 1.04 | 0.99 | 0.97 |
| **Pig livestock (thousand heads)** | | | | | | | | | | | | | |
| World | 857618 | 867114 | 871438 | 879991 | 885957 | 894988 | 862342 | 841890 | 882544 | 912708 | 908166 | 922929 | 941022 |
| EU-15 | 121869 | 116785 | 115195 | 118769 | 119890 | 118081 | 116417 | 120307 | 120690 | 125381 | 121168 | 121825 | 123671 |
| Hungary/ world % | 0.89 | 0.92 | 0.69 | 0.61 | 0.56 | 0.49 | 0.58 | 0.63 | 0.56 | 0.60 | 0.59 | 0.52 | 0.51 |
| Hungary/ EU% | 6.29 | 6.85 | 5.20 | 4.52 | 4.17 | 3.69 | 4.32 | 4.40 | 4.09 | 4.37 | 4.40 | 3.97 | 3.90 |
| **Chicken livestock (million heads)** | | | | | | | | | | | | | |
| World | 10619 | 11049 | 11472 | 11860 | 12519 | 12890 | 13481 | 14331 | 13600 | 14139 | 14461 | 14859 | 15854 |
| EU-15 | 911 | 907 | 918 | 923 | 935 | 935 | 957 | 966 | 992 | 981 | 1002 | 999 | 1005 |
| Hungary/ world % | 0.50 | 0.41 | 0.31 | 0.31 | 0.25 | 0.26 | 0.23 | 0.19 | 0.23 | 0.22 | 0.18 | 0.21 | 0.22 |
| Hungary/ EU% | 5.80 | 4.96 | 3.87 | 3.94 | 3.29 | 3.63 | 3.29 | 2.87 | 3.12 | 3.11 | 2.59 | 3.08 | 3.42 |
| **Sheep livestock (thousand heads)** | | | | | | | | | | | | | |
| World | 1204026 | 1182013 | 1158937 | 1135973 | 1124790 | 1090899 | 1079830 | 1064414 | 1065982 | 1068669 | 1057827 | 1056184 | 1034008 |
| EU-15 | 115551 | 116162 | 115632 | 115641 | 115164 | 112512 | 109630 | 113868 | 116495 | 115187 | 112220 | 106966 | 105061 |
| Hungary/ world % | 0.17 | 0.16 | 0.16 | 0.15 | 0.11 | 0.09 | 0.09 | 0.08 | 0.08 | 0.09 | 0.09 | 0.11 | 0.11 |
| Hungary/ EU% | 1.79 | 1.61 | 1.56 | 1.52 | 1.09 | 0.84 | 0.89 | 0.77 | 0.74 | 0.79 | 0.83 | 1.06 | 1.08 |

Source: FAO statistical database

Hungary's meat production makes up only 0.5 percent that of the world's production, representing a decline, since its share used to be around 1 percent in the beginning of the nineties. Hungary's share in the case of meat production is also relatively small in relation to that of the EU, only 3 percent.

The situation is similar in the case of egg production; Hungary's share of the world's production is 0.3 percent with  the tendency toward decline.

However Hungary's situation is different regarding some kinds of meat. Hungarian cattle and sheep production compared to that of the EU is insignificant, and Hungarian pork production isn't strong either, but its share of pork entails 3.3% of that of the EU. Regarding chicken production, it's important to note that  Hungary's share constitutes 5% of that of the EU and Hungary has been able to pretty much maintain this level ever since the beginning of the nineties.

In both fishing production and logging Hungary represents only a negligible value. Hungary is not a big player in these fields compared with the EU either. In the year 2000, Hungary's share of fishing production was 0.3 percent, and its share in terms of logging was 1.5% in the year 2002.

Examining the data in production changes involving the more important products, we can see that the production rate of the 11 most important products generally increased worldwide in 2002 in comparison to the data of 1990. (Only wheat and sugar beet production could be said to be an exception). The situation is similar within the EU Member States, (in the year 1990, calculated from the data of the 15 EU Member States); the production rate has shown an increasing trend among  the majority of the 11 products. At the same time, an increasing trend could only be observed for maize, sunflower seed and vegetable production, and there has been a decline in the production of the rest of the products. We consider this to be a warning sign, indicating a decreasing share of the world's agriculture. Stronger indications of decline could be seen in animal livestock, where, with the exception of sheep, the amount of world livestock has increased while the amount Hungarian livestock has decreased significantly in the case of every breed.

Table 11

**The production of animal products in comparison to that of the world and the EU (hand corrected)**

| Denomination | Year | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| **Meat production (thousand tons)** | | | | | | | | | | | | | |
| World | 179579 | 183687 | 187434 | 192125 | 198463 | 204626 | 206897 | 214934 | 222917 | 225945 | 232965 | 236541 | 245047 |
| EU-15 | 32983 | 33293 | 33300 | 33641 | 33770 | 34156 | 34835 | 34705 | 36007 | 36046 | 35966 | 35863 | 36244 |
| Hungary in the world % | 0.90 | 0.78 | 0.67 | 0.58 | 0.53 | 0.52 | 0.55 | 0.49 | 0.49 | 0.49 | 0.48 | 0.50 | 0.46 |
| Hungary in the % of the EU. | 4.89 | 4.31 | 3.78 | 3.32 | 3.10 | 3.10 | 3.26 | 3.05 | 3.01 | 3.06 | 3.14 | 3.29 | 3.12 |
| **Milk production(thousand tons)** | | | | | | | | | | | | | |
| World | 542491 | 534779 | 527763 | 529531 | 534328 | 539794 | 543271 | 547825 | 557664 | 562466 | 578080 | 584651 | 598687 |
| EU-15 | 130416 | 127616 | 125776 | 124402 | 124316 | 126098 | 126052 | 125022 | 124989 | 124740 | 125940 | 125930 | 125616 |
| Hungary in the world % | 0.53 | 0.47 | 0.45 | 0.40 | 0.37 | 0.37 | 0.37 | 0.37 | 0.38 | 0.38 | 0.38 | 0.37 | 0.38 |
| Hungary in the EU %. | 2.22 | 1.99 | 1.87 | 1.70 | 1.58 | 1.60 | 1.59 | 1.61 | 1.71 | 1.72 | 1.74 | 1.73 | 1.82 |
| **Egg production (thousand tons)** | | | | | | | | | | | | | |
| World | 37554 | 39185 | 39831 | 41508 | 45042 | 47067 | 50212 | 50302 | 52035 | 53745 | 55392 | 56594 | 58102 |
| EU-15 | 5245 | 5268 | 5200 | 5178 | 5346 | 5359 | 5287 | 5367 | 5408 | 5397 | 5201 | 5303 | 5380 |
| Hungary in the world % | 0.70 | 0.64 | 0.59 | 0.57 | 0.48 | 0.40 | 0.37 | 0.38 | 0.37 | 0.36 | 0.32 | 0.28 | 0.32 |
| Hungary in the EU % | 5.03 | 4.74 | 4.50 | 4.56 | 4.07 | 3.53 | 3.50 | 3.56 | 3.53 | 3.54 | 3.45 | 3.01 | 3.48 |

Source: FAO statistical database

Table 12

**The convergence of meat production in comparison to that of the world and the EU, (also, hand corrected)**

| Denomination | Year | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| **Beef production (thousand tons)** | | | | | | | | | | | | | |
| World | 53378 | 53836 | 52962 | 52404 | 53131 | 54000 | 54535 | 55169 | 55316 | 55867 | 56517 | 56647 | 57883 |
| EU-15 | 8948 | 9389 | 8863 | 8205 | 7869 | 7983 | 7950 | 7895 | 7736 | 7609 | 7396 | 7454 | 7502 |
| Hungary in the world's % | 0.21 | 0.23 | 0.23 | 0.19 | 0.14 | 0.13 | 0.12 | 0.11 | 0.12 | 0.10 | 0.09 | 0.07 | 0.08 |
| Hungary in the EU% | 1.27 | 1.31 | 1.39 | 1.18 | 0.92 | 0.86 | 0.79 | 0.80 | 0.84 | 0.75 | 0.69 | 0.54 | 0.64 |
| **Pork production(thousand tons)** | | | | | | | | | | | | | |
| World | 69908 | 70953 | 73088 | 75480 | 77963 | 78883 | 78830 | 82731 | 88000 | 88430 | 89584 | 91188 | 94186 |
| EU-15 | 15476 | 15096 | 15237 | 16057 | 16164 | 16095 | 16483 | 16365 | 17606 | 17862 | 17618 | 17544 | 17706 |
| Hungary in the world's % | 1.46 | 1.31 | 1.05 | 0.89 | 0.78 | 0.73 | 0.85 | 0.69 | 0.65 | 0.67 | 0.71 | 0.66 | 0.61 |
| Hungary in the EU% | 6.58 | 6.16 | 5.02 | 4.19 | 3.76 | 3.59 | 4.07 | 3.48 | 3.23 | 3.33 | 3.63 | 3.45 | 3.25 |
| **Poultry production (thousand tons)** | | | | | | | | | | | | | |
| World | 40827 | 42982 | 45207 | 47736 | 50467 | 54267 | 55875 | 59017 | 61243 | 63249 | 68010 | 69949 | 73869 |
| EU-15 | 6511 | 6734 | 7105 | 7272 | 7654 | 7935 | 8259 | 8374 | 8563 | 8461 | 8826 | 8852 | 9030 |
| Hungary in the world's % | 1.10 | 0.82 | 0.75 | 0.67 | 0.68 | 0.71 | 0.68 | 0.67 | 0.70 | 0.67 | 0.61 | 0.73 | 0.66 |
| Hungary in the EU% | 6.92 | 5.24 | 4.79 | 4.39 | 4.46 | 4.88 | 4.57 | 4.74 | 4.97 | 5.03 | 4.69 | 5.78 | 5.37 |
| **Sheep production (thousand tons)** | | | | | | | | | | | | | |
| World | 9697 | 9894 | 9943 | 10165 | 10395 | 10631 | 10658 | 11048 | 11314 | 11294 | 11437 | 11291 | 11549 |
| EU-15 | 1223 | 1234 | 1215 | 1219 | 1196 | 1187 | 1177 | 1105 | 1134 | 1137 | 1136 | 1034 | 1055 |
| Hungary in the world's % | 0.06 | 0.06 | 0.06 | 0.02 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.07 | 0.08 | 0.08 |
| Hungary in the EU% | 0.44 | 0.49 | 0.49 | 0.15 | 0.09 | 0.16 | 0.14 | 0.17 | 0.22 | 0.32 | 0.66 | 0.85 | 0.82 |

Source: FAO statistical database

Table 13

**The production share of fishing within the world and the EU production**

| Denomination | Year | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1990** | **1991** | **1992** | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** |
| **Fishing production (thousand tons)** | | | | | | | | | | | |
| World | 98550 | 98129 | 100742 | 104358 | 112190 | 116043 | 119944 | 122139 | 117790 | 126652 | 130434 |
| EU-15 | 7114 | 7253 | 7600 | 7480 | 7919 | 8287 | 7725 | 7862 | 7968 | 7548 | 7236 |
| Hungary/ world % | 0,03 | 0,03 | 0,03 | 0,02 | 0,02 | 0,02 | 0,02 | 0,02 | 0,01 | 0,02 | 0,02 |
| Hungary/EU, % | 0,48 | 0,41 | 0,39 | 0,31 | 0,30 | 0,28 | 0,27 | 0,28 | 0,22 | 0,26 | 0,28 |

FAO statistical database

Table 14

**The share of production of industrial wood in the world and the EU production**

| Denomination | Year | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1990** | **1991** | **1992** | **1993** | **1994** | **1995** | **1996** | **1997** | **1998** | **1999** | **2000** | **2001** | **2002** |
| **Industrial wood production (thousand m3)** | | | | | | | | | | | | | |
| World | 1701447 | 1562623 | 1487012 | 1479695 | 1480631 | 1512626 | 1503779 | 1546882 | 1515688 | 1526288 | 1574634 | 1552132 | 1579115 |
| EU-15 | 264548 | 199636 | 197017 | 198588 | 221136 | 230518 | 212891 | 223139 | 225808 | 224611 | 259346 | 248286 | 234539 |
| Hungary./world, % | 0.21 | 0.20 | 0.19 | 0.15 | 0.17 | 0.16 | 0.12 | 0.15 | 0.15 | 0.22 | 0.21 | 0.21 | 0.22 |
| Hungary./EU, % | 1.33 | 1.60 | 1.44 | 1.14 | 1.11 | 1.03 | 0.85 | 1.05 | 1.02 | 1.47 | 1.27 | 1.33 | 1.47 |

Source: FAO statistical database

Table 15

**The convergence of production in the case of main plant and animal products in 2002**
**1990=100**

| Denomination | Production of plant originated products | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Wheat** | **Maize** | **Sugar beat** | **Sunflower** | **Vegetable** | **Tomato** | **Fruit** | **Apple** |
| World | 96.7 | 124.7 | 79.7 | 105.2 | 170.4 | 142.4 | 134.8 | 139,2 |
| EU-15 | 117.8 | 167.8 | 97.7 | 64.0 | 103.7 | 107.5 | 98.2 | 93,3 |
| Hungary | 62.9 | 135.3 | 47.4 | 113.9 | 104.3 | 43.6 | 57.6 | 49,7 |
| | The production of animal products | | | Animal livestock | | | | |
| | **Meat** | **Milk** | **Egg** | **Cattle** | **Poultry** | | **Hen** | **Sheep** |
| World | 136.3 | 110.3 | 154.8 | 105.3 | 109.9 | | 148.4 | 85.7 |
| EU-15 | 109.9 | 96.3 | 102.6 | 88.1 | 101.5 | | 108.5 | 90.9 |
| Hungary | 70.2 | 79.1 | 71.0 | 49.0 | 63.0 | | 65.0 | 54.9 |

Source: FAO statistical database

# 2. Capacities of Hungarian agriculture

The basic resources of agricultural production, (labour-force, assets, land) along with certain variables, is still a source of comparative advantage on the international level for the national economy as well as for those living in rural areas. This definition is valid despite the tremendous changes that took place in terms of quantity, quality, ownership, methodology, and the economic environment of production assets. This social and economic reshaping has brought new pressures and a continual sequence of problems and difficulties to the surface. Some of these pressures were eased by the consolidated development over the past few years, but Hungary hasn't been able to eradicate the rest of the problems during the thirteen years since the political-economic transition. Due to the economic and rural character of the agricultural sector, the upcoming EU accession will propel rural society into a new phase. The reasonable application of resources and the rapid liquidation of anomalies, coupled with Hungarian national interests, will also play an important role in EU accession

In the following part of the study we shall observe the conditions of usage and ownership of land from the nineties up to the present period. Later we will analyse the distinct character of agricultural employment, living conditions and wages. In order to realistically evaluate the Hungarian situation, we will make comparisons with the international community, based on available data.

## 2.1. Arable land as the greatest resource of Hungary

Hungary's most important resource is productive land. Based on general criteria, the quality of arable areas, land types, physical conditions, climate, and landscape are favourable for agricultural production. However, factors influencing the quality of land show different tendencies in different parts of the country. The differences mainly pertain to the landscape, the physical characteristics and fertility of the soil, and also to water economisation/ irrigation. Climatic differences have also materialised in different geographical conditions, however climatic fluctuations limiting agricultural production are rare. There are smaller areas of production characterised by special conditions for production. They are *rural* which makes the cultivation of special products possible, and are further enhanced by culturally specific and traditional processing, thus increasing their individual quality.

Based on the statistical data (of 31st of May 2002), 83% (82.9%) of the country's entire 9.3-hectare territory is productive land. Sixty-three percent (62.9%) of the above territory is under agricultural cultivation. A large portion of this area, about half of the entire territory, is arable. Forests cover nineteen percent of the country's land, and one tenth belongs to the sector of grass land.

Table 16

**The utilisation of land according to branches of cultivation**

| Denomination | 1990 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|
| **The territories of cultivation branches, thousand hectares** | | | | | | | | | | |
| **Arable** | 4712.8 | 4714.4 | 4715.9 | 4712.7 | 4710.8 | 4709.5 | 4708.0 | 4499.8 | 4504.5 | 4515.5 |
| Garden | 341.2 | 35.0 | 90.2 | 98.2 | 109.2 | 109.4 | 107.7 | 101.6 | 97.9 | 98.5 |
| Orchard | 95.1 | 92.7 | 93.9 | 94.3 | 95.6 | 96.3 | 96.4 | 95.4 | 98.0 | 97.3 |
| Vineyard | 138.5 | 131.9 | 131.3 | 130.9 | 130.9 | 129.7 | 127.0 | 105.9 | 104.4 | 92.8 |
| Grassland | 1185.6 | 1148.0 | 1148.0 | 1148.3 | 1148.1 | 1147.8 | 1147.2 | 1051.2 | 1048.5 | 1063.1 |
| **Agricultural territory** | 6473.1 | 6122.0 | 6179.3 | 6184.5 | 6194.6 | 6192.7 | 6186.3 | 5853.9 | 5853.2 | 5867.3 |
| Forest | 1695.4 | 1766.5 | 1762.9 | 1764.5 | 1766.7 | 1769.3 | 1774.9 | 1769.6 | 1762.4 | 1771.7 |
| Reed | 40.3 | 40.8 | 41.3 | 41.2 | 41.3 | 41.2 | 41.1 | 60.0 | 60.4 | 60.0 |
| Fish-Pond | 26.9 | 27.2 | 27.0 | 27.0 | 33.0 | 32.8 | 32.8 | 32.0 | 32.3 | 33.0 |
| **Cultivated areas** | 8235.7 | 7956.5 | 8010.5 | 8017.2 | 8035.6 | 8036.1 | 8035.1 | 7715.5 | 7708.3 | 7732.0 |
| Uncultivated areas | 1067.5 | 1346.5 | 1292.5 | 1285.8 | 1267.4 | 1267.6 | 1267.9 | 1587.5 | 1595.1 | 1571.0 |
| **Total** | 9303.2 | 9303.0 | 9303.0 | 9303.0 | 9303.0 | 9303.0 | 9303.0 | 9303.0 | 9303.0 | 9303.0 |
| **The division of the branches of cultivation, %** | | | | | | | | | | |
| **Arable** | 50.7 | 50.7 | 50.7 | 50.7 | 50.6 | 50.6 | 50.6 | 48.4 | 48.4 | 48.5 |
| Garden | 3.7 | 0.4 | 1.0 | 1.1 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.1 |
| Orchard | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.0 |
| Vineyard | 1.5 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.1 | 1.1 | 1.0 |
| Grassland | 12.7 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 12.3 | 11.3 | 11.3 | 11.4 |
| **Agricultural territories** | 69.6 | 65.8 | 66.4 | 66.5 | 66.6 | 66.6 | 66.5 | 62.9 | 62.9 | 63.1 |
| Forest | 18.2 | 19.0 | 18.9 | 19.0 | 19.0 | 19.0 | 19.1 | 19.0 | 18.9 | 19.0 |
| Reed | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.6 | 0.6 | 0.7 |
| Fish-Pond | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 |
| **Cultivated areas** | 88.5 | 85.5 | 86.1 | 86.2 | 86.4 | 86.4 | 86.4 | 82.9 | 82.9 | 83.1 |
| Uncultivated areas | 11.5 | 14.5 | 13.9 | 13.8 | 13.6 | 13.6 | 13.6 | 17.1 | 17.1 | 16.9 |
| **Total** | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: The Statistical Yearbook of Agriculture, 2000, KSH 2001: Hungarian Statistical Yearbook 2000,
Monthly statistical data: 2002/7, KSH, 2002

Note:  The comparison of land areas is limited by the fact that between 1992-1994, the gardens of urban areas
had to be registered as uncultivated territories, which were classified according to their realistic utilisation
from 1995.The growing area of uncultivated land area reached 320 thousand hectares between 1999-2000
mainly affecting the sector of arable and grassland.

Examining the changes that took place between 1990-2002, a significant change
was the 10-percent decrease in agricultural areas, which was mainly the result of the
loss of territories from arable and horticultural areas. The fast decrease of productive
land is reflected in the growing area of land (147.5%) withdrawn from cultivation. As
a result of this, the share of land withdrawn from cultivation grew from 11.5% to
16.9%. The chronological comparison of the data must be viewed cautiously  due to
several changes of data resulting from their multiple utilisation. Horticultural areas for
instance were categorised as uncultivated areas from 1992. From 1995, they
continuously began to be categorised in their corresponding branches of cultivation.
Change in terms of land registration also draws attention to the large amount of
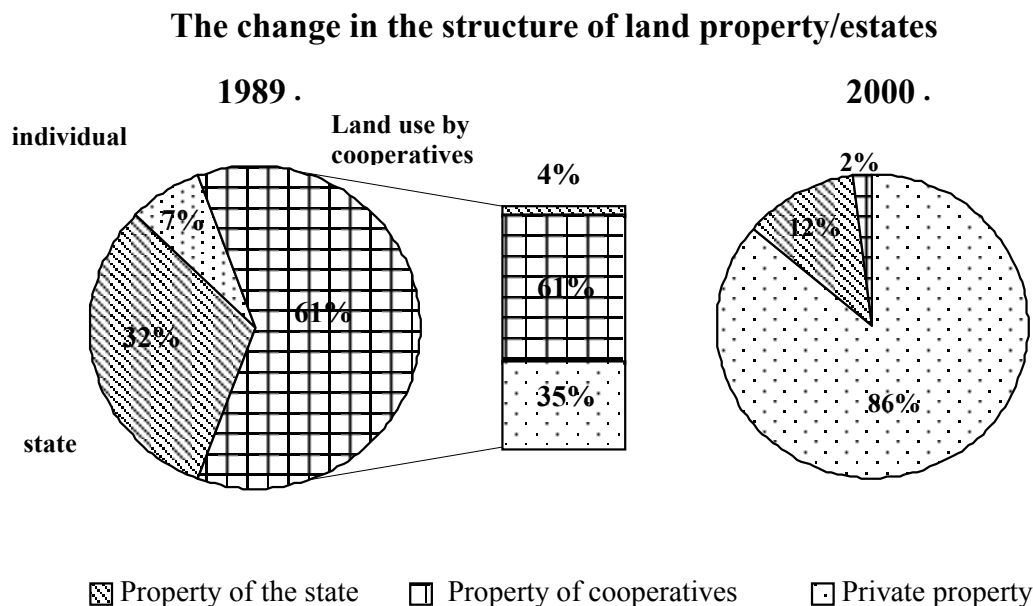uncultivated areas.

Another cause for concern is the 10% decrease in arable land, meaning more and more land is unsown. The amount of unsown land increased by 150% between of 1990-2002. This means that over 100 hectares of land were withdrawn from production.

The rate and the extent of the decrease in agricultural land described above will need special attention in the future given that conditions for agricultural production in Hungary are quite favourable, even in an international sense. The amount of agricultural land, (arable, horticultural areas/inner gardens, vineyards, grassland) is still pretty high, exceeding 60% despite the decrease that has taken place in the past few years. Out of the EU Member States, only Denmark approaches this number, where the proportion of agricultural land is around 50%. The Hungarian proportion of agricultural land exceeds that of the EU-15 by 23 percent and the proportion of arable land is 20% higher than that of the EU-15. However Hungary's proportion of forested areas is 16% lower than that of the EU-15. Another important factor, other than the proportion of arable land, is the combination of production factors (topology, climate, land quality and production traditions), which is a priceless, irreplaceable resource. The reasonable and compatible utilisation of this resource is fundamentally necessary.

During the past one and a half centuries several contradictory (in terms of their targets and purposes) land reforms have reshaped the ownership and the utilisation of land in Hungary. These changes basically hampered the co-ordinated development of agriculture, land-ownership, and utilisation. This co-ordination is a distinct part of EU agriculture, which is protected and encouraged by the state and has proven viable in the long run. Land utilisation in Hungary has been a mixture of legal strctures in terms of ownership over the past 50 years. This phenomenon was characterised by the separation of land ownership and land utilisation.
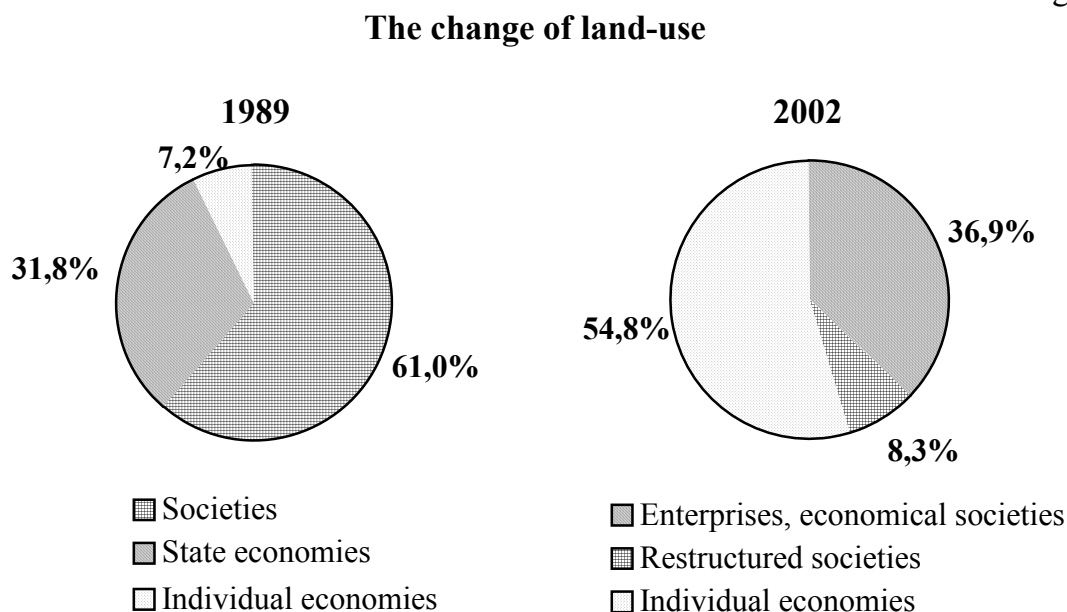
According to the data registered about ownership and utilisation at the end of the 1980s, 31.8% of the land had been utilised by state farms and enterprises, societies (economic organisations); 61% had been utilised by production co-operatives, (agricultural, fishing and specialised cooperatives combined) and 72 % of the land had been used by individual and small-scale operations. State and private farms including small-scale operations were all legal structures, representing individual and state ownership as well. Land utilisation and ownership were dealt with separately by the co-operatives, based on the make-up of co-operatives and individual land use. The corporations cultivated 3.5% as state holdings and 61.1% as common ownership of the co-operatives while 35.1% percent of the land was handed over for individual usage, meaning that it was owned by individual members of the co-operation. The purpose of the political-economic transition of Hungary, beginning in the 1990s, was the restructuring of ownership and the reintroduction of the dominance of private ownership. As a result of the changes about 86% of the land is privately owned. About 12 percent of the land under state control is let to business operations (government organisations, nature protection territories, national parks), and the restructured corporations make up two percent of the remaining area.

Figure 1

**The change in the structure of land property/estates**

**1989.**  **2000.**

individual

Land use by
cooperatives

4%

61%

7%

61%

32%

35%

2%

12%

86%

state

⊠ Property of the state    ▦ Property of cooperatives    ⊡ Private property

The changes of the nineties have significantly restructured the nature of land usage thus linking it to varying forms of commercial operations. As a result of the changes, the proportion of individuals utilising land attained (54.8%), exceeding half the area of productive land in the year 2002.The number of larger size operations and usage of public land has been constantly increasing and has reached over 1/3$^{rd}$ of the productive area, (36.9%). The share of cooperational land has decreased to barely more than 8% of the productive land.

Figure 2

**The change of land-use**

**1989**  **2002**

7,2%

31,8%

61,0%

36,9%

54,8%

8,3%

▦ Societies
■ State economies
☐ Individual economies

■ Enterprises, economical societies
▦ Restructured societies
☐ Individual economies

We only have partial information and estimated data on the true state of land ownership, as well as on the make-up of landowners and on the slightly flourishing land market, as well as on land rental. The KSH may serve as information regarding the 50% of land affected by land-lease, revealed every year on the 31st of May which reflects the present state of land ownership. More descriptive and detailed data could be found in the complete summarisation of agriculture, which is done in every ten years, most recently in the publication of (ÁMÖ2000).

Table 17

**The change of land use\* according to organisational forms (1990-2001)**

| Denomination | 1990 | 1995 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|
| **Enterprises, corporations** | | | | | | | | |
| - land area, 1000 hectares | 2145.8 | 2268.8 | 2093.5 | 2128.5 | 2318.5 | 2623.4 | 2734.9 | 2739.8 |
| - share, % | 26.1 | 28.3 | 26.1 | 26.5 | 28.9 | 34.0 | 35.5 | 36.9 |
| **Cooperatives** | | | | | | | | |
| - land area, 1000 hectares | 4937.8 | 2083.6 | 1730.6 | 1584.8 | 1412.7 | 1178.5 | 854.9 | 616.99 |
| - share, % | 60.0 | 26.0 | 21.5 | 19.7 | 17.6 | 15.3 | 11.1 | 8.3 |
| **Economic organisations** | | | | | | | | |
| - land area, 1000 hectares | 7083.6 | 4352.4 | 3824.1 | 3713.3 | 3731.2 | 3801.9 | 3589.8 | 3356.1 |
| - share, % | 86.0 | 54.3 | 47.6 | 46.2 | 46.4 | 49.3 | 46.6 | 45.2 |
| **Private farms** | | | | | | | | |
| - land areas, 1000 hectares | 1152.1 | 3658.1 | 4211.5 | 4322.0 | 4303.9 | 3913.6 | 4118.5 | 4070.7 |
| - share, % | 14.0 | 45.7 | 52.4 | 53.8 | 53.6 | 50.7 | 53.4 | 54.8 |
| **Total** | | | | | | | | |
| - land territory, 1000 hectares | 8235.7 | 8010.5 | 8035.6 | 8036.0 | 8035.1 | 7715.5 | 7708.3 | 7732.4 |
| - share, % | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: KSH.

A more detailed analysis of the above data could be done based on the dates of General Agricultural Census of 2000 (ÁMÖ 2000). The purpose, the method, the timing, and the system of criteria of the summarisation different from those of the annual publications; therefore there are numerical differences between the two databases. The summarised data in correlation with those of the EU, do not include those economies where the farm size[2], does not reach the minimal size as well as those areas where the users or cultivators cannot be identified personally.

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[2] Economy: A productive unit of agricultural activity which is separate in terms of an economic sense as well as in terms of technology.

Utilised at the 31st of March in 2000

- Productive area-arable, orchard, vineyards, meadow, grassland, reed, fish-pond separately or altogether at least 1500m² or
- Orchard and vineyard separately or altogether at least 500m².
  31st of March, 2000
- One large size of livestock ( cattle, pig, sheep, horse, goat and **buffaloes)**
- 50 heads of poultry (hen-kind, goose, turkey, guinea fowl), separately or altogether.
  25-25 Hungarian rabbit, furry-animal-meat pigeon or 5 families of bee
  During the 12 month of summarisation
- Has been doing agricultural services or
- Intensive horticultural production, (ex: green house-production, production under foil.)

This explains the differences between the statistical data and the data of ÁMÖ 2000 on land areas. The majority of economies with statistical size possess land, 96.2%. The land utilisation (meaning their relationship to the land) of the two legal structures, however differs significantly. The activities of the private farms are tightly connected to the land, while this is only true for barely 2/3$^{rd}$ of the economical organisations that deal only with animal husbandry or different services. A much greater proportion of landless commercialisation constitutes a severe problem for land-privatisation and land usage. A significant part of the operations suffer from a lack of land they can lease, or experience financial difficulties in doing so and are compelled to change their economic structure, and this is coupled with the expense of fodder (which also risks increasing production costs) in order to feed their animals.

Table 18

**The number and the territorial share of private farms and economic organisations, 2000**

| Denomination | The number of holdings Total | Holdings with land areas out of these | | | |
|---|---|---|---|---|---|
| | | Number per pieces | Share from all % | Scattering | Territorial share |
| Private farms | 958534 | 924788 | 96,5 | 99,4 | 40,5 |
| Economic organisations | 8382 | 5392 | 64,3 | 0,6 | 59,5 |
| Aggregated economies | 966916 | 930180 | 96,2 | 100,0 | 100,0 |

Source: ÁMÖ 2000 – Territorial data, KSH 2000

The current utilisation of land also indicates a lack of balance between economic structures. Sixty percent of land usage is connected to a negligible share (0.6%) of economic operations, mainly the legal inheritor of the earlier large size corporations. The private farms that entail 99.4% of the agricultural units cultivate on 40.5% of the land. We must also pay attention to those units that don't reach the statistical size, and that cultivate on land (including for hobby purposes) around the house, producing food for personal needs. Out of the 1.8 million units included in the census 960 thousand reached the minimal statistical farm size. Close to one half (46,4%) of the examined units do not belong to this category of holdings, but cultivate 16% of the productive land, meaning 1.3 million hectares of land.

There are differences between the two basic forms of land usage in terms of land – share and economy. The numerical proportion of private farms exceeds the national average by 8-10% in the case of agricultural areas such as Southern Transdanubia, and the Southern Great-Plains. Another determining factor is the equally high participation rate in the Northern Great Plains, where the majority of the great corporations experienced liquidation without any form of restructuring. Its role in the agricultural life is affected by the lack of other employment, which results in overproduction.

Table 19

**The regional scattering of agricultural lands areas (2000)**

| Regions | Involved in agricultural activity | | | | |
|---|---|---|---|---|---|
| | Economic organisations | Private farms | No-economy | Economic organisations | Private farms |
| | Their number in terms of share[1),]% | | | Their number in terms of territorial share[1),]% | |
| Middle-Hungary | 0.3 | 34.1 | 65.6 | 62.5 | 37.5 |
| Middle-Transdanubia | 0.5 | 45.1 | 54.4 | 67.6 | 32.4 |
| Western-Transdanubia | 0.6 | 54.6 | 44.8 | 68.9 | 31.2 |
| Southern- Transdanubia | 0.7 | 63.5 | 35.8 | 67.7 | 32.3 |
| Northern-Hungary | 0.3 | 48.1 | 51.5 | 66.5 | 33.5 |
| The Northern Great Plains | 0.4 | 59.2 | 40.4 | 48.4 | 51.6 |
| The Southern Great Plains | 0.5 | 62.3 | 37.2 | 47.6 | 52.4 |
| Country in total | 0.5 | 53.2 | 46.4 | 59.5 | 40.5 |

[1)] The number of economies, and their area together=100.0%
Source: General Agricultural Census, 2000-Teritorrial Data, and KSH 2000

Southern Transdanubia has maintained her position not only in terms of numerical share but in terms of territory also. However, in the Southern Transdanumian region, the amount of private farms remains way under (half) their numerical ratios. This can be traced back to legal successors of mainly former corporations. The land occupacy by economic organisations exceeds the national average by a 6-8-point average in every region of the country with the exception of the Southern and Northern Great Plains. We may conclude that these are signs of the different capacities, and traditions of the regions and indicative of their need to adjust.

The major changes in land ownership that took place in the nineties, (the compensation of earlier landowners and subsequent inheritance of land), the designation of territories of partial share and their subsequent classification.), have significantly increased the number of those legally connected to land, meaning ownership. This is regardless of whether they were connected to agriculture earlier or whether they intend to continue any agricultural activity on the land in their possession. Therefore the restructuring of the nineties resulted in a pretty chaotic and divided system of land ownership, where a secure livelihood from farm operations is still rare even a decade after changes in ownership structure.

The unfavourable effects of land ownership, resulting from the division of land according to legal possession, is somewhat compensated by the opportunity to lease land. The average size of land within economies with land is 2.8 hectares and it is 711.7 hectares within economic organisations. (The territorial average in terms of the entire economy does not show much difference in the case of private farms, however the difference in the case of economical organisations is pretty big, when those cultivators not holding land at their disposition are included, it comes out to be 457 hectares.)

The bipolar application of land is well illustrated by the comparison of economies according to size-categories: Nominatively:

- While the number and territorial rate of private farms tend towards smaller estates, the economic organisations represent the higher end of the scale, indicating the bi-polar usage of land and the characteristics as well as the differences in economic opportunities.
- An interesting distinction is that while there is a 9% difference in the territorial share of the two economic structures; there is a 110-fold difference in the number of economic organisations, tilting in favour of private farms.
- The sharp division of land in terms of private farms is reflected in their average size which barely reaches 3 hectares and the majority (95%), - along with close to 1/3$^{rd}$ of the productive land (34.1%)- are in the category of " below 10 hectares"; moreover, the majority of economies cultivating on less than 5 hectares of land (90.4%), pull the average down, meaning less than 1 hectare of land is used per economy.
- The third (37%) of the economic organisations at the other end of the land utilisation scale belong to the category above 300 hectares, constituting 90% of the economic group/sector, on a average territory of 1100 hectares.
- We may conclude that the number of middle-sized corporations is insignificant among private farms as well as their territorial share. One of the main objectives of the EU accession is to increase the number of these economies.

Table 20

**Private farms and economic organisations bearing regional territories and economic organisations in 2000**

| Denomination | Economies | | The size of area | | The average territory of an economy/ac |
|---|---|---|---|---|---|
| | Number | Division, % | Hectares | Scattering, % | |
| **Private farms** | | | | | |
| Under 10 hectares | 874037 | 94.5 | 890590 | 34.1 | 1.02 |
| 10-50 hectares | 43630 | 4.7 | 916730 | 35.1 | 21.01 |
| 50-100 ac | 4653 | 0.5 | 324920 | 12.4 | 69.83 |
| 100-300 ac | 2219 | 0.2 | 360209 | 13.8 | 162.33 |
| Above 300 | 249 | 0.0 | 121551 | 4.7 | 488.16 |
| Total | 924788 | 100.0 | 2614000 | 100.0 | 2.83 |
| **Economic Organisations** | | | | | |
| Under 10 hectares | 787 | 14.6 | 3067 | 0.1 | 3.90 |
| 10-50 ac | 1356 | 25.1 | 40640 | 1.1 | 29.97 |
| 50-100 ac | 593 | 11.0 | 45625 | 1.2 | 76.94 |
| 100-300 ac | 1101 | 20.4 | 232724 | 6.1 | 211.38 |
| Above300 | 1555 | 28.8 | 3511944 | 91.6 | 2258.48 |
| Total | 5392 | 100.0 | 3834000 | 100.0 | 711.05 |

Source: General Agricultural Census, 2000-Teritorrial Data, and KSH 2000

More time will be necessary for the formation and consolidation of those private farms capable of providng a livelihood and capable of surviving on an economic basis. The process is not hindered by intentions; however, it is hindered by lack of capital which troubles the economy as a whole, and the low production profitability. Even though the area of the private farms has increased five-fold in the last decade, it still does not reach 3 hectares. The majority of the economies still remain under 5 hectares, and do not provide livelihood for a family who must thus find other sources of income. Owners with less land usually let their land to economic organisations, or to private farms. This means that leasing reduces the unfortunate tendency of dividing land into smaller portions. However leasing is not without risk and results in cost increases as well as other disadvantages.

Table 21

**The number and territory of private farms owning land, according to the size of their holdings**

| Size of holding | Private farms | | Land area | | The average territory of one economy, ha |
|---|---|---|---|---|---|
| | Number | Share, % | Hectare | Share, % | |
| **In 1991** | | | | | |
| -5.0 | 1388551 | 99.5 | 566147 | 88.4 | 0.4 |
| 5.1-10.0 | 5556 | 0.4 | 36505 | 5.7 | 6.6 |
| 10.1- | 1646 | 0.1 | 37647 | 5.9 | 22.9 |
| Total | 1395753 | 100.0 | 640299 | 100.0 | 0.5 |
| **In 2000** | | | | | |
| -5.0 | 831666 | 89.9 | 588150 | 22.5 | 0.7 |
| 5.1-10.0 | 42731 | 4.6 | 303224 | 11.6 | 7.2 |
| 10.1-50.0 | 43630 | 4.7 | 917514 | 35.1 | 21.0 |
| 50.1- | 7121 | 0.8 | 805112 | 30.8 | 113.1 |
| Total | 924788 | 100.0 | 2614000 | 100.0 | 2.8 |

Source: Agricultural small-scale production I. KSH 1993, Private farming in agriculture 1994. KSH, 1995, General Agricultural Census 2000- Territorial Data, KSH.2000.

The slow territorial concentration of land and the compensating characteristic of production are expressed by the diversity of the 960 thousand private farms.

A large portion of the private farms (60.4%) only produce for self consumption, meaning that their contribution to families is not negligible, but may not be considered as vital. Above 30% have indicated that they produce above their personal consumption, meaning that they use this amount to complement their income. The proportion of commercial farms is only 8% (76.6 thousand). The proportion of those involved in economical services is only 0.2%. The 80,000 economies producing for the market will certainly be able to compete. The number of these holdings could be increased by EU subsidies and could come from the semi-commercial holdings.

Figure 3

**The division of private farms according to the purpose of farming**
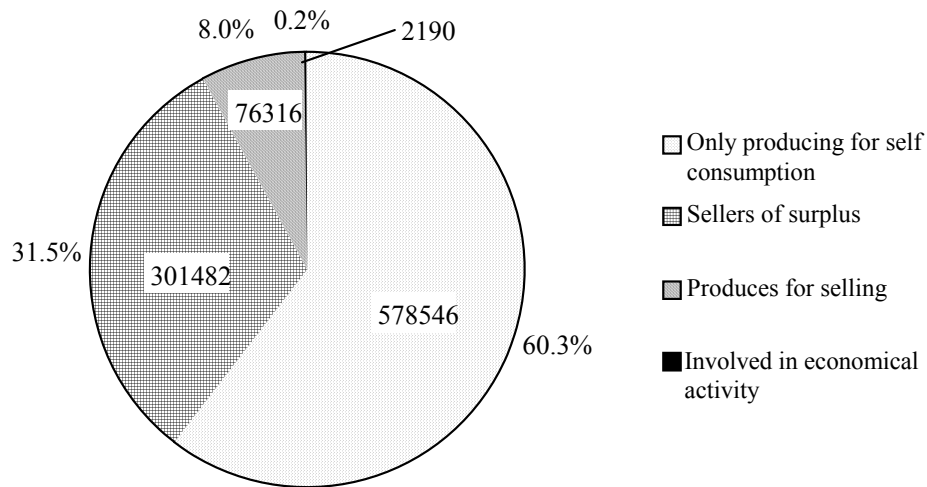


Source: ÁMÖ 2000, KSH, 2001

To estimate the consequences of EU accession on private farms, we must consider the significant differences between the utilisation of land in Hungary and the EU average as well as the Member States themselves. The average size of EU corporations (18.4 hectares), which is increasing, represents great fluctuations within the Member States. For instance, there is a sixteen-fold difference between the two fluctuating values, (Greece: 4.3 hectares, Great Britain: 69.3 hectares. A small average size also exists in Italy and Portugal, which is tightly connected to the large amount of sowed land. The size of corporations is increasing in every Member State, even if this tendency is different in each Member State. This increasing tendency was the most obvious (an increase in the size of the estate by over a third.) in Spain, Portugal and France in the nineties. The concentration of productive land is around 15-25% in the rest of the Member States also. Due to a declining agricultural population, coupled with the desire to keep the holdings intact, the Union tries to encourage the concentration of holdings by different means.

Within the EU It can be stated that the usage of land capacities greatly varies between the different size classes of holdings, and even within the size classes. These factors are a good solution toward disparities in terms of areas, employment and wages. In terms of their economic effect, they are a clearly defined, reliable, efficient base for the subsidy schemes. Obviously, these distinct solutions cannot be adapted to the Hungarian structure and usage of estates. However the adaptation of the experience, and the formation of an carefully considered political concept would serve to ease contradictions as well as the process of consolidation.

Table 22

**The average size of holdings in the EU countries**

| Denomination | Average size of co-operation, ha | | | Change: 1990=100% |
|---|---|---|---|---|
| | 1990 | 1995 | 1997[1] | |
| Greece | 4.3 | 4.5 | 4.3 | 100.0 |
| Italy | 5.6 | 5.9 | 6.4 | 114.3 |
| Portugal | 6.7 | 8.7 | 9.2 | 137.3 |
| Austria | - | 15.4 | 16.3 | - |
| Netherlands | 16.1 | 17.7 | 18.6 | 115.5 |
| Belgium | 15.8 | 19.1 | 20.6 | 130.4 |
| Spain | 15.4 | 19.7 | 21.2 | 137.7 |
| Finland | 20.7 | 21.7 | 23.7 | 114.5 |
| Ireland | 26.0 | 28.2 | 29.4 | 113.1 |
| Germany | 26.1 | 30.3 | 32.1 | 123.0 |
| Sweden | 32.9 | 34.5 | 34.7 | 105.5 |
| France | 30.5 | 38.5 | 41.7 | 136.7 |
| Luxemburg | 31.7 | 39.7 | 42.5 | 134.1 |
| Denmark | 34.2 | 39.6 | 42.6 | 124.6 |
| U.K. | 67.9 | 70.1 | 69.3 | 102.1 |
| EU-15 | - | 17.5 | 18.4 | - |

[1] The list of the Member States by thesize of the holdings is based on the annual data of 1997.
Source: Agricultural Statistical Yearbook, EUROSTAT

## 2.2. Employment and the convergence of average salaries within the agriculture

### 2.2.1. The national-economic characteristics of employment

The changes of employment and economic activity have all been affected negatively by unfavourable demographic factors (high mortality rate, low birth-rate, disadvantageous structure). Economic decline that lasted until the last trimester of the nineties, as well as the modifications in the different sectors of the nationaleconomy, have also affected it unfavourably. The massive liquidation of jobs and the unhealthy growth of the economically inactive followed the social and economic changes that influenced employment in the nineties. The above phenomenon still exists and is valid nowadays despite a decreasing rate of unemployment (which peaked at 12.6% in 1993,) and the flourishing economy in the last few years. Due to several contradictory factors influencing the labour market (increasing numbers of employable people, the massive liquidation of jobs and the decreasing rate of unemployment) the number of employable but inactive people has increased 1.7 times, by 169.3% between 1990-2002.If one considers the growth in idle potential workers by 940 thousand, and combines it with official unemployment figures, it has almost reached a level of 2.3 million persons. The gap between the active labour force and the inactive layers of the

population is the result of (in a way a positive trend but in the long-term risky in terms of job opportunities) the growing number of younger people continuing their studies, the large amount of early retirement when compared to other countries, and especially premature retirement that people are being pressured into. A third of the inactive population is made up of those staying at home or those that are pushed out of the labour force or those that do not even get in. Unemployment among women is 43.8%, which exceeds men by 10%.

