



*Ambasada  
Rzeczypospolitej Polskiej  
W Królestwie Danii*

*The Embassy  
of the Republic of Poland  
to the Kingdom of Denmark*

København, den 23. marts 2001

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**Kære Claus Larsen-Jensen,**

Vedlagt fremsender jeg materiale vedr. polsk landbrug udarbejdet sidste år af det polske ministerium for landbrug og udvikling af landdistrikter.

Du er velkommen til at kontakte mig, såfremt du har brug for andet materiale vedr. Polen.

**Med venlig hilsen**

A handwritten signature in black ink that reads "Ewa Dębska".

**Ewa Dębska**

**2. ambassadesekretær**