As a result of the above phenomenon, all indicators of the economy show a significant decline compared to 1990, despite the fact that economic consolidation and employment have increased in the past few years. Regional differences have increased compared to the (5%), at the beginning of the decade. The unemployment situation is still the worst in northern Hungary and the Northern plains, which are only monolaterally industrialised and unfavourable for agricultural production. Less favourable tendencies are appearing in the Transdanubian regions also, where the rate of employment barely reaches 50%. The differening pace of agricultural development is reflected in the fact that the western Transdanubian regions now have a slight advantage and took the lead in employment between 2000-2001 from the central Hungarian regions.

Table 23

**The change of economic activity**

| Denomination | The share of employment[1], % | | | The rate of activity[2], % | | |
|---|---|---|---|---|---|---|
| | 1996 | 2000 | 200 | 1996 | 2000 | 2001 |
| Middle Hungary | 56.8 | 60.5 | 60.8 | 62.2 | 63.8 | 63.6 |
| Middle Transdanubia | 52.7 | 59.2 | 59.8 | 58.8 | 62.2 | 62.5 |
| Western Transdanubia | 59.3 | 63.4 | 63.2 | 63.9 | 66.2 | 65.9 |
| Southern Transdanubia | 50.3 | 53.5 | 52.5 | 55.6 | 58.1 | 57.0 |
| Northern Hungary | 45.7 | 49.4 | 49.6 | 54.0 | 55.0 | 54.2 |
| Northern Great Plain | 45.6 | 49.0 | 49.6 | 52.5 | 54.0 | 53.8 |
| Southern Great Plain | 52.8 | 56.0 | 56.2 | 57.6 | 59.0 | 59.4 |
| Italy | 52.4 | 56.3 | 56.5 | 58.2 | 60.1 | 59.9 |
| EU - | 60.1 | 63.3 | 63.3 | 67.5 | 69.0 | .. |

[1] Rate of employment: The rate of economically occupied people from (15-64) population;

[2] The rate of activity: The combined rate of the people within employable age group, including employed and unemployed.

Source:  The chronology of examinations of labour force 1992-2000, KSH, 2001.
          Employment in Europe 2001, European Commission, Luxembourg 2001.

Examining the current employment trends in different types of **settlements**, there is no reason to believe that the 30.4% employment rate of villages examined in 1996 differs from the regions where the most critical employment conditions exist, such as the northern plains, and northern Hungary. Employment opportunities are

decreasing as a result of the smaller population. In those villages where the population is between 50-100 persons, the number of inactive people unable to support themselves and thus forced to rely on social welfare or other help exceeds 70%

Due to the decline in the active labour force, there is great pressure on those employed, which is indicated by the growing gap between the active and the inactive population. While 100 employed persons had to support only 123 economically inactive people in the year 1990, this number increased to 168 after the peak of 1996 when the rate of the inactive population was 186 for 100 workers. In some counties of the most severely touched regions, an inactive population of 250-280 persons has to be supported by 100 active people. The gap between the active and inactive population is the greatest in the following counties: Szabolcs-Szatmár-Bereg, Borsod Abaúj-Zemplén and Nógrád. There are other labour market indicators, which justify the above statement, and the same thing could be said about the majority of communities.

Severe regional employment problems are also increased because of ethnic make-up, meaning the high amount of gypsies, which sometimes entail up to 40% of the population. While over 60 percent of the population live in cities, a similar amount of the gypsy population choose less populated regions, which do not provide them with job opportunities.

Those villagers, mainly living from agriculture, are less productive and thus their income becomes lower than that of the average person. Therefore, they assume a much greater burden than other people in supporting their families. The only thing dependent individuals can rely on, in a socio/economic sense, is their family as they haven't been able to receive social benefits from a system which is strongly tied to having employment. Support mechanisms introduced in 1999 have somewhat alleviated the above problem, but without creating job opportunities we can hardly expect any improvement. An obstacle to positive change is the fact that many families who had two working members, (which provided them with secure and stable support), have become families of only one breadwinner. In the worst regions, with small populations, it is not unusual to find that no family member enjoys any sort of job opportunities.

The Hungarian rate of employment was 7-9%, behind that of the EU average - and the gap measured by indicators only decreased by 1-1%, during the years examined. Our results regarding employment come closest to the Member States at the bottom of the employment rate list, meaning Greece and Spain. Our rate is below (10%) that of the Portugal average, which in many ways has similar economic capacities to Hungary.

EU employment policies, which are merely "recommendations", orient Hungary as well as the other candidate countries waiting for accession. These suggestions contain tips for the optimal utilisation of labour, creation of job opportunities, and for furthering adaptation, and for equal job opportunities. It is urgent to change Hungarian labour market conditions and an indicator of this urgency is the extremely high rate of unemployment among potentially active people, which

increased from (using our rate of 1990 as the basis) 22.8% to 36.32% by the year 2002.

## 2.2.2. Changes in the structure of employment in the various sectors

Negative factors influencing conomic and social restructuring were just as strong  up until the last trimester of the nineties. Following the low point in 1997, the anomalies of unemployment began to soften on a national economic level. The 1.3 million (26.7%) decrease in the number of unemployed was overturned by an average of 1-1.5% increase of the employment rate after 1997. However the growing number of working people did turn out to be permanent.

The decrease in the labour force market has significantly restructured the nature of employment according to national economic branches. The changes-similar to international trends- is characterised by a decline in the importance of the production sectors and the increasing significance of the service sector. The forest and agricultural sectors' share of the labour force decreased from 17.5% in 1990 to 6.2%  in 2002. The partial share of industry, including the construction industry, has gone below one third, (34.2%), and the service sector has approached 60%.

The decrease in the agricultural sector by 650 thousand people entailed the greatest unit of redundancies. About two-thirds of agricultural employees working in 1990 have been shed from the sector. Ninety percent of the dismissals were done during a critically short period, between 1990-1994. The shedding of employees exceeded the national average by 2.5 fold during the above period.

Figure 4

**The decrease in the number of the employed population within the major sectors of the economy**

All labour force output within the national economy between 1990-2000=100%
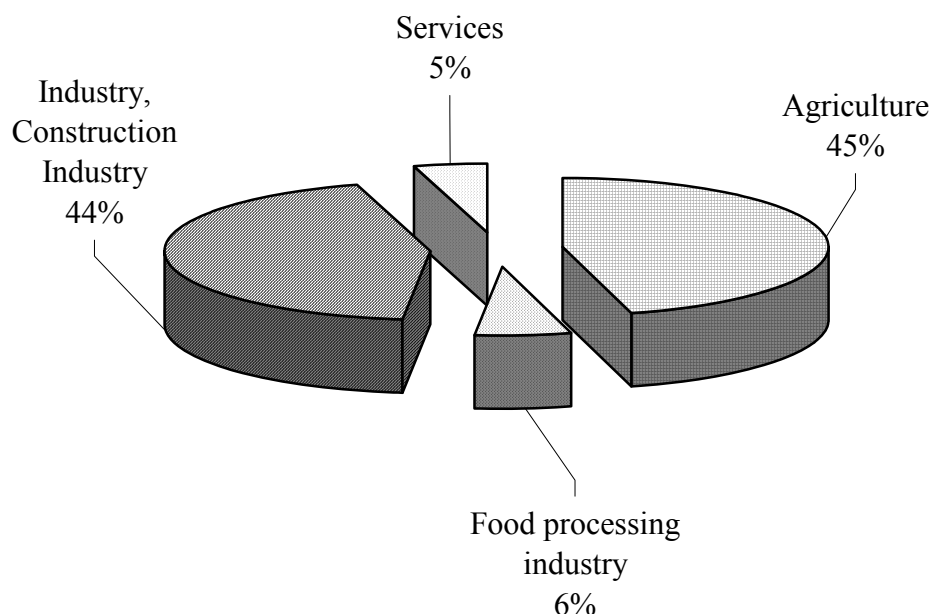


Source: The balance of the national economy, KSH, the data of the corresponding values

In the national economy close to 250,000 new jobs were created between 1997-2001. Undoubtedly this positive trend represents fluctuations of different directions in each economic sector. Unfortunately the rate of the above phenomenon shows a slow decrease. The newly created jobs are insufficient to employ the new demographical wave or to resolve the problem of the permanently unemployed. The increase in employment has barely had any positive effect on the situation of lightly populated rural areas. The agricultural sector was the only place where the shedding of employees has continued. The positive effects of employment did not have much of an influence on the rural communities; they only increased the rate of fluctuations there.

The trend toward growing service sector employment is similar to that of the economically developed countries. The basic difference is that this restructuring results in the development of engineering-technologies, the increase of labour force productivity, and the increase of purchasing power. In Hungary a similar trend in terms of employment was followed by a decline in productivity, and a catastrophic lag in engineering and technologies in certain sectors. Based on randomly chosen factor-pairs, several analysts have come to the conclusion of a favourable increase in labour productivity.

Table 24

## The change of the employed[1] within the major sectors of the national economy (1992-2002)

| Denomination | The employed | | | | | |
|---|---|---|---|---|---|---|
| | Number, 1000 pers | Division% | Number, 1000 pers. | Division % | Number 1000 pers. | Division % |
| | 1992 | | 1997 | | 2002 | |
| Agriculture | 460.1 | 11.3 | 287.8 | 7.9 | 240.9 | 6.2 |
| Industry, Construction Industry | 1431.0 | 35.0 | 1207.9 | 33.5 | 1319.9 | 34.1 |
| Producing sectors | 1891.1 | 46.4 | 1495.7 | 41.4 | 1560.8 | 40.3 |
| Service | 2191.6 | 53.6 | 2114.5 | 58.6 | 2309.8 | 59.7 |
| Total | 4082.7 | 100.0 | 3610.3 | 100.0 | 3870.6 | 100.0 |

Source: The regional chronological order of the labour force-1992-2000. KSH 2000. Periodic Statistical Reports, 2001/12 KSH 2002.
1) The long term examination of the number of active population according to sectors, and the number of employment type from 1992 which is based on the referred source. This means that it should be the demand of the analysis between 1990-2001.

A common characteristic of all regions of the country is the decreasing role of agriculture, meaning a slight employment increase of the industry and services. The national data show different results due to variations in the capacities and the production traditions in different regions.On the one hand, due to the decrease of employment in the agricultural sectors affecting every region, the differences in employment rate have somewhat evened out. On the other hand, those regions of significant agricultural production and favourable capacities, and traditions are still currently important and are registered because of their economic importance. The Southern Great Plains as well as the Southern Transdanubia along with the slightly industrialised and Northern Great Plains exceed the average agricultural production by 1.5-2.5 times. Characteristic of this type of activity, the people in these regions bond 3-4 times as strongly compared to the people living in cities.

Table 25

**The division of labour force according to sectors of the national economy per regions**

| Denomination | Agri-culture | Industry[1] | Services | Agri-culture | Industry[1] | Services | Agri-culture | Industry[1] | Services |
|---|---|---|---|---|---|---|---|---|---|
| | **1992** | | | **1997** | | | **2001** | | |
| **The share of labour force, %** | | | | | | | | | |
| Middle Hungary | 3.8 | 33.3 | 62.9 | 2.2 | 27.8 | 70.0 | 1.9 | 26.4 | 71.7 |
| Middle Transdanubia | 10.8 | 41.1 | 48.1 | 8.2 | 41.5 | 50.3 | 6.0 | 44.6 | 49.4 |
| Western Transdanubia | 12.6 | 39.3 | 48.1 | 7.2 | 39.7 | 53.1 | 5.4 | 42.1 | 52.5 |
| Southern Transdanubia | 16.3 | 32.7 | 51.0 | 11.7 | 31.5 | 56.8 | 9.8 | 33.9 | 56.3 |
| Northern Hungary | 9.1 | 40.8 | 50.1 | 5.6 | 39.3 | 55.1 | 4.8 | 39.0 | 56.2 |
| Northern Great Plains | 15.9 | 35.2 | 48.1 | 12.3 | 32.6 | 55.1 | 8.1 | 34.2 | 57.7 |
| Southern Great Plains | 22.9 | 31.2 | 45.9 | 16.6 | 32.1 | 51.3 | 14.2 | 33.9 | 51.9 |
| Italy | 11.4 | 35.5 | 53.1 | 7.9 | 33.5 | 58.6 | 6.2 | 34.4 | 59.4 |
| EU-15- | 6.4 | 33.2 | 60.4 | 4.9 | 27.8 | 67.3 | 4.2 | 26.4 | 69.4 |

[1] Industry and construction industry altogether
Source:  The regional time lines of the labour force market1992-2000. KSH, 2000
          Employment in Europe 2001, European Commission, Luxembourg 2001.
          Teréz Laky: Hungarian Labor Force Market, OFA, 2003.

Economic changes in the structure of employment, which have occurred in Hungary along with a severe decline in economic activity, are similar to trends in other countries. Employment in the service sector is 10% below that of the EU average (69.4%), and the employment rate in the industrial sector (26.4%) is (8%) lower that that of the EU. Involvement in the agricultural sector barely exceeds that of the EU (by 2%), which represents a value of 4.2% within the Union.

Employment trends in the various sectors became similar to those in the EU during the nineties. On the one hand, this fact represents positive trends in Hungarian economic structure as it is now more and more similar to that of the EU,  but it also shows the fiercely competitive situation which Hungary will face after accession. Another important fact is the urgent need for Hungary to prepare for economic competition prior to accession. Development of rural regions in connection with agricultural employment is thus an issue requiring special attention. The demands of the labour force and the role of the sector are influenced by several factors at the same time, (population, the share of agricultural territories, the capacities of land and the frequency of manpower). It would be a mistake to merely consider a minimum standard as an objective. In the highly populated countries with low agricultural employment rate, (Belgium, The Netherlands and the UK), the low employment rate in the agricultural sector does not mean that it is insignificant in terms of jobs. On an international scale, the data indicate that Hungary is much closer to the EU average in

terms of land capacity, and frequency of manpower in relation to the share of employees in agriculture. Of course there are significant differences behind the above parallels. In order to estimate the importance and and in order to retain a role for the agricultural sector, one must consider the more favourable production conditions of the EU members.

### 2.2.3. The characteristics and measures of employment in agriculture

The number of people employed in the agricultural sector shrank to half the amount (went down to 54.7%) between the years of 1992-2000,which amounts to (6.5%). One year later only 48% of those working in the sector in 1992 were employed in agriculture. The official rate at this time was 6.2%. The share of those depending on or connected to agriculture (even in order to supplement their income) highly exceeds this value and it would be difficult to tell the difference based on the statistics of different content and definition.

Based on the statistically measured number of occupants of the sector, on a regular basis, it can be stated that there has been decrease and restructuring  in all the legal entities within the sector. The most obvious change was the changing ratio of legal employment and membership of the corporations. The change in their share was barely any different at the beginning. This is the result of the restructuring of corporations into economic societies. The rate of the above process was sparked by initially modest intentions, which later on turned into the politics of agriculture. The share of employees within the sector approaches 60% (57.2%), while the share of cooperative members is 11.6% as their number had shrunk to one fifth of its original value.

Table 26

**The convergence of employment within the agriculture**

| Year | Their number total, 1000 pers | Number of employees within the agriculture | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Broken down to: | | | | | | | |
| | | Employed | | Member of cooperative | | Enterprises | | Helping family member | |
| | | 1000 pers | % | 1000 pers | % | 1000 pers | % | 1000 fő | % |
| 1992 | 460.1 | 193.4 | 42.0 | 176.0 | 38.2 | 69.5 | 15.1 | 18.9 | 4.1 |
| 1993 | 349.4 | 172.7 | 49.4 | 101.8 | 29.1 | 53.7 | 15.4 | 15.9 | 4.5 |
| 1994 | 327.6 | 167.0 | 50.9 | 80.7 | 24.6 | 55.2 | 16.8 | 13.8 | 4.2 |
| 1995 | 295.1 | 150.1 | 50.8 | 66.4 | 22.5 | 53.6 | 18.2 | 13.1 | 4.4 |
| 1996 | 302.4 | 162.0 | 53.6 | 60.3 | 19.9 | 59.0 | 19.5 | 12.9 | 4.3 |
| 1997 | 287.8 | 152.2 | 43.5 | 50.9 | 17.7 | 60.6 | 21.0 | 14.5 | 5.0 |
| 1998 | 278.8 | 158.6 | 56.9 | 42.3 | 15.2 | 57.2 | 20.5 | 13.1 | 4.7 |
| 1999 | 270.4 | 151.7 | 56.1 | 34.5 | 12.8 | 65.2 | 24.1 | 12.2 | 4.5 |
| 2000 | 251.7 | 144.1 | 57.2 | 29.2 | 11.6 | 62.9 | 25.0 | 10.0 | 4.0 |
| 2001 | 243.4 | .. | .. | .. | .. | .. | .. | .. | .. |
| The rate of change[1] | 52.9 | 74.5 | - | 19.6 | - | 93.8 | - | 64.5 | - |

[1] The value of change in %, shows the change between the two corresponding fluctuating data, with the exception of all agricultural workers the index is: 2000:1992=100%

Source: KSH

The number of people involved in agriculture part-time or for other purposes are the multiples of those officially working in agriculture. According to the data of the ÁMÖ in the year 2000, close to 2 million people were involved in farming for short or long periods. Their share within the national economy is 20.3%. This share increases a little when we relate the number of agricultural workers to the active population engaged in agriculture above the age 15.

Table 27

**The demography of the active workers and agricultural employees according to regions and counties (2000).**

| Denomination | Population within the active range | | | | | | The share of agri-cultural workers |
|---|---|---|---|---|---|---|---|
| | Total , persons | Broken down to: | | Population engaged in agriculture, persons | From this: | | |
| | | 15-59 | 60- | | 15-59 | 60- | |
| | | annual, % | | | annual, % | | |
| | 2403185 | 76.3 | 23.7 | 158387 | 70.5 | 29.5 | 6.6 |
| Middle-Transdanubia | 914718 | 77.9 | 22.1 | 188173 | 71.1 | 28.9 | 20.6 |
| Western-Transdanubia | 823370 | 76.4 | 23.6 | 222595 | 69.3 | 30.7 | 27.0 |
| Southern-Transdanubia | 808417 | 76.0 | 24.0 | 259134 | 71.0 | 29.0 | 32.1 |
| Northern-Hungary | 1037605 | 75.3 | 24.7 | 287772 | 69.4 | 30.6 | 27.7 |
| Northern Great Pains | 1226118 | 77.2 | 22.8 | 450486 | 72.5 | 27.5 | 36.7 |
| Southern Great Plains | 1112568 | 75.0 | 25.0 | 409226 | 70.9 | 29.1 | 36.8 |
| Total | 8325981 | 76.3 | 23.7 | 1975773 | 70.9 | 29.1 | 23.7 |

\* Unemployed

Source: The work-force of the private farms, 2000, KSH Budapest 2001

There is a 5.5 fold difference between the proportion of people working in agriculture in different regions. The most people tied to agriculture live in the regions of the Southern Great Plains: Southern Transdanubia and the Northern Great Plains. In the first two places the motivation comes from favourable circumstances and traditions while in the third region the main reason for involvement in agriculture is the result of the lack of job opportunities and critical employment conditions.

The significance of agricultural production based on the index of population is around 20% in the economically consolidated northern region of the country. At the same time agriculture remains in the background in the capital and larger cities in Hungary.

The majority of the 958.5 thousand private farms are run by one household, and there is only one elderly person living in every five households. The number of private farms operated by more than one household is insignificant, only (1.9%). There are no significant differences regarding the make-up of private farms, households and people.

### 2.2.4. Quality traits of the agricultural employees

In line with international tendencies, an ageing population within agriculture is a typical trend. Recent data reflecting the demography of the population indicate the extent of the process. Fifty-nine percent of the agriculturally employed population belongs to the middle-aged and elderly layer of the population, showing an increase of 13 percent. A quarter of the employees are over the age 50 and the proportion of 40-49 year old people is increasing. There are no signs that there is a young population ready

to replace their elders in agriculture. The involvement of young people is at its lowest in this sector when compared to other sectors (17.95). The enduring nature of this age factor is reflected by the 10% lower rate of young people planning to work in the sector and the 8-9% of the elderly population participating in different sectors.

Table 28

**The composition of labour force according to age groups (1990-2001)**

| Age groups- | The division of labour force according to age categories. % | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Agriculture | | | Industry | | | National Economy | | |
| | 1990 | 1996 | 2001 | 1990 | 1996 | 2001 | 1990 | 1996 | 2001 |
| 14-29 year | 23.5 | 21.8 | 17.9 | 28.2 | 29.7 | 28.4 | 27.2 | 28.5 | 26.6 |
| 30-39 year | 31.0 | 25.9 | 23.1 | 30.9 | 25.1 | 24.4 | 31.4 | 26.3 | 25.1 |
| 40-49 year | 27.2 | 35.1 | 34.0 | 26.5 | 32.7 | 30.1 | 26.9 | 32.3 | 29.8 |
| 50-X year | 18.3 | 17.2 | 25.0 | 14.4 | 12.4 | 17.1 | 14.4 | 12.9 | 18.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

[1] The division according to the composition of age groups in the first two periods, according to the number of occupied population in 2001.
Source: The convergence of employment, 1980-1996, Microcensus, 1996, KSH, BP, 1997, Population counting. 2001, 2. Detailed data based on the samples of representative data, KSH, 2001.

Contrary to the above tendency, a clearly positive change has occurred in the educational make-up of those employed in agriculture. Over half (55.3%) of the people working in agriculture in the nineties had only finished elementary school. This proportion decreased to 42.4% by 1996, and by the year 2001, it was only true for one third of the people. Currently close to 60 percent of the population involved is educated to an intermediate level (their rate has increased by 5.5 percent) and using 1990 as a base, the share of people with college or university degree has increased by 7.7%.

Table 29

**The composition of the active earners according to their education (1990-2001)**

| Education | The division of the employed according to their education | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Agriculture | | | Industry | | | National Economy | | |
| | 1990 | 1996 | 2001 | 1990 | 1996 | 2001 | 1990 | 1996 | 2001 |
| Elementary school | 55.3 | 42.4 | 34.0 | 42.3 | 25.1 | 19.5 | 38.6 | 21.3 | 15.4 |
| Middle school | 39.2 | 50.4 | 58.2 | 51.2 | 66.4 | 71.2 | 49.2 | 61.6 | 65.0 |
| Superior education | 5.5 | 7.2 | 7.7 | 6.5 | 8.5 | 9.2 | 12.3 | 16.8 | 19.6 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: The convergence of employment, 1980-1996, Microcensus, 1996, KSH, Bp 1997.
Population counting: 2001. 2, Detailed data based on the representative sample, KSH, 2001

However we are not satisfied with the development of the people's educational background in agriculture when we compare it to the average value of the national economy or to industry. The share of those with low education entails up to one third of agricultural employment which is still very high, 1.7-2.2 times that of the ratio in industry and the economy as a whole. he agricultural sector still lags 10-20% behind a similar index in industry. The "brain drain" of professionals is much worse. he service

sector enjoys a 20-% advantage in terms of highly qualified people in the national economy.

The make-up of the labour force in this sector, which is worse than that of the national average, leads to the conclusion that the nature of the work, the strong bond with the villages, and the low salaries are not attractive to young people. This particular phenomenon hinders Hungary's adjustment to EU requirements as well as to the new circumstances. It is worrisome that the rising educational level and the organisational and proprietal changes happening in agriculture are linked to major lay-offs in the sector. The restructured economic organisations laid off their uneducated employees in the first place, which in itself resulted in a higher educational level.

The education level of those working in private farms is similarly low. Close to half of the people working in agriculture are over the age 50 (47.9%). The rate of young people (under 30) working in the sector is only 17.5%. The proportion of the elderly working in agriculture exceeds the number of the youngest workers by 1.7 times. This changes when we consider commodity production where the younger generation exceeds the number of those above the age 60 by twofold.

We observe that in terms of education, the majority (92%) of the educated population has a degree (either middle or basic) that is not related to agriculture. The share of those that are highly educated is only 6%. In commodity production the average level of education is higher.

A troubling picture appears in terms of agricultural education, because an important condition of obtaining EU subsidies is to have people trained in agriculture working within the sector. Although agricultural training may be replaced by several years of professional experience, due to the reluctance of the younger generations and the upcoming departure of the elderly, it will be hard to meet EU standards for agriculturally trained workers. Out of the people working in private farms, 94.2 percent have very little or no education in terms of agriculture. The rate of those with no education is 38.8% and the rate of those with basic education is 55.4%. This lack of education is presumably complemented by several years of experience in the sector. Only 5.5 percent of agricultural producers hold intermediate or higher degrees. With the higher education in commodity production, the number of qualified people shall increase.

## 2.2.5. Income conditions of those working in agriculture

The incomes of the working population have very much deteriorated in the past decade. The real value of income for those people living from wages decreased by 26%, in two separate sequences, between 1990-2000. Up until 1996, the real value of wages had been decreasing. Following this period, thanks to economic consolidation, income began to increase slightly. As a result, wages exceeded real value by 13% in the year 2000 compared to the previous 4-year period.

The above tendency, present in most sectors in the national economy, has not occurred in a few sectors, including agriculture where the augmentation of net salaries did not match the inflation of consumer prices, which has in turn lead to the continous decline of the real value of agricultural wages. Income disparity has become a problem for agriculture.

Another disadvantage is the traditionally low position of agriculture, the lower educational level of the employees, and the opportunity for supplementary income which is taken into consideration by the decision makers also, and finally the low profitability of the sector.

We may only talk about the even division of income between different sectors in reference to the years at the end of the eighties. Then people working in the agriculture sector had been able to achieve this by doing a great deal of overtime. In the period afterwards, the disparity of income increased, then became a typical negative factor in the sector. The traditional integrated opportunities for supplementary income (supplementary and household plots), became very narrow. This phenomenon also negatively impacted on those living in rural regions but working in different branches of the economy. Because of the insufficient source of supplementary income, self-subsistence rapidly became a solution. This was especially true for those regions in economic crisis, where these options have become the main source of income for those in poverty.

Based on the national data of income disparity between 1990-2001, we can see that the average gross agricultural income fell 20-35 below the average in the industrial and economic sectors.

In analysing personal income tax, a smaller difference may be observed between the averages in net income. In terms of HUF, this means that in the year 2001, the gross income of people working in agriculture was 29,000-32 000 lower than the average of those occupied in the industrial and economic sectors. Also, the average agricultural income was 15000-16000 HUF lower than the national average net income. Summarising, we can state that the income disadvantages in agriculture increased during the 90s. The determining difference in average income 2200 HUF (1200 HUF net) in the year 1990, increased by ten times this amount, which is tremendous even considering the devaluation of HUF.

The constant and increasing gap between agricultural wages and other groups or branches between 1990-2001 were a result of lower annual increases in salaries than those in the industrial and other sectors of the economy.

Table 30

**The gross and the net income of the people employed in agriculture in comparison with the other sectors of the national economy**

| Denomination | 1990 | 1992 | 1994 | 1996 | 1998 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|
| **Gross average income (HUF/person/month)** | | | | | | | |
| - in the agriculture | 11268 | 15317 | 24671 | 34992 | 46171 | 59538 | 72144 |
| - in the industry | 13700 | 22038 | 33949 | 50223 | 68451 | 91533 | 104776 |
| - in the average of the economic sectors | 13446 | 22294 | 33939 | 47491 | 66192 | 87330 | 103254 |
| *Agricultural gross income* | | | | | | | |
| - In the %- of the industrial wages | 82.2 | 69.5 | 72.6 | 69.7 | 67.5 | 65.0 | 68.9 |
| - in the % of the average of economical sectors | 83.8 | 68.7 | 73.6 | 73.7 | 69.8 | 68.0 | 69.9 |
| **Net average income (HUF/person/month)** | | | | | | | |
| - in the agriculture | 8817 | 11710 | 18261 | 24809 | 33636 | 40905 | 45553 |
| - in the industry | 10273 | 15495 | 23387 | 32402 | 45437 | 57668 | 65438 |
| - in the average of the economical sectors | 10108 | 15628 | 23424 | 31086 | 44266 | 55650 | 64624 |
| *Agricultural net income* | | | | | | | |
| - In the % of the industrial wages | 85.8 | 75.6 | 78.1 | 76.6 | 74.9 | 70.9 | 74.6 |
| - In the % of the average of economical sectors | 87.2 | 74.9 | 78.0 | 79.8 | 76.0 | 73.0 | 75.5 |

[*] 1992-1996 is above 20 persons, the data of full time employees above 4 person from 1998.
Source: The ratio of employment and wages 1998-2001.KSH 2002

The rise in minimal wages in the past few years from HUF25.500 to 50.000 did not decrease the salary disparities between the different sectors. However, it is not negligible that the disadvantage of wages in the case of both the gross and the net income decreased by 1-2 percent in the first years of 2000. This way, the gross salary of the those involved in agriculture has reached 70% of the average of the national economy and three quarters of that of the net average.

Agricultural salaries in the nineties fell below those of the national and the industrial economy, in each year of the nineties. However in the year 2001, the situation altered. In the national economy average, there was an augmentation of 17%, and an augmentation of 15% within the industrial sector and an augmentation of 20% within the agricultural sector in terms of gross salaries. Contrary to the prior tendencies, the wage rises, for the first time, exceeded those of the other two sectors.

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# 3. The role of agriculture in the national economy, distributive shares and absolute numbers

## 3.1. The position of agriculture in the national economy

In the previous period agriculture was a crucial sector within the national economy. Althought its importance is declining, which is a natural phenomenon of economic development, its importance should not be underestimated. This importance is not only in an economic sense, but also in terms of sociology, and political interpretations. Through agricultural leadership and policies we should reach this target, and various factors should not be ignored when evaluating the sector. At the same time, those that give the sector a leading role within the Hungarian national economy should be viewed with caution. We must accept that agriculture cannot be a leading sector in a developed or moderately developed country. However, it can be a successful sector.. We are convinced that with astute and balanced leadership and policies, targets can be met.

The share of agricultural production in the GDP gradually decreased in the nineties and it made up 3.5% in the year of 2002. It is important to mention in connection with the chronological comparisons of data, that the activities beyond the basic activities of the large corporations fell under individual control in the years of 1991 and 1992. They managed their activities like other organisations and had partially left the sector. There was also a change in statistical classifications. All these factors played a role in the fact that while agriculture had been 12.5% of the GDP in the year of 1991, it did not even reach 8% in the following year 1992. This ratio has continuously decreased throughout the years. Along with the deteriorating results in agricultural production, we must take into consideration the fact that as a result of external capital investment, the output of other sectors has increased significantly.

The share of agriculture and food production, in other words agri-business, in the GDP was a source of political debate in the past decade. Calculations indicate that the 3-4% partial share of agriculture mentioned before made up a further 3-4% of the food industry. Should we include the other industrial sectors linked to agriculture, we may say that the agri-business makes up 12-15% of the GDP.

Agriculture's share of consumption has continuously decreased, with the exception of the years of 2000-2002 but not nearly as fact as within the GDP production. We could have evaluated the decreasing food consumption as a positive change, had it occurred within an augmentation in gross consumption. Unfortunately this was not the case. We have to talk about the realistic decline in food consumption, which resulted from the deterioration of living standards lasting till the end of the nineties. Professionals writing about food consumption state that there has been a 30% decrease in terms of nominal consumption. In our opinion, this is an exaggerated value. It isn't the rate of food consumption that has decreased, but rather the food consumption of retail stores has decreased by such a value. We are afraid that the

black and grey market began to gain a greater role in the food trade in the first part of the decade, as well as the role of individual production for personal consumption which could not be officially registered by the statistics.

The share of agricultural products and commodities of the food industry in gross exports has also decreased significantly. At the beginning of the nineties the share was 25-26 percent. However at the end of the decade it was only 8-9%. This share was still greater than that of agriculture, forestry, fishing and the food industry of the GDP. The balance of the external trade has constantly increased partially due the inflation, with the exception of the year 1999. Its value exceeded HUF 300 million in the years 1998 and 2000 (calculations based on the main products of the sectors), and reached HUF 352 million in the year 2002. Out of the productive sectors, the agricultural sector is the only one to have improved the country's current acount balance.

Investments from part of the economic organisations of forestry and fishing amounted to HUF 90 billion in the year 2001, exceeding that of the prior year, by 16.1%. 3% of all national economy investments were placed in the sector. In the period between 1980-1989 the agricultural sector had been receiving 10-11% of all the gross investments[3] according to statistics from that period.

When talking about the diversity of the role of agriculture within the national economy, we must mention its role in employment. At the beginning of the period analysed, the sector used to have a determining role, especially in terms of rural employment. Seventeen percent of the employed population was employed by this sector. By the end of the examined period this ratio decreased to 6.2 percent. This was the main reason for the horrendous unemployment in villages and certain rural regions of the country.

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[3] According to the calculations taken from the year 2002, the KSH takes into consideration the investments of agricultural nature from part of the households, and the share of agriculture including the above investors made up 6. 3% from the investments of the national economy in 2002.

Table 31

**The share of agriculture in the national economy**
**Calculated at current price**

| Year | The partial share of the agriculture | | | | | The balance of external trade flow in billion HUF |
| | Within GDP production | In consumption | In export | Within investment | Within employment | |
| | % | | | | | |
|------|------|------|------|------|------|------|
| 1990 | 12.5 | 37.0 | 24.9 | 8.7 | 17.0 | 104.1 |
| 1991 | 7.8* | 31.9 | 26.2 | 4.3 | 15.2 | 150.8 |
| 1992 | 6.5 | 31.0 | 24.8 | 2.9 | 13.0 | 156.6 |
| 1993 | 5.8 | 28.7 | 22.4 | 3.1 | 9.3 | 109.4 |
| 1994 | 6.0 | 28.7 | 21.6 | 2.9 | 8.7 | 132.5 |
| 1995 | 5.9* | 28.4 | 22.7 | 2.9 | 8.9 | 246.6 |
| 1996 | 5.8 | 27.3 | 21.0 | 3.4 | 8.3 | 276.8 |
| 1997 | 5.2 | 26.9 | 15.0 | 3.6 | 7.9 | 332.3 |
| 1998 | 4.9 | 26.5 | 12.1 | 3.6 | 7.5 | 338.2 |
| 1999 | 4.2 | 26.2 | 9.2 | 3.3 | 7.1 | 313.9 |
| 2000 | 3.7 | 29.2 | 8.0 | 2.7 | 6.9 | 350.4 |
| 2001 | 3.8 | 29.6 | 7.5 | 3.0 | 6.2 | 374.8 |
| 2002 | 3.5 | 29.9 | 7.8 | 6.3* | 6.2 | 352.4 |

* Methodologiical change.
Source: KSH, AKI

## 3.2. Investments

The evolving situation of the agricultural sector along with the effects of the social-economical revolution sweeping the sector caused a drastic decline in production. At the same time, strategic targets like EU accession made the stabilisation of the sector even more urgent, as well as innovations within the sector, which are mainly limited by lack of technology. Investment that may improve the conditions of agriculture is the means for improving efficiency and competitiveness of the sector.

Hungarian agriculture achieved a relatively high level in terms of agricultural assets from the beginning (beginning of the nineties) of the period examined, compared to that of the surrounding countries and comopared to Hungary's previous history. Hungary could thank its better output for the higher level of assets.

The sector had reached its highest level of investment in the year 1987, (with an amount of HUF 37.5 billion). This value decreased to 26 billion by the initial year of the examined period, 1990. At the beginning of the decade, the rate of investments declined severely every year, and calculated at current prices it was only HUF 16 billion by 1992. In the years following that period, the investment rate of the sector increased steeply and it reached HUF 90 billion in the year 2001.

However we may only obtain a realistic time-adjusted value of investment output by analysing at a constant price. Based on this analysis it can be seen that the investments implemented between 1992 and 1995 were 41-44% of the year 1990. Starting from this point however, even the volume of the investments increased annually. By the year 1998, it was almost twofold of the initial year, but the increasing trend in terms of volume stopped in 1999, therefore, the value of investments did not reach the data of the basic year, even in the year 2001.[4]

The decreasing significance of the sector is also revealed by the convergence of its share of the investments of the national economy. While this rate approached 10% at the end of the eighties and at the beginning of the nineties, it only accounted for 2% by the year 1992. Even though it subsequently increased, it was unable unable to exceed 3.7%. Altogether, agricultural investments devaluated in comparison with the significance of the sector, opening a dangerous door towards deterioration in competitiveness.

Sources of investment significantly changed throughout the past decade. Obviously, the sector's own sources of investment decreased. While the share of its sources was 70%, in certain years it exceeded 80%, but it did not reach 50% from 1992. This negative tendency is linked to the deterioration in profitability of the sector, coupled with years of drought and the excessive deficit in the period of adjustment.

The trends in agricultural investments in the past decade definitely support one thing: the biggest loser of the economic and marketing changes is the agricultural sector. On the one hand, the unfavourable make-up of resources of the agricultural sector was the cause for this phenomenon. On the other hand, weak and unreasonable agricultural policy was also responsible, and this because of contradictory objectives. This is mainly the reason why a HUF 600-700 billion investment has not been carried out, why the agricultural sector has such trouble recovering, and why it has been put on a steep, downward track: As a result of lack of innovations and compensation, the ability to adjust to market trends weakened; also the economic indicators regarding competitiveness and efficiency measured in natural resources have deteriorated: The sources for income have all been exhausted: These factors all serve as a principal basis for the devaluation of national subsidies.

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[4] The value of investment tendencies is a little less due to the fact that the annual economic KSH of the year 2002, only discounted the data of economic organisations, without taking in consideration the agricultural sort of investments of individual households. The share of the post mentioned investors has increased in the period examined.

Table 32

**The convergence of agricultural, game farming and forestry as well as the convergence of fishing**

| Year | The value of investments | | | |
| --- | --- | --- | --- | --- |
| | On current price, million HUF | It's price index Prior year=100 | On the same price of 1990 million HUF | Volume index Prior year=100 |
| **Agriculture, Forestry and game farming** | | | | |
| 1990 | 26396 | | 26396 | |
| 1991 | 21117 | 128.0 | 16498 | 62.5 |
| 1992 | 16200 | 118.6 | 10671 | 64.7 |
| 1993 | 19686 | 115.1 | 11266 | 105.6 |
| 1994 | 24476 | 120.6 | 11615 | 103.1 |
| 1995 | 29608 | 125.4 | 11205 | 96.5 |
| 1996 | 46134 | 121.5 | 14369 | 128.2 |
| 1997 | 61462 | 116.8 | 16390 | 114.1 |
| 1998 | 76677 | 110.9 | 18437 | 112.5 |
| 1999 | 79388 | 107.3 | 17791 | 96.5 |
| 2000 | 76759 | 108.3 | 15883 | 89.3 |
| 2001 | 89473 | 106.5 | 17384 | 109.5 |
| Total | 567376 | | 187905 | |
| **Fishing** | | | | |
| 1990 | 52 | | 52 | |
| 1991 | 73 | 117.2 | 62 | 118.9 |
| 1992 | 59 | 126.1 | 43 | 68.4 |
| 1993 | 85 | 116.8 | 49 | 115.5 |
| 1994 | 114 | 116.6 | 57 | 115.0 |
| 1995 | 291 | 119.1 | 121 | 214.3 |
| 1996 | 67 | 121.5 | 23 | 18.9 |
| 1997 | 371 | 116.9 | 109 | 473.7 |
| 1998 | 842 | 110.5 | 224 | 205.4 |
| 1999 | 720 | 109.1 | 175 | 78.4 |
| 2000 | 961 | 108.4 | 216 | 123.1 |
| 2001 | 798 | 107.9 | 166 | 77.0 |
| Total | 4433 | | 1298 | |
| Summarised | 571809 | | 189203 | |

Note: The data of the economic organisations: contain the sum of non-deductable VAT.
Source: KSH

Table 33

**Share of agricultural investments from the investments of the national economy and the GDP**

(at current price, %)

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Investment* | 8.7 | 4.3 | 2.9 | 3.1 | 2.9 | 2.9 | 3.4 | 3.6 | 3.6 | 3.3 | 2.7 | 3.0 | . |
| GDP | 12.5 | 7.8 | 6.5 | 5.8 | 6.0 | 5.9 | 5.8 | 5.2 | 4.9 | 4.2 | 3.7 | 3.8 | 3.5 |

*Based on the calculations in terms of economic organisations
Source: KSH

Table 34

**The division of agricultural investments according to the material-mechanical composition of the investments**

(at current price, %)

| Year | Building asset | Machinery asset | Other |
|------|----------------|-----------------|-------|
| 1991 | 34.0 | 46.1 | 19.9 |
| 1992 | 36.0 | 44.8 | 19.3 |
| 1993 | 34.2 | 48.5 | 17.3 |
| 1994 | 30.5 | 51.8 | 17.7 |
| 1995 | 33.8 | 58.0 | 8.3 |
| 1996 | 34.1 | 57.0 | 8.9 |
| 1997 | 36.8 | 55.7 | 7.5 |
| 1998 | 37.9 | 55.1 | 7.0 |
| 1999 | 33.8 | 47.9 | 18.2 |
| 2000 | 35.0 | 45.0 | 20.1 |
| 2001 | 22.7 | 40.9 | 36.4 |
| 2002 | 27.9 | 43.2 | 28.9 |

Note: Data of economic organisations.
Source: KSH


## 3.3. The convergence of external trade in the Hungarian agricultural sector[5]

The examination of the agricultural sector's significance is reasonable from several aspects. Most importantly, Hungary is an open economy with a high rate of participation in international trade. This is characterised by the fact that the gross share of external trade (meaning the import and export altogether) was 1.23 times the amount of the annual GDP in 2001.

The other important aspect is the share of the agricultural sector in external trade: The share of agriculture and the food industry show a decreasing tendency regarding total external trade.

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[5] In his chapter the agricultural external data include the data of the HS nomenclature based on the 01-24 group of commodities. This difference of content can be seen within the data of Tables 31 and 36. (The greater content of the prior).

**A K I I**

Table 35

### The share of agriculture and the food industry (A+FI)[1] from the flow of the entire external trade, million HUF, (at current prices and marginal parity)

| Year | Export | | | Import | | | Balance | | |
|---|---|---|---|---|---|---|---|---|---|
| | Gross | Out of this: A+ FI | A+ FI share % | Gross | A+FI from this | Share of A+FI % | Gross | From this: A+FI | Gross without A+FI |
| 1990 | 603636 | 150551 | 24.9 | 544921 | 46454 | 8.5 | 58715 | 104097 | -45382 |
| 1991 | 764274 | 200333 | 26.2 | 855643 | 49511 | 5.8 | -91369 | 150822 | -242191 |
| 1992 | 843566 | 209105 | 24.8 | 878503 | 52553 | 6.0 | -34937 | 156552 | -191489 |
| 1993 | 819915 | 183400 | 22.4 | 1162491 | 74044 | 6.4 | -342576 | 109356 | -451932 |
| 1994 | 1128695 | 244353 | 21.6 | 1537002 | 111881 | 7.3 | -408307 | 132472 | -540779 |
| 1995 | 1621991 | 368826 | 22.7 | 1936387 | 122271 | 6.3 | -314396 | 246555 | -560951 |
| 1996 | 2001654 | 420017 | 21.0 | 2468050 | 143171 | 5.8 | -466396 | 276846 | -743242 |
| 1996[2] | 2392273 | 420017 | 17.6 | 2763879 | 143171 | 5.2 | -371606 | 276846 | -648452 |
| 1997 | 3566839 | 535374 | 15.0 | 3961164 | 203033 | 5.1 | -394325 | 332341 | -726666 |
| 1998 | 4934502 | 594666 | 12.1 | 5511511 | 256444 | 4.7 | -577009 | 338222 | -915231 |
| 1999 | 5938525 | 549073 | 9.2 | 6645562 | 235205 | 3.5 | -707037 | 313868 | -1020905 |
| 2000 | 7942804 | 637024 | 8.0 | 9064022 | 286668 | 3.2 | -1121218 | 350356 | -1471574 |
| 2001 | 8748170 | 656200 | 7.5 | 9665060 | 281400 | 2.9 | -916900 | 374800 | -1291700 |
| 2002 | 8874000 | 689396 | 7.8 | 9704100 | 337015 | 3.5 | -830100 | 352381 | -1182481 |

[1] The data of agriculture and the food industry for 1990 are the results of calculations based on the nomenclatures of KSH and SITC and the summarised data of 01-24 group of products of the HS from 1991. (The two types of data are of similar content sutiable for macro-economical calculations, the difference considering the year of 2000 is 1.6%, that is, the figures of SITC are higher)

[2] The KSH reports its 1996 dates with two different methods. The first one does not contain while the second one contains the data on the trade flow of bonded areas. The products of agriculture are only present in the custom free trade to a very small extent. This is because it is mainly made up of mechanical products.

Source: KSH, AKII database, and own calculations.

By the second part of the eighties, the value of the food industry in total international exports stabilised around 22-23%. This share had been increasing until 1991, even exceeding 25%. In the following period, (ignoring minor changes), the share of the sector in exports decreased drastically: It was only 7.8% by the year 2002. (The data of HS is based on the group of commodities 01-24). Several factors played a role in the convergence in the above phenomenon; on the one hand, the decreasing rate of agricultural exports, which experienced greater and lower fluctuations from 1996 and, on the other hand, the increase in total Hungarian exports.

The decline in the sector's exports was the most dramatic in the year 1997, while the exports of the entire national economy were increasing dramatically. /(The escalating exports of the national economy were continuous from 1994, which was mainly the result of the exports in the mechanical-industry, especially influenced by external capital.)  At the same time a methodological factor (of statistical calculation) also played a role in the decreasing share of the agricultural sector: Contrary to prior practice, the KSH reported that exports combined with commerce of the exports in related areas since 1996. The share of agricultural products in the export of related trade was very little, since this is mainly made up of the products of the mechanical industry.

The import contributed even to a smaller extent in the gross imports of the national economy than were experienced in terms of exports. Its share is also declining. It peaked at the beginning of the examined period at 9% in 1990. It has continuously decreasing since then. It was only 3.5% in 2002. This is especially important given that the imports of the food industry shows an increasing tendency. However the import of other sectors within the national economy is increasing even faster.

Table 36

**The share of the agriculture and the food industry (A+FI) from the entire turnover of Hungarian external trade, million USD, (at current prices, marginal parity).**

| Year | Export | | Import | | Balance | | | A+FI index (1989=100) | |
|---|---|---|---|---|---|---|---|---|---|
| | Gross | Out of this: A+FI | Gross | Out of this: A+FI | Gross | Out of this: A+IN | Without A+FI | Export | Import |
| 1990[1] | 9588 | 2387 | 8647 | 735 | 941 | 1652 | -711 | 106,2 | 104,1 |
| 1991[1] | 10187 | 2669 | 11382 | 660 | -1195 | 2009 | -3204 | 118,7 | 93,5 |
| 1992 | 10705 | 2653 | 11079 | 660 | -374 | 1993 | -2367 | 118,0 | 93,5 |
| 1993 | 8 907 | 1974 | 12530 | 799 | -3623 | 1175 | -4798 | 87,8 | 113,2 |
| 1994 | 10701 | 2307 | 14554 | 1060 | -3853 | 1247 | -5100 | 102,6 | 150,1 |
| 1995 | 12867 | 2901 | 15466 | 978 | -2599 | 1923 | -4522 | 129,0 | 138,5 |
| 1996[2] | 13145 | 2746 | 16209 | 940 | -3064 | 806 | -4870 | 122,2 | 133,1 |
| 1996[2] | 15704 | 2746 | 18144 | 940 | -2440 | 1806 | -4246 | 122,2 | 133,1 |
| 1997 | 19100 | 2857 | 21234 | 1088 | -2134 | 1769 | -3903 | 127,1 | 154,1 |
| 1998 | 23005 | 2772 | 25706 | 1199 | -2701 | 1573 | -4274 | 123,3 | 169,8 |
| 1999 | 25013 | 2310 | 28008 | 995 | -2995 | 1315 | -4310 | 102,8 | 140,9 |
| 2000 | 28092 | 2256 | 32080 | 1017 | -3988 | 1239 | -5227 | 100,4 | 144,1 |
| 2001 | 30498 | 2544 | 33682 | 1135 | -3184 | 1409 | -4593 | 102,6 | 160,8 |
| 2002 | 34337 | 2668 | 37612 | 1306 | -3275 | 1362 | -4637 | 105,2 | 170,7 |

[1] The figures of agriculture and the food industry are the calculations of this table in 1990-1991. The calculation was done in such a way that we took the % shares of the table and reflected them onto the entire external trade. We had to do this because in these three years there was a large quantity of commercial flow in Rubel. From 1992, the data of the products groups 0-24 HS of the AKII database.

Source: The KSH reports its 1996 data with two different methods. The first one does not contain while the second one contains the data of the trade flow of bonded areas. The products of agriculture are only present in the custom free trade to a very small extent. This is because it is mainly made up of mechanical products. Source: KSH, AKKI database, and own calculations.

The decreasing share of agriculture in the food industry is not a distinctly Hungarian phenomenon, since the same occurs within the EU where the share of the agricultural sector was 11% in 1990 and 8% in 2001. The share of "extra-EU" trade, meaning trade carried out with third countries is especially low and decreasing within the category of agricultural products. While it was 8% in 1990, it was only 6% by 2001.

Altogether, these are all part of a world trend, which are supported by WTO data. Agriculture represented 12% of world trade in 1990 and only 9% in 2000.

Another important question is the share of external trade that the food economy entails in the production value of the sector. The determination of the above was limited by many methodologiical obstacles. This is because agricultural exports contain the summarised data of the agricultural and food industrial exports while the production value related to both sectors is only indicated in a cumulative form. (This is because the food industry uses raw agricultural resources in large quantities). In order to avoid this accumulation, we have calculated the combined value of the production for both sectors by adding the gross value represented in the GDP of tobacco, food and beverages to the gross output of agricultural production (including with forestry and fishing). Based on this calculation, the share was between 25-31% at the beginning of the decade while it reached an increased value of 32-36% by the end of the decade. The reason for the increase was that the production value of the sector decreased in a lower rate than that of the export based on HUF data.

Table 37

**The shares of the Hungarian agricultural exports in terms of the food-industry from the production value of these combined sectors.**

| Year | Production value, million HUFs | Export | The shares of export % |
|------|--------------------------------|--------|------------------------|
| 1991 | 665698 | 200333 | 30,1 |
| 1992 | 665193 | 209105 | 31,4 |
| 1993 | 713124 | 183400 | 25,7 |
| 1994 | 855589 | 244353 | 28,6 |
| 1995 | 1094237 | 368826 | 33,7 |
| 1996 | 1351180 | 420017 | 31,1 |
| 1997 | 1509544 | 535374 | 35,5 |
| 1998 | 1655154 | 594666 | 35,9 |
| 1999 | 1705660 | 549073 | 32,2 |
| 2000 | 1868984 | 637024 | 34,1 |
| 2001 | 2132597 | 656200 | 30,8 |

 Note: We make the production value based on the following: The total value of gross agricultural output + the added value of food, drinking beverages, and tobacco manufacturing in GDP. (Since the addition of the of the gross production value of the agriculture and food industry would have caused a significant cumulation)

Source: own calculation based on the Hungarian Statistical Yearbook of KSH Budapest, 1997-2002.

We also have to stress the fact that in a country permanently struggling with debts, and constantly forced to rely on imports at an increasing rate due to a narrow production structure and limited Hungarian energy sources, the food industry remains the only source left which is able to produce a positive balance of external trade in the long run. (Tourism is the only other that has a positive balance. However this does not constitute part of the balance of external trade of the national economy, and it only shows up in the balance of payments).

Evaluating the convergence of Hungarian external trade from different viewpoints, we come to different conclusions. Relating the convergence of Hungarian exports to the prior output of Hungarian production, we may not be pleased since there has not been any increase, only fluctuations. On the other hand, imports have grown dynamically and continuously: If we begin from the potential of the agricultural sector, we may not be pleased either, since Hungary was not able to capitalise on its opportunities and capacities. Should we examine it in terms of international comparison, we get a controversial picture. In terms of Western Europe, the amount of exports of the Hungarian agricultural sector could be said to be low. The value of agricultural export per one hectare was USD 14112 in the Netherlands; USD 12286 in Belgium and USD 3297 in Denmark while in Hungary was only USD 372 per hectare. (interestingly, in Portugal it is only 364). Still we got a positive result when we compared these results with those of the former socialist exporter countries in the year

2000: in this respect, Hungary could be considered a unique country in terms of exports and postive agricultural external trade balance (Poland: 131, Bulgaria, 94, Romania 25 USD/ha).

Examining the data of the agricultural and food industry exports, we may state that the rate of export has increased dynamically calculated on HUF parity. Taking 1990 as the basic year, the augmentation of exports reached 458% by the year 2002. At the same time, the USD based index, which reflects reality much accurately, only indicated an increase of 112%. The inflation of HUF, in other words its significant devaluation compared to the currency of USD and other currencies, is responsible for the above phenomenon: Based on the weighted average of the external trade's average, the HUF/USD currency in 1990 was HUF 63, in the year 2002 it was 258HUF. So the exchange rate index, despite the HUF revaluation between 2001-2002, was 409.5.

Table 38

**The basic indices of the values of Hungarian food export**
**(calculated on current and marginal parity values)**

| Year | Million HUF | Million USD | Index (1990=100) | |
|------|-------------|-------------|------------------|----------|
| | | | **HUF-based** | **USD-based** |
| 1990 | 150551 | 2387 | 100,0 | 100,0 |
| 1991 | 200333 | 2669 | 133,1 | 111,8 |
| 1992 | 209105 | 2653 | 138,9 | 111,1 |
| 1993 | 183400 | 1974 | 121,8 | 82,7 |
| 1994 | 244353 | 2307 | 162,3 | 96,6 |
| 1995 | 368826 | 2901 | 245,0 | 121,5 |
| 1996 | 420017 | 2746 | 279,0 | 115,0 |
| 1997 | 535374 | 2857 | 355,6 | 119,7 |
| 1998 | 594666 | 2772 | 395,0 | 116,1 |
| 1999 | 549073 | 2310 | 364,7 | 96,8 |
| 2000 | 637024 | 2256 | 423,1 | 94,5 |
| 2001 | 656200 | 2544 | 435,1 | 106,6 |
| 2002 | 689396 | 2668 | 457,9 | 111,8 |

Source: calculations based on the KSH, AKII database.

Consequently the USD-based calculations show a much more realistic picture. A much more realistic reflection is provided by Eurobased calculations; transactions have been Euro-based in the past few years. In the majority of the examined period, USD-based calculations were typical, therefore at this point we will maintain the traditional form of presentations in USD. Euro-based calculations are going to be significant at the convergence of the balance of the agricultural external trade.

Hungarian agricultural export reached its peak in 1995; the export value based on the HS codes exceeded USD 2.9 billion at that time. Another year within the decade, where agriculture was able to approach this level, was 1997 when the export was USD 2.86 billion. By the end of the decade an export of USD 2.3-2.7 billion became typical

The imports of the sector were also fluctuating during the examined period. However while exports showed a fluctuating and downward tendency, the rate of imports was definitely increasing. The level of imports was USD 735 billion in 1990, and by the last two years of the decade it stabilised around 1 billion dollars. In the year 2002, it exceeded 1.3 billion dollars. In terms of share, the same tendency could be seen in the case of imports as that of exports: The share of food-economy drastically decreased from the annual 8.5% in 1990 to 3.5% by the year 2002.

Table 39

**The flow of agricultural and food industrial external trade, million USD, million ECU (EURO), (at current price and marginal parity)**

| Year | Export | | Import | | Balance | | Currency |
|------|--------|--------|--------|--------|--------|--------|----------|
| | Million USD | Million ECU | Million USD | Million ECU | Million USD | Million ECU | 1 ECU=USD |
| 1990 | 2387 | 1875 | 735 | 577 | 1652 | 1298 | 1,27343 |
| 1991 | 2669 | 2154 | 660 | 533 | 2009 | 1621 | 1,23916 |
| 1992 | 2653 | 2044 | 660 | 508 | 1993 | 1535 | 1,29810 |
| 1993 | 1974 | 1686 | 799 | 682 | 1175 | 1003 | 1,17100 |
| 1994 | 2307 | 1939 | 1060 | 891 | 1247 | 1048 | 1,18952 |
| 1995 | 2901 | 2218 | 978 | 748 | 1923 | 1470 | 1,30801 |
| 1996 | 2746 | 2163 | 940 | 740 | 1806 | 1422 | 1,26975 |
| 1997 | 2857 | 2519 | 1088 | 959 | 1769 | 1560 | 1,13404 |
| 1998 | 2772 | 2473 | 1199 | 1069 | 1573 | 1403 | 1,12109 |
| 1999 | 2310 | 2167 | 995 | 934 | 1315 | 1234 | 1,06578 |
| 2000 | 2256 | 2452 | 1017 | 1105 | 1239 | 1347 | 0,92000 |
| 2001 | 2544 | 2830 | 1135 | 1263 | 1409 | 1567 | 0,89900 |
| 2002 | 2668 | 2824 | 1306 | 1384 | 1362 | 1440 | 0,94200 |

Source: KSH AKII database, Eurostat B-4-Finanz-und  Währungsstatistik.

Calculating the external trade of agriculture and the food industry in ECU (EUR), the figures represented in USD indicate that the balance deteriorated significantly in the past decade. At the same time, however, we would have had a much favourable picture, had we indicated the figures in ECU, in other words EUR.

The make-up of the balance of external trade for agriculture was made up of the following elements: 51% by EU members, 19% by the CEFTA countries, 18 by the former member states of Yugoslavia, (The CEFTA countries without Slovenia) and also 18% by the former states of the Soviet Union. Hungary's balance is only negative with Latin America, primarily because of the fodder, coffee and citrus fruit imports.

The following characterise the product make-up of the balance: The list of commodities producing the greatest positive balance (annual figures of 2002):

|  |  |
|---|---|
| Meat | USD 464 billion |
| Crop | USD 326 billion |
| Processed vegetable and fruit | USD 234 billion |

Commodities with the greatest negative balance:

| | |
|---|---|
| Animal fodder | - USD 110 billion |
| Fruit/ walnut | - USD 33 billion |
| Cocoa | - USD 30 billion |

Different world economic factors came into effect at the beginning and at the end of the period as well. The most important factors at the beginning of the decade were the following: the termination of COMECON (Council for Mutual Economic Aid = KGST), the restructing crisis of the Central and Eastern European countries, the collapse of the Soviet Union and the former Yugoslavia, and the division of the former Czechoslovakia. In the second part of the examined period these factors had a milder effect. (with the exception of the unexpected Russian crisis of 1998). By the second part of the examined period Hungary had already been through the market transition and the influence of other international effects was stronger at that point.

The share of transaction/commercial business grew dynamically in the nineties within Hungarian external trade. Contrary to prior commercial business, which was mainly true for the import of tropical products, it was a new phenomenon in the external trade of agriculture. Commercial business occurred for almost every product. Another new phenomenon in the transactions was that the majority of these were done with the former COMECON states and the trans-traders were primarily Western-European countries (Austria, Switzerland, Italy, The Netherlands, France and Germany). The middleman,or triangular trade as they call it in the Western cultures, represented a pretty significant share in agricultural trade of Hungary directed towards the central and eastern European countries. This form of trade was already popular in 1991 in the trade with Yugoslavia, Czechoslovakia, and the Soviet Union. Later on, this form of trade reached a pretty high share of Hungary's agricultural export directed towards the former COMECON countries: At the beginning of the decade it made up 20% of the entire agricultural commerce, and by 1995 this share reached 26%.

Table 40

**The share of transition ttrade within the Hungarian agricultural exports (USD million, at current price, and marginal parity)**

| Year | Gross | Out of this: transition | The rate of transition, % |
|------|-------|-------------------------|---------------------------|
| 1991 | 2636 | 534 | 20,3 |
| 1992 | 2653 | 688 | 25,9 |
| 1993 | 1974 | 304 | 15,4 |
| 1994 | 2307 | 409 | 17,7 |
| 1995 | 2901 | 748 | 25,8 |
| 1996 | 2746 | 570 | 20,8 |
| 1997 | 2857 | 749 | 26,2 |
| 1998 | 2772 | 778 | 28,1 |
| 1999 | 2310 | 547 | 23,7 |
| 2000 | 2256 | 513 | 22,7 |
| 2001 | 2544 | 543 | 21,3 |
| 2002 | 2668 | 586 | 22,0 |

Source: AKII database, own calculations

Globalisation is a determining factor impacting on Hungarian trade in the food economy. This is an effect which Hungary cannot escape from. Hungary mainly enjoys the effects of globalisation, especially through external capital investments on the one hand, and on the other through the decrease of marketing limitations. The globalisation of trade had a negative effect on Hungarian exports in general; however these effects, in terms of the agricultural and food Industrial products, referring primarily to the decreasing level of Hungarian production, and Hungary's lack of compatibility to enter the market were suppressed. The same holds true for opening of the economy, which could be felt in all of Hungarian external trade, but it has only affected Hungarian agricultural export to a very small extent. The effects of the free trade agreements were pretty controversial in the case of Hungarian agricultural exports and several factors of which a positive result was expected turned out to have negative effects as well.

Out of all the internatonal agreements WTO agricultural treaties had the strongest effect on external trade in the nineties, which was the only one that enabled the partial liberalisation of agricultural products because of GATT/WTO negotiations. The organisation CEFTA, created in 1993, and enlarged by the second part of the nineties, was just as important for the Eastern European countries and Hungary; furthermore, the effects of the EU társulási megállapodás***signed in 1991, has had a flourishing influence on the economy.

The GATT/WTO agreement did not exclusively make us feel the favourable effects of liberalisation, but it also limited the export of Hungarian exportable products by regulating the export supports. Mostly EU exporters were able to take advantage of the favourable quotas of the agreement rather than the Hungarian exporters toward the EU market. The CEFTA agreement could only be considered completely successful in

terms of the industrial articles; we may only speak of partial success in the agricultural sector as well. Still we may say that out of the three international agreements, this was the only one that obviously had a trade increasing effect.

The European Union occupies an important place both in exports as well as in imports. Its share of Hungarian exports is around 50%, while its share of Hungary's imports was 40%, but in the last decade it has increased to 50%. The opportunities provided by the Accession Agreement between the EU and Hungary signed in 1991 had a significant role in the above convergence. A factor resulting in a much stronger flow of EU exports towards Hungary than vice versa was that Hungary had only been able to partially capitalise (even though at an improving rate, but still not completely)on the export quotas defined in the agreement, while the EU exporters, exporting towards Hungary, were able to take better advantage of the quotas.

The new agricultural liberalisation agreement valid from June of 2000 and further expanded in 2001 and 2002 played a significant role in the preparation for EU accession. The restructuring of quota-management /the implementation of the principle of sequence/, could be considered a further development in breaking down custom barriers. The quota management allows the inclusion of new, not even exported products on the list, as well as for the combination of quotas at different levels for the same products.

The Hungarian exports directed towards the CEFTA countries are increasing in terms of absolute numbers as well. It has doubled from the annual USD 248 billion of 2000 to USD 481 billion by 2002[6]. On the one hand, its share of all the exports of the food industry is also increasing as it grew from the annual 9% of 1993 to 20% by the end of the period examined. This figure also indicated the share-restructure of the Hungarian absorptive capacity and the increase of the role of the middle European countries.

This group of countries were involved in 17% of the Hungarian food industry by the year 2002, so it can be stated that the CEFTA countries share of the Hungarian external trade balance of the food economy showed a continuously positive tendency: the positive balance barely exceeded USD 200 billion in 1993, and it was USD 257 billion in 2002, (in the year 1998 it was much greater, over USD 400 billion).

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6 For the sake of comparison we calculated with the current membership in both cases, meaning: Poland, Slovenia, Slovakia, Czech Republic, Romania and Bulgaria.

Despite of the favourable tendencies, one may observe that Hungary's exports directed towards the CEFTA countries differ both in terms of product structure and in terms of the direction of export. This means that Hungary's exports increase evenly within the region, but the internal structure of Hungarian exports is pretty uncertain (contrary to Hungarian exports in the EU), meaning that Hungarian exporters and products have to compete with varying partners and varying product structures. Upon examination of the import tendencies we must mention that the stable USD 30 billion commerce up till 1996 increased by seven-fold in the past 6 years (USD 202-224 billion), therefore we may speak of a significant expansion of imports along with the improvement of our export positions.

**A K I I**

**Hungary's agricultural external trade with the more important regions, million USD**

| Region | 1993 | | | | | | 2002 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Export | Division % | Import | Division % | Balance | Division % | Export | Division % | Import | Division % | Balance | Division % |
| Countries total | 1974 | 100.0 | 800 | 100.0 | 1174 | 100.0 | 2668 | 100.0 | 1362 | 100.0 | 1362 | 100.0 |
| Out of this: | | | | | | | | | | | | |
| EU-15 | 1057 | 53.5 | 435 | 54.4 | 622 | 53.0 | 1333 | 50.0 | 637 | 48.9 | 696 | 51.1 |
| EFTA | 68 | 3.4 | 12 | 1.5 | 56 | 4.8 | 71 | 2.7 | 16 | 1.2 | 55 | 4.0 |
| CEFTA[1] | 168 | 8.5 | 38 | 4.8 | 130 | 11.1 | 481 | 18.0 | 224 | 17.2 | 257 | 18.9 |
| Former Soviet Union | 394 | 20.0 | 14 | 1.8 | 380 | 32.4 | 259 | 9.7 | 11 | 0.8 | 248 | 18.2 |
| Former Yugoslavia | – | – | – | – | – | – | 265 | 9.9 | 14 | 1.1 | 251 | 18.4 |

[1] The data of the standard CEFTA members

Source: AKII database

If we were to examine the target markets and the suppliers of agricultural external trade in terms of the main partner countries we would see that the first ten, but especially the first five most important export markets and import suppliers have not changed in the last decade.

Table 42

**The five main target countries of the Hungarian agricultural exports in 1991 and 2002**

| 1991 | | | 2002 | | |
|---|---|---|---|---|---|
| **Countries** | **Value (million USD)** | **Share (%)** | **Countries** | **Value (million USD)** | **Share (%)** |
| Germany | 560 | 21 | Germany | 527 | 20 |
| Soviet Union | 478 | 18 | Austria | 195 | 7 |
| Italy | 282 | 11 | Russia | 167 | 6 |
| Yugoslavia | 182 | 7 | Italy | 166 | 6 |
| Austria | 161 | 6 | Romania | 130 | 5 |
| Total | 1163 | 63 | Total | 1185 | 44 |
| Altogether | 2636 | 100 | Altogether | 2668 | 100 |

Source: own calculation based on the Food 98 database

In the first part of the nineties the targets of Hungarian agricultural exports were more concentrated, the share of the first ten countries of entire exports was at a stable 80% and the share of the 3 first countries was especially high. On the contrary, in the second part of the decade, the share of individual target markets was somewhat lower, and the share of the ten first countries was only around 60%. Hungary's most significant export partner was Germany in the decade with a share of around 20%. Russia was in second place up to 1998. Out of the EU Member States, Italy and Austria, and out of the East European countries, Poland, Romania, Bosnia, and Herchegovina had a significant share of our agricultural exports.

Table 43

**The five main suppliers of the Hungarian agricultural import in 1991-2002**

| 1991 | | | 2002 | | |
|---|---|---|---|---|---|
| **Countries** | **Value (million USD)** | **Share(%)** | **Countries** | **Value (million USD)** | **Share (%)** |
| Brasilia | 103 | 16 | Brasilia | 158 | 12 |
| Austria | 66 | 11 | Germany | 154 | 12 |
| Germany | 59 | 9 | Netherlands | 115 | 9 |
| USA | 41 | 7 | Italy | 85 | 7 |
| Netherlands | 34 | 5 | Poland | 84 | 6 |
| Total | 302 | 48 | Total | 596 | 46 |
| Altogether | 627 | 100 | Altogether | 1306 | 100 |

Source: own calculat ion based on the Food 98 database

Even though Brazil, Germany, Austria and The Netherlands had an important role throughout the entire decade, the change in imports was much greater than in the case of exports. The constant presence of the top ten countries with the greatest share of exports are France and Italy within the EU and Poland's share is significant within the Eastern European countries. The United States is among the most important importers each year and Uganda from the beginning of the decade. We may also observe the significance of Slovakia in the Hungarian agricultural market.

Based on the analysis of Hungarian external trade of agriculture according to regions and countries, we have come to the conclusion that the radius of our imports but especially of our exports is quite narrow as it is mainly concentrated in Europe (the EU and Eastern European countries). The only exception to this is Latin America and especially Brazil in the case of imports.

We may say (on a macro level) that in terms of the restructuring of agricultural exports and imports that the main product groups of animal husbandry contributed to our export profits by 34% at average between 1991-2002; the main groups of plant production/horticulture by 27%, and the main groups of food-production by 39%. By the end of the decade, 1997-1999 animal husbandry's share was below average, The export income and share of the sectors involve plant production (in terms of crop production), fluctuated pretty strongly, and reached 23% below the average in 2002. The partial share of food processing increased above 43% by 1997, but declined steeply afterwards; however in the year 2002 it rose again above the average.

Table 44

**The share of certain sectors of the agriculture from the agricultural exports
between 1991-2002 (million USD, in %)**

Unit.: million USD

| Sector | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Animal husbandry | 1168.8 | 865.5 | 713.2 | 779.6 | 829.7 | 964.3 | 890.2 | 832.1 | 760.0 | 804.5 | 931.1 | 895.3 |
| Plant production | 709.5 | 959.7 | 476.7 | 598.3 | 990.4 | 603.8 | 736.0 | 819.8 | 682.9 | 636.7 | 755.9 | 624.1 |
| Food processing | 757.9 | 827.7 | 783.0 | 927.4 | 1080.4 | 1177.6 | 1230.7 | 1120.5 | 865.2 | 812.5 | 854.7 | 1148.4 |
| Total: | 2636.2 | 2652.9 | 1972.9 | 2305.3 | 2900.5 | 2745.7 | 2856.8 | 2772.3 | 2308.1 | 2253.7 | 2541.6 | 2667.8 |

Unit: %

| Sector | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Animal husbandry | 44.3 | 32.6 | 36.1 | 33.8 | 28.6 | 35.1 | 31.2 | 30.0 | 32.9 | 35.7 | 34.1 | 33.6 |
| Plant production | 26.9 | 36.2 | 24.2 | 26.0 | 34.1 | 22.0 | 25.8 | 29.6 | 29.6 | 28.3 | 28.5 | 23.3 |
| Food processing | 28.7 | 31.2 | 39.7 | 40.2 | 37.2 | 42.9 | 43.1 | 40.4 | 37.5 | 36.1 | 37.3 | 43.1 |
| Total: | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: own calculations based on Food database

The main groups of meat and butchery products show a remarkable trend (above USD 100 million on average) within the more important main groups with an annual share of 21% and with a USD 548 million export income average. The main markets for meat products are the EU Member States. There was a decline in the profit of meat products at the end of the nineties: (USD 6451 million in 1996, 545 million in 2002), mainly due to the devaluation of the EURO against the USD. The export of live animal stock contributed to the income by 5%, however the 139 million average income is the result of its stable position at the first part of the nineties. It produced an income below USD 100 million in 1999 for the first time, (USD 95.9 million). The fact that the sector was able to overcome the shock caused by the BSE disease is supported by the fact that the sector was able to produce an income of USD 135 billion in the year 2002. The third main group of animal husbandry is the export of milk and dairy products, which increased above USD 100 million by the end of the decade, therefore it is worthy of mention, not only because of its 4% (USD 99 billion share) but because of its improving market position.

Regarding the export of the main crops, cereals stand out.  It attracts attention not only because of its 11% annual average share, but because of its strongly fluctuating income. It has been able to produce an income of USD 400-500 million in good years, and only USD 100-150 million in weaker years.  In this sense, the period between 1999 and 2000 counted as a year with a medium value despite the weaker production results. As a result of good production the export value of the sector increased to USD 354 million in the year 2002.

In second place, we must mention the groups of vegetable and fruit products. The export of horticultural products have made up altogether 10%, USD 232 million in our agricultural export, and the sector maintains stable markets, (exports primarily towards the EU). Their annual fluctuations are much lower than in the case of crops, despite their dependence on the weather. In the main groups of oil seeds and fodder, the stability of the prior years is over. After 1997 and 1998, this main group reached a result below average even in the year 2001. Despite this fact, it still belongs to the more important main groups with its 5%, USD 124 million share. An important fact is that it was able to reach a value of USD 171 billion in the year 2002.

Out of the main groups belonging to the food processing industry, the most important are the groups of processed vegetable and fruit products, with an annual share of 11%, USD 282 billion. This product group has been affected severely by the Russian monetary crisis; its export profits decreased by USD 264 million in 1999 to the level of the year 1993, and it was only able to get above the average by a result of USD 283 million in 2001. The branch was able to overcome this result by an export income of USD 301 million in 2002. The main group of animal and plant oils along with the animal products brought an average income above 100 million USD. (USD 101 and 127 million at the average). However their share has shown a decreasing tendency in the export markets in the past few years, due to the changing consumption habits.

The export income of animal fodder has shown an increasing trend as well. The sector produced an annual average income of USD 80 million between the period of 1991-2002 reached the average of USD 100 million in 2000 for the first time, and exported USD 165 million in the year 2002. In the year 2000, the Hungarian fodder export towards the CEFTA countries doubled in comparison to the prior year and it further increased by 16% in the year 2002. What stands in the background of this phenomenon is that the majority of Western European business people have settled and created joint ventures in Hungary to expand them towards the countries in the region.

The main group of vinegar, potable-alcohol and drinking beverages plays an important role too primarily through the exportation of wine. In the last 12 years it has contributed to the Hungarian export output by 6%, 158 million. The main group of tobacco and tobacco products produced a greater increase in the beginning of the nineties, however the progress following the 1997 peak came to an end, and by the year 2002 the export income shrank to USD 10 million.

Table 45

**The export of agricultural and food industrial products according to main product groups, 1991-2001, (million USD)**

| | Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Live animals | 187.7 | 156.8 | 120.2 | 131.4 | 128.5 | 142.4 | 135.4 | 111.8 | 95.9 | 126.2 | 155.1 | 135.3 |
| 2. | Meat, slaughter products | 759.6 | 552.3 | 436.7 | 473.4 | 539.9 | 640.6 | 597.4 | 529.5 | 488.7 | 492.7 | 573.7 | 544.9 |
| 3. | Fish, animals of sweet water | 11.7 | 13.3 | 10.7 | 17.0 | 14.9 | 15.4 | 10.0 | 13.8 | 12.2 | 8.5 | 7.3 | 5.9 |
| 4. | Diary products | 136.5 | 84.3 | 75.6 | 60.8 | 76.3 | 87.9 | 75.1 | 104.8 | 92.0 | 101.8 | 129.5 | 134.2 |
| 5. | Other animal products | 73.3 | 58.8 | 70.0 | 97.0 | 70.1 | 78.0 | 72.2 | 72.2 | 71.2 | 75.2 | 65.4 | 75.0 |
| 6. | Wood/ other plants | 8.7 | 8.8 | 7.2 | 10.5 | 12.6 | 12.3 | 15.0 | 15.6 | 14.7 | 14.6 | 15.3 | 17.5 |
| 7. | Vegetables | 169.2 | 155.4 | 113.9 | 139.8 | 153.8 | 145.5 | 120.4 | 138.3 | 141.5 | 123.9 | 143.9 | 147.2 |
| 8. | Fruits/walnut | 144.9 | 117.1 | 102.3 | 105.5 | 78.7 | 95.8 | 90.8 | 94.2 | 79.5 | 69.2 | 74.7 | 67.4 |
| 9. | Coffee/tea/spices | 35.6 | 27.4 | 21.6 | 27.2 | 32.4 | 29.0 | 24.8 | 26.0 | 34.4 | 27.4 | 28.5 | 29.4 |
| 10. | Crops | 190.0 | 478.2 | 107.0 | 167.2 | 471.7 | 125.0 | 305.7 | 395.7 | 255.2 | 221.0 | 334.7 | 353.9 |
| 11. | Products of the meal industry | 28.0 | 49.9 | 7.4 | 17.7 | 88.7 | 35.6 | 62.4 | 40.9 | 41.5 | 47.5 | 40.6 | 34.8 |
| 12. | Oily seeds/fodder | 125.6 | 115.8 | 110.4 | 122.4 | 145.4 | 154.8 | 111.8 | 102.6 | 109.1 | 126.5 | 109.6 | 170.5 |
| 13. | Plant abstracts | 0.1 | 0.1 | 0.3 | 0.6 | 0.3 | 0.5 | 0.3 | 0.6 | 0.3 | 0.4 | 0.6 | 0.7 |
| 14. | Other plant products | 7.4 | 7.0 | 6.6 | 7.4 | 6.8 | 5.3 | 4.8 | 5.9 | 6.6 | 6.2 | 8.2 | 7.9 |
| 15. | Animal plants/fat | 117.3 | 119.8 | 84.4 | 92.6 | 88.9 | 96.1 | 180.5 | 152.1 | 116.2 | 83.0 | 54.6 | 57.8 |
| 16. | Animal food unfit for human consumption | 147.1 | 140.7 | 132.0 | 132.8 | 143.8 | 158.7 | 192.8 | 144.1 | 101.4 | 96.1 | 101.0 | 102.9 |
| 17. | Sugar. Sugar prod. | 54.4 | 63.0 | 15.2 | 11.9 | 31.8 | 31.9 | 44.0 | 64.1 | 30.9 | 25.5 | 33.1 | 54.9 |
| 18. | Cocoa, cocoa prep | 24.4 | 32.7 | 26.7 | 39.8 | 39.3 | 48.8 | 40.4 | 34.8 | 25.9 | 27.1 | 32.1 | 39.1 |
| 19. | Pastry products | 18.3 | 14.9 | 12.0 | 21.4 | 35.1 | 49.1 | 50.9 | 53.4 | 33.5 | 34.1 | 37.1 | 37.0 |
| 20. | Veg and fruit prod.. | 234.2 | 202.8 | 227.0 | 331.9 | 321.8 | 334.5 | 319.4 | 284.0 | 246.0 | 259.7 | 283.1 | 301.1 |
| 21. | Other edible ready to eat products | 13.2 | 18.1 | 30.4 | 46.4 | 61.8 | 60.3 | 77.7 | 83.5 | 71.6 | 54.1 | 60.0 | 69.0 |
| 22. | Drinking beverages, alcohol and vinegar | 83.5 | 144.6 | 189.6 | 183.5 | 263.3 | 238.4 | 187.0 | 178.7 | 116.6 | 104.0 | 99.7 | 105.8 |
| 23. | Animal Fodder | 54.9 | 59.9 | 42.2 | 32.6 | 44.6 | 71.4 | 55.9 | 63.5 | 79.0 | 109.8 | 137.5 | 165.2 |
| 24. | Tobacco and prod. | 10.6 | 31.2 | 23.5 | 34.5 | 50.0 | 88.4 | 82.0 | 62.4 | 44.2 | 19.1 | 16.5 | 10.4 |
| | Consolidated main groups: | 2636.2 | 2652.9 | 1972.9 | 2305.3 | 2900.1 | 2745.8 | 2856.8 | 2772.3 | 2308.1 | 2253.7 | 2541.6 | 2667.8 |

Source: Own calculations based on the Food database.

Table 46

**The export of agricultural and food industrial products according to main product groups, 1991-2001 (%)**

| | Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Live animals | 7.1 | 5.9 | 6.1 | 5.7 | 4.4 | 5.2 | 4.7 | 4.0 | 4.2 | 5.6 | 6.7 | 5.1 |
| 2. | Meat, slaughter products | 28.8 | 20.8 | 22.1 | 20.5 | 18.6 | 23.3 | 20.9 | 19.1 | 21.2 | 21.9 | 22.9 | 20.5 |
| 3. | Fish, sweet water animals | 0.4 | 0.5 | 0.5 | 0.7 | 0.5 | 0.6 | 0.3 | 0.5 | 0.5 | 0.4 | 0.3 | 0.2 |
| 4. | Diary products | 5.2 | 3.2 | 3.8 | 2.6 | 2.6 | 3.2 | 2.6 | 3.8 | 4.0 | 4.5 | 5.6 | 5.0 |
| 5. | Other animal prod | 2.8 | 2.2 | 3.5 | 4.2 | 2.4 | 2.8 | 2.5 | 2.6 | 3.1 | 3.3 | 2.5 | 2.8 |
| 6. | Wood, other plant | 0.3 | 0.3 | 0.4 | 0.5 | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 |
| 7. | Vegetables | 6.4 | 5.9 | 5.8 | 6.1 | 5.3 | 5.3 | 4.2 | 5.0 | 6.1 | 5.5 | 5.9 | 5.5 |
| 8. | Fruit, walnut | 5.5 | 4.4 | 5.2 | 4.6 | 2.7 | 3.5 | 3.2 | 3.4 | 3.4 | 3.1 | 3.8 | 2.5 |
| 9. | Coffee tea spices | 1.4 | 1.0 | 1.1 | 1.2 | 1.1 | 1.1 | 0.9 | 0.9 | 1.5 | 1.2 | 1.2 | 1.1 |
| 10. | Crops | 7.2 | 18.0 | 5.4 | 7.3 | 16.3 | 4.6 | 10.7 | 14.3 | 11.1 | 9.8 | 10.5 | 13.3 |
| 11. | Products of the mill ind | 1.1 | 1.9 | 0.4 | 0.8 | 3.1 | 1.3 | 2.2 | 1.5 | 1.8 | 2.1 | 2.1 | 1.3 |
| 12. | Oily seeds, fodder | 4.8 | 4.4 | 5.6 | 5.3 | 5.0 | 5.6 | 3.9 | 3.7 | 4.7 | 5.6 | 3.2 | 6.3 |
| 13. | Plant abstracts. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14. | Other plant prod | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 | 0.3 |
| 15. | Lard and plant oil | 4.4 | 4.5 | 4.3 | 4.0 | 3.1 | 3.5 | 6.3 | 5.5 | 5.0 | 3.7 | 2.3 | 2.2 |
| 16. | Animal or prep | 5.6 | 5.3 | 6.7 | 5.8 | 5.0 | 5.8 | 6.7 | 5.2 | 4.4 | 4.3 | 4.0 | 3.9 |
| 17. | Sugar, sugar prod | 2.1 | 2.4 | 0.8 | 0.5 | 1.1 | 1.2 | 1.5 | 2.3 | 1.3 | 1.1 | 1.3 | 2.1 |
| 18. | Cocoa, cocoa prep | 0.9 | 1.2 | 1.4 | 1.7 | 1.4 | 1.8 | 1.4 | 1.3 | 1.1 | 1.2 | 1.1 | 1.5 |
| 19. | Pastry prod | 0.7 | 0.6 | 0.6 | 0.9 | 1.2 | 1.8 | 1.8 | 1.9 | 1.4 | 1.5 | 1.5 | 1.4 |
| 20. | Vegetable and fruit prep | 8.9 | 7.6 | 11.5 | 14.4 | 11.1 | 12.2 | 11.2 | 10.2 | 10.7 | 11.5 | 10.0 | 11.2 |
| 21. | Other edible ready prod | 0.5 | 0.7 | 1.5 | 2.0 | 2.1 | 2.2 | 2.7 | 3.0 | 3.1 | 2.4 | 2.7 | 2.5 |
| 22. | Drinks, alcohol, vinegar | 3.2 | 5.5 | 9.6 | 8.0 | 9.1 | 8.7 | 6.5 | 6.4 | 5.1 | 4.6 | 4.3 | 4.0 |
| 23. | Animal fodder | 2.1 | 2.3 | 2.1 | 1.4 | 1.5 | 2.6 | 2.0 | 2.3 | 3.4 | 4.9 | 6.1 | 6.2 |
| 24. | Tobacco and tob prod | 0.4 | 1.2 | 1.2 | 1.5 | 1.7 | 3.2 | 2.9 | 2.3 | 1.9 | 0.8 | 0.9 | 0.4 |
| | Total main groups: | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Own calculations based on the Food database.

The main groups connected to animal husbandry from Hungary's agricultural imports increased by 13% on the average between 1991 and 2002, and the main product groups connected to plant production contributed 27%, and the main groups connected to food industry 60%. The mean income: 128, 263 and 560 million USD as an annual average. The proportions could be considered pretty stable, but only the food industry's proportion showed an increasing tendency by the end of the millennium, and has been above 60% between 1999 and 2002.

Examining the structure of Hungarian agricultural imports according to the main groups, we may state that the share of animal fodder is by the the greatest. Its share is a stable 20%, between a minimum of 15.7% and a maximum of 23.2% This definitely high share is especially significant if we take into consideration that they have preserved their leading role within fodder importation along with the increasing value of imports in the last ten years. Within the 12-year average, the import expenditures making up USD 195 million were greatly exceeded by USD 275 million import of the year 2002. The other important main groups in Hungarian imports only have 6.2-7.7% partial share, mainly products from tropical regions, such as coffee, tea, spices, cocoa products, fruit, and walnut. The diversity of Hungary's agricultural imports is also indicated by the fact that while in 1991 the first ten main product groups provided 80% of entire imports, they only provided 7% of it in the year 2002.

Table 47

**The import of agricultural and food industrial products according to main product groups, 1991-2001 (million USD)**

| | Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Live animals | 15.1 | 14.2 | 7.5 | 9.3 | 8.7 | 9.9 | 15.0 | 17.9 | 15.7 | 18.9 | 21.4 | 23.3 |
| 2. | Meat and slaughter products | 1.0 | 24.1 | 46.5 | 108.4 | 75.7 | 37.3 | 62.6 | 76.8 | 23.4 | 49.6 | 71.3 | 81.3 |
| 3. | Fish and sweet wat. anim | 5.4 | 8.8 | 11.1 | 12.7 | 11.0 | 10.4 | 13.8 | 16.5 | 14.6 | 13.9 | 15.9 | 17.4 |
| 4. | Diary products | 9.9 | 30.6 | 36.5 | 42.2 | 27.3 | 23.0 | 42.7 | 40.7 | 34.1 | 43.0 | 49.9 | 57.0 |
| 5. | Other animal products | 7.5 | 13.1 | 14.6 | 18.7 | 17.1 | 19.3 | 23.1 | 23.0 | 20.9 | 19.8 | 16.9 | 17.8 |
| 6. | Wood/other plant | 10.4 | 19.6 | 24.1 | 25.3 | 20.3 | 15.0 | 16.9 | 22.0 | 22.3 | 24.8 | 25.8 | 33.9 |
| 7. | Vegetables | 13.8 | 13.1 | 15.9 | 22.7 | 22.6 | 17.6 | 21.0 | 20.8 | 21.4 | 27.9 | 34.2 | 42.0 |
| 8. | Fruit/walnut | 84.0 | 56.9 | 48.2 | 60.6 | 62.3 | 61.5 | 61.0 | 65.3 | 61.9 | 58.9 | 59.4 | 99.6 |
| 9. | Coffee tea spices | 50.0 | 34.9 | 44.1 | 83.3 | 100.6 | 80.7 | 82.6 | 89.9 | 83.6 | 65.8 | 49.6 | 41.3 |
| 10. | Crops | 66.5 | 21.2 | 33.4 | 45.5 | 20.3 | 40.4 | 28.6 | 27.4 | 31.9 | 32.6 | 37.0 | 28.4 |
| 11. | Prod of the meal ind. | 9.6 | 11.2 | 9.9 | 13.0 | 9.0 | 5.3 | 6.5 | 5.9 | 4.1 | 5.2 | 4.4 | 5.2 |
| 12. | Oily seeds, fodder | 25.6 | 25.9 | 28.9 | 49.7 | 47.0 | 38.9 | 45.2 | 61.3 | 44.8 | 37.0 | 49.3 | 54.3 |
| 13. | Plant abstracts | 3.9 | 6.0 | 6.4 | 7.0 | 7.4 | 10.6 | 9.1 | 12.1 | 8.3 | 7.3 | 7.0 | 7.7 |
| 14. | Other plant prod. | 0.6 | 0.4 | 0.4 | 0.5 | 0.6 | 0.7 | 0.5 | 0.7 | 0.8 | 0.6 | 1.2 | 1.3 |
| 15. | Lard, plant oils | 16.6 | 21.3 | 30.3 | 48.4 | 59.2 | 48.8 | 98.9 | 127.2 | 60.3 | 61.0 | 64.0 | 73.4 |
| 16. | Animal food products | 8.5 | 9.9 | 8.0 | 11.6 | 9.4 | 9.6 | 10.5 | 13.1 | 10.4 | 12.4 | 14.6 | 18.8 |
| 17. | Sugar, sugar prod. | 8.0 | 7.9 | 40.3 | 22.2 | 20.5 | 17.9 | 15.9 | 17.5 | 20.4 | 20.4 | 29.0 | 28.3 |
| 18. | Cocoa, prod. | 36.6 | 37.2 | 41.8 | 49.1 | 44.8 | 56.0 | 56.9 | 57.1 | 53.8 | 45.8 | 54.0 | 69.1 |
| 19. | Pastry products | 4.0 | 6.9 | 19.5 | 31.8 | 26.4 | 20.8 | 29.5 | 36.7 | 43.6 | 45.2 | 55.4 | 76.6 |
| 20. | Vegetable and fruit prod. | 20.1 | 21.8 | 26.3 | 45.3 | 49.9 | 45.6 | 54.1 | 54.5 | 49.5 | 62.4 | 56.0 | 66.8 |
| 21. | Other edible ready to eat products | 39.4 | 61.5 | 74.6 | 92.3 | 53.3 | 47.4 | 51.5 | 58.7 | 70.1 | 71.9 | 79.7 | 100.0 |
| 22. | Drinking bev, alcohol, vinegar | 35.1 | 35.2 | 29.4 | 32.8 | 44.8 | 32.7 | 26.4 | 26.9 | 29.3 | 29.5 | 33.7 | 51.2 |
| 23. | Animal fodder | 117.6 | 131.9 | 157.0 | 166.5 | 187.0 | 217.7 | 236.6 | 250.1 | 194.9 | 220.7 | 259.4 | 274.6 |
| 24. | Tobacco and tob prod. | 37.1 | 45.7 | 43.9 | 60.1 | 51.1 | 71.4 | 77.2 | 74.3 | 71.9 | 39.1 | 42.6 | 36.9 |
| | Consolidated main groups: | 626.2 | 659.3 | 798.7 | 1058.9 | 976.1 | 938.5 | 1086.1 | 1196.0 | 991.9 | 1013.4 | 1132.0 | 1306.2 |

Source: Own calculations based on the Food database

Table 48

**The import of agricultural and food industrial products according to main product groups, 1991-2001 (%).**

| | Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Live animals | 2.41 | 2.15 | 0.94 | 0.87 | 0.89 | 1.06 | 1.38 | 1.50 | 1.58 | 1.86 | 1.43 | 1.78 |
| 2. | Meat and slaughter prod. | 0.16 | 3.66 | 5.82 | 10.24 | 7.75 | 3.98 | 5.77 | 6.42 | 2.36 | 4.89 | 5.43 | 6.22 |
| 3. | Fish and sweet wat er animals | 0.86 | 1.34 | 1.39 | 1.20 | 1.13 | 1.10 | 1.27 | 1.38 | 1.48 | 1.37 | 1.44 | 1.33 |
| 4. | Diary prod | 1.59 | 4.64 | 4.57 | 3.98 | 2.79 | 2.45 | 3.93 | 3.40 | 3.43 | 4.24 | 4.57 | 4.36 |
| 5. | Other anim or prod | 1.20 | 1.98 | 1.83 | 1.77 | 1.75 | 2.06 | 2.13 | 1.93 | 2.11 | 1.96 | 1.54 | 1.36 |
| 6. | Wood/other plant | 1.66 | 2.97 | 3.01 | 2.39 | 2.08 | 1.60 | 1.56 | 1.84 | 2.25 | 2.45 | 2.45 | 2.60 |
| 7. | Vegetables | 2.20 | 1.99 | 1.99 | 2.15 | 2.31 | 1.87 | 1.93 | 1.73 | 2.16 | 2.75 | 3.70 | 3.22 |
| 8. | Fruit/walnut | 13.42 | 8.63 | 6.04 | 5.72 | 6.38 | 6.55 | 5.61 | 5.46 | 6.24 | 5.81 | 4.65 | 7.63 |
| 9. | Coffee tea spices | 7.98 | 5.30 | 5.52 | 7.87 | 10.30 | 8.60 | 7.61 | 7.51 | 8.43 | 6.49 | 4.49 | 3.16 |
| 10. | Crops | 10.63 | 3.22 | 4.18 | 4.30 | 2.08 | 4.30 | 2.63 | 2.29 | 3.22 | 3.21 | 4.07 | 2.17 |
| 11. | Prod of the meal ind. | 1.54 | 1.70 | 1.23 | 1.22 | 0.93 | 0.56 | 0.59 | 0.49 | 0.41 | 0.51 | 0.36 | 0.40 |
| 12. | Oily seeds, fodder | 4.09 | 3.93 | 3.62 | 4.70 | 4.81 | 4.15 | 4.16 | 5.13 | 4.52 | 3.65 | 4.91 | 4.16 |
| 13. | Plant abstracts | 0.62 | 0.91 | 0.81 | 0.66 | 0.76 | 1.13 | 0.84 | 1.01 | 0.84 | 0.72 | 0.65 | 0.59 |
| 14. | Other plant production | 0.09 | 0.06 | 0.05 | 0.05 | 0.06 | 0.07 | 0.05 | 0.06 | 0.08 | 0.05 | 0.11 | 0.10 |
| 15. | Lard, plant oils | 2.64 | 3.22 | 3.79 | 4.57 | 6.07 | 5.20 | 9.11 | 10.63 | 6.08 | 6.02 | 5.45 | 5.62 |
| 16. | Animal food products | 1.36 | 1.50 | 1.01 | 1.10 | 0.96 | 1.02 | 0.96 | 1.09 | 1.05 | 1.23 | 1.15 | 1.44 |
| 17. | Sugar, sugar production | 1.27 | 1.19 | 5.05 | 2.09 | 2.10 | 1.91 | 1.47 | 1.46 | 2.05 | 2.01 | 2.45 | 2.17 |
| 18. | Cocoa, products | 5.84 | 5.64 | 5.24 | 4.63 | 4.58 | 5.97 | 5.24 | 4.78 | 5.42 | 4.52 | 4.28 | 5.29 |
| 19. | Pastry products | 0.63 | 1.05 | 2.44 | 3.01 | 2.70 | 2.22 | 2.71 | 3.07 | 4.40 | 4.46 | 4.62 | 5.86 |
| 20. | Vegetable and fruit products | 3.21 | 3.30 | 3.30 | 4.28 | 5.11 | 4.86 | 4.98 | 4.55 | 4.99 | 6.16 | 5.01 | 5.11 |
| 21. | Other edible ready to eat products | 6.29 | 9.34 | 9.34 | 8.72 | 5.46 | 5.05 | 4.74 | 4.90 | 7.07 | 7.09 | 7.42 | 7.66 |
| 22. | Drinking bev, alcohol, vinegar | 5.60 | 5.34 | 3.69 | 3.09 | 4.59 | 3.49 | 2.43 | 2.25 | 2.95 | 2.91 | 2.88 | 3.92 |
| 23. | Animal fodder | 18.78 | 20.01 | 19.65 | 15.72 | 19.16 | 23.20 | 21.78 | 20.91 | 19.65 | 21.78 | 23.08 | 21.02 |
| 24. | Tobacco and tob. prod. | 5.92 | 6.93 | 5.50 | 5.67 | 5.23 | 7.61 | 7.11 | 6.21 | 7.25 | 3.85 | 3.85 | 2.82 |
| | Consolidated main groups: | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |

Source: Own calculations based on the Food database

# 4. Agricultural structures

## 4.1. Ownership structures within agriculture and within the food industry

The structure of ownership within the agricultural sector became fundamentally restructured during the 1990s. State ownership, the share of private capital (in other words the share of external investors along with Hungarian investors) have affected the individual sectors of the national economy very differently.

Following the political-economic transition, as a consequence of the Acts on corporations and on transformation, the registered capital within the agricultural sector was fixed and determined. Following this period, even its nominally summarised quantity changed very little. As a result of this the share of registered capital in privately owned assets decreased from the annual 89% of 1992 to 46.4% by the year 2002. This also means that the capital not registered under the owner's name has doubled in ten years. The 64% coverage of all registered capital shrank to only 25.5%.

The structure of ownership is also characterised by the fact that the property of cooperatives shrank quickly from the annual 47% of 1992 to 18% and then by 2002 was only 7.1%. The state properties decreased from 15% to 7,6% by 2001, and they have begun to increase again reaching 11.21% in 2002. The values of properties of non-foreign private persons increased from the annual HUF 85 billion of 1992 to HUF 160 billion by 2000. Then it decreased to HUF 130 billion by 2002. The capital of foreign property has increased ten-fold; this 23% investment means an 8.5% share.

Table 49

**The share of major owners in agricultural enterprises practising double entry bookkeeping**

Unit: Billion HUF

| Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | years | | | | | | |
| State property | . | 44.1 | 41.3 | 26.3 | 23.6 | 21.5 | 50.6 | 23.1 | 24.9 | 25.3 | 21.1 | 30.5 |
| Property of the local gvnmt | .. | .. | 1.3 | 1.6 | 1.8 | 1.4 | 2.1 | 1.8 | 1.4 | 1.7 | 2.2 | 2.3 |
| Property of Hungarian private persons | .. | 84.8 | 187.4 | 186.6 | 189 | 181.2 | 175.8 | 176.7 | 165.8 | 159.6 | 150.9 | 129.4 |
| Property of Hungarian corporations | .. | .. | 9.8 | 11.3 | 15.6 | 22.7 | 27.2 | 32.2 | 30.8 | 36.1 | 51.2 | 62.9 |
| Employees' share of assets | .. | 0.6 | 0.5 | 1.2 | 1.8 | 1.9 | 2.1 | 2.1 | 1.2 | 1.6 | 1.4 | 1.8 |
| Share of external properties | .. | 2.5 | 7.3 | 9.9 | 15.4 | 18.3 | 20.9 | 22.1 | 30.9 | 32.6 | 24.4 | 23.0 |
| Property of cooperatives | .. | 141.1 | 54.7 | 46 | 39.7 | 42.4 | 40 | 35.8 | 41.2 | 32.5 | 23.7 | 19.2 |
| Other property | .. | .. | 0.9 | 1.3 | 1.9 | 1.6 | 4 | 1.8 | 2.5 | 1.3 | 2.8 | 3.9 |
| Registered capital | 238.5 | 298.5 | 304.7 | 284.2 | 288.8 | 291 | 292.7 | 295.6 | 298.7 | 290.8 | 277.8 | 271.7 |
| Own capital | 319.4 | 334.2 | 333.5 | 328.1 | 358.4 | 382.6 | 408.8 | 443.6 | 450.6 | 457.4 | 509.7 | 585.3 |

Source: AKII calculations based on the urgent report of APEH

As a result of the change of the ownership structure, the external share is 50% in over 9% of the agricultural organisations. The majority of the economies have remained under Hungarian control.

Table 50

**The distribution of agricultural and fishing organisations according to the trait of property in 2002**

| The type of owner | Number of organisations* | Registered capital, billion HUF | Private Hungarian | External |
|---|---|---|---|---|
| | | | The share of property from registered capital, % | |
| 100 %- Hungarian property | 6916 | 243.3 | 51.5 | 0.0 |
| Foreign share above 50% | 655 | 22.8 | 2.4 | 79.4 |
| External share between 25-50% | 62 | 1.9 | 45.7 | 41.4 |
| Share below 25% | 35 | 3.7 | 36.8 | 8.2 |
| Total | 7668 | 271.7 | 47.1 | 7.1 |

* Only those organisations doing double-entry bookkeeping and tax reports
Source: AKII calculations based on the urgent report of APEH

Foreign capital obtained a role in the economic organisations at this time. In the year 2001 the share of external capital within the 706 foreign interested economies was 64%.

Table 51

**Enterprises of foreign interest in the agricultural sector according to the form of ownership**

| Denomination | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| | year | | | | | | | | |
| Number of organisations with external interest | | | | | | | | | |
| Limited liability companies | 288 | 480 | 548 | 594 | 628 | 637 | 663 | 671 | 634 |
| Joint stock companies | 13 | 13 | 15 | 17 | 18 | 17 | 22 | 18 | 18 |
| Cooperatives | | | 4 | 4 | 5 | 10 | 11 | 12 | 10 |
| Other organisations | 10 | 12 | 12 | 12 | 7 | 10 | 73 | 21 | 44 |
| Altogether | 311 | 505 | 579 | 627 | 658 | 674 | 769 | 722 | 706 |
| External share of all registered capital, billion HUF | | | | | | | | | |
| Limited liability companies | 4.7 | 6.9 | 11.4 | 13.2 | 14.1 | 14.9 | 22.8 | 24.5 | 16.9 |
| Joint stock companies | 2.1 | 2.3 | 2.4 | 3.3 | 5.8 | 5.7 | 6.6 | 6.9 | 5.6 |
| Cooperatives | | | 0 | 0 | 0.1 | 0.1 | 0.1 | 0 | 0.2 |
| Other organisations | 0.5 | 0.7 | 1.6 | 1.8 | 0.9 | 1.4 | 1.4 | 1.2 | 1.2 |
| Total | 7.3 | 9.9 | 15.4 | 18.3 | 20.9 | 22.1 | 30.9 | 32.6 | 23.8 |

Source: The major data on agricultural and food industrial organisations doing double-entry bookkeeping, 1997-2001, AKII, Budapest

The foreign inquiry primarily preferred economies of plant and horticulture production.

Table 52

**The division of external investments according to major activities**

| The direction of specialisation of economic forms | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| | years | | | | | | | | |
| **The number of organisations with external interest** | | | | | | | | | |
| Horticulture and gardening | 177 | 338 | 390 | 437 | 465 | 479 | 491 | 487 | 473 |
| Animal husbandry | 56 | 79 | 90 | 97 | 110 | 110 | 133 | 150 | 153 |
| Mixed holdings | 17 | 24 | 28 | 24 | 25 | 27 | 27 | 23 | 24 |
| Agricultural services of plant production, gardening. Animal husbandry and assistance | 61 | 64 | 71 | 69 | 58 | 58 | 58 | 62 | 56 |
| **External share of all registered capital, billion HUF** | | | | | | | | | |
| Horticulture and gardening | 4.8 | 7.1 | 11.1 | 14.1 | 16.9 | 17.7 | 24.6 | 25.6 | 14.6 |
| Animal husbandry | 1.4 | 1.6 | 2.7 | 3.1 | 2.6 | 3.1 | 4.4 | 5.7 | 7.7 |
| Mixed holdings | 0.6 | 0.7 | 0.8 | 0.3 | 0.5 | 0.5 | 0.6 | 0.2 | 0.4 |
| Services of horticulture, gardening, animal husbandry and assistance | 0.5 | 0.5 | 0.8 | 0.8 | 0.9 | 0.8 | 1.2 | 1.1 | 1.1 |

Source. The major data of agricultural and food industrial organisations doing double-entry bookkeping 1997-2001. AKII, Budapest.

Following the course of privatisation, the share of external capital has been greatest in the sector of the food industry. In the meantime, the economic role of the state decreased to a minimum.

Table 53

**The share of state and external capital of all registered capital within the sectors of industry\***

| Sector | Year 1995 | | Year 1997 | | Year 2000 | | Year 2001 | |
|---|---|---|---|---|---|---|---|---|
| | State | External | State | External | State | External | State | External |
| | The share of all registered capital % | | | | | | | |
| Production of food and drinking beverages | 14.2 | 51.5 | 2.2 | 60.3 | 1.6 | 62.9 | 5.1 | 60.1 |
| Production of tobacco | 0.2 | 97.3 | 0.1 | 93.3 | 0.2 | 82.3 | 0.1 | 61.4 |
| The production of food and drinking beverages together | 132.6 | 53.3 | 2.1 | 61.5 | 1.6 | 63.4 | 1.6 | 61.2 |
| Mining, processing industry, electricity, gas, heat, and water supplies in total. | 40.3 | 32.5 | 25.9 | 43.4 | 17.1 | 48.8 | 16.7 | 50.6 |

 \*/ The data of enterprises doing double-entry bookkeeping
Source:  Statistical Yearbook of Iindustry and Construction 1996: KSH, Budapest, 1997.
         1998. KSH, Budapest, 1999
         2001. KSH, Budapest, 2002.

The foreign share increased by 240 percent (1 to 3.4) between the years 1992 and 2002, reaching a share of 60%. The rate of foreign investments exceeded the augmentation of the registered capital on a sectorial level. The role of the state in terms of properties did not change much regarding enterprises doing double-entry bookkeeping. The low share that local governments obtained throughout privatisation did not change very much.  The share of cooperative property did not change either, however its nominal value somewhat increased until 1994. Following that year however, the value of the registered capital at their disposal decreased. The annual share in terms of ownership by Hungarian private persons was HUF 41.9 billion, indicating a 12% share. 24.8 percent of the Hungarian food industries are under Hungarian control.

Table 54

**The major enterprise owners in the agricultural and food industries doing double and single entry-bookkeeping**

Unit: billion HUF

| Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001* | 2002* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Years | | | | | | |
| State property | .. | 102.2 | 73.0 | 49.4 | 37.1 | 18.1 | 4.2 | 3.6 | 5.1 | 4.3 | 2.1 | 9.0 |
| Property of the local gvnmnt | .. | .. | 4.2 | 3.7 | 3.0 | 3.0 | 3.8 | 2.8 | 2.3 | 2.2 | 1.8 | 1.6 |
| The property of Hungarian private persons | .. | 25.0 | 18.7 | 22.0 | 22.8 | 28.4 | 33.4 | 31.7 | 37.0 | 39.7 | 42.4 | 41.9 |
| Hungarian social property | .. | .. | 34.9 | 50.5 | 62.7 | 73.5 | 87.1 | 93.0 | 93.9 | 90.4 | 85.0 | 86.5 |
| Employees' share of assets | .. | 0.1 | 3.8 | 5.7 | 6.4 | 5.8 | 5.5 | 4.9 | 4.1 | 3.5 | 3.4 | 3.5 |
| Share of external property | .. | 72.2 | 111.5 | 134.9 | 158.4 | 158.0 | 215.8 | 235.9 | 234.4 | 247.5 | 214.4 | 199.9 |
| Cooperative property | .. | 7.9 | 9.8 | 11.0 | 5.5 | 6.1 | 4.5 | 3.6 | 5.1 | 4.8 | 4.1 | 4.0 |
| Other property | .. | .. | 2.8 | 4.2 | 3.1 | 1.7 | 1.8 | 1.2 | 1.2 | 2.2 | 1.0 | 1.7 |
| Registered capital | 238.5 | 227.0 | 258.7 | 281.4 | 299.0 | 294.6 | 356.1 | 376.7 | 383.1 | 394.6 | 354.1 | 348.1 |
| Own capital | 319.4 | 251.9 | 296.3 | 325.1 | 345.5 | 355.4 | 460.4 | 507.4 | 545.6 | 613.7 | 618.8 | 679.7 |

*/Only enterprises doing double-entry bookkeeping
Source: AKII calculations based on the urgent report of APEH

The share of Hungarian private persons of all organisations of Hungarian properties was 35% in 2001, and this rate had hardly reached 31% in 2002.

Table 55

**The distribution of food industrial organisations according to property traits in 2002***

| Trait of owner | Number of organisations | Registered capital/ billion HUF | Private/ Hungarian | External |
|---|---|---|---|---|
| | | | The share of property from the registered capital, % | |
| 100 % Hungarian property | 3000 | 119.6 | 30.5 | 0.0 |
| External share above 50% | 316 | 205.7 | 0.7 | 93.5 |
| External share between 25-50%. | 68 | 16.7 | 18.9 | 42.6 |
| Foreign share below 25% | 33 | 6.0 | 14.4 | 6.8 |
| Altogether | 3417 | 348.1 | 21.2 | 57.4 |

*/ Only enterprises of double-entry bookkeeping
Source: AKII calculations based on the fast urgent report of the APEH

External investors were interested in 335 limited liability companies, 62 joint stock companies and a further 15 other organisations. They obtained 51% of their HUF 216 billion capital from different joint stock companies.

Table 56

**Enterprises of foreign interest within the food industry according to operational status**

| Denomination | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|
| | Years | | | | | | | | |
| The number of organisations of foreign interest | | | | | | | | | |
| Limited liability companies | 363 | 400 | 442 | 425 | 422 | 418 | 379 | 361 | 335 |
| Joint stock companies | 67 | 71 | 76 | 70 | 67 | 73 | 70 | 69 | 62 |
| Other organisations | 8 | 8 | 12 | 12 | 10 | 11 | 10 | 14 | 15 |
| Total | 438 | 479 | 530 | 507 | 499 | 502 | 459 | 444 | 412 |
| External share of the registered capital | | | | | | | | | |
| Limited liability companies | 45.8 | 56.1 | 70.3 | 68.7 | 106.0 | 119.9 | 102.7 | 96.4 | 99.8 |
| Joint stock companies | 61 | 74.2 | 82.1 | 80.2 | 103.6 | 111.2 | 125.7 | 144.6 | 109.1 |
| Other organisations | 4.7 | 4.6 | 5 | 6.1 | 6.2 | 4.8 | 6.0 | 6.5 | 6.5 |
| Total | 111.5 | 134.9 | 157.4 | 155.0 | 215.8 | 235.9 | 234.4 | 247.5 | 215.5 |

Source: The major data of the agricultural and food economic organisations, 1997-2001, AKII, Budapest.

The absolute value of the greatest foreign capital is close to HUF 40 billion which was in the sectorial branch of "the manufacture of other non-classified food products" with a share of 90.6%

External capital:

*This mostly became significant in the production of soft drinks to the value of HUF 27.6 billion, obtaining a share of 96.1%, followed by:

- Beer and malt production (HUF 28.4 billion, 96.1%)
- The sweets industry (HUF 24.5 billion, 96.1%)
- Production of vegetable oils (HUF 10 billion, 94.8%)
- Production of preserved flour-based goods (HUF 11.6 billion, 92.3%.)
- Manufacturing of tobacco products(HUF 8.9 billion, 82.3%)
- Milk processing(HUF 14.7 billion, 78.2)
- Sugar production (HUF 18.4 billion, 68.9%)

Controversially the share of registered capital in external interest is low in the following sectors:

- production of pastries (4.2%)
- bread production (6.8%)
- fish processing (8.9%)
- wine production (13.0%)

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Table 57

**The role of external capital within each sector of the food industry, according to the classification of 1997**

| Sector | External share from the registered capital | | | | | Foreign share from the registered capital of external enterprises | | | | | External interest of a given sector from the registered capital of all its enterprises % | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1997 | 1998 | 1999 | 2000 | 2001 | 1997 | 1998 | 1999 | 2000 | 2001 | 1997 | 1998 | 1999 | 2000 | 2001 |
| | Years | | | | | | | | | | | | | | |
| Meat processing | 14.9 | 17.2 | 20.2 | 17.8 | 22.4 | 71.0 | 68.4 | 64.1 | 55.7 | 65.3 | 33.6 | 33.4 | 34.4 | 30.1 | 36.1 |
| Broken down into: meat processing and preservation | 7.0 | 6.5 | 8.2 | 7.6 | 9.0 | 76.7 | 67.0 | 71.5 | 66.8 | 65.8 | 39.3 | 36.9 | 47.0 | 42.9 | 42.5 |
| Poultry processing + preservation | 4.7 | 7.7 | 10.5 | 7.9 | 10.7 | 58.3 | 66.2 | 60.1 | 45.0 | 62.0 | 23.3 | 28.8 | 29.7 | 23.4 | 32.0 |
| Production of meat and poultry meat preparations | 3.2 | 3.0 | 1.5 | 2.3 | 2.7 | 84.8 | 79.0 | 58.7 | 74.3 | 80.1 | 50.9 | 48.3 | 25.2 | 29.9 | 35.8 |
| Fish processing | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 83.1 | 74.6 | 77.5 | 66.6 | 34.6 | 34.5 | 9.7 | 8.9 |
| Fruit and vegetable production | 18.1 | 19.9 | 16.2 | 18.0 | 15.6 | 85.3 | 88.0 | 84.0 | 83.1 | 85.5 | 53.0 | 57.3 | 52.6 | 51.0 | 47.5 |
| Production of lard and plant oils | 10.0 | 10.0 | 9.9 | 9.8 | 10.0 | 99.3 | 99.4 | 99.5 | 99.7 | 99.2 | 97.3 | 95.9 | 97.0 | 94.8 | 94.8 |
| Operation of dairies and cheese making | 13.9 | 14.7 | 18.3 | 16.9 | 14.7 | 93.7 | 92.6 | 85.2 | 97.1 | 96.3 | 59.1 | 61.7 | 70.2 | 80.1 | 78.2 |
| Manufacturing of products from the cereal industry and starch. | 2.0 | 2.8 | 2.1 | 3.9 | 4.8 | 80.7 | 85.4 | 86.8 | 74.3 | 77.5 | 9.9 | 14.9 | 10.3 | 20.7 | 38.4 |
| Manufacturing of goods from the cereal industry | 7.2 | 5.7 | 5.7 | 5.3 | 5.3 | 74.4 | 69.8 | 69.8 | 68.0 | 68.0 | 74.2 | 69.5 | 69.5 | 67.7 | 67.7 |
| Manufacturing of fodder | 8.9 | 9.1 | 9.4 | 9.7 | 10.1 | 93.2 | 93.9 | 95.8 | 97.4 | 97.2 | 63.2 | 54.8 | 63.7 | 58.4 | 61.1 |
| Manufacturing of other food products | 47.2 | 61.5 | 72.8 | 93.6 | 63.7 | 76.4 | 79.2 | 83.5 | 87.9 | 87.5 | 54.1 | 62.9 | 67.6 | 75.0 | 69.4 |
| Broken down into: manufacturing of bread and fresh pastry goods and cakes. | 5.8 | 4.5 | 1.0 | 1.0 | 0.9 | 83.1 | 73.8 | 44.2 | 57.2 | 56.1 | 30.9 | 24.9 | 7.1 | 7.5 | 6.8 |
| Manufacture of rusks and biscuits | 0.3 | 1.6 | 11.7 | 11.6 | 11.6 | 99.3 | 99.2 | 99.8 | 96.8 | 99.9 | 35.9 | 92.7 | 96.6 | 90.7 | 92.3 |
| Manufacture of sugar | 10.9 | 12.7 | 15.1 | 15.5 | 18.4 | 47.7 | 47.0 | 53.8 | 57.3 | 68.9 | 35.9 | 47.0 | 53.7 | 57.3 | 68.9 |
| Manufacture of cocoa, chocolate and sugar confectionery | 11.8 | 24.9 | 25.3 | 25.7 | 25.4 | 99.0 | 99.7 | 99.7 | 99.7 | 99.7 | 89.6 | 94.5 | 94.6 | 95.1 | 95.9 |
| Manufacture of pastry | 0.3 | 0.0 | 0.1 | 0.1 | 0.1 | 17.5 | 77.7 | 91.0 | 87.8 | 85.7 | 9.6 | 6.2 | 6.8 | 8.3 | 4.2 |
| The manufacture of other non-classified products | 18.1 | 17.8 | 19.6 | 39.7 | 7.3 | 99.5 | 99.6 | 99.5 | 99.9 | 99.6 | 85.1 | 76.6 | 77.5 | 90.6 | 61.7 |

Source: The major data on the agricultural and food industrial organisations doing double-entry bookeeping, 1997-2001

**The role of external capital within each sector of the food industry, according to the classification of 1997**

| Sector | External share from the registered capital | | | | | Foreign share from the registered capital of external enterprises | | | | | External interest of a given sector from the registered capital of all its enterprises % | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1997 | 1998 | 1999 | 2000 | 2001 | 1997 | 1998 | 1999 | 2000 | 2001 | 1997 | 1998 | 1999 | 2000 | 2001 |
| | Years | | | | | | | | | | | | | | |
| Manufacture of beverages | 82.0 | 83.9 | 70.7 | 63.6 | 60.0 | 94.5 | 95.3 | 96.7 | 97.2 | 96.5 | 81.6 | 82.0 | 74.2 | 71.0 | 71.0 |
| Broken down into: manufacture of potable alcoholic beverages | 2.7 | 2.6 | 1.7 | 1.7 | 1.7 | 58.4 | 58.0 | 83.2 | 81.9 | 81.2 | 38.3 | 40.8 | 25.6 | 23.5 | 23.2 |
| Wine production | 2.1 | 2.7 | 2.2 | 2.3 | 2.4 | 86.5 | 85.6 | 89.4 | 92.8 | 89.5 | 17.4 | 19.0 | 11.9 | 11.3 | 13.0 |
| Beer production | 21.2 | 21.8 | 27.5 | 28.3 | 28.4 | 91.8 | 94.5 | 94.6 | 96.3 | 95.5 | 90.4 | 92.9 | 93.2 | 95.0 | 94.3 |
| Production of soft drinks, beverages | 56.0 | 56.8 | 39.3 | 31.3 | 27.6 | 98.8 | 99.2 | 99.3 | 99.3 | 99.4 | 96.9 | 97.2 | 96.6 | 96.4 | 96.1 |
| Manufacturing of tobacco | 11.6 | 11.0 | 9.0 | 8.9 | 8.9 | 97.3 | 92.1 | 86.6 | 86.6 | 86.6 | 93.3 | 88.1 | 83.8 | 82.3 | 82.3 |
| Total | 215.8 | 235.8 | 234.3 | 247.5 | 215.5 | 86.6 | 86.6 | 86.5 | 86.5 | 87.1 | 60.6 | 62.6 | 61.2 | 62.7 | 60.8 |

Source: The major data on the agricultural and food industrial organisations doing double-entry bookkeeping, 1997-2001

## 4.2. Agricultural enterprises by legal status of farming

The 1990s was a decade when drastic restructuring of Hungarian agriculture took place. Due to the political-economic transition of the country the large-size holdings and collective ownership were replaced by a new type of management based on direct interests and by small-size holdings; the government provided assistance with the transformation process.

In the first year of the period analysed, that is, following the political-economic transformation, the dominance of large-size enterprises in state and co-operative ownership was characteristic. However, the significance of enterprises in state ownership was smaller than in other sectors of the economy. In agriculture the most common legal operational status was the co-operative. As a result of capital accumulation supported by government subsidies, high level production concentration also took place also in the co-operatives. The size differences among co-operatives was much larger than that among state holdings.

Before the political-economic transition about two-thirds of the agricultural production value was generated by 13 state holdings and by nearly 1200 agricultural co-operatives[7]. Farmers (in the majority part-timers) of small-size holdings (about 1.5-1.6 million farms) provided more than one third of agricultural production.

Earlier the proportion of small holdings was also significant and in some sectors their role was indeed determinant. The close relationship between large-size and small-size holdings and the functional labour-division between them were characteristic in the Hungarian agricultural model. The large-size holdings with high level technological background assisted the operation of the small ones.

Following the political-economic transition the main goal of transforming the ownership - becoming dominant also in the management structure of the enterprises - was to replace the state and co-operative ownership by private ownership in order to ensure the interests of private capital and to encourage the general entrepreneurial spirit amongst farmers. This was, however, a task without any precedent since in the history of this industry and its legislation no such restructuration had taken place in any part of the world before.

Based on Government Decree No. 126/1992 (VIII.28.) 25 holdings of strategic importance were selected and became state holdings in permanent state ownership due to their role in protecting the genetic resources and ensuring propagating material. The rest of the holdings were to be 100 percent privatised. From among the state holdings – (corporations) – in permanent state ownership 12 joint stock companies were privatised in 2001.

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[7]Enterprises engaged in fishery and specialist cooperatives are not included here.

Privatisation in general took place in several phases. The first phase was the decentralised privatisation (division of activities). This served a double purpose, on the one hand, the large-size holdings were divided into small units and, on the other hand, the debts were to be decreased. The process started by publishing invitations for bids for certain units of the enterprises, independent parts of plants, machines and stocks all with free price competition. In addition to superfluous stocks marketable business shares and factories were sold by abolishing numerous elements of vertical integration in "production-processing-commerce" as well as the means and ways of integration. Obviously this provided opportunities to establish independent plants instead of unifying parts which were far away from each other and without real connections. The other goal was to improve liquidity by selling business stocks/shares or assets; this depended on incomes obtained since in this way the enterprises could pay back their debts accumulated and  rid themselves of increasing loan interest.

In the second phase of privatisation the farms were transformed into agricultural enterprises - a) joint stock companies - RT and b) limited liability companies – KFT- and then were sold partially or as a whole.

The ownership and structural transformation of agricultural co-operatives was much different from that of state holdings due to their different characteristics. The transformation of co-operatives, which used to be determinant in agriculture - was an extraordinarily complex process. The political and economic affects of it were both significant.

The co-operatives set about co-operation and transition at an accelerated rate; this process involved about 1 million people, 5.6 million hectares of land and other assets of about HUF 260 billion. In addition to liquidation the forms of transformation were as follows:

- Division,
- Break-away by groups,
- Individual break-away by establishing independent units,
- Establishing agricultural enterprises.

According to the Acts passed by Parliament in 1992, in the transformation process the co-operatives were to distribute their total assets among their employees and those persons or their inheritors who were eligible according to the Acts to claim a certain share of the assets. By applying the Acts the collective assets were distributed in the forms of share tickets and business shares among the owners, who individually had only limited rights but jointly constituted a significant part.

The number of enterprises engaged in agriculture, hunting and forestry increased rapidly up to 1995 and from then the sizes of the companies decreased. However, even at present the structure of holdings cannot be considered stable.

At the end of 2002 in agriculture, hunting, forestry and fishery 38,112 agricultural enterprises (agricultural enterprises and private farmers) were

operational; 451 more than in the previous year. The increase was most significant regarding the number of private farmers.

Private farmers account for 66 percent of total enterprises in operation. In 2002 there were 25,167 private farmers and 12,945 agricultural enterprises; in 2002 their number decreased by more than 19 percent. The most prevalent legal operational status is still the limited company and only 1,654 co-operatives were engaged in agriculture in that year.

The enterprises engaged in agriculture are characterised by the predominance of organisations with only a small staff. While until 1992 the companies with not more than 20 employees did not account for more than 50 percent in total agricultural enterprises, in 2002 approximately 82 percent in total agricultural enterprises were in the category of **less than 10 employees**.

As for the food industry, the number of enterprises (including the number of enterprises with various legal status) also increased during the period of privatisation. A great number of private farmers gave up their activities and closed down after 1996.

Table 58

**Number of enterprises engaged in agriculture, hunting and forestry** [*]

| Legal operational status of holdings | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | at the end of the year | | | | | | | | | | | | |
| Total enterprises | 13705 | 16210 | 17105 | 18022 | 30491 | 26465 | 32321 | 38149 | 39042 | 38203 | 39160 | 37661 | 38112 |
| **In which:** | | | | | | | | | | | | | |
| Private farms | 11428 | 12589 | 12678 | 11579 | 22493 | 18288 | 22682 | 27427 | 27832 | 26434 | 26595 | 24583 | 25167 |
| Agricultural corporations | 2277 | 3621 | 4427 | 6443 | 7998 | 8177 | 9639 | 10722 | 11210 | 11769 | 12565 | 13078 | 12945 |
| **Breakdown of agricultural corporations**: | | | | | | | | | | | | | |
| Limited liability companies | 446 | 1297 | 1628 | 2434 | 3140 | 3185 | 3805 | 4516 | 4725 | 4909 | 5255 | 5614 | 5689 |
| Joint stock companies | 17 | 42 | 45 | 109 | 171 | 179 | 191 | 204 | 197 | 242 | 259 | 316 | 312 |
| Co-operatives | 1405 | 1493 | 1621 | 1971 | 2048 | 1965 | 1930 | 1915 | 1715 | 1832 | 1886 | 1808 | 1654 |
| General partnership | 41 | 41 | 51 | 89 | 103 | 91 | 103 | 97 | 90 | 104 | 155 | 156 | 155 |
| Limited partnership | 124 | 510 | 918 | 1715 | 2348 | 2183 | 2773 | 2925 | 3291 | 3463 | 3806 | 3965 | 3987 |

*Agricultural enterprises in operation since 1996
Source: Hungarian Central Statistical Office (KSH)

Table 59

**Number of agricultural enterprises by staff categories** [*]

| Staff category | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | at the end of the year | | | | | | | | | | | | |
| < 10 | .. | .. | .. | 1434 | 2420 | 3692 | 7219 | 8432 | 9090 | 9431 | 10162 | 10716 | 10674 |
| 11-20 | 413 | 1031 | 1456 | 1006 | 1012 | 701 | 633 | 576 | 540 | 687 | 777 | 774 | 782 |
| 21-50 | 106 | 297 | 430 | 667 | 761 | 834 | 752 | 738 | 701 | 773 | 817 | 858 | 863 |
| 51-300 | 860 | 1060 | 1191 | 1272 | 1209 | 1062 | 963 | 906 | 818 | 811 | 839 | 730 | 626 |
| > 300 | 722 | 666 | 374 | 247 | 126 | 96 | 72 | 67 | 61 | 67 | | | |

[*] Agricultural enterprises with legal status engaged in agriculture and hunting between 1990-1995.
Source: Hungarian Central Statistical Office (KSH)

Table 60

**Legal operational status of enterprises operating in the food, beverage and tobacco production**

| Legal status | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Corporations with legal operational status** | 1724 | 2370 | 2794 | 2640 | 2931 | 3235 | 3097 | 3012 | 3083 | 3142 |
| Agricultural corporations | 1542 | 2214 | 2648 | 2550 | 2846 | 3153 | 3022 | 2929 | 2981 | 3038 |
|   of which limited liability companies | 1422 | 2022 | 2415 | 2320 | 2610 | 2003 | 2746 | 2692 | 2755 | 2819 |
|   Joint stock companies | 108 | 182 | 226 | 226 | 232 | 247 | 245 | 236 | 225 | 218 |
| Co-operatives | 65 | 92 | 97 | 70 | 67 | 69 | 69 | 80 | 101 | 103 |
| Other legal statuses of corporations (enterprise) | 117 | 64 | 49 | 20 | 18 | 13 | 6 | 3 | 1 | 1 |
| **Corporations with legal operational status** | 857 | 1259 | 1434 | 1197 | 1379 | 1365 | 1347 | 1348 | 1395 | 1369 |
| General partnership | 29 | 52 | 60 | 51 | 50 | 47 | 43 | 51 | 98 | 108 |
| Limited partnership | 529 | 971 | 1166 | 1010 | 1203 | 1208 | 1203 | 1220 | 1276 | 1254 |
| Other corporations | 299 | 236 | 208 | 136 | 126 | 110 | 101 | 77 | 21 | 7 |
| **Private farmers** | .. | .. | 6172 | 4668 | 5009 | 4792 | 4252 | 4001 | 3900 | 3649 |

Enterprises registered up to 1994
Enterprises operating since 1995
Source: Data of the Hungarian Central Statistical Office (KSH)and the Tax and Financial Control Authority (APEH)

In the food industry, within the enterprises in operation and with legal operational status the number of companies employing only several workers increased significantly.

<div align="right">Table 61</div>

**Agricultural corporations with legal operational status in operation by staff categories engaged in food, beverage and tobacco production**

| Staff number | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|
| over 300 | 146 | 140 | 110 | 389 | 385 | 399 | 98** | 93** |
| between 51-300 | 272 | 253 | 268 | | | | 295*** | 323*** |
| between 21-50 | 320 | 321 | 309 | 383 | 408 | 443 | 890 | 917 |
| between 11-20 | 273 | 326 | 280 | 426 | 449 | 440 | | |
| less than 11* | 1629 | 1891 | 1774 | 1814 | 1833 | 1853 | 2016 | 2084 |
| Total | 2640 | 2931 | 2741 | 3012 | 3075 | 3135 | 3299 | 3417 |

\*/ Including the organisations of undefined staff number
\*\*/ over 250
\*\*\*/ between 51-250
Source: Hungarian Central Statistical Office (KSH)

## 4.3. Structure of production

During the last decade the volume of agricultural production decreased significantly compared to 1990. Agricultural production reached its nadir in 1993. Following the record in 1996 - which was only 76 percent of 1990 - production dropped again. The volume of crop production started to grow in 1994 but after1996 the crop production fell again. The gross production of Animal husbandry decreased also in 1994 and even in the second part of the nineties it fluctuated between 63-67 percent of the production level of 1990.

Between 2000-2002 the change of the volume of crop production was induced first of all by the fluctuation of crop production, while the production of animal products hardly changed. In 2001 crop production accounted for 93.7 percent of the production volume of 1990, that is, it was the second largest production in the period analysed.

Table 62

**Volume index of gross agricultural production**
(1990 = 100%)

(at constant prices, %)

| Year | Total agricultural production | of which: | |
|------|---------|-----------------|-------------------|
| | | **Crop production** | **Animal husbandry** |
| 1991 | 93.8 | 102.5 | 84.4 |
| 1992 | 75.0 | 76.1 | 73.8 |
| 1993 | 67.7 | 69.1 | 66.1 |
| 1994 | 69.8 | 75.9 | 63.3 |
| 1995 | 71.6 | 77.3 | 65.5 |
| 1996 | 76.1 | 84.9 | 66.6 |
| 1997 | 73.6 | 84.0 | 62.6 |
| 1998 | 74.1 | 80.9 | 66.5 |
| 1999 | 74.4 | 82.8 | 65.4 |
| 2000 | 69.6 | 70.9 | 67.9 |
| 2001 | 80.6 | 93.7 | 66.9 |
| 2002* | 74.7 | 80.4 | 66.8 |

Source: Hungarian Central Statistical Office (KSH)

*/ based on EAA

By considering the production structure (if farming conditions are favourable) we see that the share of crop production, horticulture and of Animal husbandry account for 50 percent each. In the case of unfavourable weather conditions, particularly if it is unfavourable for most crops the above shares might deviate by 5-10 percent.

The internal structure of gross agricultural production are basically determined by the prices which were applied to the calculations. Between 1990-2000 the value of live animals and animal products increased compared to crops and horticultural products. Each year the production prices of animal products based on the 1990 base price exceeded the crop production index of the same period. This fact somewhat modifies the production structure and the change calculated by the two different price bases.

Table 63

**Value of gross agricultural production**
Based on constant prices of 1991

Unit.: billion HUF

| Year | Total agricultural production | Of which: | | Distribution, % | |
|---|---|---|---|---|---|
| | | Crop production | Animal husbandry | Crop production | Animal husbandry |
| 1991 | 449.1 | 254.2 | 194.9 | 56.6 | 43.4 |
| 1992 | 359.2 | 188.9 | 170.3 | 52.6 | 47.4 |
| 1993 | 324.2 | 171.6 | 152.6 | 52.9 | 47.1 |
| 1994 | 334.5 | 188.3 | 146.2 | 56.3 | 43.7 |
| 1995 | 342.9 | 191.8 | 151.1 | 55.9 | 44.1 |
| 1996 | 364.4 | 210.7 | 153.7 | 57.8 | 42.2 |
| 1997 | 352.9 | 208.3 | 144.5 | 59.0 | 41.0 |
| 1998 | 374.3 | 197.2 | 177.1 | 52.7 | 47.3 |
| 1999 | 377.3 | 212.0 | 165.3 | 56.2 | 43.8 |
| 2000 | 444.3 | 237.7 | 206.3 | 53.5 | 46.5 |
| 2001 | 462.9 | 236.6 | 226.4 | 51.1 | 48.9 |
| 2002 | 491.0 | 253.4 | 237.7 | 51.6 | 48.4 |

Source: data of the Hungarian Central Statistical Office (KSH) and own calculations
Remark: Since 1998 the calculations are based on EAA

In the first half of the period analysed above, the price increase was characteristic for live animals and for animal production. However, Animal husbandry decreased more significantly. In the production structure at current prices the 49.4 percent share of crop production and horticulture increased in 1996 to 60 percent. In 1998 due to the drastic drop of cereal production the gross production of crops approached 50 percent. In 2000 the shares of the two main product types in total production was balanced. This was mainly due to the volume decrease of crop production - cereals, industrial plants, potato and vegetables - and even the high production prices could not compensate this. In 2002 the shares of the two main sectors was approximately 50 percent each.

### 4.3.1. Crop production and horticulture

The production structures of crop production and horticulture as well as the change of production area are shown in the following tables.

Table 64

**Production values in crop production and horticulture by main sectors**

(based on current prices, billion HUF)

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cereals and leguminous plants | 91.6 | 112.0 | 79.1 | 94.7 | 124.6 | 148.2 | 261.4 | 269.9 | 197.1 | 206.3 | 269.4 | 280.5 | 291.8 |
| Industrial plants | 24.2 | 29.0 | 21.5 | 19.0 | 33.3 | 50.1 | 66.5 | 58.5 | 72.1 | 87.4 | 56.4 | 85.9 | 100.2 |
| Potato | 10.1 | 15.3 | 15.0 | 14.2 | 18.6 | 37.0 | 25.9 | 20.0 | 42.2 | 47.9 | 28.1 | 31.2 | 27.4 |
| Seed hay and juicy fodder | 13.6 | 19.6 | 12.4 | 13.5 | 19.0 | 22.5 | 25.7 | 27.2 | 37.3 | 36.7 | 26.3 | 33.3 | 31.1 |
| Vegetable | 28.0 | 28.2 | 32.7 | 35.9 | 38.4 | 48.3 | 60.4 | 85.2 | 94.9 | 105.4 | 87.4 | 105.9 | 105.7 |
| Fruits | 18.3 | 24.3 | 19.1 | 19.9 | 24.3 | 32.6 | 36.7 | 43.1 | 46.1 | 48.1 | 52.0 | 41.4 | 36.5 |
| Wine growing | 18.4 | 13.9 | 11.0 | 12.1 | 15.1 | 17.8 | 30.4 | 37.9 | 35.5 | 29.6 | 38.1 | 62.7 | 50.6 |
| Other crops | 16.5 | 13.6 | 14.6 | 19.7 | 23.0 | 32.9 | 43.1 | 21.7 | 21.9 | 42.6 | 40.5 | 40.1 | 52.1 |
| Crop production and horticulture | 220.6 | 255.8 | 205.4 | 228.9 | 296.3 | 389.5 | 550.1 | 563.5 | 546.7 | 604.1 | 598.2 | 681.1 | 675.3 |
| Live animals and animal products | 225.7 | 192.1 | 193.0 | 197.7 | 238.6 | 319.9 | 373.6 | 438.8 | 517.9 | 478.5 | 564.5 | 683.9 | 653.0 |
| Total gross production | 446.3 | 447.9 | 398.4 | 426.7 | 535.0 | 709.5 | 923.7 | 1002.3 | 1064.6 | 1082.6 | 1162.7 | 1365.0 | 1348.3 |
| **Production structure, %** | | | | | | | | | | | | | |
| Cereals and leguminous plants | 20.5 | 25.0 | 19.8 | 22.2 | 23.3 | 20.9 | 28.3 | 26.9 | 18.5 | 19.1 | 23.2 | 20.5 | 21.6 |
| Industrial plants | 5.4 | 6.5 | 5.4 | 4.4 | 6.2 | 7.1 | 7.2 | 5.8 | 6.8 | 8.1 | 4.9 | 6.3 | 7.4 |
| Potato | 2.3 | 3.4 | 3.8 | 3.3 | 3.5 | 5.2 | 2.8 | 2.0 | 4.0 | 4.4 | 2.4 | 2.3 | 2.0 |
| Hayseeds and fodder | 3.0 | 4.4 | 3.1 | 3.2 | 3.6 | 3.2 | 2.8 | 2.7 | 3.5 | 3.4 | 2.3 | 2.4 | 2.3 |
| Vegetable | 6.3 | 6.3 | 8.2 | 8.4 | 7.2 | 6.8 | 6.5 | 8.5 | 8.9 | 9.7 | 7.5 | 7.8 | 7.8 |
| Fruits | 4.1 | 5.4 | 4.8 | 4.7 | 4.6 | 4.6 | 4.0 | 4.3 | 4.3 | 4.4 | 4.5 | 3.0 | 2.7 |
| Viticulture (wine products) | 4.1 | 3.1 | 2.8 | 2.8 | 2.8 | 2.5 | 3.3 | 3.8 | 3.3 | 2.7 | 3.3 | 4.6 | 3.7 |
| Other crops | 3.7 | 3.0 | 3.7 | 4.6 | 4.3 | 4.6 | 4.7 | 2.2 | 2.0 | 3.9 | 3.5 | 2.9 | 3.9 |
| Crop production and horticulture | 49.4 | 57.1 | 51.6 | 53.7 | 55.4 | 54.9 | 59.6 | 56.2 | 51.4 | 55.8 | 51.4 | 49.9 | 51.6 |
| Live animals and animal products | 50,6 | 42,9 | 48,4 | 46,3 | 44,6 | 45,1 | 40,4 | 43,8 | 48,6 | 44,2 | 48,6 | 50,1 | 48,4 |
| Total gross production | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 |

Source: own calculations based on the data of the Hungarian Central Statistical Office (KSH).

*/ based on EAA

Table 65

**Production area of the main crops**
(continued on the next page)

Unit: thousand hectares

| Crop | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002[+] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cereals[1] | 2778 | 2778 | 2658 | 2708 | 2895 | 2749 | 2807 | 2937 | 2835 | 2402 | 2764 | 3081 | 2929 |
| wheat[2] | 1221 | 1152 | 846 | 986 | 1059 | 1108 | 1193 | 1247 | 1183 | 734 | 1 024 | 1206 | 1111 |
| rye | 92 | 93 | 70 | 68 | 88 | 77 | 59 | 67 | 62 | 39 | 43 | 51 | 48 |
| winter barley | 189 | 209 | 220 | 185 | 197 | 187 | 154 | .. | .. | 125 | 151 | 203 | 202 |
| spring barley | 108 | 149 | 258 | 244 | 226 | 206 | 171 | .. | .. | 208 | 174 | 164 | 170 |
| total barley | 297 | 358 | 478 | 429 | 423 | 393 | 325 | 370 | 369 | 334 | 325 | 367 | 372 |
| oat | 48 | 50 | 51 | 53 | 56 | 53 | 48 | 52 | 52 | 71 | 58 | 61 | 64 |
| maize | 1082 | 1106 | 1159 | 1121 | 1204 | 1033 | 1053 | 1059 | 1023 | 1115 | 1193 | 1258 | 1201 |
| rye | 12 | 9 | 5 | 5 | 5 | 4 | 3 | 2 | 3 | 2 | 3 | 2 | .. |
| Bean | 4 | .. | 4 | 44 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 3 | .. |
| Peas | 135 | 114 | 111 | 88 | 54 | 57 | 52 | 53 | 54 | 50 | 25 | 26 | .. |
| Bread bean | 3 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | .. |
| Sugarbeet | 131 | 161 | 108 | 95 | 105 | 124 | 118 | 98 | 80 | 66 | 57 | 66 | 56 |
| Tobacco | 9 | 10 | 9 | 9 | 8 | 7 | 6 | 6 | 6 | 8 | 6 | 5 | 5 |
| Sunflower | 347 | 389 | 428 | 389 | 416 | 491 | 473 | 440 | 427 | 521 | 299 | 320 | 418 |
| Colza | 60 | 65 | 34 | 22 | 28 | 45 | 94 | 89 | 52 | 181 | 116 | 110 | 127 |
| Flax | 9 | .. | 6 | 2 | 2 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | .. |
| Soya-bean | 42 | 25 | 28 | 15 | 9 | 10 | 13 | 14 | 24 | 32 | 22 | 21 | .. |
| Papaverous | 3 | .. | 4 | 4 | 4 | 6 | 3 | 4 | 3 | 5 | 3 | 2 | .. |
| Hemp | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | .. |
| Potato | 44 | 48 | 52 | 56 | 57 | 57 | 62 | 64 | 53 | 56 | 47 | 36 | 34 |

## Production area of the main crops (continued)

Unit: thousand hectares

| Crop | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002[+] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Silage maize | 321 | 243 | 243 | 222 | 213 | 196 | 162 | 156 | 145 | 143 | 147 | 129 | .. |
| Green maize | 14 | 13 | 9 | 8 | | | | | | | | | |
| Mixed green fodder harvested in autumn | 14 | .. | 10 | 9 | 12 | 13 | 9 | 11 | 10 | 9 | 5 | 4 | .. |
| Lucerne | 302 | 32 | 280 | 255 | 254 | 253 | 247 | 233 | 222 | 210 | 159 | 155 | .. |
| Red clover | 21 | 16 | 15 | 11 | 12 | 12 | 12 | 11 | 9 | 11 | 8 | 8 | .. |
| Vegetables on free ground[3] | 116 | 112 | 82 | 83 | 98 | 119 | 95 | 118 | 109 | 112 | 90 | 101 | 114 |
|    white cabbage | 4 | 4 | 4 | 5 | 5 | 7 | 6 | 7 | 7 | 6 | 4 | 5 | 6 |
|    carrot | 4 | .. | 2 | 3 | 4 | 5 | 4 | 5 | 5 | 5 | 3 | 3 | 3 |
|    onion | 5 | 7 | 6 | 6 | 6 | 9 | 7 | 6 | 6 | 7 | 5 | 6 | 5 |
|    cucumber | 3 | .. | 2 | 3 | 3 | 4 | 3 | 7 | 5 | 5 | 3 | 3 | 3 |
|    water melon | 7 | .. | 4 | 4 | 4 | 7 | 6 | 6 | 7 | 7 | 8 | 8 | 10 |
|    French bean | 4 | .. | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 3 | 3 |
|    green peas | 31 | 20 | 13 | 12 | 12 | 14 | 12 | 18 | 13 | 13 | 15 | 19 | 22 |
|    tomato | 15 | 12 | 7 | 7 | 9 | 12 | 10 | 14 | 13 | 11 | 6 | 6 | 7 |
|    green pepper[4] | 8 | 6 | 8 | 7 | 7 | 9 | 8 | 10 | 10 | 9 | 7 | 7 | 7 |
|    Sweet corn | .. | 11 | 9 | 11 | 14 | 15 | 15 | 15 | 16 | 19 | 22 | 26 | 33 |
| red pepper | 9 | 9 | 5 | 5 | 5 | 5 | 5 | 6 | 7 | 5 | 5 | 6 | 6 |

+/ Preliminary data. 1/ Wheat, rye, barley, oat, maize, triticale, meslin, rice, millet, sorghum and buckwheat. 2/ including durum wheat
3/ Up to 1996 including red pepper. 4/ including bonnet pepper (small-scale farming)
Source: Hungarian Central Statistical Office (KSH).
     Agricultural stat6istical pocket book 2001. AKII, Budapest

Table 66

**Total production of the main crops**
(continued on the next page)

Unit.: thousand tonnes

| Crop | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002[+] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cereals | 12561 | 15797 | 9981 | 8520 | 11709 | 11269 | 11308 | 14121 | 13005 | 11376 | 10037 | 15047 | 11630[2] |
| of which: wheat[1] | 6198 | 6008 | 3453 | 3021 | 4 874 | 4614 | 3910 | 5258 | 4895 | 2638 | 3692 | 5197 | 3896 |
| maize | 4500 | 7745 | 4405 | 4044 | 4 761 | 4680 | 5989 | 6828 | 6143 | 7149 | 4984 | 7858 | 6087 |
| rice | 28 | 39 | 15 | 13 | 15 | 13 | 7 | 7 | 8 | 7 | 11 | 8 | .. |
| barley | 1369 | 1555 | 1723 | 1138 | 1558 | 1408 | 921 | 133 | 1305 | 1042 | 901 | 1299 | 1052 |
| rye | 232 | 223 | 136 | 113 | 193 | 171 | 98 | 153 | 129 | 80 | 86 | 121 | 95 |
| oat | 163 | 135 | 147 | 96 | 131 | 139 | 112 | 138 | 132 | 180 | 97 | 150 | 138 |
| Potato | 1226 | 1219 | 1212 | 1057 | 946 | 1099 | 1308 | 1140 | 1148 | 1199 | 864 | 908 | 745 |
| dry leguminous | 316 | 281 | 251 | 148 | 144 | 152 | 110 | 118 | 140 | 118 | 54 | 69 | .. |
| of which: bean | 4 | 6 | 4 | 4 | 4 | 5 | 5 | 0 | 6 | 6 | 4 | 4 | .. |
| pea | 305 | 269 | 242 | 140 | 134 | 143 | 101 | 111 | 131 | 108 | 48 | 64 | .. |
| oil seeds | 876 | 1000 | 857 | 734 | 743 | 903 | 1056 | 737 | 875 | 1243 | .. | .. | .. |
| of which: sunflower | 684 | 813 | 765 | 682 | 667 | 789 | 868 | 540 | 718 | 793 | 484 | 632 | 779 |
| colza | 106 | 112 | 44 | 22 | 53 | 89 | 138 | 145 | 73 | 328 | 179 | 205 | .. |
| tobacco | 14 | 18 | 13 | 11 | 12 | 11 | 10 | 11 | 13 | 16 | 10 | 9 | 11 |
| Sugar beet | 4743 | 5867 | 2928 | 2182 | 3370 | 4199 | 4677 | 3691 | 3361 | 2934 | 1976 | 2903 | 2249 |
| Mass green fodder | 6383 | 7269 | 4009 | 4191 | 4565 | 4955 | 4311 | 4371 | 4232 | 4373 | 2581 | .. | .. |
| of which: silage maize and green maize | 5690 | 6167 | 3549 | 3712 | 3898 | 4220 | 3918 | 3946 | 3835 | 4000 | 2407 | 3000 | .. |
| Seed-hay and hay | 2993 | 3355 | 2336 | 1858 | 2145 | 2200 | 1463 | 1404 | .. | .. | .. | .. | .. |
| of which: lucere hay | 1468 | 1812 | 1230 | 1020 | 1167 | 1145 | 1272 | 1171 | 1145 | 1157 | 683 | 843 | 701 |
| Grass hay | 1247 | 1241 | 921 | 692 | 786 | 854 | 912 | 904 | 946 | 927 | 600 | 699 | .. |

## Total production of the main crops (continued)

Unit.: thousand tonnes

| Crop | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002[+] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetable[3] | 2036 | 1993 | 1401 | 1336 | 1419 | 1537 | 1597 | 1548 | 1796 | 1972 | 1500 | 1857 | 1850 |
| of which: onion | 160 | 185 | 168 | 138 | 134 | 195 | 180 | 128 | 150 | 149 | 117 | 174 | 122 |
| carrot | 119 | 119 | 91 | 94 | 98 | 106 | 121 | 117 | 118 | 117 | 89 | 99 | 104 |
| tomato | 527 | 468 | 251 | 202 | 224 | 231 | 263 | 220 | 330 | 201 | 203 | 236 | 247 |
| cucumber | 96 | 108 | 99 | 89 | 93 | 94 | 102 | 119 | 126 | 126 | 103 | 99 | 96 |
| water melon | 87 | 82 | 61 | 66 | 61 | 91 | 92 | 76 | 112 | 125 | 133 | 130 | 166 |
| green peas[4] | 314 | 218 | 118 | 108 | 162 | 72 | 76 | 70 | 71 | 65 | 61 | 113 | 102 |
| French bean | 40 | 40 | 30 | 29 | 24 | 28 | 29 | 32 | 28 | 33 | 27 | 29 | 25 |
| white cabbage | 127 | 135 | 106 | 124 | 117 | 131 | 153 | 171 | 178 | 174 | 120 | 161 | 157 |
| green pepper[5] | 142 | 154 | 125 | 120 | 117 | 123 | 131 | 141 | 152 | 171 | 134 | 135 | 117 |
| sweet corn | 109 | 132 | 80 | 105 | 123 | 146 | 173 | 185 | 203 | 256 | 291 | 416 | 468 |
| red pepper | 69 | 95 | 34 | 34 | 41 | 41 | 52 | 45 | 65 | 33 | 40 | 60 | 57 |
| Fruits | 1444 | 1332 | 1151 | 1271 | 1049 | 684 | 980 | 883 | 834 | 822 | 1 038 | 917 | 699 |
| In which: apple | 945 | 859 | 666 | 819 | 657 | 353 | 552 | 500 | 482 | 445 | 695 | 605 | 527 |
| pears | 64 | 70 | 65 | 64 | 43 | 41 | 41 | 37 | 36 | 39 | 37 | 21 | 13 |
| cherry | 27 | 26 | 28 | 24 | 24 | 20 | 22 | 22 | 19 | 20 | 18 | 16 | 7 |
| sour cherry | 64 | 63 | 77 | 76 | 73 | 48 | 66 | 65 | 49 | 45 | 49 | 56 | 38 |
| plum | 152 | 140 | 142 | 123 | 116 | 105 | 114 | 123 | 104 | 98 | 91 | 90 | 49 |
| apricot | 42 | 36 | 40 | 36 | 27 | 18 | 45 | 25 | 17 | 38 | 21 | 16 | 7 |
| peach | 72 | 61 | 61 | 62 | 50 | 42 | 76 | 54 | 65 | 71 | 64 | 57 | 22 |
| raspberry | 27 | 26 | 23 | 18 | 18 | 18 | 2 | 18 | 20 | 22 | 20 | 13 | .. |
| strawberry | 16 | 15 | 14 | 12 | 12 | 12 | 13 | 13 | 13 | 14 | 12 | 13 | .. |
| Grape | 863 | 759 | 662 | 607 | 614 | 544 | 665 | 717 | 720 | 570 | 684 | 811 | 501 |

+/ Preliminary data 1/ including durum wheat 2/ not including millet, sorghum buckwheat and rice.

3/ From 1996 including red pepper. 4/ Up to 1995 green peas were registered in in-shell weight and since 1996 in grain weight. 5/ including bonnet pepper

Source: Hungarian Central Statistical Office (KSH).

The sector of cereals - ones supplying products for human consumption, for fodder crops or as a source of foreign currency - is of key importance in the Hungarian agricultural economy. Since the cereal sector supplies products for human consumption, crops for fodder and is a source of foreign currency, it plays an important role in the Hungarian agriculture. In utilising the arable land cereals have a determinant role too; based on last year's data the area of cereals accounted for 60-70 percent. In recent years the area of wheat and maize fluctuated between 760-1280 thousand hectares varying by species.

Table 67

**Main characteristics of grain production**

| Year | Cereals[1] | Of which: | | Harvested area [3] | Harvested quantity | | |
|------|-----------|-----------|-------|------------------|------------------|-----------|-------|
| | | Wheat[2] | Maize | | Total cereals | Of which: | |
| | | | | | | Wheat[2] | Maize |
| | Share in area, % | | | Thousand ha | Thousand tonnes | | |
| 1990 | 59.8 | 26.3 | 23.3 | 2778 | 12561 | 6198 | 4500 |
| 1991 | 60.2 | 25.0 | 24.0 | 2778 | 15797 | 6008 | 7745 |
| 1992 | 60.7 | 19.3 | 26.5 | 2658 | 9981 | 3453 | 4405 |
| 1993 | 62.9 | 22.9 | 26.1 | 2708 | 8520 | 3021 | 4044 |
| 1994 | 64.6 | 23.6 | 26.9 | 2895 | 11709 | 4874 | 4761 |
| 1995 | 60.8 | 24.5 | 22.8 | 2749 | 11269 | 4614 | 4680 |
| 1996 | 62.6 | 26.6 | 23.9 | 2807 | 11308 | 3910 | 5989 |
| 1997 | 64.5 | 27.9 | 23.5 | 2937 | 14121 | 5258 | 6828 |
| 1998 | 64.4 | 26.7 | 23.5 | 2835 | 13005 | 4895 | 6143 |
| 1999 | 57.3 | 17.8 | 26.6 | 2402 | 11376 | 2638 | 7149 |
| 2000 | 70.5 | 26.1 | 31.2 | 2744 | 10025 | 3692 | 4984 |
| 2001 | 70.3 | 28.7 | 29.2 | 3081 | 15047 | 5197 | 7858 |
| 2002[+] | 70.4 | 26.3 | 29.3 | 2929 | 11630[4] | 3896 | 5543 |

+/ Preliminary data.1/ not including millet, sorghum and buckwheat. 2/ including durum wheat
3/ Up to 1992 crop land 4/ not including millet, sorghum and buckwheat.
Source: Hungarian Central Statistical Office (KSH).

When Hungarian grain production reached its lowest level in 1993, yields were low and the production area was the smallest in the decade. Due to the high grain prices in the middle of the decade the production area of grain increased - in particular that of wheat - and consequently the grain harvested increased. However, the production volume only approached the levels seen at the end of the eighties and at the very beginning of the nineties. Between 1999-2000 - partially as a consequence of the efforts of agricultural policy and due to the flood and inland water problems- wheat was harvested only on 734 and 1025 thousand hectares of land, respectively. In these years yields per hectare were fluctuating around 3.6 tonnes, which was almost 30 percent down on yields of 1990. In 2000 due to the production price drop of the previous year the production area of cereals decreased, it was most significant in the cases of wheat and corn. Due to the dry weather wheat production fell by 25 percent compared to the previous year.

Between 1999 and 2002 the harvested area of maize increased to between 1100 and 1260 hectares, which together with the higher yields of 1999 and 2001 resulted in a record production.

By considering production values, the second most important arable crops are the industrial plants. During the last decade the production of industrial plants was also contradictory. Considerable fluctuations were characteristic for the sector.

Table 68

**Characteristics of industrial plant production**

| Year | Industrial plants | Of which: | | Harvested | | | |
| | | Sunflower | Sugar beet | Sunflower | Sugar beet | Sunflower | Sugar beet |
| | Share in area, % | | | Area[1], thousand hectares | | Production, thousand tonnes | |
| 1990 | 12.8 | 7.5 | 2.8 | 347 | 131 | 684 | 4743 |
| 1991 | 14.1 | 8.4 | 3.5 | 389 | 161 | 813 | 5867 |
| 1992 | 14.0 | 9.8 | 2.5 | 428 | 108 | 765 | 2928 |
| 1993 | 13.2 | 9.1 | 2.2 | 389 | 95 | 682 | 2182 |
| 1994 | 13.4 | 9.3 | 2.4 | 416 | 105 | 667 | 3370 |
| 1995 | 16.1 | 10.9 | 2.7 | 491 | 124 | 789 | 4199 |
| 1996 | 15.8 | 10.6 | 2.7 | 473 | 118 | 868 | 4677 |
| 1997 | 14.5 | 9.8 | 2.2 | 440 | 98 | 540 | 3691 |
| 1998 | 12.9 | 9.8 | 1.8 | 427 | 80 | 718 | 3361 |
| 1999 | 18.8 | 12.6 | 1.6 | 521 | 66 | 793 | 2934 |
| 2000 | 13.2 | 8.0 | 1.5 | 299 | 57 | 484 | 1976 |
| 2001 | 11.5 | 7.3 | 1.5 | 320 | 66 | 632 | 2903 |
| 2002[+] | 13.9 | 10.0 | 1.3 | 418 | 56 | 779 | 2249 |

+/ Preliminary data.
1/ crop land area, up to 1992.
Source: Hungarian Central Statistical Office (KSH).

Up to 1995 the production area of sunflower increased to more than 490 thousand hectares and then it started to decline gradually. Following the peak yield of 1999, sunflower was harvested only on 299 hectares in 2000. In 2002 the favourable market conditions encouraged farmers to increase production and thus sunflower production increased to more than 400 thousand hectares. Yields were about at the level of the second half of the seventies. In 1996 record yields were harvested, that is, 868 thousand hectares.

By the beginning of the 1990s the production area of rape dropped to 20-28 thousand hectares from the previous level of 50-60 thousand hectares of the 1980s. Since then it has been fluctuating considerably. In 1998 the area of rape was 52 thousand hectares, in 1999 181 hectares while in 2002 it was 127 thousand hectares.

Strong fluctuations characterise the area and harvested yields of sugar beet. Following the area increase at the end of the 1980s and at the beginning of the 90s - that is, 161 thousand hectares in 1991 and 5.9-million tonnes production - after a significant drop it increased again. By adjusting to the demand of the processing industry from 1997 on it decreased again. Between 2000-2002 the harvested area was 60 thousand hectares on average. In the second half of the 90s and also later the

yields were favourable, the average yields exceeded 40 tonnes/ha in several crop years.

As a result of decreasing livestock volumes - in particular of cattle and sheep based on fodder - the area and production of seeds hay and juicy fodder were also decreasing.

The proportion of arable land with seeds hay and juicy fodder decreased - with some fluctuations - by the second half of the nineties - from the 19.0 percent levels of 1990 to half of that value; and at the beginning of the next decade it was not more than its third. Meanwhile, the area of lucerne gradually decreased by almost 50% and that of green maize to 39 percent. In addition, the utilisation of grassland dropped too. The quantity of harvested fodder depended not only on the area but also on weather.

Table 69

**Characteristics of hay and juicy fodder production**

| Year | Hay and juicy fodder | Of which: | | Harvested | | | | |
| | | Silage maize and green maize | Lucerne | Silage maize and green maize | Lucerne | Silage maize and green maize | Seeds hay | Of which: |
| | | | | | | | | Lucerne-hay |
| | Share in production area, % | | | Area[1], thousand hectares | | Production, thousand tonne | | |
|------|------|------|------|------|------|------|------|------|
| 1990 | 19.0 | 7.2 | 6.5 | 335 | 302 | 5690 | 2993 | 1468 |
| 1991 | 12.5 | 5.6 | 6.5 | 256 | 302 | 6167 | 3358 | 1812 |
| 1992 | 16.1 | 5.8 | 6.4 | 251 | 280 | 3549 | 2336 | 1230 |
| 1993 | 14.8 | 5.4 | 5.9 | 222 | 255 | 3712 | 1858 | 1020 |
| 1994 | 14.1 | 5.0 | 5.7 | 213 | 254 | 3898 | 2145 | 1167 |
| 1995 | 13.9 | 4.6 | 5.6 | 196 | 253 | 4220 | 2200 | 1145 |
| 1996 | 9.2 | 3.3 | 5.3 | 162 | 247 | 3918 | 1462 | 1772 |
| 1997 | 8.4 | 3.1 | 5.1 | 156 | 233 | 3883 | 1040 | 1171 |
| 1998 | 8.4 | 3.1 | 5.0 | 145 | 222 | 4232 | 1307 | 1145 |
| 1999 | 8.6 | 3.3 | 5.0 | 143 | 210 | 4000 | .. | 1157 |
| 2000 | 6.9 | 2.5 | 4.1 | 147 | 159 | 2407 | .. | 683 |
| 2001 | 6.2 | 3.2 | 3.6 | 129 | 155 | 3000 | .. | 843 |
| 2002[+] | .. | 2.4 | 3.6 | .. | 155 | .. | .. | 701 |

+/ Preliminary data.
1/ production area until 1992.
Source: Hungarian Central Statistical Office (KSH).

Summary: Although the production of cereals, leguminous plants and industrial plants fell during the first half of the 90s, in the second half of the decade it increased and exceeded the level of the 90s. However, in connection with the fodder requirement of the livestock in the cases of seeds hay and juicy fodder no similar improvements could be seen. In 2001 the volume index of cereal and leguminous plants was 108.4 percent compared to 1990, that of industrial plants 87.3 percent but of hay and fodder only 53.8 percent compared to the crop production index of 93.7 percent.

The above production volume decreased parallel to the restructuring of arable land. Hence, by the beginning of 2000 the share of cereals exceeded 70 percent - with intermittant significant fluctuations - wheat and maize accounted for a share of 30 percent each. The production of leguminous plants dropped. Sunflower remained determinant by increasing from 7.5 percent of 1980 to 10 percent by the second half of the nineties and then after a provisional drop it increased again to 10 percent by 2002. The area of the other industrial plants (without oilseeds and sugar beet) fluctuated considerably. The production area of sugar beet dropped below 2 percent. During the nineties the share of seed hay and fodder crops decreased by around 66%.

Table 70

**Structure of sown area on arable land**

Unit: %

| Type of crop | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **years** | | | | | | | | | | | | | |
| Cereals [1] | 59.8 | 60.2 | 60.7 | 62.9 | 64.6 | 60.8 | 62.6 | 64.5 | 64.4 | 57.3 | 70.5 | 70.3 | 70.4 |
| wheat, rye | 28.3 | 27.0 | 20.9 | 24.5 | 25.6 | 26.2 | 27.9 | 28.8 | 28.2 | 18.7 | 27.2 | 27.3 | 27.5 |
| maize | 23.3 | 24.0 | 26.5 | 26.1 | 26.9 | 22.8 | 23.9 | 23.5 | 23.5 | 26.6 | 31.2 | 29.2 | 29.3 |
| barley | 6.4 | 7.8 | 10.9 | 10.0 | 9.4 | 8.7 | 7.3 | 8.1 | 8.4 | 8.0 | 8.2 | 8.4 | 8.9 |
| Potato | 1.0 | 1.0 | 1.2 | 1.3 | 1.3 | 1.3 | 1.3 | 1.4 | 1.2 | 1.3 | 1.2 | 0.8 | 0.8 |
| Leguminous plants | 3.1 | 2.5 | 2.7 | 2.3 | 1.4 | 1.5 | 1.2 | 1.2 | 1.8 | 2.0 | 0.7 | 1.1 | 0.6 |
| Industrial plants [2] | 2.5 | 2.2 | 1.7 | 1.9 | 1.7 | 2.5 | 2.5 | 2.5 | 1.3 | 4.6 | 3.7 | 2.7 | 13.9 |
| Sunflower | 7.5 | 8.4 | 9.8 | 9.1 | 9.3 | 10.9 | 10.6 | 9.8 | 9.8 | 12.6 | 8.0 | 7.3 | 10.0 |
| Sugar beet | 2.8 | 3.5 | 2.5 | 2.2 | 2.4 | 2.7 | 2.7 | 2.2 | 1.8 | 1.6 | 1.5 | 1.5 | 1.3 |
| Hay and juicy fodder | 19.0 | 12.5 | 16.1 | 14.8 | 14.1 | 13.9 | 9.2 | 8.4 | 8.4 | 8.6 | 6.9 | 6.2 | 6.5 |
| silage maize | 7.2 | 5.6 | 5.8 | 5.4 | 5.0 | 4.6 | 3.3 | 3.1 | 3.1 | 3.3 | 2.5 | 3.2 | 3.8 |
| lucerne | 6.5 | 6.5 | 6.4 | 5.9 | 5.7 | 5.6 | 5.3 | 5.1 | 5.0 | 5.0 | 4.1 | 3.6 | 2.5 |
| Vegetables [3] | 2.5 | 2.4 | 1.9 | 1.9 | 2.2 | 2.6 | 2.4 | 2.9 | 2.5 | 2.5 | 2.2 | 2.1 | 2.5 |
| Other crops | 1.8 | 7.3 | 3.4 | 3.6 | 3.0 | 3.8 | 7.5 | 7.1 | 8.8 | 9.5 | 5.3 | 8.0 | 4.0 |
| Total area | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

1/ not including millet, sorghum and buckwheat. 2/ not including sugar beet and oilseed.
3/ From 1996 not including red pepper.
Source: Hungarian Central Statistical Office (KSH).

During the last decade the sectors of horticulture maintained their role in agriculture and even increased their significance. Following the drop in the middle of the nineties, by 1998 the volume of vegetable production had exceeded the level of 1990. Fruit production was the lowest in 1995, that is, 54 percent of the annual volume of 1990; since then fruit production reached 80 percent. The crisis of wine-growing lasted until 1995 hand in hand with fruit production and since then - with the exception of some yield drops - it has continuously been increasing. In 2000

volume index of production was 76.4 percent of the value of 1990 and in 2001 it was 125.3 percent.

By calculating at current prices in 1990 the share of the three main sectors of horticulture in gross agricultural production was 14.5 percent; in 1997 they accounted for a share of 16.6 percent and in 2002 for 14.2 percent in gross agricultural production. During the period analysed the structure of horticulture changed. Based on current prices fruits maintained their relative importance, however, due to unfavourable weather conditions between 2001 and 2002 fruit output decreased considerably. In 1996, following the losses in wine-growing it started to regain its position but later it dropped again. The share of vegetable production increased from 6.3 percent of 1990 - with some fluctuations (i.e., 9.7 percent in 1999) - to 7.8 percent by 2002.

In the labour intensive horticultural sectors the role of small-size farms was significant before and after privatisation in the 1990s. This continued into the 1990s when agricultural enterprises limited their activities and the proportion of small-size holdings in vegetable production grew. In the first years after 2000 agricultural enterprises augmented their vegetable production in particular on arable land. The growth of sweetcorn production was outstanding: in 2002 agricultural enterprises produced more by 145 percent compared with 1999.

Concerning the vegetable production of private farms: commercial production dominates (70 percent share) while consumption from private production accounts for almost 30 percent of the total production. Up to 2000 the share of private production grew slightly while that of commercial production decreased.

Table 71

**Vegetable production\* by agricultural enterprises**

Unit.: thousand tonnes

| Year | Number of economic organisation | Private farmers | Of which: | | Total |
|------|------|------|------|------|------|
| | | | Commercial farm | Consumpti- on from own production | |
| 1990 | 468 | 1568 | 1148 | 316 | 2036 |
| 1991 | 342 | 1651 | 1159 | 414 | 1993 |
| 1992 | 173 | 1228 | 767 | 400 | 1401 |
| 1993 | 186 | 1150 | 720 | 388 | 1336 |
| 1994 | 236 | 1183 | 780 | 395 | 1419 |
| 1995 | 261 | 1383 | 886 | 414 | 1644 |
| 1996 | 193 | 1404 | 982 | 348 | 1597 |
| 1997 | 217 | 1331 | 887 | 377 | 1548 |
| 1998 | 261 | 1535 | 1052 | 365 | 1796 |
| 1999 | 231 | 1741 | 1007 | 471 | 1972 |
| 2000 | 311 | 1189 | 798 | 356 | 1500 |
| 2001 | 407 | 1450 | 1037 | 332 | 1857 |
| 2002 | 481 | 1369 | .. | .. | 1850 |

\*/ Up to 1995 green peas were registered in in-shell weight and since 1996 in grain weight.. Since 1996 not including red pepper.
Source: Hungarian Central Statistical Office (KSH).

Over the last 20 years fruit production decreased by 30-50 percent - with the exception of some significant intermittant volume fluctuation. The dominance of apple is characteristic (it provided two-thirds **and in 2002 three-quarters** of the total fruit production of the country.) During the period analysed the proportion of agricultural enterprises engaged in fruit production dropped from 40 percent to 12-17 percent. Small-size producers also decreased fruit production; the share of products for sale increased and the consumption from own production fell significantly.

Table 72

**Fruit production\* by agricultural enterprises**

Unit.: thousand tonnes

| Year | Number of economic organisation | Private farmers | Of which: | | Total |
| --- | --- | --- | --- | --- | --- |
| | | | Commercial farm | Consumpti-on from own production | |
| 1990 | 575 | 930 | 433 | 461 | 1505 |
| 1991 | 471 | 926 | 467 | 432 | 1397 |
| 1992 | 261 | 940 | 470 | 411 | 1201 |
| 1993 | 250 | 1067 | 612 | 398 | 1317 |
| 1994 | 128 | 963 | 573 | 348 | 1091 |
| 1995 | 108 | 612 | 313 | 273 | 720 |
| 1996 | 162 | 856 | 463 | 338 | 1018 |
| 1997 | 136 | 790 | 406 | 283 | 926 |
| 1998 | 131 | 742 | 460 | 173 | 873 |
| 1999 | 136 | 731 | 449 | 176 | 867 |
| 2000 | 180 | 890 | 518 | 171 | 1070 |
| 2001 | 112 | 853 | 613 | 221 | 965 |
| 2002 | 117 | 582 | .. | .. | 689 |

\*/ including table-grapes.
Source: Hungarian Central Statistical Office (KSH).

During the period analysed the level of wine-growing was maintained despite some fluctuation and the annual average of the last 13 years was about 671 thousand tonnes. In the last decade private wine-growers not only increased their share but also increased their production, therefore, the share and production of agricultural enterprises decreased. In 2002 92 percent of the grape harvest was produced by private wine-growers while in 1990 their share was 68 percent.

Table 73

**Wine growing of agricultural enterprises**

Unit.: thousand tonnes

| Year | Economic organisations | Private farmers | Total |
|------|------------------------|-----------------|-------|
| 1990 | 275 | 588 | 863 |
| 1991 | 200 | 559 | 759 |
| 1992 | 150 | 512 | 662 |
| 1993 | 117 | 490 | 607 |
| 1994 | 64 | 550 | 614 |
| 1995 | 56 | 488 | 544 |
| 1996 | 57 | 608 | 665 |
| 1997 | 49 | 668 | 717 |
| 1998 | 43 | 677 | 720 |
| 1999 | 33 | 537 | 570 |
| 2000 | 53 | 631 | 684 |
| 2001 | 62 | 749 | 811 |
| 2002 | 42 | 459 | 501 |

Source: Hungarian Central Statistical Office (KSH).

## 4.3.2. Animal husbandry

The sectors of Animal husbandry were the most important losers of the agricultural production regression of the nineties. Based on the production data from the last 10-12 years it can be seen that Animal husbandry could significantly recover but slower than crop production or horticulture. The gross production volume of the above crop production and horticulture sectors decreased by 19 percent on average while that of Animal husbandry dropped by 32 percent.

Figure 5

**Structure of Animal husbandry in 2001 based on gross production value (at current prices, billion HUF)**

Other animal
25.6

Sheep
13.0

Cattle
178.1

Poultry
218.9

Pig
248.3
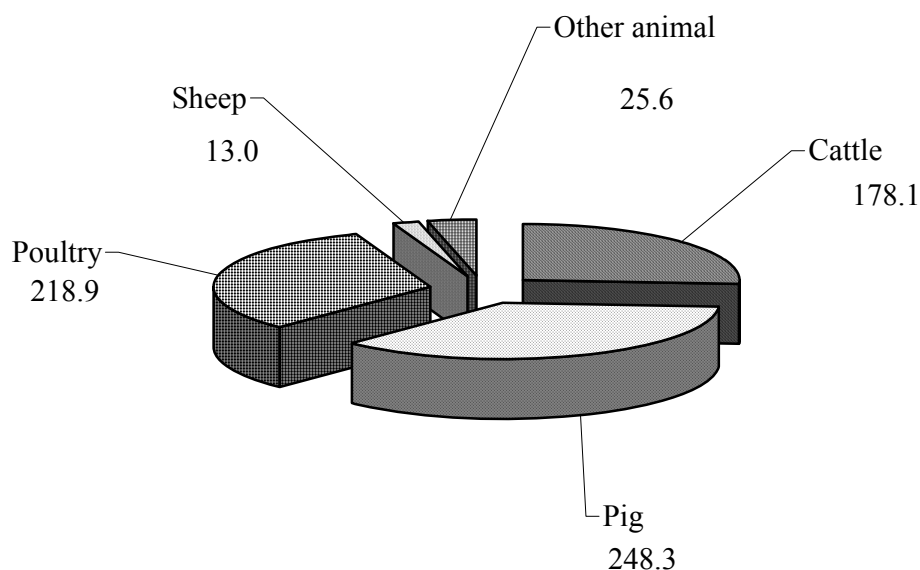
Source: Hungarian Central Statistical Office (KSH).

In Animal husbandry, after the political-economic transition of 1989, cattle, pig and sheep production dropped during the second half of the 90s. In 1997 the volume index of gross production of cattle and pig breeding did not reach 64 percent and 52 percent of 1990 levels respectively. Then the output of the pig sector slightly increased but in 2002 it reached only 52 percent of the base year. Sheep breeding has been continuously decreasing since 1990 and it reached its lowest value in 1999 with 28.8 percent (at constant prices 1990=100 percent). From among the sectors of Animal husbandry first of all the the poultry sector was the one which increased significantly (31 percent) compared to the lowest value of 1993. The drops in the other sectors of Animal husbandry started after 1994 and since then production has been falling continuously. The leading product of this sector is the rabbit.

Table 74

**Gross production values of live animals and animal products by the main sectors**

(at current prices,%)

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | years | | | | | | | | | | | | |
| Cattle | 13.6 | 11.4 | 13.1 | 12.4 | 11.7 | 11.1 | 9.6 | 10.7 | 13.6 | 13.9 | 14.1 | 13.0 | 12.7 |
| Pig | 21.4 | 16.8 | 18.0 | 16.8 | 15.0 | 18.0 | 15.3 | 15.4 | 16.1 | 13.7 | 15.7 | 18.2 | 17.0 |
| Poultry | 12.4 | 11.8 | 13.2 | 13.7 | 14.8 | 12.9 | 12.5 | 14.9 | 15.8 | 13.9 | 16.0 | 16.0 | 15.7 |
| Other animals and animal products | 3.2 | 2.9 | 4.1 | 3.4 | 3.1 | 3.1 | 3.0 | 2.8 | 3.1 | 2.7 | 2.8 | 2.9 | 3.1 |
| Total Animal husbandry | 50.6 | 42.9 | 48.4 | 46.3 | 44.6 | 45.1 | 40.4 | 43.8 | 48.6 | 44.2 | 48.6 | 50.1 | 48.4 |
| Total agricultural products | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

+ preliminary data
Source: Hungarian Central Statistical Office (KSH).

Table 75

**Volume indices of agricultural production**

(at constant prices, %, 1990=100%)

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Crop production + Horticultural products | 100.0 | 102.5 | 76.1 | 69.1 | 75.9 | 77.3 | 84.9 | 84.0 | 80.9 | 82.8 | 70.9 | 93.7 | 80.4 |
| Animal husbandry | 100.0 | 84.4 | 73.8 | 66.1 | 63.3 | 65.5 | 66.6 | 62.6 | 66.5 | 65.4 | 67.9 | 66.8 | 66.7 |
| Cattle | 100.0 | 87.3 | 82.1 | 69.0 | 64.3 | 65.0 | 64.0 | 63.6 | 66.6 | 66.7 | 67.3 | 68.6 | 67.5 |
| Pig | 100.0 | 84.4 | 64.7 | 58.0 | 51.2 | 55.2 | 61.3 | 51.2 | 54.5 | 56.7 | 55.5 | 51.7 | 51.1 |
| sheep | 100.0 | 90.0 | 73.2 | 50.1 | 41.2 | 47.5 | 38.5 | 34.8 | 38.2 | 28.8 | 35.2 | 37.6 | 34.2 |
| Poultry | 100.0 | 81.1 | 76.1 | 72.8 | 77.0 | 79.3 | 77.1 | 82.6 | 88.5 | 81.7 | 91.0 | 93.2 | 95.0 |

* Based on EAA  Source: Hungarian Central Statistical Office (KSH).

In cattle breeding the changing proportion of dairy cows and cattle for slaughter are worth analysing. Cattle for slaughter production dropped over the 12 years from 250 thousand tonnes of 1990 to 95 thousand tonnes and the production became rather a "by-product" of milk production. During the period analysed milk production decreased by 24-25 percent.

Between 1990-2002 the livestock of pig fluctuated to a great extent. The stocks of pigs and sows were more or less continuously falling up to the middle of the nineties. By the end of 1994 the number of pigs dropped to its lowest point registered in 1990 (4.4 million head). Following a provisional growth the livestock started to fall again. On 1 December 2002 the livestock number of pigs was 5 million, that is 63 percent of 1990. Similar to the drop of the number of pigs the number of sows fell too. The number was lowest in 1994, that is, 335 sows and even the 381 sows registered in December 2002 was only 61 percent of 1990. At the millennium the pig for slaughter production was of 800 thousand tonnes, which is only 61 percent of the value 10 years earlier. Later the decrease continued and the pig for slaughter production reached its nadir in 2001.

Figure 6

**Livestock numbers of pig
(1990-2002)**



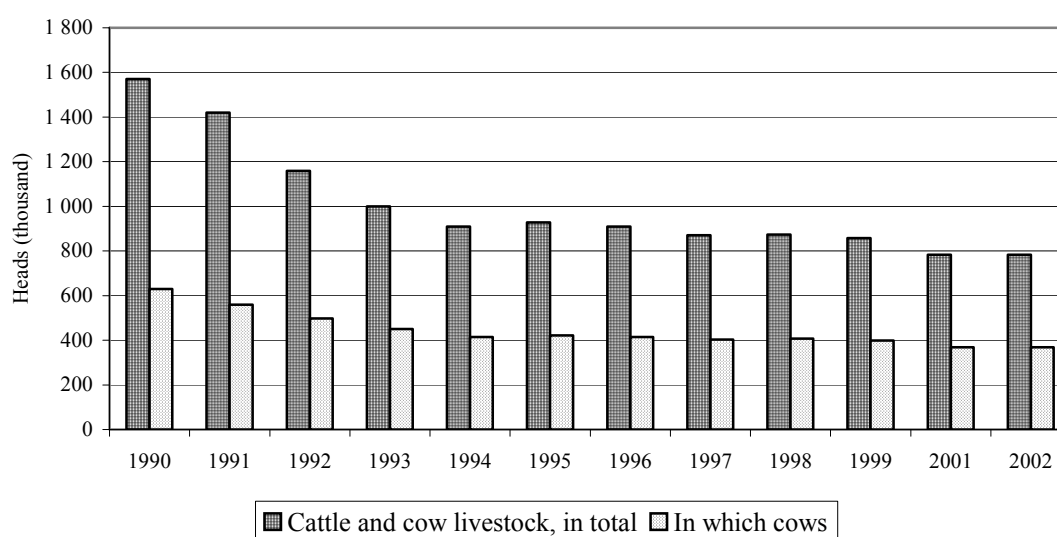Source: Hungarian Central Statistical Office (KSH).
Vertical axis: head of livestock in thousands, Horizontal: statistics for pig stocks year on year.

The EU classification system was introduced in 1993 in the sector. Due to the preference of quality pig production - together with the supports provided for breeding stocks - the quality of pigs for slaughter output improved. However, at present there is a great uncertainty in the pig sector. Due to the difficulties of sales, low profitability as well as losses, a great number of private farmers had to give up

breeding during the last few years. In the past cattle for slaughter production was an important, export-oriented activity and it was a special kind of lifestyle in rural areas. However, the recent economic and market changes affected the sector unfavourably and consequently, following the initial spectacular upswing, production started to decrease due to difficulties concerning efficiency and income. Livestock volume is decreasing in Hungary. As a result of the decreasing purchasing power of the Hungarian population due to the unfavourable world market processes and to the decreasing standard of living the decrease accelerated. After the significant drop of livestock levels in 1997 it stagnated in 1998 and then it started to fall again. The smallest cattle stock level was registered in December 2002 (770 heads) 13 thousand less than in the previous year and lagging behind by 13 percent compared with the stock of 1990. The livestock of cows is also continuously decreasing. In 2002 there were only 362 thousand cows in Hungary. The stock of cows (630 thousand head) is slightly more (57 percent) than half of the stock registered 12 years before. By passing the lowest level in December 1997 the stock started to grow slightly but since the end of 1999 it has continuously been falling. Milk production dropped from 2763 litres of 1990 to 1878 litres by 1994. From the middle of the decade as a result of several new measures milk production stagnated and in 1998 it started to grow slightly. By 2002 the quantity of milk produced reached 2.1 billion litres. A significant proportion of the cow stock are special species of dairy cows or cows for both milk and beef production . The number of beef cattle is low. The stock of beef cows dropped from 85-90 thousand in the second part of the eighties to 22 thousand.

Figure 7

**Livestock numbers of cattle and cow
(1990-2002)**



Source: Hungarian Central Statistical Office (KSH). Blue: Bovines, Crimson: of which cows, thousand head.

The economic importance of poultry breeding is shown by the fact that after pig breeding it is Hungary's second most important sector of Animal husbandry and in 2000 it used to be the first. In 1990 it accounted for 12.4 percent in gross agricultural production and in 2001 for 16 percent. While between 1990-1993 the poultry for slaughter production decreased by 29 percent and due both to the drop of the output of the other Animal husbandry sectors and to the increasing output prices the weight of the poultry sector within agriculture slightly grew. In poultry the stock decrease of gallinaceae (hens, cocks and chicken) was similar to the other sectors of Animal husbandry. In 2002 the number of gallinaceae in Hungary was 32.2 million (less by 11.1 million (26 percent) than in 1990). The drop of water-fowl was not so significant and moreover the stock of ducks increased significantly. The growing number of turkey is promising especially by taking into account that the export-oriented development of the sector is significant also in France. The number of turkey doubled during the last 10 to 12 years. The importance of broiler chicken decreased and it seems to have stabilised at a lower level. Water-fowl are slowly recovering and will reach the level of the eighties. In 2002 poultry for slaughter production was 690 thousand tonnes after a recovery and exceeded the quantity of 1990 (592 thousand tonnes). Its composition changed: the poultry for slaughter production decreased while the output of duck, goose and poultry - the recovery of which was outstanding - exceeded that.

Figure 8

**Stock of gallinaceae and egg-layers
(1990-2002)**
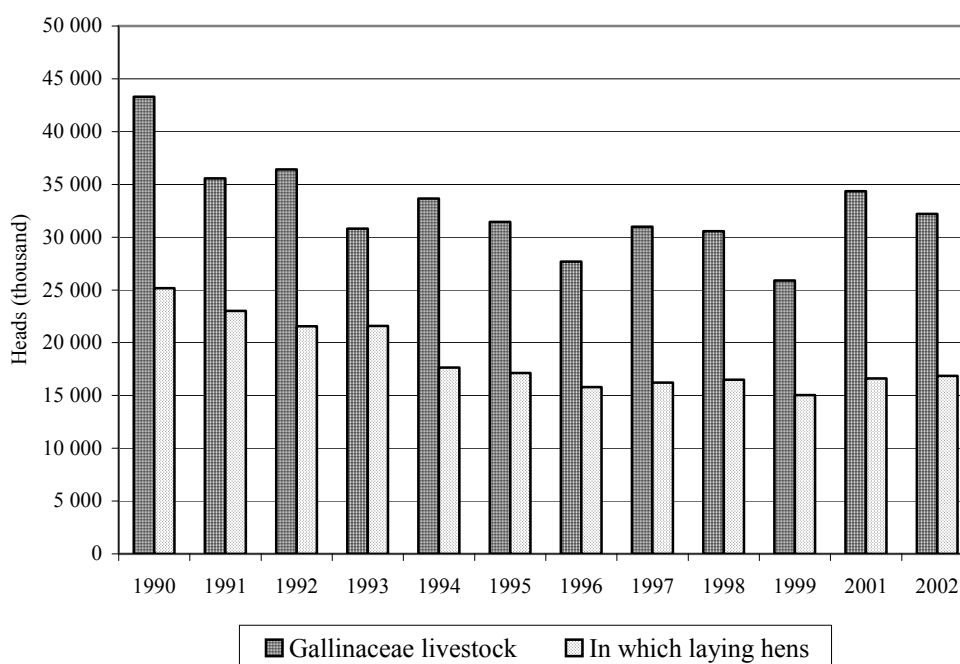


Source: Hungarian Central Statistical Office (KSH). Blue: all poultry, Crimson: of which egg-layers, thousand head

Sheep breeding is the most contradictory sector of Hungarian Animal husbandry. It is characterised by both booms and drastic declines and even the present situation is critical. It is much below the optimal regarding both the number and quality. However, due to the large areas of grasslands and the upcoming EU accession a significant development seems desirable.

The output share of sheep breeding in the production value of Hungarian agriculture dropped from 2 percent to below 1 percent and then in 1998 to 1 percent. Its share in the values of live animals and animal products dropped by over 50%, that is, from 4.3 percent to 1.9 percent. From 1982 - up to the most recent years - the stock was decreasing continuously and this tendency in the middle of the nineties became critical for the whole agricultural economy and the sector itself. The measures taken since 1995 provisionally slowed down the rate of the decrease but could not stop it. Between 1996-1997 the decline continued. In 1998 due to the subsidies provided for stock increase and quality improvement the livestock slightly grew and between 2002-2002 the number of animals exceeded 1 million.

Summing up, the stock of ewe dropped from 1,313 in 1990 to 632 by 1997 and in 2000 it was 897. In 2002 the number of ewes was 854. It is characteristic that private farmers provide the majority (86 percent) of production. The sheep stock of agricultural enterprises decreased over two years - between 2000 and 2002 - by 56 thousand head (27 percent) while that of private farmers by 30 thousand head (3 percent). In 2001, 21 thousand private farmers were breeding sheep just as one year earlier. The number agricultural enterprises engaged in sheep breeding was 237, their number decreased by 21 percent compared to the data of the previous year.

The quantity of sheep for slaughter, wool and sheep milk for processing decreased between 1990-2002 to 52, 53 and 80 percent respectively, due to the declining stock seen over several years. As a consequence of the devaluation of wool the importance of meat production is increasing, however, the breeding and meat yield characteristics of merino sheep are lagging much behind the yields of foreign species. The average milk yield is low too. By considering the present situation of the sector in meat and milk production the quantity increase has to be coupled with quality improvement. Efforts have to be made in order to increase the stock and the number of animals per ewe. The decision has to be made whether to develop in the direction of extensive or intensive breeding.

Figure 9

**Livestock numbers of sheep and ewes
(1990-2002)**



☐ Sheep livestock      ▦ In which ewes
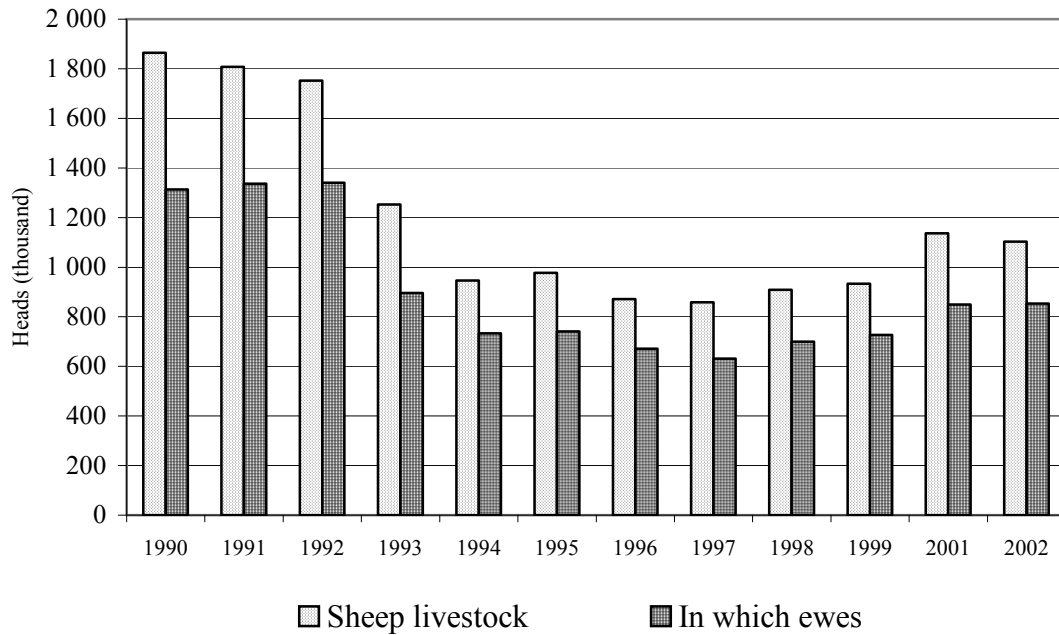
Source: Hungarian Central Statistical Office (KSH). Blue: All sheep breeds, Crimson: of which ewes, thousand head

Table 76

**Change of livestock volumes**
**(as of each December)**

Unit.: thousand animals

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | year | | | | | | | | | | | | |
| Total cattle | 1571 | 1420 | 1159 | 999 | 910 | 928 | 909 | 871 | 873 | 857 | 805 | 783 | 770 |
| of which cows | 630 | 559 | 497 | 450 | 415 | 421 | 414 | 403 | 407 | 399 | 380 | 368 | 362 |
| Pigs | 8000 | 5993 | 5364 | 5001 | 4356 | 5032 | 5289 | 4931 | 5479 | 5335 | 4834 | 4822 | 5082 |
| of which sows | 624 | 482 | 467 | 401 | 335 | 436 | 379 | 345 | 391 | 379 | 348 | 343 | 381 |
| Sheep | 1865 | 1808 | 1 52 | 1 52 | 947 | 977 | 872 | 858 | 909 | 934 | 1129 | 1136 | 1103 |
| of which ewes | 1313 | 1336 | 1340 | 896 | 734 | 741 | 672 | 632 | 700 | 727 | 897 | 849 | 854 |
| Total poultry* | 48372 | 38952 | 39542 | 33828 | 38141 | 35521 | 32300 | 35665 | 35995 | 31244 | 37016 | 43279 | 43411 |
| of which gallinaceae | 43309 | 35557 | 36419 | 30812 | 33665 | 31458 | 27692 | 30983 | 30557 | 25890 | 30716 | 34343 | 32206 |
| - egg-layers | 25171 | 23011 | 21566 | 21597 | 17650 | 17132 | 15810 | 16209 | 16498 | 15033 | 14261 | 16606 | 16849 |
| goose | 1858 | 1092 | 894 | 876 | 1385 | 1111 | 1089 | 1136 | 1074 | 1226 | 1470 | 2175 | 2009 |
| duck | 1685 | 1512 | 1329 | 1304 | 1806 | 1287 | 1533 | 1553 | 2378 | 2269 | 1480 | 2837 | 3443 |
| turkey | 1520 | 791 | 900 | 836 | 1285 | 1665 | 1986 | 1993 | 1986 | 1859 | 3350 | 3924 | 3251 |

*/ not including guinea-fowl.
Source: Hungarian Central Statistical Office (KSH).
Up to 1995 as of 31 December
Since 1996 as of 1 December

Table 77

## Production of animal products

| Product | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002[+] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | years | | | | | | | | | | | | |
| Milk production, million litres | 2763 | 2418 | 2234 | 2020 | 1878 | 1920 | 1918 | 1931 | 2045 | 2045 | 2081 | 2080 | 2100 |
| Production of slaughter animals, thousand tonnes | | | | | | | | | | | | | |
| Cattle for slaughter, in live weight | 249.8 | 263.2 | 260.9 | 190.6 | 148.0 | 127.5 | 120.4 | 114.8 | 99.4 | 101.7 | 117.2 | 98.0 | 95.0 |
| in bony meat weight | 141.4 | 149.1 | 147.2 | 107.3 | 83.0 | 73.4 | 69.0 | 65.7 | 56.9 | 58.2 | 66.9 | 55.9 | 54.1 |
| Pig for slaughter | | | | | | | | | | | | | |
| in live weight | 1288.8 | 1182.5 | 946.4 | 833.1 | 748.7 | 711.1 | 837.5 | 722.2 | 709.9 | 789.6 | 793.4 | 689.0 | 700.0 |
| in carcass weight * | 1039.7 | 954.7 | 765.0 | 673.9 | 609.2 | 576.0 | 674.5 | 581.6 | 571.7 | 639.6 | 642.6 | 558.1 | 567.0 |
| in bony meat weight | 615.9 | 562.1 | 445.2 | 392.4 | 352.4 | 332.9 | 413.9 | 358.3 | 353.2 | 393.7 | 397.3 | 337.6 | 343.0 |
| Production of poultry for slaughter | | | | | | | | | | | | | |
| in live weight | 592.0 | 464.0 | 446.0 | 419.0 | 447.0 | 510.0 | 492.0 | 517.1 | 580.9 | 514.0 | 616.0 | 622.0 | 690.0 |
| Gallinaceae | 411.6 | 319.4 | 320.4 | 319.2 | 329.3 | 372.7 | 332.8 | 333.3 | 396.9 | 315.0 | 364.5 | 362.1 | 361.1 |
| goose | 76.1 | 55.8 | 48.9 | 44.3 | 45.8 | 49.7 | 59.1 | 54.4 | 51.2 | 57.6 | 63.2 | 50.1 | 87.4 |
| duck | 42.9 | 41.6 | 37.0 | 29.6 | 36.9 | 39.4 | 28.9 | 44.4 | 42.4 | 48.7 | 57.0 | 59.8 | 87.9 |
| turkey | 60.5 | 46.4 | 39.1 | 25.8 | 34.8 | 47.8 | 70.8 | 84.8 | 90.1 | 91.5 | 130.8 | 149.7 | 152.5 |
| in carcass weight | 453.3 | 355.0 | 341.3 | 320.5 | 342.3 | 387.9 | 378.6 | 397.9 | 447.0 | 379.5 | 458.0 | 485.2 | 538.2 |
| Sheep for slaughter | 35.0 | 26.0 | 28.0 | 28.0 | 23.0 | 19.1 | 19.6 | 17.2 | 15.8 | 15.9 | 15.7 | 16.0 | 18.2 |
| Egg production, million | 4679 | 4443 | 4164 | 4211 | 3877 | 3467 | 3273 | 3388 | 3388 | 3190 | 3171 | 3277 | 3400.0 |
| Wool, thousand tonnes | 7.3 | 4.2 | 4.5 | 4.1 | 3.9 | 3.3 | 3.2 | 3.0 | 3.0 | 3.4 | 3.4 | 3.3 | 3.9 |
| Sheep milk ** million litres | 4.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 1.0 | 1.2 | 4.0 | 3.0 | 3.2 | 4.0 | 3.2 |

*/ bony meat + white meat
**/ purchased quantity.
+ Preliminary data.
Source: Hungarian Central Statistical Office (KSH).

# 5. The main characteristics of the food industry, the structure of the sector

For more than a decade the production of the food industry decreased at a slower rate than agriculture as a whole. One reason of this is that due to the falls in agricultural output, Hungarian basic materials were lacking and the input of home agricultural origin was supplemented by imports. However, the tendency of food industrial production followed that of agricultural production.

Following the gradual decline of the food industry in the first third of the decade  from the middle of the decade the sector started to grow again, however, by 1997 it dropped below the lowest level of 1993. After 1998, production grew again but even in 2002 it did not reach the level of 1989.

The production decrease affected the various sectors to different extent. However, due to the changes of TEÁOR (Hungarian Standard Industrial classification of all Economic Activities) categories and the fields of observation the survey of this can only be approximate. Based on approximate data the production of alcohol and alcoholic beverages declined the most. The drop was most significant in wine production but in 2002 the distilling industry reached only 77.7 percent of the level of 1989. In addition to soft beverages the production of brewery, tobacco products and sweets exceeded the levels of 1989. Meat production was continuously decreasing until 1996. After that production fluctuated and even in the best years (1999-2000) it approached only 74-75 percent of the level of 1989 but in 2002 it could not match the highest level of 1999. Poultry processing - as a result of the increase of Hungarian production - was not much affected by the transition; since 1995 its production volume reached more than 90 percent (in 1998: 105 percent) of the level of 1989. Milk production has been increasing since 1997, however, in 2002 it was lower than the production of 1989 by 22 percent.

**AKII**

Table 78

**Production volume of food, beverages and tobacco products**
**(production of 1989 = 100)**

| Sector | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Food, beverages and tobacco products | 99.1 | 92.4 | 88.7 | 84.9 | 89.6 | 91.0 | 90.7 | 84.2 | 84.8 | 87.2 | 92.6 | 93.1 | 94.9 |
| of which: | | | | | | | | | | | | | |
| Meat and fish processing | 96.7 | 92.6 | 72.8 | 64.8 | 64.5 | 63.5 | 66.6 | 66.7 | 61.3 | 75.2 | 74.4 | 66.4 | 70.9 |
| Poultry processing | 98.5 | 77.5 | 65.7 | 70.2 | 84.8 | 97.9 | 94.7 | 90.8 | 104.5 | 94.7 | 92.2 | 97.5 | 93.5 |
| Fruit and vegetable production | 97.3 | 87.5 | 65.0 | 63.3 | 76.8 | 81.4 | 81.1 | 80.2 | 82.7 | 74.2 | 82.5 | 87.5 | 99.5 |
| Milk processing | 93.7 | 80.7 | 78.3 | 75.9 | 73.3 | 71.3 | 67.9 | 69.8 | 74.2 | 75.1 | 80.1 | 78.5 | 78.0 |
| Manufacture of sugar | 99.3 | 117.8 | 82.4 | 86.6 | 83.3 | 96.8 | 111.4 | 98.3 | 73.0 | 73.4 | 57.5 | 67.5 | 57.8 |
| Manufacture of cocoa, chocolate and sweets | 97.4 | 87.7 | 74.7 | 71.8 | 72.0 | 79.6 | 85.1 | 82.8 | 83.1 | 86.9 | 84.6 | 111.1 | 117.5 |
| Distilling industry and alcoholic beverages | 95.5 | 92.2 | 79.8 | 85.5 | 87.2 | 49.3 | 46.5 | 34.1 | 42.2 | 52.7 | 58.1 | 80.9 | 77.7 |
| Manufacture of wine | 96.9 | 43.3 | 40.4 | 37.8 | 35.9 | 40.4 | 30.3 | 18.7 | 23.1 | 32.7 | 48.2 | 46.6 | 43.3 |
| Manufacture of beer | 105.6 | 107.2 | 112.4 | 106.7 | 113.9 | 113.9 | 101.8 | 97.1 | 95.3 | 106.9 | 113.8 | 108.3 | 114.0 |
| Soft beverages | 181.1 | 240.7 | 362.0 | 408.3 | 383.0 | 486.4 | 586.6 | 502.7 | 510.7 | 587.8 | 690.1 | 661.1 | 677.0 |
| Tobacco products | 112.5 | 104.0 | 86.6 | 89.3 | 98.8 | 86.8 | 97.9 | 94.3 | 99.3 | 108.8 | 100.6 | 118.0 | 113.3 |

Source: Research and Information Institute of Agricultural Economics (AKII).

In spite of the decrease in meat processing together with poultry (which is the most significant sector of food processing considering both volume and value) with a production value of HUF 400 billion in 2002 it accounted for not more than 21 percent[8] of the production value of food, beverages and tobacco products. The products of milk processing, the milling industry and fodder mix production accounted for about one fourth of the production value. During the decade this proportion could be maintained with the exception of some fluctuation, however, and in the case of milk processing this was also due to the restructuring and price changes. Similar to the volume increase - from 1 percent to 4.8 percent - the share of soft drinks production increased too. The output share of tobacco products increased as well. With some fluctuations the output shares of bakery products and sugar in production decreased.

Table 79

**Production structure of the food industry**
**(at current prices)**

Unit: %

| Sector | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Food, beverages and tobacco products | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| of which: | | | | | | | | | | | | | |
| Meat and fish processing | 21.5 | 20.5 | 20.9 | 19.2 | 18.3 | 18.6 | 17.3 | 18.6 | 17.4 | 13.0 | 16.4 | 12.4 | 12.2 |
| Poultry processing | 7.8 | 6.9 | 6.7 | 7.2 | 8.6 | 9.7 | 9.3 | 10.2 | 11.2 | 9.7 | 9.0 | 9.9 | 8.9 |
| Fruit and vegetable processing | 10.1 | 11.9 | 8.0 | 7.7 | 8.7 | 9.3 | 9.4 | 10.2 | 10.5 | 8.1 | 8.3 | 8.3 | 9.3 |
| Vegetable oil processing | 5.0 | 4.7 | .. | .. | .. | .. | 3.3 | .. | .. | .. | .. | .. | .. |
| Milk processing | 13.0 | 11.5 | 12.4 | 12.5 | 11.6 | 10.6 | 9.8 | 11.2 | 12.1 | 12.5 | 12.3 | 11.8 | 11.8 |
| Manufacture of grain mill products* | 13.0 | 12.1 | .. | .. | .. | 13.6 | 16.1 | 82.8 | 13.2 | 12.5 | 12.9 | 13.9 | 4.2** |
| Manufacture of bread, pastry goods and cakes | 5.2 | 6.2 | 6.3 | 6.0 | 5.1 | 4.8 | 5.1 | 5.1 | 5.0 | 4.8 | 4.9 | 4.2 | .. |
| Manufacture of sugar | 4.7 | 5.2 | 4.8 | 5.4 | 4.8 | 4.7 | 5.4 | 4.6 | 3.4 | 3.6 | 2.7 | 3.4 | 3.0 |
| Manufacture of cocoa, chocolate and sweets | 5.5 | 5.7 | 2.7 | 2.7 | 2.8 | 3.4 | 3.8 | 3.9 | 3.9 | 3.3 | 2.9 | 3.6 | 3.8 |
| Distilling industry and alcoholic beverages | 3.6 | 3.9 | 2.8 | 2.9 | 2.8 | 1.5 | 1.4 | 1.2 | 1.5 | 1.4 | 1.4 | 1.6 | 1.5 |
| Manufacture of wine | 2.6 | 1.7 | 1.7 | 1.7 | 1.6 | 1.9 | 1.5 | 0.9 | 1.1 | 1.9 | 2.7 | 2.5 | .. |
| Manufacture of beer | 4.2 | 5.1 | 5.5 | 5.1 | 4.6 | 4.1 | 3.4 | 3.3 | 4.2 | 4.7 | 4.7 | 4.5 | 5.1 |
| Soft beverages | 1.0 | 1.3 | 2.5 | 2.9 | 3.7 | 4.4 | 4.9 | 4.4 | 4.2 | 4.7 | 4.8 | 4.5 | 4.8 |
| Tobacco products | 3.0 | 3.3 | 3.6 | 4.1 | 4.3 | 3.5 | 3.6 | 3.4 | 3.6 | 4.6 | 4.2 | 4.5 | 4.8 |

* including animal feed production
** not including animal feed production
Remark: Due to several changes in the category specifications may include some inaccuracies.
Source: Hungarian Central Statistical Office (KSH)

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[8] Meat and poulty processing together

Table 80

## Production of food, beverages and tobacco products (at current prices)

Unit.: billion HUF

| Sector | 1990 | 1991 | 1992 | 1993[1] | 1994[1] | 1995[1] | 1996[2] | 1997[2] | 1998[2] | 1999[3] | 2000[3] | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meat, fish, poultry, vegetable and vegetable oil processing | .. | .. | .. | .. | .. | 322.8 | 385.6 | | 541.0 | .. | .. | .. | .. |
| Meat and fish processing | 83.3 | 90.6 | 91.1 | 92.8 | 110.2 | 146.6 | 169.6 | 208.3 | 217.5 | 219.0 | 262.7 | 476.2 | 230.3 |
| Poultry processing | 30.1 | 30.4 | 29.3 | 34.8 | 51.7 | 76.3 | 91.6 | 114.4 | 140.6 | 128.2 | 144.4 | | 169.0 |
| Fruit and vegetable processing | 39.1 | 52.8 | 35.0 | 37.3 | 52.7 | 73.6 | 92.4 | 113.8 | 131.8 | 108.3 | 133.9 | 152.6 | 175.8 |
| Vegetable oil and processing | 19.4 | 20.7 | .. | .. | .. | .. | 32.1 | .. | 51.1 | .. | .. | .. | |
| Milk processing | 50.3 | 50.7 | 54.0 | 60.5 | 70.0 | 83.4 | 95.8 | 124.7 | 151.7 | 167.1 | 197.8 | 211.0 | 222.2 |
| Products of milling industry, starch and feed production | 50.3 | 53.5 | .. | .. | .. | 107.4 | 157.4 | .. | 165.9 | .. | .. | 253.8 | 78.9 |
| Manufacture of grain mill products | .. | .. | 9.4 | 11.6 | 25.0 | 36.5 | 55.3 | 58.0 | 51.1 | 65.4 | 93.0 | 96.2 | .. |
| Feed production | .. | .. | 48.3 | 51.8 | 47.0 | 62.6 | 88.0 | 80.5 | 97.8 | 100.6 | 113.5 | 126.6 | .. |
| Manufacture of bread, fresh pastry goods and cakes | 20.0 | 27.6 | 27.5 | 28.8 | 30.6 | 38.0 | 49.6 | 56.4 | 63.1 | 64.1 | 78.8 | 77.8 | .. |
| Manufacture of sugar | 18.3 | 23.2 | 20.7 | 26.0 | 28.9 | 37.0 | 52.7 | 51.7 | 42.0 | 48.6 | 43.2 | 62.7 | 55.8 |
| Manufacture of cocoa, chocolate and sweets | 21.1 | 25.3 | 11.7 | 13.0 | 16.8 | 26.7 | 37.5 | 43.8 | 48.9 | 44.7 | 46.4 | 65.3 | 71.5 |
| Pasta production | .. | .. | 1.6 | 2.1 | 3.0 | 4.0 | 5.4 | .. | 8.2 | 9.1 | 9.3 | 12.8 | .. |
| Production of other food products | .. | .. | 11.1 | 23.1 | 37.2 | 49.8 | 52.7 | 43.7 | 51.2 | | | 17.6 | .. |
| Distilling industry and alcoholic beverages | 13.9 | 17.4 | 12.0 | 13.8 | 17.1 | 11.8 | 13.8 | 13.3 | 18.3 | 18.5 | 22.9 | 29.9 | 27.5 |
| Manufacture of wine | 9.9 | 7.5 | 7.3 | 8.0 | 9.5 | 14.7 | 14.3 | 10.3 | 13.9 | 24.8 | 42.8 | 46.4 | .. |
| Manufacture of beer | 16.2 | 22.6 | 23.9 | 24.7 | 27.5 | 32.6 | 33.0 | 37.2 | 52.0 | 63.5 | 75.9 | 83.4 | 97.0 |
| Soft beverages | 3.7 | 5.7 | 10.9 | 14.1 | 22.6 | 34.5 | 47.7 | 48.8 | 52.0 | 62.9 | 77.8 | 82.4 | 90.4 |
| Tobacco products | 11.5 | 14.5 | 15.5 | 20.0 | 25.9 | 27.7 | 35.4 | 37.8 | 45.3 | 62.0 | 68.2 | 83.2 | 90.5 |
| Food, beverages and tobacco products | 387.2 | 442.6 | 435.6 | 483.4 | 603.9 | 790.4 | 980.9 | 1116.8 | 1253.4 | 1337.6 | 1606.7 | 1832.3 | 1890.1 |

1/Agricultural enterprises with a staff number over 20; 2/ agricultural enterprises with a staff number over 10; 3/ agricultural enterprises with a staff number over 4.

Remark: Due to several changes in the category specifications may include some inaccuracies.

Source: Hungarian Central Statistical Office (KSH).

At certain stages the structures of the various production sectors were also slightly modified. Their output depended on the changes of basic material production.

In meat processing after 1991 the production decrease of raw pork was the most significant but that of beef was also fluctuating considerably. Until 1995 the production of sausages slightly decreased but by the second half of the nineties it not only reached the level of the end of the eighties but also exceeded that volume. By the end of 2002 the position of salami production had declined by 14 percent.

In the area of milk products the drop was the most significant in the case of milk for consumption (from 831 million litres of 1990 to 642 million litres by 2002) and butter (from 39 thousand tonnes of 1990 to 10 thousand tonnes by 2002). The decrease of cheese production was smaller; from the 59 thousand tonnes of 1990 to 47 thousand tonnes in two years and this was the lowest level of production for the period. From 1997 the production started to grow continuously and by 2001 22 percent more cheese was produced than at the beginning of the decade.

The volume of flour production varied a lot. After the peak of 1992 it dropped to its lowest point in 1994 (wheat production in 1992 and 1993 was extremely low). In 1995 it approached the level of 1992 but in 2002 - also due to the low wheat production - there was a drastic drop. In 2002 the flour production was 783 thousand tonnes, which was even smaller than the low volumes of 1993-1994.

Bread production by organisations included in the statistical surveys decreased continuously (from 673 tonnes in 1990 to 336 thousand tonnes). Pasta manufacturing fluctuated from one year to the next but the tendency of the last years is relatively stable.

In the area of beverages (with the exception of the intermittant falls in production levels) the production of soft drinks and of mineral water grew most significantly.

Table 81

## Production of the main food products

Unit.: thousand tonnes

| Product | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bony raw meat | 595 | 574 | 407 | 359 | 309 | 304 | 306 | 330 | 304 | 349 | .. | .. | .. |
| beef | 97 | 95 | 88 | 59 | 45 | 41 | 37 | 38 | 33 | 35 | 35 | 26 | .. |
| pork | 497 | 470 | 301 | 287 | 255 | 253 | 269 | 292 | 271 | 335 | 321 | 275 | 283 |
| Slaughtered poultry | 232 | 153 | 164 | 136 | 155 | 188 | 86 | 105 | 123 | 136 | 160 | 155 | 158 |
| Sausages | 40 | 34 | 40 | 35 | 38 | 33 | 49 | 47 | 47 | 44 | 45 | 44 | 44 |
| Salami | 14 | 16 | 14 | 13 | 13 | 14 | 13 | 13 | 14 | 13 | 12 | 12 | 12 |
| Products prepared from meat pulp (red meat) | 50 | 52 | 58 | 56 | 58 | 55 | 56 | 60 | 68 | 55 | 62 | 47 | .. |
| Lard for consumption | 77 | 71 | 44 | 39 | 33 | 29 | 35 | 27 | 24 | 30 | 24 | 16 | 17 |
| Milk for consumption, million l | 831 | 732 | 685 | 620 | 622 | 583 | 557 | 541 | 581 | 593 | 591 | 583 | 642 |
| Butter | 39 | 29 | 22 | 18 | 15 | 15 | 14 | 13 | 16 | 17 | 12 | 14 | 10 |
| Cheese | 59 | 52 | 47 | 50 | 50 | 51 | 49 | 51 | 55 | 59 | 68 | 72 | .. |
| Preserved fruit | 364 | 336 | 349 | 319 | 427 | 403 | .. | .. | .. | .. | .. | .. | .. |
| Preserved vegetable | 310 | 238 | 127 | 142 | 203 | 259 | 193 | 252 | 287 | 172 | 268 | 340 | 340 |
| Preserved tomato | 74 | 43 | 13 | 17 | 35 | 46 | 37 | 44 | 49 | 25 | 31 | 20 | .. |
| Pickles | 127 | 107 | 57 | 36 | 99 | 107 | 82 | 126 | 118 | 77 | 74 | 106 | 116 |
| Flour | 1249 | 1192 | 1312 | 957 | 923 | 1234 | 1051 | 1108 | 972 | 1015 | 1039 | 995 | 783 |
| Feed mix | 2167 | 1789 | 1997 | 2035 | 1718 | 1780 | 2296 | 1782 | 2267 | 2206 | 2059 | 2043 | .. |
| sugar | 512 | 605 | 399 | 939 | 440 | 480 | 556 | 487 | 439 | 439 | 280 | 443 | 312 |
| Bread | 673 | 587 | 485 | 348 | 336 | 293 | 284 | 284 | 285 | 379 | 329 | 336 | .. |
| Bakery products, million loaves/ cakes etc. | 2489 | 2221 | 1995 | 1438 | 1324 | 1306 | 60 | 61 | 65 | | | | .. |
| Pasta | 65 | 46 | 43 | 38 | 50 | 73 | 68 | 56 | 31 | 44 | 44 | 46 | .. |
| Sweets | 23 | 22 | 16 | 16 | 13 | 12 | 11 | 10 | 12 | 12 | 12 | 10 | .. |
| Chocolate | 34 | 31 | 25 | 28 | 36 | 20 | 23 | 24 | 25 | 22 | 27 | 48 | |
| Beer, million litres | 992 | 957 | 916 | 788 | 808 | 770 | 727 | 697 | 716 | 700 | 719 | 714 | 727 |
| Mineral water, million litres | 32 | 33 | 45 | 53 | 90 | 116 | 136 | 176 | 219 | 263 | 344 | 413 | .. |
| Soft beverages, free of alcohol, million litres | 310 | 324 | 472 | 604 | 489 | 513 | 578 | 824 | 906 | 911 | 1018 | 986 | 993 |
| Cigarettes, million. | 28.2 | 26.1 | 26.8 | 28.7 | 29.5 | 25.7 | 27.6 | 26.1 | 26.8 | 23.0 | 22.0 | 21.0 | 19.5 |

Since 1996 data are based on the Hungarian Product Categories (BTO), since 1996 the data of the organisations with a staff number over 20 are included.
Source: Hungarian Central Statistical Office (KSH), Agricultural Statistical Pocket Book, AKII, Budapest 2003.

# 6. Characteristics of forestry, hunting and fishery

## 6.1. Forestry

In 2002 about 20 percent of the area of Hungary was forest. This proportion is 1.4 percent higher than 12 years before. The total area of sylviculture is 1.9 million hectares, from which the area of forests is 1.8 million hectares. The forest area increased from 1695 thousand hectares of 1990 to 1821 thousand hectares by 2002, that is, by 7 percent.

Table 82

**Forest area and the share of forest area**

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Forest area, thousand hectares | 1695 | 1701 | 1712 | 1764 | 1767 | 1763 | 1765 | 1767 | 1769 | 1775 | 1773 | 1787 | 1821 |
| Proportion of forest area % | 18.2 | 18.3 | 18.4 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 18.9 | 19.0 | 19.2 | 19.3 | 19.6 |

Source: Hungarian Central Statistical Office (KSH).

12 percent of the Great Plain, 23 percent of the Transdanubian Region and 28 percent of North Hungary is forest. Concerning the counties, the share of forests is the largest in Nógrád county (41.4 percent), while that of Békés is the smallest (2.3 percent). The six counties of the Great Plain account for 24 percent in the total area of forests; the share of forests in the Trandanubian Region is 46 percent and it is 30 percent in North Hungary.

66.2 percent of the forests have economic functionality, 18.9 percent are areas of nature protection and the rest are used for other purposes. The regional data might significantly deviate from the national averages.

In Hungary the ownership of forests has not been settled yet. Through privatisation and due to compensation issues 40 percent of the ownership of forests was passed into private hands and 60 percent remained in state ownership. At present there are about 300 thousand new owners.

The variety of tree species in Hungarian forests is larger than the European average. Native Hungarian species are: beech, turkey oat, oak, hornbeam, poplar, sallow, alder, lime and other broadleaved species. However, locust acacia, silver birch and the majority of the pine species are not native species. The share of native species is approximately 58 percent, at present the area of black locust exceeds 22 percent.

Table 83

**Distribution of forest area in Hungary by tree species**

| Name of the species | 2002 | |
|---|---|---|
| | Area (ha) | Share (%) |
| Oak | 355 287 | 21.1 |
| Turkey oak | 196 946 | 11.4 |
| Beech | 104 241 | 6.2 |
| Hornbeam | 97 339 | 5.7 |
| Locust acacia | 383 628 | 21.7 |
| Other hard/soft broadleaved | 81 597 | 4.6 |
| Poplar | 174 169 | 9.8 |
| Other soft broadleaved | 96 575 | 5.6 |
| Scotch pine | 137 490 | 8.1 |
| Austrian pine | 68 590 | 4.0 |
| Other conifers | 27 943 | 1.7 |
| Total: | 1 723 805 | 100.0 |

Source: Hungarian Central Statistical Office (KSH). National Database of Forests 2003.

Based on the data of the last decade reforestation and afforestation were at the lowest level in 1994 due to the economic situation and restructuring of the country. In 1994 reforestation and afforestation were implemented only on 29.2 thousand hectares of land. This is only 1.65 percent of the total forest area although in 1990 investments were implemented on a further 2.8 percent of the area (47.6 thousand hectares). Between 1995 and 1998 the area of afforestation increased gradually. The structure of the increase changed too: the area of forest regenerations and plantations of first phase started to increase again while blank filling of regeneration areas, plantations and afforestation further decreased. In 2002 the area of first phase work reached  36 thousand hectares - and exceeded the level of 1990 - while by the end of the decade the area of blank filling dropped to 5-6 thousand hectares and in 2002 the figure was 9200 hectares (20 percent in total afforestation and plantation area.)

Even today the largest proportion of forest regeneration is even today artificial regeneration. However, in 1990 its share was only 71 percent and in 2001 53 percent. From 1995 the area of natural regeneration increased and from 1997 it regularly exceeded the regeneration levels seen at the end of the eighties.

Disturbances in rich forest habitats (e.g. activities of forest management, oversized game stock) have an unfavourable effect on the quality of these forest habitats. Therefore, in order to maintaining the natural environment the natural processes of forests have to feature the least possible human intervention.  It is high time to improve forest management in order to maintain the landscape and to extend natural regeneration. More detailed and differentiated sylvicultural regulations have to be prepared with special regard to nature protection of forests and to forests in private ownership. In forestry, policies have to be developed for maintaning diversity and protecting the fauna and flora.

Table 84

**Reafforestation and forestation**

Unit: thousand hectares

| Denomina-tion | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Forest reforestation | 26.0 | 21.9 | 20.2 | 16.1 | 15.6 | 16.1 | 17.1 | 19.2 | 20.3 | 18.9 | 20.3 | 22.0 | 22.0 |
| Natural | 7.6 | 6.9 | 8.2 | 7.4 | 6.8 | 6.9 | 7.3 | 8.9 | 9.1 | 8.8 | 9.9 | 11.3 | .. |
| Artificial | 18.4 | 15.0 | 12.0 | 8.7 | 8.8 | 9.2 | 9.8 | 10.3 | 11.2 | 10.0 | 10.4 | 11.7 | .. |
| Share in forest area, % | 1.53 | 1.29 | 1.18 | 0.91 | 0.88 | 0.91 | 0.97 | 1.09 | 1.15 | 1.07 | 1.14 | 1.23 | 1.21 |
| First planting of afforestation and plantation | 6.9 | 6.7 | 7.2 | 3.2 | 2.9 | 4.2 | 6.6 | 8.3 | 8.2 | 8.7 | 9.8 | 13.2 | 14.8 |
| Share in forest area, % | 0.41 | 0.39 | 0.42 | 0.18 | 0.16 | 0.24 | 0.37 | 0.47 | 0.46 | 0.49 | 0.55 | 0.74 | 0.81 |
| **Total first planting** | 32.9 | 28.6 | 27.4 | 19.3 | 18.5 | 20.3 | 23.7 | 27.5 | 28.5 | 27.6 | 30.1 | 35.2 | 36.8 |
| Blank filling of reforestation | 10.7 | 12.1 | 9.8 | 8.6 | 8.7 | 7.8 | 6.5 | 5.7 | 5.0 | 4.2 | 4.7 | 6.8 | 6.8 |
| Replacement of afforestation | 4.0 | 3.9 | 2.7 | 2.5 | 2.0 | 1.3 | 1.2 | 1.4 | 1.6 | 1.2 | 1.1 | 2.4 | 2.4 |
| **Blank filling** | 14.7 | 16.0 | 12.5 | 11.1 | 10.7 | 9.1 | 7.7 | 7.1 | 6.6 | 5.4 | 5.8 | 9.2 | 9.2 |
| **Total affore-station and plantation** | 47.6 | 44.6 | 39.9 | 30.4 | 29.2 | 29.4 | 31.4 | 34.6 | 35.1 | 33.0 | 35.9 | 44.3 | 46.0 |
| Share in forest area, % | 2.81 | 2.62 | 2.33 | 1.72 | 1.65 | 1.67 | 1.78 | 1.96 | 1.98 | 1.87 | 2.02 | 2.48 | 2.53 |

Remark: The data of 1996-1998 are annual data.
+ preliminary data
Source: Hungarian Central Statistical Office (KSH).

Timber is one of the natural raw materials used in largest quantities. In the EU Member States 85-90 percent of the timber from logging on average is processed while in Hungary only 50-60 percent is used by the industry. This is due to the different species and different technological level of processing.

Following the political-economic transition logging dropped significantly; in 1994 the annual logging was of 5.7 million cubic metres in total while at the beginning of the decade is was of 7.4 million cubic metres. From 1996 logging increased and in 2001 it reached 7 million cubic metres, in which net volume above ground level was of 5.8 million cubic metres. Note that in the logging figures, regarding final use the capacities are not used. When it was at its lowest level the proportion of 'final use' timber was about 60 percent while earlier it used to be

about 69 percent. As a result of + sanitary cutting, 322 cubic metres of timber was produced (4.6 percent) from dry-fallen or decaying trees.

Table 85

**Logging**

Unit: thousand cubic metres

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Final cutting | 5050 | 4961 | 4511 | 3724 | 3474 | 3830 | 4296 | 4404 | 4540 | 4862 | 5021 | 5007 |
| Thinnings | 1548 | 1573 | 1383 | 1235 | 1257 | 1362 | 1180 | 1252 | 1297 | 1299 | 1431 | 329 |
| Clearings | 397 | 376 | 313 | 291 | 286 | 305 | 306 | 338 | 334 | 332 | 346 | 353 |
| Sanitary and other cuttings | 420 | 345 | 382 | 474 | 700 | 552 | 822 | 718 | 408 | 408 | 489 | 322 |
| Total | 7415 | 7255 | 6589 | 5724 | 5717 | 6049 | 6604 | 6713 | 6579 | 6901 | 7287 | 7011 |

Source: Hungarian Central Statistical Office (KSH).

In net logging the share of industrial timber varied – ranging between 50-60 percent – and the difference was firewood. Based on the data of the Ministry of Agriculture and Regional Development 39-40 percent of firewood is unsquared timber. The raw material of the timber industry decreased considerably; the volume used by the  paper-industry accounted for 76 percent. The timber used by the mining industry latterly accounted for 29 percent of the quantity produced at the end of the eighties. However, the share and volume of fibroid timber increased significantly.
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Table 86

**Total logging**

Unit.: thousand cubic metres

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fellings (gross), above ground level | 7415 | 7255 | 6589 | 5724 | 5717 | 6049 | 6604 | 6713 | 6579 | 6901 | 7282 | 7010 | 7013 |
| Removals (net), above ground level | 5906 | 5776 | 5132 | 4473 | 4397 | 4334 | 5321 | 5438 | 5329 | 5724 | 5902 | 5811 | 5642 |
| Industrial wood | 3559 | 3227 | 2702 | 2272 | 2263 | 2386 | 3193 | 2947 | 2951 | 3148 | 3305 | 3492 | 3052 |
| Firewood | 2347 | 2549 | 2430 | 2201 | 2134 | 1948 | 2128 | 2491 | 2319 | 2576 | 2597 | 2319 | 2590 |

Source: AKII

Table 87

**Felling and wood working in the forest management of the Ministry of Agriculture and Regional Development**

Unit: thousand cubic metres

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total industrial timber | 2263 | 2081 | 1912 | 1766 | 1843 | 1855 | 1834 | 1909 | 1902 | 1958 | 2137 | 2201 | 2153 |
| - logs | 925 | 856 | 771 | 748 | 807 | 836 | 836 | 809 | 838 | 891 | 892 | 897 | 831 |
| - other timber industrial raw material | 227 | 182 | 140 | 145 | 158 | 151 | 144 | 135 | 141 | 143 | 176 | 179 | 172 |
| - timber for the mining industry | 56 | 45 | 41 | 37 | 38 | 33 | 32 | 27 | 25 | 23 | 21 | 18 | 16 |
| - timber for the paper industry | 534 | 560 | 481 | 363 | 277 | 293 | 283 | 280 | 270 | 256 | 370 | 381 | 405 |
| - fibrous timber | 244 | 274 | 330 | 324 | 403 | 394 | 405 | 504 | 456 | 459 | 505 | 518 | 458 |
| Thick firewood | 1289 | 1417 | 1438 | 1470 | 1512 | 1369 | 1362 | 1392 | 1239 | 1302 | 1426 | 1387 | 1448 |
| Total thick timber | 3552 | 3498 | 3350 | 3236 | 3355 | 3224 | 3196 | 3301 | 3141 | 3260 | 3563 | 3588 | 3601 |
| Thin firewood | 172 | 210 | 230 | 229 | 237 | 211 | 210 | 218 | 183 | 182 | 205 | 176 | 192 |
| Total timber | 3727 | 3736 | 3587 | 3469 | 3597 | 3437 | 3417 | 3528 | 3341 | 3448 | 3774 | 3770 | 3797 |

Source: AKIIGame farming

Forests are the habitat of a large number of plant and animal species and are the only shelter of numerous species. Therefore, it is an international effort to provide high level  protection for forests. In Hungary 338 hectares of forest are protected forests or national parks. This is 18.9 percent of the total forest area. From the EU Member States only Austria (19,9 percent) supercedes Hungary. The high share of forests shows that forests in Hungary represent a special value for nature conservation. Not only the area but also the whole flora and fauna of forests are included in forest values. Both the growing stock and game stock of forests are of outstanding significance.

In among the additional functions of forests the quality development of game farming will in the next years and decades be an important task both economically and from the aspects of tourism.

The game livestock numbers changed slightly during the last decade. The stock of small game decreased and the stock of larger game increased considerably. Compared to the end of the eighties the stock of hares and pheasants declined. The hare stock decreased by 27 percent through the nineties and that of pheasants by 25 percent. The number of moufflons ranged between 9-10 thousand head with annual fluctuations; the stock of deer, fallow-deer, roe-deer grew and the number of wild-boar doubled. The boar stock has been increasing since 1997 and in 2002 it reached 91 thousand head. After the number of partridges increased in 1997 it then dropped to 63 thousand and in 2002 there were only 51 thousand head.

At the beginning of the nineties the shooting of hare increased and the number of captured animals dropped slightly; then from 1993 the hunting of hare decreased but since 2001 the number of shot and captured hare increased again. Regarding the number of captured hare there was not much fluctuation.

The hunting of pheasants was continuously decreasing up to 1999. Capturing of pheasants is practically finished, as is the snaring of most game.

Deer and roe-deer hunting used to be intensive but then shooting dropped but from 1999 hunting of deer started to increase again.

Table 88

**Hunting: Game stock**

Unit: thousand head

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hare | 795.7 | 581.3 | 589.1 | 570.2 | 597.5 | 602.3 | 602.3 | 475.1 | 515.8 | 463.3 | 514.1 | 521.8 | 582.5 |
| Pheasant | 1099.3 | 835.3 | 831.1 | 672.2 | 784.5 | 821.4 | 821.4 | 645.5 | 765.7 | 686.1 | 788.9 | 698.7 | 824.8 |
| Partridge | 50.5 | 50.4 | 55.8 | 60.0 | 73.2 | 103.4 | 103.4 | 62.7 | 73.2 | 63.6 | 65.5 | 52.0 | 51.4 |
| Deer | 55.1 | 53.8 | 54.3 | 51.7 | 50.1 | 54.4 | 54.4 | 71.7 | 74.1 | 74.0 | 77.5 | 82.6 | 82.6 |
| Fallow deer | 14.3 | 16.5 | 18.9 | 16.9 | 16.0 | 16.1 | 16.1 | 14.1 | 20.7 | 20.2 | 22.2 | 20.9 | 22.1 |
| Roe-deer | 236.2 | 241.0 | 277.3 | 235.9 | 233.4 | 245.6 | 245.6 | 237.6 | 269.3 | 273.4 | 291.9 | 307.3 | 319.6 |
| Moufflon | 10.6 | 9.2 | 9.4 | 8.5 | 8.5 | 9.4 | 9.4 | 10.7 | 10.0 | 9.5 | 10.6 | 9.9 | 9.6 |
| Wild-boar | 38.8 | 42.1 | 44.0 | 42.3 | 39.4 | 43.1 | 43.1 | 58.9 | 65.8 | 68.4 | 75.8 | 82.4 | 82.4 |

Source: AKII

**A K I I**

Table 89

## Number of shot and captured game

Unit: thousand heads

| Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Shot game** | | | | | | | | | | | | |
| Hare | 147.3 | 152.8 | 130.1 | 134.5 | 132.4 | 96.4 | 97.1 | 79.6 | 83.6 | 85.2 | 100.5 | 132.1 |
| Pheasant | 672.2 | 640.2 | 537.1 | 526.9 | 543.5 | 404.4 | 491.5 | 433.3 | 543.4 | 430.4 | 535.7 | 558.4 |
| Partridge | 4.5 | 3.5 | 2.3 | 2.3 | 3.1 | 2.2 | 1.8 | 1.4 | 1.8 | 1.2 | 1.4 | 2.0 |
| Deer | 36.7 | 32.8 | 30.0 | 23.9 | 21.8 | 20.4 | 19.7 | 20.1 | 24.1 | 28.9 | 34.0 | 41.7 |
| Fallow deer | 6.2 | 6.5 | 7.5 | 6.5 | 5.5 | 4.4 | 4.7 | 5.5 | 5.5 | 6.0 | 6.7 | 9.6 |
| Roe-deer | 44.0 | 42.5 | 37.6 | 38.8 | 37.9 | 35.4 | 34.5 | 37.9 | 44.2 | 52.8 | 61.8 | 72.1 |
| Moufflon | 2.8 | 2.4 | 2.6 | 1.8 | 2.3 | 2.1 | 1.5 | 2.0 | 2.5 | 2.3 | 2.7 | 3.7 |
| Wild-boar | 43.8 | 42.9 | 42.9 | 33.5 | 35.0 | 35.1 | 38.1 | 48.5 | 58.0 | 67.7 | 88.3 | 88.3 |
| **Captured game** | | | | | | | | | | | | |
| Hare | 32.4 | 46.8 | 41.0 | 53.3 | 57.0 | 43.5 | 41.9 | 30.6 | 46.2 | 47.7 | .. | .. |
| Pheasant | 41.9 | 13.3 | 20.5 | 21.2 | 7.7 | 1.1 | 2.4 | 0.8 | 7.2 | 9.2 | .. | 3.1 |
| Partridge | – | – | – | – | – | – | 0.0 | .. | .. | .. | .. | .. |
| Deer | 0.1 | 0.0 | 0.2 | 0.1 | 0.0 | – | 0.0 | 0.1 | .. | .. | .. | .. |
| Fallow deer | 0.0 | 0.2 | 0.1 | 0.0 | 0.0 | – | 0.1 | 0.1 | .. | .. | .. | .. |
| Roe-deer | 0.1 | 0.0 | 0.0 | 0.0 | – | – | 0.0 | 0.04 | .. | .. | .. | .. |
| Moufflon | 0.0 | – | – | 0.0 | 0.0 | – | 0.0 | 0.1 | .. | .. | .. | .. |
| Wild-boar | | | | | | | | | | | .. | .. |

Source: AKII

## 6.2. Fishery

Statistical data (which seems to mirror the decreases in the agricultural sector) shows that the production of fishery dropped significantly too. While in 1990 25 thousand tonnes of fish was produced in 1993 the annual production was less than two third of that. In 1995 the production was 15.3 thousand tonnes. Between 1998 and 2002 a slight increase characterised the sector; the volume of 18 to 20 thousand tonne was the level of 1991-1992.

Table 90

**Production of fishery stock**

Unit thousand tonnes

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total fish production | 25.0 | 19.9 | 20.3 | 17.0 | 17.9 | 16.3 | 15.3 | 16.4 | 18.0 | 19.1 | 19.9 | 19.3 | 19.5 |
| of which: | | | | | | | | | | | | | |
| Agricultural enterprises | 10.0 | 9.0 | 7.6 | 5.0 | 6.2 | 6.5 | 6.2 | 5.5 | 6.4 | 6.6 | 6.3 | 5.5 | 5.7 |
| Co-operatives | 7.0 | 5.0 | 2.4 | 2.0 | 1.9 | 1.8 | 2.3 | 1.6 | 2.0 | 2.0 | 2.4 | 1.8 | 1.6 |
| Private farms | 8.0 | 5.9 | 10.3 | 10.0 | 9.8 | 8.0 | 6.8 | 9.3 | 9.6 | 10.5 | 11.2 | 12.0 | 12.2 |

Source: AKII

# 7. Convergence of food trade and changes of the food market

## 7.1. The organisational restructuring of the food market

The Hungarian political-economic transition as well as privatisation led to fundamental changes in the food trade. The food trade was attractive for investors and even for foreign investors. A great number of international food chain stores started operation in Hungary, this involved restoring several stores and green field investments. Food chain stores of Hungarian ownership were also established of which some developed at an especially high rate and are also expanding abroad. However, the majority of the Hungarian food trading companies are SMEs, which are, financially, barely self-sustaining.

The period of spontaneous privatisation was 1989-1990 when the small stores were converted to private property and when a great number of small stores were established. Consequently, the number of food stores started to grow.

During privatisation (from 1991 to about 1995-96) the ownership of large food trading companies (for example, "Közért", a grocery store) were transferred. The majority of the stores in favourable locations were taken over by multinational chain stores. Some small stores developed further but others went bankrupt. In the first half of this period many new enterprises were launched despite the low chances of gaining sufficient income/returns. However, the majority were operational only for a short time. From around 1996 the signs of consolidation appeared more significantly and it continues even at present.

Table 91

**Number of food and mixed food retail stores**

| Year | Total | Of which: operated by private farmers |
|------|-------|---------------------------------------|
| 1990 | 25066 | 12011 |
| 1991 | 37687 | 20579 |
| 1992 | 43342 | 26405 |
| 1993 | 49999 | 32333 |
| 1994 | 54901 | 35956 |
| 1995 | 58590 | 38265 |
| 1996 | 59743 | 38382 |
| 1997 | 47384 | 28692 |
| 1998 | 51051 | 29595 |
| 1999 | 52159 | 29643 |
| 2000 | 51725 | 28681 |
| 2001 | 51603 | 28058 |
| 2002 | 51330 | 28501 |

Source: Hungarian Central Statistical Office (KSH).

Regarding the number of food retail stores the "breaking-point" of 1997 was due to a new system which was introduced in the national business survey. In the first half of the nineties the registration of new stores was obligatory but no information was available on the closing down of stores. In 1996 the Hungarian Central Statistical Office (KSH) carried out a census on retail stores. From 1997 on it is the task of local governments to keep a continuous register of the shops located in their area.

At the beginning of the nineties the number of stores increased rapidly. In this the number of stores operated by private farmers increased significantly too. Their share was the largest in the middle of the decade. The later decrease was due to the appearance of large food trade chains, i.e. strengthening competition.

Since the political-economic transition, new types of stores and enterprises were established.

In Hungary in 1997 the total area of retail stores was 1.7 million $m^2$ which by 2001 had grown to 12 million $m^2$; that is a 25 percent increase of retail surface area. The total sales surface area of stores over 400 $m^2$ is 740 thousand $m^2$ which is double of that in 1997. The sale surface area of stores over 400 $m^2$ is 35 percent more than that of total retail stores while in 2000 it accounted for 41 percent in total retail sales.

The relationship between producers and food retailers changed dramatically. In the relationship between food trade stores and food producers the partners are not of equal rights. Retailers have the dominant power position and dictate and the producers have to adapt. However, it is true that in spite of the unfavourable conditions they offer an opportunity for them to supply products in large volumes. For the SMEs the food chain stores offer opportunity only at regional level and in the cases of special and niche products[9]. In recent years more and more sales organisations were established by the co-ordination of food chain stores; this increases further the strong market position of traders and the concentration of trade.

In spite of all this, we can say that in Hungary the food retail system established in the nineties is of two poles which means that in addition to the further expansion of the chain stores there are a large number of small independent retail stores the majority of which operate in the grey economy and are often farmers who lack other income generating opportunities. In rural food trading a split can be seen. First of all in villages where only Hungarian-owned Co-op stores can be found and where other stores do not meet the requirements of the population - regarding choice and price – since local people may be much less mobile.

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[9] Niche market is a definite group of potential customers who due to common characteristics are especially sensitive to a certain type of product or service. The niche market is a special market meeting special requirements (for example, ecological tourism, special food products or drinks in a certain market). During the expansion of the market the niche market can develop to a global market. (for example, organic production).

In addition to the hypermarkets (49) the rapid expansion of chain stores (in 2002 there were 45) is also outstanding in comparison to other countries of the world. In Hungary the chain store surface by inhabitants is 14 m$^2$ (in Germany 9.7, in Austria and Great Brittain 21). Experts think that even at present there is an oversupply in chain stores and their distribution is not evenly balanced.

## 7.2. Convergence of food trade

In the nineties the volume of food retail increased by 7 to 8 percent. The change of volume was not seen as even since at the beginning of the decade it dropped considerably and during the last four years the sales of food and mixed food retailers increased by 15 percent.

Table 92

**Sales of food and mixed food retail stores**

| Year* | Million HUF | Volume index Previous year = 100 |
|---|---|---|
| 1990 | 292153 | 85.9 |
| 1991 | 409261 | 113.5 |
| 1992 | 460303 | 92.2 |
| 1993 | 551329 | 91.5 |
| 1994 | 611410 | 91.2 |
| 1995 | 682362 | 93.9 |
| 1996 | 876520 | 106.5 |
| 1997 | 1015450 | 98.1 |
| 1998 | 1286640 | 107.4 |
| 1999 | 1450863 | 107.0 |
| 2000 | 1515366 | 96.4 |
| 2001 | 1762404 | 103.9 |
| 2002 | 2041605 | 110.8 |

*between 1990-1993 data is from food stores, Since 1994 both mixed food retail and food retail stores
Source: KSH and AKII calculations

The calculation is difficult now as in the nineties because the methods of data collection and estimations changed several times. Up to 1994 sales indicated the sales of food stores but since 1994 the survey was carried out with two categories (mixed food retail and food retail). From 1998 these two categories were merged. From January 2003 the data was again broken down by KSH.

Based on the data of GFK Hungarian Market Research Institute in 2002 hyper-markets accounted for 19 percent in total sales of food and domestic-use chemicals (this indicated a growth compared to previous year). The share of small stores increased too and reached 36 percent. The market share of supermarkets stagnated (14 percent), that of large chain stores decreased by 1 percent and

accounted for 15 percent. The share of retailers in markets and street-traders stabilised to between 4 to 5 percent. The share of other outlets dropped by 2 to 7 percent.

Table 93

**New types of stores (hyper- and supermarkets, large food chain stores) for purchasing daily consumer products based on housewives' opinion in 2001 (% of respondents would buy there)**

| Product category | 2001 |
|---|---|
| Preserved and packed food | 55 |
| Washing power | 55 |
| Toilet articles | 48 |
| Soft beverages free of alcohol | 47 |
| Milk and milk products | 44 |
| Deep frozen products | 43 |
| Cosmetics | 41 |
| Meat products | 37 |
| Bread and fresh pastry goods and cakes | 35 |
| Beer | 34 |
| Sweets | 33 |

Source: GfK Market Research Institute, Shopping Monitor

# 8. The economic conditions

## 8.1. Prices of agricultural products

Prices of agricultural products have been unstable in recent years. Prices were fluctuating from one year to the other and this had a significant effect on production. The correlation of prices of the various products was modified and not always in accordance with expectations, yields and plans. The reason for this was that from the second half of the eighties the rate of inflation increased and the increase of sales prices varied by product. Planning became indispensable for agricultural producers; the earlier relative sales security and stability of prices and incomes disappeared.

In the nineties the role of prices in the transformation of agricultural production strengthened regarding the volume and structure. First of all competition as well as Hungarian and external markets determined the prices. The procurement prices of the most important raw materials produced by the industry and the prices of equipment could freely be determined. In the frame of the new regulation of the agricultural price system determination of the freedom in prices was increased and the range of flexible prices were extended.

At the beginning of the decade in order to facilitate producers' decision making and to make any expected income calculable official procurement prices were maintained in the cases of the main agricultural products. In accordance with this the prices officially set were as follows:

- Fixed prices were applied for cows milk,
- Guaranteed prices for pig for slaughter (based on market conditions declines upwards were allowed ),
- Reference prices were applied for cattle for slaughter, maize, feeding barley and fodder mixes. From reference prices, varying declines both upwards and downwards were allowed.),
- The prices of other agricultural products could be fixed freely.

Since 1991 the prices of cows milk, cattle for slaughter and pig for slaughter were still determined officially together with that of common wheat and feeding maize. For milk "the highest price" was fixed, in such a way - by taking into account both taxes and subsidies - that it should cover the operational costs and profit. For the other products the lowest prices were fixed in order to cover at least the input costs of farmers operating efficiently.

Act No. VI of 1993 on the Agricultural Market Regime bought about a new change in price regulation. In accordance with it, in the case of a directly regulated agricultural market (for the following commodities regulated within the markets: cows milk, common wheat, feeding maize and from 1 January 1994 for cattle for slaughter and pig for slaughter) guaranteed prices were fixed. The guaranteed price provided an income only for those producers who were producing more efficiently than the average and it provided a compensation payment for part of the losses in the

case of market disturbances. In general, up to 1998, it met about 90 percent of the average production costs of the given year. In accordance with the amended act the "guarantee price: is a minimum price determined by law being less than 70 percent of the the cost price of producers producing at average level which is in accordance with quotas allocated by the Minister and for the quantity determined intervention is regulated…"

Act No. XVI (1993) concerning the Agricultural Market Regime set down guiding prices and from the second part of the decade also to publish lower and upper intervention price limits in relation to the guiding price. Based on the Act the guiding price is a price indicating the price which - depending on market conditions - is the midpoint of price fluctuations. In accordance with the regulations the intervention price is calculated based on the guiding price and it can be the lowest or highest price. If the market price reaches or exceeds it then the measures of the agricultural market regime are applied.

The upcoming EU accession means that new amendments of the Agricultural Market Regime Act are required. Therefore, Act No. XVI (1993) defined the base price, guiding price, minimum price and intervention price in accordance with the market regulations of the various commodities. This will modify prices accordingly but this effect can only latterly be seen.

During the period analysed producer prices were increasing continuously due to the high rate of inflation and price increase compared to international levels. The annual average price increase reached the highest level in 1996 (33.7%). Then the price increase of crop products approached 60 percent while that of animal products was only about 20 percent. This high rate of price increase stopped in 1997. In that year the average price increase of agricultural products dropped to less than 10 percent. This was caused by the price increase of animal products, vegetables and fruits as well as by the drop in crop prices. This tendency continued also in 1998. In 1998-1999, as a result of world market tendencies it increased by 2.8 and 2.6 percent respectively over the two years. A significant difference between the price levels of the two years is that the decreasing price level of crop production in 1998 was followed by an increased in 1999, while in Animal husbandry the price increase declined in 1999 by 4.7 percent on average; this decrease affected all the sectors of animal breeding.

In 2000 the price level of agricultural products changed significantly and exceeded the level of the previous year by 22.5 percent. As part of this, the producer prices of crop products increased by 30.8 percent and that of live animals and animal products by 12.3 percent. The increase compared to the low level of 1999 was also due to the extraordinary weather conditions (frost, flood, inland water problems and drought) as the relative shortage of products induced a price rise.

In 2001 the average price increase was only 4.9 percent. The price increase was much lower than in the previous year and was mainly due to the decrease (19 percent) of the average procurement price of cereals. The prices of vegetables were

lagging behind by 5.1 percent of fruits by 14.8 percent and of wine and wine products (primarily 'must') by 10.3 percent compared to the previous year. In the area of animals for slaughter the average producer price of pig for slaughter increased by the largest margin in spite of the fact that from August 2001 the average procurement prices dropped. The price of sheep for slaughter increased by 22.5 percent and that of poultry for slaughter by 18.4 percent. The average producer price of cows milk rose by 10.0 percent.

In 2002 across the entire agricultural market, the processes influencing the development of prices moved in the opposite direction compared with the previous year. In general, producer prices did not reach the levels of 2001. Concerning annual levels, the producer prices of crop products and horticultural products grew by 2.5 percent, while that of live animals and animal products dropped by 5.0 percent compared to 2001. The increase of crop products in 2002 was first of all due to the cereal and vegetable supply, which was smaller than the previous year and to the lowl fruit availability due to the frost and drought. First of all the price decrease of Animal husbandry was caused by the significant drop of producer prices of pig for slaughter although the prices of poultry for slaughter and eggs decreased too. The price increase due to the increased demand in the beef cattle market resulted in the producer price increase of cows milk.

**AKII**

Table 94

**Average producer prices for the main commodities**

| Denomination | Unit | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wheat | HUF/tonne | 6 079 | 5 503 | 6 817 | 9 396 | 9 329 | 10 925 | 24 271 | 20 722 | 15 536 | 19 851 | 27 778 | 22 828 | 22 700 |
| Barley | HUF/tonne | 6 138 | 5 601 | 6 294 | 8 130 | 8 480 | 9 234 | 23 084 | 20 077 | 13 652 | 17 469 | 27 882 | 25 746 | 25 300 |
| Maize | HUF/tonne | 8 628 | 6 741 | 7 101 | 10 166 | 9 944 | 12 910 | 19 877 | 15 529 | 14 718 | 15 734 | 25 355 | 19 611 | 20 700 |
| Sugar beet | HUF/Tonne | 1 856 | 1 825 | 1 984 | 2 202 | 2 885 | 3 736 | 4 452 | 5 713 | 4 786 | 5 364 | 6 879 | 7 780 | .. |
| Sunflower seed | HUF/tonne | 15 133 | 15 067 | 13 667 | 14 301 | 24 471 | 31 331 | 37 095 | 41 956 | 52 955 | 49 906 | 48 500 | 60 136 | 66 100 |
| Potato | HUF/tonne | 11 825 | 12 803 | 12 472 | 15 360 | 19 108 | 33 736 | 20 389 | 17 172 | 29 523 | 28 240 | 33 953 | 34 134 | .. |
| Onion | HUF/kg | 8.90 | 9.60 | 10.60 | 16.20 | 19.90 | 19.40 | 15.50 | 28.40 | 28.90 | 27.20 | 36.20 | 24.50 | 31.80 |
| Tomato | HUF/kg | 4.90 | 5.30 | 6.30 | 8.10 | 9.30 | 10.30 | 14.10 | 20.80 | 18.00 | 16.50 | 18.00 | 18.10 | 18.50 |
| Green pepper | HUF/kg | 29.80 | 26.10 | 29.80 | 36.40 | 36.70 | 42.40 | 58.50 | 86.40 | 59.00 | 77.70 | 88.00 | 114.40 | 99.50 |
| Apple | HUF/kg | 10.40 | 13.80 | 10.90 | 8.80 | 10.60 | 24.90 | 18.60 | 18.90 | 16.70 | 28.80 | 18.40 | 14.10 | 11.50 |
| Wine-grape | HUF/kg | 13.80 | 13.70 | 13.80 | 15.30 | 18.20 | 28.40 | 35.00 | 33.70 | 34.90 | 44.40 | 58.50 | 51.10 | 50.90 |
| Wine* | HUF/litre | 53.50 | 55.80 | 26.30 | 26.20 | 32.90 | 43.30 | 61.90 | 66.20 | 76.50 | 99.90 | 118.30 | 120.00 | |
| Pig for slaughter** | HUF/kg | 70.00 | 64.50 | 79.90 | 89.30 | 117.20 | 168.20 | 169.50 | 219.50 | 227.00 | 192.70 | 237.00 | 333.00 | 275.00 |
| Cattle for slaughter *** | HUF/kg | 75.20 | 64.10 | 69.80 | 87.70 | 111.30 | 151.30 | 156.00 | 165.80 | 211.10 | 199.70 | 206.90 | 210.30 | 216.40 |
| Poultry for slaughter | HUF/kg | 60.70 | 70.30 | 73.60 | 86.30 | 110.10 | 124.00 | 158.60 | 191.90 | 195.10 | 188.80 | 201.50 | 238.10 | 222.50 |
| Cows milk | HUF/litre | 14.20 | 14.40 | 15.70 | 19.20 | 24.40 | 29.60 | 34.50 | 44.00 | 55.50 | 59.40 | 63.00 | 68.50 | 72.30 |
| Hen eggs | HUF/egg | 3.00 | 3.70 | 4.60 | 5.30 | 6.10 | 7.00 | 9.60 | 12.40 | 12.30 | 10.40 | 12.50 | 14.30 | |

*/ barrelled.
**/ not including piglets and sucklers.
***/ not including calves for slaughter
Source: Hungarian Central Statistical Office (KSH).

Table 95

**Producer price index**
**(1990 = 100,0)**

| Denomination | 1991* | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horticultural and crop products | 104.1 | 105.9 | 134.4 | 152.3 | 200.5 | 290.7 | 290.2 | 280.0 | 306.2 | 400.5 | 378.6 | 388.1 |
| Products of crop production ** | 93.7 | 97.5 | 126.7 | 142.4 | 179.9 | 283.4 | 267.6 | 249.6 | 280.2 | 372.1 | 355.2 | 361.9 |
| Vegetables *** | 128.9 | 143.8 | 180.4 | 198.1 | 256.0 | 337.2 | 408.3 | 412.0 | 413.2 | 536.6 | 509.1 | 526.9 |
| Fruits | 176.6 | 134.4 | 149.6 | 198.8 | 348.4 | 283.0 | 343.9 | 399.5 | 394.5 | 461.6 | 393.5 | 442.3 |
| Wine-grapes, must, wine | 100.7 | 100.0 | 103.6 | 123.3 | 199.1 | 235.4 | 237.1 | 258.1 | 313.9 | 378.3 | 339.2 | 329.0 |
| Live animals, animal products | 107.4 | 122.2 | 135.9 | 176.4 | 213.7 | 255.9 | 315.5 | 348.8 | 332.5 | 373.8 | 447.5 | 425.1 |
| Cattle **** | .. | 143.9 | 108.6 | 148.0 | 200.5 | 207.4 | 220.5 | 280.7 | 265.5 | 275.2 | 279.6 | 287.7 |
| Cows milk | .. | 114.2 | 142.8 | 179.1 | 205.8 | 254.5 | 322.0 | 399.6 | 429.3 | 461.9 | 465.1 | 492.1 |
| Pig | .. | 113.7 | 127.3 | 167.2 | 238.2 | 242.2 | 313.0 | 327.0 | 275.6 | 337.1 | 473.6 | 395.0 |
| Poultry | .. | 122.5 | 143.5 | 181.9 | 202.7 | 268.2 | 320.9 | 329.5 | 311.9 | 334.3 | 395.1 | 371.0 |
| Hen eggs for consumption | .. | 167.3 | 186.6 | 258.1 | 198.1 | 356.3 | 441.1 | 426.8 | 398.2 | 517.2 | 591.7 | 569.2 |
| Index of agricultural producer prices | 104.2 | 113.2 | 135.1 | 163.1 | 206.4 | 276.0 | 301.4 | 309.8 | 317.9 | 389.4 | 408.7 | 404.2 |

*/ Data calculated by the index of procurement prices between 1991 and 1992.
**/ Cereals, leguminous and industrial plants, potato, hay seeds, seeds.
***/ Since 1996 not including red pepper.
****/ not including slaughter calves.
Source: Hungarian Central Statistical Office (KSH).
Agricultural Statistical Pocketbook 2001. AKII – KSH

## 8.2. Terms of trade

The view that in conflicts of interests in agricultural markets the losers were generally the producers can best be justified by the terms of trade.

Table 96

**Price indices and terms of trade**

1990=100%

| Year | Price index of industrial products used in production | Price index of agricultural production | Terms of trade |
|------|------|------|------|
| 1990 | 100.0 | 100.0 | 100.0 |
| 1991* | 132.6 | 105.0 | 126.3 |
| 1992* | 143.2 | 114.0 | 125.6 |
| 1993 | 171.8 | 135.1 | 127.2 |
| 1994 | 202.9 | 163.1 | 124.4 |
| 1995 | 250.9 | 206.4 | 121.6 |
| 1996 | 351.7 | 276.0 | 127.4 |
| 1997 | 404.8 | 301.4 | 134.3 |
| 1998 | 425.9 | 309.9 | 135.4 |
| 1999 | 443.9 | 317.9 | 139.6 |
| 2000 | 491.6 | 389.4 | 126.2 |
| 2001 | 565.7 | 408.7 | 138.4 |

Source : Agricultural Statistical Pocket Book, 2001. KSH, Budapest. 2002.
          Agricultural production , 2002. KSH, Budapest, 2003.
*Producer price index calculated by the producer procurement price index.

As a result of the drastic 35 to 40 percent increase of the terms of trade over the last 11-12 years the agricultural income has decreased by more than HUF 400 billion calculated at constant prices.

As a consequence of the unfavourable processes between 1991-92 and 1996-97 some sectors of agriculture were sacrificed. The unfavourable process also continued between 1998-99 but to a lesser extent.

During the decade up to 1997 the price indices of industrial goods used for production were of two digits (in double figures); prices increased by 15-40 percent annually. In 1998 and 1999 the increase slowed down. However, even during this period the terms of trade increased since the producer price index of agricultural products was lower than the price index of industrial goods. In contrast to the large increase of the agricultural price index (22.5 percent) of 2000 the price index of industrial goods was low (10.9 percent). Therefore, prices were favourable for agriculture. However, this situation changed in 2001 and the terms of trade increased again by 9.7 percent.

In 2002 the Hungarian Statistical Office (KSH) adopted the methodology of EUROSTAT for calculating the terms of trade. Based on this methodology the agricultural producer price index is divided by the price index of inputs. In the calculation of the price index of inputs not only the price changes of industrial input but also that of of agricultural input are taken into account. The index of inputs includes the price indices of products and services used in intermediate production and the same for agricultural investments. As in 2002, both the producer prices and the prices of industrial goods used for agricultural production decreased by 1.1 percent, therefore, the terms of trade did not change in 2002.

The terms of trade index increases from time to time in other countries too, however, the increase in Hungary has been extremely high. This was caused by the coincidence of several factors. Considering "permissive" conditions: the limited purchasing power of the population and the different price flexibility of the various products competing for consumers are the most important issues.

## 8.3. Subsidies, PSE figures and credits

In 1994 the schemes controlling agricultural subsidies were significantly changed. The system of subsidies was introduced to reduce the cost of production. Up to then the share of financial resources provided by the central budget for market access accounted for more than 80 percent of the total of subsidies.

The amount of agricultural subsidies was continuously increasing. Between 1998 and 2002 agricultural subsidies from the central budget were at current prices, higher by 88 percent on average than the averages of 1994-1997. In 1998 subsidies were increased by 26.9 percent compared to the previous year and in 1999 by 19 percent. In 2000 it did not change but in 2001 it increased significantly again (41.7 percent). In 2002 these resources  (if we consider as a separate issue the HUF 60 billion spent on the debt consolidation programmes of agricultural producers in that year only and on compensation payed as damages to cover unfavourable weather conditions) were hardly increased.

By analysing the changes of subsidies since 1997 at real prices (with accumulated inflation rates) we can see that resources from the central budget aiming to support the agricultural economy were decreasing until 2000. The amount of 1998 is 87.5 percent, in 1999 94.7 percent and in 2000 only 88 percent of the averages of 1994-97. In the two last years of the period analysed the subsidies from the central budget exceeded (at real prices) the average of 1994-1997 by HUF 8.3-8.4 billion.

By analysing the internal structure of the agricultural subsidies - by target groups - we can see that in the three main types of subsidies - market access, subsidies for reducing the production costs and investment subsidies - the share of subsidies provided for sales was the largest until 2000. However, this share is still some way behind the 54 percent average of 1994-1997. A significant part of the

market access support was provided both to non-agricultural enterprises. Subsides provided for reducing production costs and for agricultural investments increased fourfold in the last four years of the period compared to the average of 1994-1997.

Based on the Farm Accountancy Data Network established in the third quarter of the nineties it is possible to present the distribution of subsidies by sectors, that is, the shares of subsidised private farmers and corporations. The position of private farms improved during the last years: in the cases of corporations subsidy-per-hectare in 1999 was HUF 15,680 in 2000; HUF 17,930 in 2001; HUF 22,030 and HUF 34,570 in 2002, while the same subsidy-per-hectare in the cases of private farms was HUF 11,560; HUF 13,140; HUF 16,860 and HUF 22,470 in the same years (in the above amounts the investment subsidies are not included).

Table 97

# Agricultural subsidies

million HUF

| Denomination | Average of 1994-1997 | 1998 | 1999 | 2000 | 2001 | 2002 | Average of 1998-2002 |
|---|---|---|---|---|---|---|---|
| Total agricultural subsidies | 81891 | 110879 | 131923 | 134728 | 190861 | 200654 | 153809 |
| Support to reduce costs of agricultural production | 14067 | 29963 | 407764 | 47285 | 86512 | 67645 | 54436 |
| Market access support | 44477 | 38964 | 56875 | 49140 | 32291 | 43209 | 44096 |
| Agricultural and food industrial export subsidies | 38838 | 18799 | 21905 | 24456 | 13211 | 4201 | 16514 |
| Farm and agricultural market subsidies, state purchase | 4015 | 6018 | 13581 | 12736 | 11157 | 18603 | 12419 |
| Market access support | 1624 | 14147 | 21389 | 11948 | 7924 | 20406 | 15162 |
| Subsidies for agricultural investments | 11339 | 30360 | 26275 | 27728 | 55645 | 66061 | 47360 |
| Total subsidies for agricultural enterprises | 69883 | 99287 | 123926 | 124153 | 174449 | 176915 | 139746 |
| Other subsidies | 12009 | 11593 | 7997 | 10575 | 16412 | 23739 | 14063 |
| Rate of inflation (consumer price index) | 122,2 | 114,3 | 110,0 | 109,8 | 109,2 | 105,3 | 109,7 |
| **Total deflated budgetary subsidies I. (deflated by the rate of inflation of the given year)** | 67125 | 97007 | 119930 | 122703 | 174781 | 190555 | 140995 |
| Support to reduce costs of agricultural production | 11544 | 26214 | 37069 | 43065 | 79224 | 64240 | 49962 |
| Market access support | 36371 | 34084 | 51704 | 44754 | 29571 | 41034 | 40231 |
| Agricultural and food industrial export subsidies | 31669 | 16447 | 19913 | 22274 | 12098 | 3984 | 14944 |
| Farm and agricultural market subsidies, state purchase | 3329 | 5265 | 12346 | 11600 | 10217 | 17667 | 11419 |
| Market access support | 1373 | 12377 | 19445 | 10881 | 7256 | 19379 | 13867 |
| Subsidies for agricultural investments | 9387 | 26562 | 23886 | 25253 | 50957 | 62736 | 37879 |
| Total subsidies for agricultural enterprises | 57302 | 86865 | 112660 | 113072 | 159752 | 168011 | 128072 |
| Other subsidies | 9823 | 10142 | 7270 | 9631 | 15029 | 22544 | 12923 |
| Rate of inflation (consumer price index 1994=100 %) | | 214,3 | 235,7 | 258,8 | 282,6 | 297,6 | 257,8 |
| **Total deflated budgetary subsidies I. (deflated by the accumulated rate of inflation)** | 58134 | 51750 | 55974 | 52063 | 67540 | 67432 | 58952 |
| Subsidies decreasing the costs of agricultural production | 9776 | 13984 | 17301 | 18272 | 30614 | 22733 | 20581 |
| Subsidies for market access | 33207 | 18186 | 24132 | 18984 | 11427 | 14521 | 17481 |
| Export subsidies for agricultural and food industry | 29215 | 8774 | 9294 | 9451 | 46751 | 1412 | 6721 |
| Agricultural market subsidies, government purchase | 3126 | 2809 | 5762 | 4922 | 3948 | 6252 | 4739 |
| Subsidies promoting market access | 866 | 6603 | 9075 | 4617 | 2804 | 6858 | 5991 |
| Subsidies for agricultural investments | 7439 | 14170 | 11148 | 10715 | 19691 | 22201 | 15585 |
| Total subsidies for agricultural enterprises | 5022 | 46340 | 52581 | 47976 | 61732 | 59454 | 53617 |
| Other subsidies | 8712 | 5411 | 3393 | 4036 | 5808 | 7978 | 5335 |

Source: Ministry of Finance.

By analysing the absolute values of subsidies it is also reasonable to take into account the Producer Subsidy Equivalent (PSE). If we compare the Hungarian indicator - i.e., estimated subsidy - with international data we can draw the following conclusions:

The PSE of all Hungarian producers increased by 21 percent between 1998-99 and then between 1999-2000 it dropped again by 42 percent. The value of PSE was 21 percent on average in Hungary between 1998-2000 and also much below the average value of the OECD Member States (34 percent). However, the value of PSE is very varied in OECD countries: in New Zealand 1, in Australia 6, in Norway, Iceland and Korea 66 while in Switzerland 71 percent. In 2001 the Hungarian PSE decreased continuously, and in 2002 the producer subsidy equivalent rose by about 10 percent.

In connection with the Hungarian agricultural subsidies we have to mention that the rate obtained by comparing them to agricultural GDP is not low in comparison primarily with the developed countries. In Hungary during the period analysed this rate was of 2.6 percent while in the OECD Member States it was only 1.3 percent on average.

Most agricultural credits are coupled to subsidies. In 2001 the total amount of agricultural credits was 2.9 times more than the average of 1995-97. In 1999 the rate of credit increase was equal to the rate of inflation but in 2000 it exceeded that. Credits with interest subsidies repayable within a year accounted for about 50 percent of all credits. In 2002 this share (in spite of the fact that the amount of credits-with-interest subsidies provided to family farms and small and medium size enterprises increased more than the rate of inflation) decreased by 7 percent. The average of 1995-1997 was about 72.3 percent. The role of credits repayable over a year diminished too. The share of this latter subsidised credit was 12.9 percent of the average of 1995-1997 and in 2001 it hardly exceeded 10 percent while in 2002 it increased to 11.6 percent. The capital supplementing credit - or rather its balance – increased by 2001 to 23.2 percent compared to the 14.8 percent of the base period and then it dropped to 17.8 percent. It should be mentioned that the various holdings use capital supplementing credits for financial loss-coverage.

By analysing the sector characteristics of subsidies provided around 2000 we can see that the majority of subsidies were provided to corporations - co-operatives and economic organisations. This share accounted for approximately 50 percent until 2001 and in 2002 for 75 percent. This situation was a consequence of the system of subsidised  interest rates coupled to credits.

Table 98

**Agricultural credits provided with subsidies**

| Denomination | Unit | Average of 1995-1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|
| Credits with interest subsidies repayable within a year | million HUF | 73497 | 93404 | 110936 | 136975 | 143523 | 155113 |
| | % | 72.3 | 41.6 | 44.5 | 48.9 | 49.2 | 42.1 |
| Credits with interest subsidies repayable after the first year | million HUF | 13127 | 33200 | 37485 | 31603 | 30369 | 42609 |
| | % | 12.9 | 14.7 | 15.1 | 11.3 | 10.4 | 11.6 |
| Balance of capital supplementing credit | million HUF | 15000 | 98356 | 100726 | 93065 | 67617 | 65440 |
| | % | 14.8 | 43.7 | 40.4 | 33.2 | 23.2 | 17.8 |
| Credits repayable after the first year provided in accordance with Government Decree No. 30/2000.(III.10.)* | million HUF | | | | 18450 | 49989 | 36059 |
| | % | | | | 6.6 | 17.2 | 9.8 |
| Total credit | million HUF | 101624 | 224960 | 249147 | 280093 | 291498 | 368460** |
| | % | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | |

* Credits repayable after the first year provided in accordance with Government Decree No. 30/2000.(III.10.): subsidies for young farmers, the farmer credit programme, subsidies for organisations of new types, co-operatives, credit construction for development, additional credits.
Source: MARD, Department of Sectorial Budgetary Relations

* Credits repayable after the first year provided in accordance with the Agricultural Ministerial Decree No. 57/2001.(IX. 21.) (for technological improvement, for producer organisations to purchase ownership, for infrastructure development) HUF 301 million, in accordance with the Agricultural Ministerial Decree No. 14/2001. (II. 22.) HUF 1829 million provided for food preservation, HUF 67,109 million for family farms, preferential credits provided to SMEs accounting for a share of 18.8 %.

Table 99

## Agricultural credits by legal operational status of the enterprise

Unit.: million HUF and %

| Denomination | Total | Primary producer | Private farmer | Co-opera-tive | Agricultural enterprise |
|---|---|---|---|---|---|
| **as of 31 December 2000** | | | | | |
| Current assets credits repayable within a year | 136975 100.0 | 3040 2.2 | 6770 4.9 | 25350 18.5 | 101815 74.4 |
| Current assets credits repayable after the first year | 93065 100.0 | 2738 2.9 | 5227 5.6 | 24925 26.8 | 60175 64.7 |
| Investment credits repayable after the first year | 31603 100.0 | 1493 4.7 | 7225 22.9 | 5969 18.9 | 16916 53.5 |
| Credits in accordance with Gov. Decree No.30/2000 repayable after the first year | 18450 100.0 | 683 3.7 | 2841 15.4 | 3690 20.0 | 11236 60.9 |
| **Total** | **280093 100.0** | **7954 2.8** | **22063 7.9** | **59934 21.4** | **190142 67.9** |
| **as of 31 December 2001** | | | | | |
| Current assets credits repayable within a year | 143523 100.0 | 2251 1.6 | 3995 2.8 | 17537 11.6 | 120583 84.0 |
| Current assets credits repayable after the first year | 67617 100.0 | 2708 4.0 | 4984 7.4 | 13512 20.0 | 46413 68.6 |
| Investment credits repayable after the first year | 30369 100.0 | 2581 8.5 | 7859 25.9 | 3666 12.0 | 16263 53.6 |
| Credits in accordance with Gov. Decree No.30/2000 repayable after the first year* | 49989 100.0 | 2496 5.0 | 7390 14.8 | 11617 23.2 | 28486 57.0 |
| **Total** | **291498 100.0** | **10036 3.4** | **24228 8.3** | **45489 15.6** | **211745 72.6** |
| **as of 31 December 2002** | | | | | |
| Current assets credits repayable within a year | 155114 100.0 | 2684 1.7 | 4398 2.8 | 17512 11.3 | 130520 84.2 |
| Current assets credits repayable after the first year | 42607 100.0 | 4416 12.2 | 12684 27.5 | 2861 8.4 | 22646 51.9 |
| Investment credits repayable after the first year | 65441 100.0 | 2536 3.9 | 4918 7.5 | 9743 14.9 | 48244 73.7 |
| Credits in accordance with Gov. Decree No.30/2000 repayable after the first year* | 36058 100.0 | 2122 5.9 | 6319 17.5 | 7978 22.1 | 19639 54.5 |
| Credits of mid-term for food preservation based on Agr. Min. Decree No. 14/2001. (II.23.) | 1829 100.0 | | | | 1829 100.0 |
| Credits after the first year based on Agr. Min. Decree No 57/2001. (IX. 21.)** | 301 100.0 | 3 1.0 | 71 23.6 | 125 41.5 | 102 33.9 |
| Preferential credits for family farms and SMEs | 47985*** 71.5 | 67109 100.0 | 1953 2.9 | 2929 4.4 | | 14242 21.2 |
| **Total** | **47985*** 13.0** | **368459 100.0** | **13714 3.7** | **31319 8.5** | **38219 10.4** | **237222 64.4** |

* Credits repayable after the first year provided in accordance with Government Decree No. 30/2000.(III.10.): subsidies for young farmers, the farmer credit programme, subsidies for organisations of new types, co-operatives, credit construction for development, additional credit.
** Credits repayable after the first year provided in accordance with the Agricultural Ministerial Decree No. 57/2001.(IX. 21.) for technological improvement, for producer organisations to purchase ownership, for infrastructure development
***Data on family farms
Source: MARD, Department of Sectorial Budgetary Relations

## 8.4. Taxes and obligatory payments

As for the taxation of enterprises and entrepreneurs engaged in the agricultural and food sector no database covering the whole period analysed was available. Therefore we had to confine ourselves to the data of three years - i.e., 1994, 1998 and 2002 - and attempt to present the main tendencies of this period. Concerning 2002, there is a difficulty, namely that a part of the data processing duties (regarding products with excise tax) was taken over from the Tax and Financial Control Authority (APEH) to the Hungarian Office of Customs and Finance Control (VPOP), where, due to the variety of products, no data at sector level are available.

The payments in relation to agriculture registered at the Tax and Financial Control Authority (APEH) are very special. In Hungary between 1994-1998 the total payments made to the Tax and Financial Control Authority (APEH) doubled while that of agriculture decreased. The main reason was the VAT refund (in 1998 the VAT refund was 13.6 times more in agriculture than in 1994; however, in 2000 and 2001 VAT refund decreased. However, in 2001 the amount claimed for was 7 times more than the amount claimed in 1994). The tendency prevailing up to 1998 did not change and in 2002 the VAT refund in agriculture had doubled compared to 1998.

VAT refunding was also rising year by year in the areas of food, beverage and tobacco production; in 2000 it almost reached HUF 25 billion while in 2002 it had already exceeded HUF 35 billion (which is almost triple the value of 1998).

VAT refunding - and the extent of the increase - only apparently improved the financial situation of the sector. On the one hand, VAT is an item which increased the costs of the sector automatically and only this additional amount can be claimed for. On the other hand, it has to be taken into account that the larger the VAT refund is the larger the corresponding financial resources must have been. Therefore, in agriculture it led to increased production costs and the liquidity problems caused might still have serious consequences in some cases.

By analysing the internal structure of the payments without VAT (taxes) it can be seen that in 1994 corporate tax accounted for 18.4 percent while in 1998 for 26.9 percent of all taxes. Unfortunately, in 2002 the data broken down by sectors were not available. However, based on the above it is probable that the share increased further. The two reasons are that the amount of corporate tax did not grow significantly while the amounts of the denominator were decreasing, in particular due to the increasing refund of excise tax. In 1994 the payments of customs and levies were not significant: they accounted for only 0.85 percent of all obligatory payments; in 1998 this share reached 6.3 percent. For 2002 in spite of the effects of the above processes it is difficult to estimate its share since its absolute amount is only 30.3 percent of the value of 1998. The share of the other non-negative obligatory payments is not considerable.

In addition to VAT the other refundable payments (which do not increase but decrease the total of the taxes) the refund of excise tax on fuel and on other products are to be emphasised just as was shown for 1998. The amount of the former decreased to half of the 1997 level but since then it continuously increased, in 2001 it was HUF 17.1 billion and in 2002 HUF 18.3 billion.

In addition to all payments to the Tax and Financial Control Authority (APEH) the local taxes - estimated to reach HUF 8 to 10 billion - have to be taken into account too. The share of the food industry is about HUF 3 to 4 billion. Therefore, in 1994 the total payments of the agricultural sector was HUF 17.466 billion, in 1998 HUF 27.659 billion and in 2002 HUF 39.055 billion. (N.B: these billions: 1000 million/UK numerical value)

Table 100

**Payments, 1994**

Unit: Million HUF

| Denomination | Agriculture, fishery and game farming | | | Forestry totals | Food, beverage and tobacco production | | | Total |
|---|---|---|---|---|---|---|---|---|
| | enterprises | | Sub-total | | Enterprises | | Sub-total | |
| | corpora-te | private | | | corporate | private | | |
| 1. Corporate tax (without financial institutions) | 2771 | 5 | 2776 | 76 | 5037 | 19 | 5056 | 7908 |
| 2. Payment of tariffs, levies, total | 93 | 0 | 93 | 39 | 4327 | 0 | 4327 | 4459 |
| Tariff | 42 | 0 | 42 | 26 | 3414 | 0 | 3414 | 3482 |
| Statistical and import licence levy | 51 | 0 | 51 | 13 | 913 | 0 | 913 | 977 |
| 3. Gambling tax | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4. Other payments, total | 417 | 26 | 443 | 20 | 697 | 16 | 713 | 1176 |
| Interest on overdue payments | 164 | 3 | 167 | 6 | 200 | 9 | 209 | 382 |
| Interest on overdue payments of tariffs, levies, | 5 | 0 | 5 | 1 | 44 | 0 | 44 | 50 |
| Other payments | 248 | 23 | 271 | 13 | 453 | 7 | 460 | 744 |
| **I. PAYMENTS TOTAL (1+2+3+4)** | 3281 | 31 | 3312 | 135 | 10061 | 35 | 10096 | 13543 |
| 1. Value added tax total | 557 | -1371 | -814 | 1201 | 16308 | -93 | 16215 | 16602 |
| Value added tax | 321 | -1371 | -1050 | 1086 | 8483 | -93 | 8390 | 8426 |
| Value added tax on imported products | 236 | 0 | 236 | 115 | 7825 | 0 | 7825 | 8176 |
| 2. Consumption and excise tax, total | 1163 | 2 | 1165 | 0 | 63674 | 47 | 63721 | 64886 |
| Consumption tax | 1163 | 2 | 1165 | 0 | 63545 | 47 | 63592 | 64757 |
| Consumption tax on imported products | 0 | 0 | 0 | 0 | 129 | 0 | 129 | 129 |
| **II. TAXES CONNECTED TO CONSUMPTION TOTAL (1+2)** | 1720 | -1369 | 351 | 1201 | 79982 | -46 | 79936 | 81488 |
| **III. CORPORATE TAX TO BE PAYED BY FIN. INSTITUTIONS** | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 5 |
| **IV. PERSONAL INCOME TAX** | 9862 | 20 | 9882 | 991 | 13547 | 133 | 13680 | 24553 |
| **TOTAL (I.+II.+III.+IV.)** | 14863 | -1318 | 13545 | 2327 | 103595 | 122 | 103717 | 119589 |

Source: Own calculation based on the data of the Tax and Financial Control Authority (APEH) and the Ministry of Finance

**A K I I**

Table 101

**Payments, 1998**

Unit: Million HUF

| Denomination | Agriculture, fishery and game farming | | | Forestry totals | Food, beverage and tobacco production | | | Total |
|---|---|---|---|---|---|---|---|---|
| | enterprises | | Sub-total | | Enterprises | | Sub-total | |
| | corporate | private | | | corporate | private | | |
| 1. Corporate tax (without financial institutions) | 6991 | -2 | 6989 | 367 | 8815 | -1 | 8814 | 16170 |
| 2. Payment of tariffs, levies, total | 1607 | 37 | 1644 | 86 | 9316 | 4 | 9320 | 11050 |
| Tariff | 1606 | 37 | 1643 | 85 | 9311 | 4 | 9315 | 11043 |
| Statistical and import licence levy | 1 | 0 | 1 | 1 | 5 | 0 | 5 | 7 |
| 3. Gambling tax | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 3 |
| 4. Other payments, total | 791 | 94 | 885 | 48 | 631 | 32 | 663 | 1596 |
| Interest on overdue payments | 489 | 48 | 537 | 24 | 274 | 16 | 290 | 851 |
| Interest on overdue payments of tariffs, levies, | 5 | 0 | 5 | 0 | 27 | 0 | 27 | 32 |
| Other payments | 297 | 46 | 343 | 24 | 330 | 16 | 346 | 713 |
| **I. PAYMENTS TOTAL (1+2+3+4)** | 9389 | 129 | 9518 | 501 | 18765 | 35 | 18800 | 28819 |
| 1. Value added tax, total | -9315 | -5010 | -14325 | 1508 | -3720 | 85 | -3635 | -16452 |
| Value added tax | -9566 | -5013 | -14579 | 1372 | -11978 | 77 | -11901 | -25108 |
| Value added tax on imported products | 251 | 3 | 254 | 136 | 8258 | 8 | 8266 | 8656 |
| 2. Consumption and excise tax, total | -2367 | -647 | -3014 | -124 | 92726 | 57 | 92783 | 89645 |
| Consumption tax on other products | 115 | 0 | 115 | -8 | 2621 | 11 | 2632 | 2739 |
| Consumption tax on fuel | -2404 | -648 | -3052 | -116 | -52 | -4 | -56 | -3224 |
| Consumption tax on alcohol and alcoholic beverages | -97 | 2 | -95 | 0 | 1219 | 2 | 1221 | 1126 |
| Consumption tax on beer | 0 | 0 | 0 | 0 | 824 | 1 | 825 | 825 |
| Consumption tax on tobacco products | 0 | 0 | 0 | 0 | 4341 | 0 | 4341 | 4341 |
| Consumption tax on imported products | 0 | 0 | 0 | 0 | 171 | 0 | 171 | 171 |
| Excise tax on fuel | -24 | -1 | -25 | 0 | 8 | 0 | 8 | -17 |
| Excise tax on other products | 43 | 0 | 43 | 0 | 83594 | 47 | 83641 | 83684 |
| **II. TAXES OF CONSUMPTION , TOTAL (1+2)** | -11682 | -5657 | -17339 | 1384 | 89006 | 142 | 89148 | 73193 |
| **III. CORPORATE TAX OF FIN. INSTITUTIONS** | 7 | 1 | 8 | 0 | 38 | 0 | 38 | 46 |
| **IV. PERSONAL INCOME TAX** | 17304 | 843 | 18147 | 2323 | 26483 | 423 | 26906 | 47376 |
| **TOTAL (I.+II.+III.+IV.)** | 15018 | -4684 | 10334 | 4208 | 134292 | 600 | 134892 | 149434 |

Source: Own calculations based on the data of the Tax and Financial Control Authority (APEH) and the Ministry of finance

Table 102

**Payments, 2002***

Unit: Million HUF

| Denomination | Agriculture, fishery and game farming | | | Forestry totals | Food, beverage and tobacco production | | | Total |
|---|---|---|---|---|---|---|---|---|
| | enterprises | | Sub-total | | Enterprises | | Sub-total | |
| | corporate | private | | | corporate | private | | |
| 1. Corporate tax (without financial institutions) | 7007 | -4 | 7003 | 536 | 19236 | 0 | 19236 | 26775 |
| 2. Payment of tariffs, levies, total | 500 | 22 | 522 | 2 | 5967 | 2 | 5969 | 6493 |
| Tariff | 500 | 22 | 522 | 2 | 5967 | 2 | 5969 | 6493 |
| Statistical and import licence levy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3. Gambling tax | 1 | 0 | 1 | 0 | 7 | 0 | 7 | 8 |
| 4. Other payments, total | 652 | -18 | 634 | 38 | 482 | 17 | 499 | 1171 |
| Interest on overdue payments | 654 | -18 | 636 | 39 | 400 | 17 | 417 | 1092 |
| Interest on overdue payments of tariffs, levies, | 1 | 0 | 1 | 0 | 84 | 0 | 84 | 85 |
| Other payments | -3 | 0 | -3 | -1 | -2 | 0 | -2 | -6 |
| **I. PAYMENTS TOTAL (1+2+3+4)** | 8160 | 0 | 8160 | 576 | 25692 | 19 | 25711 | 34447 |
| 1. Value added tax total | -12352 | -18533 | -30885 | 1677 | 1455 | -114 | 1341 | -27867 |
| Value added tax | -12743 | -18540 | -31283 | 1677 | -35483 | -114 | -35597 | -65203 |
| Value added tax on imported products | 391 | 7 | 398 | 0 | 36938 | 0 | 36938 | 37336 |
| 2. Consumption and excise tax, total | | | | | | | | |
| Consumption tax on other products | 17 | -3 | 14 | 0 | 2323 | 0 | 2323 | 2337 |
| Consumption tax on fuel | | | | | | | | |
| Consumption tax on alcohol and alcoholic beverages | | | | | | | | |
| Consumption tax on beer | | | | | | | | |
| Consumption tax on tobacco products | | | | | | | | |
| Consumption tax on imported products | 269 | 0 | 269 | 0 | 0 | 0 | 0 | 269 |
| Excise tax on fuel | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Excise tax on other products | 66 | 35 | 101 | 0 | 93101 | 99 | 93200 | 93301 |
| **II. TAXES CONNECTED TO CONSUMPTION, TOTAL (1+2)** | | | | | | | | |
| **III. CORPORATE TAX TO BE PAID BY FIN. INSTITUTIONS** | 4 | 0 | 4 | 0 | 1 | 0 | 1 | 5 |
| **IV. PERSONAL INCOME TAX** | 20706 | 1332 | 22038 | 3560 | 42031 | 760 | 42791 | 68389 |
| **TOTAL (I.+II.+III.+IV.)** | | | | | | | | |

* There is no sense in summarising the data due to the missing information, however, the data available are suitable to present certain tendencies and proportions.
Source: Own calculations based on the data of the Tax and Financial Control Authority (APEH) and the Ministry of Finance

By calculating the balance of subsidies and payments from among the items of agricultural subsidies the matter of repaying the vouchers has also to be taken into account. Based on these the balance of subsidies, payments and terms of trade in 1998 and 2002 is as follows:

Table 103

**Balance of subsidies, payments and losses due to the terms of trade**

Unit.: million HUF

| Denomination | 1994 | 1998 | 2002 |
|---|---|---|---|
| + Subsidies | 20516 | 70675  * | 112837 |
| – Payments (not including VAT and  other public charges) | 17466  ** | 27659  ** | 39055  ** |
| – Losses due to terms of trade | 26635  *** | 38935  *** | 43335  *** |
| Balance | -23585 | 4081 | 30447 |

\* in the calculation of subsidies in 1994 and 1998 HUF 2 billion preferential tax provided for small size farmers is included.
\*\* In the calculation of the payments the  local tax in 1994 was HUF 3 billion while in 1998 HUF 4 billion.
\*\*\*As for losses due to the terms of trade: the effects of the increase of the previous years are also included .
Source: Own calculation on the basis of 1990 data.

Between 1994 and 2002 the joint effects of subsidies, payments and losses due to the terms of trade took a more positive direction. In 1998 the positive balance of HUF 4,081 billion subsidies exceeded the effects of payments and the losses due to the terms of trade. This is especially true for 2002. However, we have to emphasise that the change of the second four years almost equals that between 1994-1998. In addition, we have to remember that payments do not include social security and other public charges to be paid on wages, which is a considerable amount. Summarising, we can draw the conclusion that for decades subsidies have been of extraordinary importance in agriculture in order to compensate the income decrease due to terms of trade for decades.

## 8.5. Incomes

The agricultural incomes of enterprises and farmers can be presented based on studies of long term financial data of enterprises performing double entry bookkeeping. It can be seen that at the beginning of the nineties the uncertainties about the political transformation had an unfavourable effect on profitability and the loss before tax was significantly larger than the profit. In 1994 there was a turning point. The result before tax of the enterprises was at its highest in 2001, that is,  HUF 37.1 billion against HUF 5.4 billion of 1994. In 1999 the loss was HUF 8 billion and in 2000 HUF 6.7 billion profit was generated. In 2002 as a result of the subsidies without repayment liability and provided in the frame of the debt consolidation programme as well as for compensating the damages caused by unfavourable weather conditions the

result before tax of the enterprises was HUF 47.2 billion. The amount of tax to be paid decreased from HUF 6 billion of 2001 to HUF 3.6 billion in 2002 despite improving profitability, which was partly due to tax-free subsidies.

The tax payment of profitabile enterprises badly effected the summarised result. In profitable enterprises the assets growth was HUF 47 billion in 2001. While in the enterprises with losses the assets decrease was of HUF 21.2 billion. In 2000 assets growth was HUF 5.5 billion and the decrease of the assets was HUF 7.7 billion less than the year before. However, the balance sheet result indicated a loss of HUF 2.3 billion.

Between 1997 and 2000 profitability both proportional to revenue and to equity decreased and also the profitability in proportion to assets was about one fifth of the value of 1997. As a consequence of the losses in 1999 the profitability of labour dropped to the level of 1996 despite a smaller number of employees.

Based on the indicators - regulated by laws applicable in those years - profitability increased considerably both in 2001 and 2002.

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Table 104

**The most important data on the management of agricultural enterprises**
**(enterprises performing double-entry bookkeeping)**

Unit: million HUF

| Denomination | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1997* | 1998 | 1999 | 2000 | 2001** | 2002** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average working staff in total number of employees engaged in agriculture | 248 639 | 195 006 | 170 038 | 154 441 | 149 782 | 141 496 | 142 175 | 138 498 | 129841 | 116229 | 109 531 | 104 972 |
| Payment of wages | 45 073 | 44 230 | 49 517 | 53 833 | 61 234 | 66 853 | 67 351 | 76 629 | 78338 | 79571 | 89 190 | 99 777 |
| Other personal payments | 14 136 | 11 160 | 11 108 | 11 404 | 13 359 | 13 287 | 13 411 | 13 985 | 13479 | 13549 | 13 514 | 13 639 |
| Social security | 20 245 | 19 739 | 22 338 | 24 280 | 26 502 | 29 319 | 29 546 | 33 764 | 31142 | 31563 | 37 804 | 39 843 |
| *Personal inputs* | 79 454 | 75 129 | 82 963 | 89 524 | 101 095 | 109 460 | 110 308 | 124 377 | 122959 | 124683 | 140 508 | 153 259 |
| Gross production value | 247 329 | 256 729 | 308 123 | 383 468 | 486 706 | 533 063 | 543 056 | 590 291 | 601099 | 664436 | 801 192 | 798 |
| *Total assets* | 463 909 | 480 091 | 476 704 | 533 155 | 614 878 | 697 261 | 711 430 | 825 382 | 874491 | 932083 | 1 084 224 | 1 204 |
| Assets per HUF 100 production value | 187.6 | 187.0 | 154.7 | 139.0 | 126.3 | 130.8 | 131.0 | 139.8 | 145.5 | 140.3 | 135.3 | 150.9 |
| Results before tax | 5 550 | 10 941 | 20 443 | 32 085 | 37 068 | 39 436 | 41 565 | 48 007 | 29382 | 36483 | 59 868 | 68 445 |
| Loss before tax | 43 494 | 25 846 | 15 060 | 12 009 | 15 357 | 19 034 | 18 657 | 24 158 | 37379 | 29763 | −22 777 | −21 952 |
| Profit before tax | -37 944 | -14 905 | 5 383 | 20 076 | 21 711 | 20 402 | 22 908 | 23 848 | -7997 | 6720 | 37 091 | 46 493 |
| Tax liability | 1 034 | 1 443 | 2 849 | 4 008 | 4 877 | 4 710 | 5 005 | 6 409 | 3400 | 4189 | 5 953 | 3 643 |
| Results after tax | 4 521 | 9 211 | 17 730 | 28 089 | 32 208 | 34 746 | 36 576 | 41 632 | 26054 | 32336 | 53 937 | 64 811 |
| Loss after tax | 43 498 | 25 568 | 15 196 | 12 021 | 15 374 | 19 055 | 18 673 | 24 192 | 37451 | 29805 | −22 799 | −21 961 |
| Profit after tax | -38 977 | -16 357 | 2 534 | 16 068 | 16 834 | 15 691 | 17 903 | 17 440 | -11397 | 2531 | 31 138 | 42 850 |
| Balance sheet result | 3 197 | 7 641 | 15 058 | 25 974 | 29 871 | 31 159 | 32 681 | 31 942 | 22037 | 27510 | 48 340 | 58 873 |
| Balance sheet loss | 43 498 | 25 631 | 15 210 | 12 021 | 15 369 | 19 055 | 18 671 | 24 181 | 37432 | 29775 | −22 646 | −21 934 |
| Balance sheet profit | -40 301 | -17 990 | -152 | 13 953 | 14 502 | 12 105 | 14 010 | 7 762 | -15394 | -2264 | 25 694 | 36 939 |

*Based on the new categories of the sector
**Due to the amendment of the Act on Accounting the 2001 and 2002 data of the enterprises cannot be compared with earlier data.
Source: calculation based on the data base of the Tax and Financial Control Authority (APEH)

Table 105

**The most important data on the management of agricultural enterprises
(enterprises performing double-entry bookkeeping)**

| Denomination | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1997* | 1998 | 1999 | 2000 | 2001** | 2002** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Profitability of equity, % | -11.4 | -4.5 | 1.6 | 5.6 | 5.7 | 5.1 | 5.6 | 5.4 | -1.8 | 1.5 | 7.5** | 8.0** |
| Profitability in proportion to revenue, % | -13.2 | -5.1 | 1.5 | 4.3 | 3.8 | 3.2 | 3.5 | 3.2 | -1.1 | 0.8 | 4.0** | 4.8** |
| Profitability in proportion to assets, % | -8.2 | -3.1 | 1.1 | 3.8 | 3.5 | 2.9 | 3.2 | 2.9 | -0.9 | 0.7 | 3.8** | 4.1** |
| Income per employee, HUF/employee/year | 238132 | 284043 | 356538 | 422407 | 498010 | 566376 | 568041 | 654256 | 707150 | 801177 | 944722 | 1081651 |
| Personal inputs per employee, HUF/employee | 319556 | 385265 | 487909 | 579665 | 674948 | 773591 | 775857 | 898040 | 946997 | 1072736 | 1292274 | 1462363 |
| Profitability of labour input, HUF/employee | 85526 | 207609 | 388196 | 552399 | 642961 | 710564 | 729174 | 826512 | 645559 | 858994 | 1294172 | 1529216 |

*Based on the new categories of the sector
**Due to the amendment of the Act on Accounting, the data of 2001 and 2002 on enterprises cannot be compared with the earlier data.

# 9. Efficiency of agricultural production

## 9.1. Main tendencies in crop production

In order to investigate the efficiency of crop production first of all the value of the assets and the raw material input have to analysed.

In the following table on fertiliser use we can see that in 2002 the fertiliser use of active ingredient fertilizers decreased approximately by one third compared to 1990. The rate and direction of the change was not continuous. At the beginning of the decade the inputs drastically dropped and then the inputs started to increase gradually. In total inputs the quantity of phosphorous and potassic fertilisers dropped the most significantly. In 2002 the quantity of these fertilisers was one third that of 1990.

The manure used per manured area decreased by 37 percent between 1990 and 1999 but by 2002 the increase exceeded 35 percent. The total quantity of manure used decreased also during the nineties and then at the beginning of 2000 it increased again  and in 2002 it exceeded the level of 1990 by 23 percent.

In spite of the increase in manured area and quantity the specific indicator of nutritive intake, that is, manure quantity per hectare decreased by 11 percent in 2002 since the manured area increased by a larger extent than the quantity used. At the beginning of the decade (and similarly to fertilizer use) the use of manure dropped abruptly and then it increased gradually. It can we seen that nutritive intake dropped and this is a sign of an extension of agriculture, in particular of crop production.

Table 106

**Fertiliser supply**

| Year | Nitrogenous- | Phosphorous- | Potassic- | Total |
|---|---|---|---|---|
| | active ingredient fertilizers | | | |
| per hectare of fertilised area, kg | | | | |
| 1990 | 55 | 20 | 29 | 104 |
| 1991 | 22 | 3 | 5 | 30 |
| 1992 | 24 | 4 | 3 | 31 |
| 1993 | 26 | 4 | 4 | 34 |
| 1994 | 36 | 5 | 5 | 46 |
| 1995 | 31 | 5 | 4 | 40 |
| 1996 | 33 | 6 | 5 | 44 |
| 1997 | 33 | 7 | 6 | 46 |
| 1998 | 40 | 6 | 7 | 53 |
| 1999 | 43 | 6 | 7 | 56 |
| 2000 | 44 | 8 | 9 | 61 |
| 2001 | 47 | 10 | 11 | 67 |
| 2002 | 50 | 10 | 12 | 72 |
| | | | | |
| per hectare of arable land, garden, orchard and vineyard, kg | | | | |
| 1990 | 68 | 24 | 35 | 127 |
| 1991 | 27 | 4 | 6 | 37 |
| 1992 | 30 | 4 | 4 | 38 |
| 1993 | 32 | 5 | 4 | 41 |
| 1994 | 45 | 5 | 6 | 56 |
| 1995 | 38 | 6 | 5 | 49 |
| 1996 | 40 | 6 | 7 | 54 |
| 1997 | 41 | 8 | 8 | 57 |
| 1998 | 49 | 8 | 8 | 65 |
| 1999 | 52 | 8 | 9 | 69 |
| 2000 | 54 | 9 | 11 | 74 |
| 2001 | 57 | 12 | 13 | 82 |
| 2002 | 61 | 12 | 15 | 88 |

Source: Hungarian Central Statistical Office (KSH).

Table 107

**Manure supply/use in agricultural enterprises**

| Year | Total | of which | | |
|---|---|---|---|---|
| | | arable land | orchard | vineyard |
| *Manured area, hectare* | | | | |
| **1990** | 68036 | 57461 | 1373 | 559 |
| **1991** | 54618 | 46476 | 1081 | 449 |
| **1992** | 53642 | 47361 | 267 | 126 |
| **1993** | 38401 | 36790 | 152 | 3 |
| **1994** | 47068 | 42082 | 303 | 67 |
| **1995** | 35539 | 33909 | 204 | 35 |
| **1996** | 40274 | 38132 | 506 | 92 |
| **1997** | 50917 | 44129 | 495 | 53 |
| **1998** | 43018 | 36962 | 670 | 302 |
| **1999** | 53096 | 46101 | 807 | 256 |
| **2000** | 59260 | 53861 | 1214 | 783 |
| **2001** | 72980 | 63126 | 1139 | 617 |
| **2002** | 92504 | 81065 | 2054 | 567 |
| *Manure used, 1000 tonne* | | | | |
| **1990** | 2416 | 2257 | 49 | 21 |
| **1991** | 1877 | 1797 | 34 | 17 |
| **1992** | 1725 | 1678 | 13 | 3 |
| **1993** | 1406 | 1391 | 6 | 0 |
| **1994** | 1606 | 1575 | 8 | 2 |
| **1996** | 1333 | 1304 | 8 | 4 |
| **1997** | 1929 | 1888 | 15 | 1 |
| **1998** | 1382 | 1326 | 19 | 6 |
| **1999** | 1670 | 1611 | 28 | 8 |
| **2000** | 2106 | 2010 | 47 | 34 |
| **2001** | 2059 | 1947 | 37 | 14 |
| **2002** | 2964 | 2790 | 57 | 22 |
| *Per hectare of manured area, tonne* | | | | |
| **1990** | 36 | 39 | 36 | 38 |
| **1991** | 34 | 39 | 32 | 37 |
| **1992** | 32 | 35 | 47 | 23 |
| **1993** | 37 | 38 | 42 | 30 |
| **1994** | 34 | 37 | 27 | 33 |
| **1995** | 41 | 42 | 33 | 22 |
| **1996** | 33 | 34 | 15 | 47 |
| **1997** | 38 | 43 | 30 | 27 |
| **1998** | 32 | 36 | 29 | 20 |
| **1999** | 31 | 35 | 34 | 30 |
| **2000** | 36 | 37 | 39 | 43 |
| **2001** | 28 | 31 | 32 | 23 |
| **2002** | 32 | 34 | 28 | 39 |

Source: Hungarian Central Statistical Office (KSH).

Table 108

**Use of plant protecting agents
(by corporations and co-operatives)**

Unit: hectare

| Year | Herbicides | Insecticides | Fungicides | Other plant protective |
|------|-----------|--------------|-----------|------------------------|
| 1994 | 1840421 | 838356 | 761101 | 224022 |
| 1995 | 1855073 | 668438 | 708560 | 295926 |
| 1996 | 1780659 | 688042 | 712315 | 295858 |
| 1997 | 1709085 | 605339 | 704490 | 306254 |
| 1998 | 1723193 | 566446 | 742239 | 296504 |
| 1999 | 1546481 | 529541 | 656955 | 300799 |
| 2000 | 1480239 | 511609 | 581881 | 220922 |
| 2001 | 1502444 | 555109 | 685001 | 268688 |
| 2002 | 1450066 | 596948 | 655804 | 305561 |

Source: Hungarian Central Statistical Office (KSH).

In general the use of plant protectives also decreased between 1994 and 2002. The area treated by herbicides decreased by 21.2 percent, by insecticides by 28.8 percent and by fungicides 13.8 percent and the area treated by other plant protecting agents decreased by 36.3 percent.

In general the yields of the main crops decreased. This was caused by the synergy effect of various factors. On the one hand, fertiliser use dropped drastically due to the disastrous financial situation of the sector and the costs of plant protection fell too. On the other hand, it was obviously also due to the transformation of entrepreneurial production structure. In crop production the number of large size holdings - required for profitable production - decreased and the special expertise required for private farming was lacking. However, we have to take into account that in the period analysed there were several years when the weather conditions were unfavourable: often at the beginning of the year there was a drought while at the end the weather was too wet and then a drought came again.

In the first 4 years of the period analysed the yield of wheat was 4340 kg/hectare and this by the end of the year decreased to 3755 kg/hectare. The tendency was the same for other cereals too. As for maize the fluctuation of annual yields was considerable but the decrease of average yields is not so significant as in the case of cereals. Decreasing yields were more moderate for the other crops.

Table 109

**Average yields, kg/hectare**

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | years | | | | | | | | | | | | |
| Wheat | 5050 | 5190 | 4070 | 3050 | 4590 | 4160 | 3280 | 4210 | 4140 | 3590 | 3600 | 4310 | 3520 |
| Rye | 2500 | 2370 | 1920 | 1660 | 2160 | 2190 | 1650 | 2260 | 2080 | 2030 | 2000 | 2370 | 1960 |
| Barley | 4570 | 4360 | 3590 | 2640 | 3670 | 3560 | 2830 | 3590 | 3540 | 3120 | 2770 | 3530 | 2820 |
| Oat | 3310 | 2650 | 2810 | 1820 | 2310 | 2590 | 2340 | 2590 | 2560 | 2520 | 1670 | 2450 | 2160 |
| Maize | 3990 | 6710 | 3650 | 3500 | 3850 | 4430 | 5610 | 6410 | 5950 | 6350 | 4150 | 6220 | 5050 |
| Sugar beet | 36090 | 37160 | 27190 | 22950 | 31980 | 33950 | 39590 | 37680 | 41960 | 44080 | 34350 | 43780 | 41080 |
| Sunflower | 1950 | 2070 | 1780 | 1750 | 1600 | 1600 | 1820 | 1220 | 1680 | 1530 | 1620 | 1960 | 1860 |
| Lucerne | 4730 | 5810 | 4300 | 3830 | 4440 | 4350 | 5030 | 4960 | 5090 | 5410 | 4240 | 5420 | 4480 |
| Potato | 16920 | 15760 | 16850 | 13310 | 12770 | 15780 | 17790 | 16280 | 18850 | 18350 | 15290 | 21280 | 18280 |

Source: Hungarian Central Statistical Office (KSH).

## 9.2. Specific indicators of animal husbandry

Based on the most important specific indicators of Animal husbandry the main conclusions drawn are as follows: due to the unfavourable positions in cattle breeding the cattle for slaughter production per cow decreased. As for pig for slaughter production the indicator per sow is fluctuating but in general the situation is improving. In the cases of milk, eggs and wool the production per head is increasing.

However, the production indicators per inhabitants of the sectors analysed fell during the decade with the exception of poultry for slaughter and of wool production.

Regarding the natural indicators of Animal husbandry and by comparing them with the values of the EU and some developed countries the following conclusions can be drawn:

**Pig meat production**

The pig for slaughter output by sow is by 3 to 4 sows less than in EU countries.

From weaning to finishing the average rate of premature/undesirable perishing in pigs in Hungary is very high. (about 20 percent).

The specific feed consumption per slaughter pig kilogram is 3.7 kg/kg, that is, by one half more than in the EU benchmark[10] countries and in addition to this the varied distribution of the specific feed consumption is also very large (3.41-7.92 kg/kg).

The daily weight increment is by 77 to 160 gram/day lower than in the developed pig breeding countries.

The average lean meat output of slaughter pig production is by 3 to 7 percent lower than in the EU Member States.

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[10] Benchmarking is a process by which the best ones in management are selected, ones which then define and set the unit of measurement.

Table 110
**Profitability indicators of slaughter pig production in some EU Member States plus Canada (2000) and Hungary (1998)**

| Denomination | Denmark | The Nether-lands | Germany | France | United Kingdom | Canada | Hungary |
|---|---|---|---|---|---|---|---|
| Number of weaners/ sows/year | 23.20 | 22.90 | 21.22 | 21.26 | 21.54 | 19.17 | 15.8 |
| Weight increment, gram/day | 804 | 768 | 732 | 789 | 657 | 748 | 520 |
| Feed conversion rate, kg/kg | 2.7 | 2.62 | 2.94 | 2.81 | 2.62 | 3.28 | 3.7 |
| Slaughter weight (live weight), kg | 101 | | 116 | 113 | 88.9 | 113 | 103 |

Source: The National Committee for Pig Production Danish Bacon and Meat Council. 2002.
M. Baltay: The difference in breeding, production and meat quality indicators between the pig sectors of Hungary and the EU; the opportunities of development and its economic consequences. OMMI 1998.

Table 111

## Main indicators of Animal husbandry

| Denomination | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in kg | | | | | | | | | | | |
| **Cattle for slaughter** | | | | | | | | | | | | |
| per cow | 418 | 467 | 384 | 329 | 307 | 286 | 277 | 246 | 250 | 294 | 265 | 258 |
| per inhabitant | 25.4 | 25.3 | 18.5 | 14.4 | 12.5 | 11.8 | 11.3 | 9.7 | 10.1 | 11.6 | 9.6 | 9.4 |
| **Pig for slaughter** | | | | | | | | | | | | |
| per sow | 1735 | 1775 | 1630 | 1808 | 1896 | 1741 | 1679 | 1757 | 2022 | 2093 | 1872 | 1902 |
| per inhabitant | 114.3 | 91.7 | 80.9 | 73.0 | 69.6 | 82.2 | 71.1 | 69.9 | 78.4 | 79.0 | 67.6 | 69.0 |
| **Sheep for slaughter** | | | | | | | | | | | | |
| per inhabitant | 2.5 | 2.7 | 2.8 | 2.2 | 1.9 | 1.9 | 1.7 | 1.6 | 1.6 | 1.3 | 1.8 | 1.9 |
| **Poultry for slaughter** | | | | | | | | | | | | |
| per inhabitant | 44.8 | 43.2 | 40.7 | 43.6 | 49.8 | 48.3 | 50.9 | 57.2 | 51.0 | 61.2 | 61.0 | 68.0 |
| **Milk production, litre** | | | | | | | | | | | | |
| per cow | 4663 | 4737 | 4613 | 4660 | 4893 | 4846 | 4985 | 5363 | 5310 | 5335 | 5516 | 5722 |
| per inhabitant | 234 | 216 | 196 | 183 | 188 | 188 | 190 | 201 | 203 | 207 | 204 | 207 |
| **Egg production, pc.** | | | | | | | | | | | | |
| per layer | 188 | 189 | 188 | 191 | 191 | 199 | 207 | 207 | 202 | 217 | 213 | 211 |
| per inhabitant | 429 | 403 | 409 | 378 | 339 | 321 | 334 | 334 | 317 | 316 | 321 | 335 |
| **Wool productions** | | | | | | | | | | | | |
| per sheep | 2.3 | 2.5 | 2.3 | 3.1 | 3.5 | 3.3 | 3.4 | 3.6 | 3.7 | 3.6 | 3.4 | 3.3 |
| per inhabitant | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.4 |

Source: Hungarian Central Statistical Office (KSH).

**Poultry breeding**

The broilers produced and sold in Hungary are as good as any in the world. However the producers can only partially use the genetic resources of the breeding stock because of the conditions (breeding, feeding, keeping etc.). Recently the situation improved but by comparing the Hungarian data with those of the USA significant differences can be seen mainly regarding the procurement weight, rate of perishing and of feed conversion.

The general conditions of broiler breeding in Hungary are lagging behind the developed EU countries. The position and income generating capacity of the sector is influenced by the fact that in Hungary the breeding period is longer and - even if the feed used for producing 1 kg chicken meat is cheaper and of low protein content - the rate of perishing is higher than in the countries with high-level production. In Hungary for broiler fattening 10 to 15 percent more feed is utilised than in the enterprises of the US and perishing is also higher by 2 to 4 percent. This increases the production costs and decreases competitiveness.

In fact the performance of breeding pairs in Hungary is also lagging behind the average of stocks in other countries.

Table 112

**Performance by breeding pairs**

| Breeding pair | Production week | Total eggs, eggs/hen | Eggs layed, eggs/hen | Hatching % | Baby chick per breeding pair, pc | Utilisation, % |
|---|---|---|---|---|---|---|
| Other countries | 60.0 | 169.6 | 160.4 | 85.2 | 136.6 | 100.0 |
| In Hungary | 59.5 | 147.7 | 134.1 | 74.6 | 100.0 | 73.2 |
| Difference | - 0.5 | - 21.9 | - 26.3 | - 10.6 | - 36.6 | - 26.8 |

Source: Hungarian Poultry, May 1996. p. 3.

In other countries there are more baby chicks per breeding pair than there are eggs layed per hen in Hungary. This increases the production costs and consequently the price too. This has an unfavourable effect on Hungary's market position.

**Cattle breeding**

In 1998 milk production per cow was 111 percent compared to the EU average; by 1993 it had dropped to 91 percent while the number of milking cows decreased by 25 percent. Parallel to this the specific production should also have increased but it did not. (In this regard, the determinant factor was that in the EU specific milk production increased in ten years from 4504 litres of 1988 to 5702 litres by 1998.)

Between 1997 and 2001 the situation improved somewhat but even today Hungary is still two years behind compared to the EU average.

The cattle for slaughter production and the number of calves per cow decreased (a change of just a few percent can indicate a significant tendency). In recent years the drop in the numbers of prematurely perishing calves and the bleeding of bull-calves (for serum production) improved the profitability of the sector and decreased the losses. The producers adjusted to this situation. During the 1990s the proportion of cattle for slaughter as part of the whole livestock produced decreased from 20 percent to about 12 percent.

**Sheep breeding**

There has been no significant change in the last 40 years concerning the genetic resources, the breeding technology, the feeding or the management of reproduction in sheep breeding. During the period of any increase farmers enjoyed extensive development. However, the stock decreased continuously and then in the nineties even after a drastic drop the genetic resources were not improved and the indicators of breeding did not improve either. In this field there was a further decline.

By considering the annual average - based on the data of the last decades - one lamb per ewe can be expected. Hungary's lag is indicated by the fact that in calculations the sale of one slaughter lamb per ewe is estimated. This means that the growth of stock is higher by the number of lambs used for replacing ewes (that is by 20 to 30 percent depending on the species)

## 9.3. Profitability per area

Profitability per area is expressed best by the value of gross annual production per hectare of agricultural land. During the last decade the area of agricultural land decreased slightly but continuously, and in this way, by 2002, the decrease reached 10 percent.

Table 113

**Profitability by agricultural area**

| Denomination | 1989 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agricultural area (thousand hectares) | 6484 | 6460 | 6136 | 6129 | 6122 | 6180 | 6184 | 6195 | 6193 | 6186 | 5854 | 5865 | 5867 |
| Value of gross production at constant prices of 1991. (billion HUF) | 493.2 | 449.1 | 359.2 | 324.4 | 334.4 | 343.0 | 364.5 | 362.9 | 360.3 | 362.5 | 336.8 | 390.0 | 362.7 |
| Value of gross production per one hectare of agricultural land (HUF/ha) | 76064 | 69521 | 58540 | 52896 | 54623 | 55502 | 58942 | 5579 | 58179 | 58593 | 57527 | 66499 | 61820 |

Source: Calculation based on the data of KSH

Based on the data of 1989 - at the constant prices of 1991 – across the range of Hungarian agriculture the value of gross production per hectare decreased almost by a quarter - that is, to 75.6 percent - by 2000. In 1993 it was at its lowest value. Then it started to increase with some fluctuations.

## 9.4. Profitability of the main products

A crucial point in the development of agriculture and agricultural production making use of market opportunities is the producers' behaviour. This is determined by the income position of the various sectors and the activities of those operating in the market and in particular by the producers' interests. It is important to analyse and discuss this question since in this way it is possible to focus on the income positions of the nineties.

We will show the development of income in proportion to costs in the cases of the main agricultural sectors by presenting the examples of two legal operational statuses, i.e., corporations and integrated commercial farms. Corporations are mainly joint stock companies established as a result of the transformation process of state holdings and of the remaining co-operatives.. A characteristic of the integrated commercial farms is that only part time producers can be included in the field of observation who participate concurrently in various producer organisations (integration).

The data clearly shows the income position or the decreasing market position of the sector. As for crop production the corporations were not able to reattain the results of the nineties, only 1996 might be an exception. (it should be mentioned, however, that the results are also lagging behind because in the base year agricultural production was outstanding). The income position of crop production deteriorated by the end of the period analysed to such an extent that in fact no income was generated by the sector and most crop production sectors had losses. The income possibilities decreased especially in 2002 seeing as at that time 10 sectors out of 14 had losses. Prices did not cover the costs. Besides the unfavourable external market conditions the frequent unfavourable weather conditions (flood, drought) also played an important role.

In Animal husbandry the unfavourable income indicators appeared earlier than in crop production. There was more economic risk in Animal husbandry which made the production unstable and large fluctuations were characteristic. The data illustrates well that in most sectors the sales prices themselves are not enough to ensure protection for the producers.

In the case of integrated commercial farms the range of products analysed differs from that of corporations. This is due to the fact that small size farms are engaged in different sectors than the larger ones and the database should reflect the real production structure. In addition to this there are also methodological

differences between the two types of holdings. For small size holdings it is difficult to calculate net incomes by correct and standard methods as the wages to be paid to private labour are difficult to estimate. In this case, therefore, the indicator (which can reflect any income loss) is the gross income in proportion to costs.

The data of the range of products observed in the small size holdings clearly shows that during the period analysed the income loss was significant in this category as well. Compared to 1999, gross income in proportion to costs dropped in most of the sectors in 2000 and in 2002, respectively. Overall income increased only slightly by forcing tomato and green pepper production as well as by managing greater egg production and cattle for slaughter production.

Table 114

**Incomes in proportion to production costs of agricultural corporations**

Unit: HUF

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year | | | | | | | | | | | | |
| Wheat | 44 | 13 | 24 | 32 | 37 | 18 | 50 | 26 | -23 | -9 | 16 | 11 | -9 |
| Winter barley | 47 | 16 | 12 | 22 | 20 | -5 | 38 | 39 | -30 | -13 | 39 | 5 | -25 |
| Spring barley | 39 | - | 17 | 15 | 24 | 16 | 65 | 27 | -13 | -19 | 1 | 6 | 6 |
| Rye | 9 | - | -39 | -2 | 10 | -36 | 23 | 9 | -27 | -35 | 0 | -26 | -50 |
| Oat | 32 | - | 2 | -7 | 7 | -5 | 45 | 3 | -21 | -26 | -23 | -24 | -8 |
| Maize | 30 | 6 | -12 | 9 | 3 | 10 | 43 | 15 | -16 | 5 | 2 | 5 | -8 |
| Sugar beet | 20 | -6 | -16 | -19 | 23 | -1 | 8 | 18 | -14 | 13 | -12 | 43 | 1 |
| Sunflower | 36 | 18 | -5 | 3 | 14 | 16 | 14 | -23 | 1 | -20 | -16 | 12 | 18 |
| Rape | 9 | - | -26 | -23 | 30 | 17 | 14 | 18 | 4 | 4 | -33 | 4 | -11 |
| Peas | 9 | - | -14 | -21 | 17 | 7 | 7 | 23 | 8 | - | - | - | - |
| Soya-bean | -10 | - | -22 | -9 | 16 | 24 | 7 | -6 | -4 | 31 | -44 | -20 | -1 |
| Green peas | -12 | -22 | -53 | 0 | 33 | 54 | -5 | -15 | 5 | -11 | - | 61 | 7 |
| Apple | -4 | 15 | -29 | -8 | -5 | 43 | 4 | -2 | -11 | -15 | - | -19 | -6 |
| Wine-grape | 2 | -27 | -31 | -31 | -36 | -22 | -17 | -1 | -21 | -22 | 102 | 38 | -14 |
| Milk | 8 | -4 | -2 | 6 | 12 | 16 | 8 | 14 | 30 | 15 | 11 | 11 | 9 |
| Eggs | 6 | 9 | 17 | 14 | 25 | 20 | 18 | 27 | 3 | -2 | 6 | 14 | 7 |
| Cattle for slaughter | 1 | -27 | -25 | -16 | -2 | 5 | -9 | -18 | -13 | -6 | -21 | -13 | 3 |
| Pig for slaughter | 33 | 10 | 21 | 16 | 34 | 44 | 20 | 28 | 16 | -1 | 9 | 12 | 6 |
| Chicken for slaughter | -1 | -2 | -6 | -6 | 5 | 1 | -6 | 0 | -1 | -1 | -3 | 2 | 1 |

Source: Database of AKII

<div align="right">Table 115</div>

**Incomes in proportion to production costs\* of the small size agriculturally integrated commercial farms**

<div align="right">Unit: HUF</div>

| Denomination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | year | | | | | | | |
| Potato | 69 | 42 | 33 | 53 | 54 | 71 | -3 | 25 | 59 | 43 | 52 | 60 | 50 |
| Tomato on free ground | 72 | 36 | 44 | 18 | 71 | 30 | 61 | 28 | 28 | 8 | 73 | 39 | 19 |
| 'Forced' tomato yield | 93 | 61 | 30 | 59 | 35 | 44 | 48 | 46 | 72 | 90 | 122 | 120 | 151 |
| Green pepper on free ground | 70 | 89 | 100 | 79 | 90 | 79 | 96 | 71 | 50 | 49 | 39 | 42 | 56 |
| 'Forced' green pepper yield | 106 | 120 | 99 | 116 | 104 | 63 | 78 | 99 | 109 | 126 | 131 | 141 | 156 |
| Red pepper | 184 | 93 | 96 | 68 | 43 | 24 | 89 | 151 | 129 | 52 | 124 | 38 | 31 |
| Onion | | | | | - | 9 | 26 | 68 | 55 | 22 | 71 | 27 | 63 |
| Cucumber | | | | | - | 38 | 52 | 82 | 51 | 33 | 40 | 45 | 54 |
| | | | | | | | | | | | | | |
| Apple | 54 | 93 | 56 | 34 | 45 | 76 | 51 | 39 | 49 | 109 | 48 | 0 | 39 |
| Peach | 123 | 101 | 80 | 42 | 111 | 156 | 96 | 105 | 87 | 54 | 52 | 60 | 78 |
| Wine-grape | 40 | -9 | 0 | -13 | 15 | 28 | 66 | 41 | 37 | 41 | 61 | 33 | 21 |
| | | | | | | | | | | | | | |
| Milk | 51 | 35 | 30 | 33 | 28 | 41 | 17 | 27 | 31 | 21 | 20 | 24 | - |
| Eggs | 11 | 22 | 35 | 56 | 11 | 18 | 2 | 22 | 6 | 5 | 19 | 26 | - |
| Cattle for slaughter | 12 | 16 | 7 | 6 | 18 | 23 | 1 | 2 | 13 | -1 | 11 | 35 | - |
| Pig for slaughter | 16 | 4 | 8 | 7 | 46 | 19 | 4 | 9 | 4 | 0 | 14 | 14 | - |
| Chicken for slaughter | 2 | 2 | 1 | 4 | 9 | 4 | 2 | 0 | 2 | -1 | 5 | 0 | - |
| Rabbit for slaughter | 19 | 26 | 25 | 16 | 6 | 8 | 1 | 6 | 6 | -5 | -3 | -2 | - |

\*Gross income; wages to be paid to a farmer's own/private labour input is not included.

Source: Database of AKII

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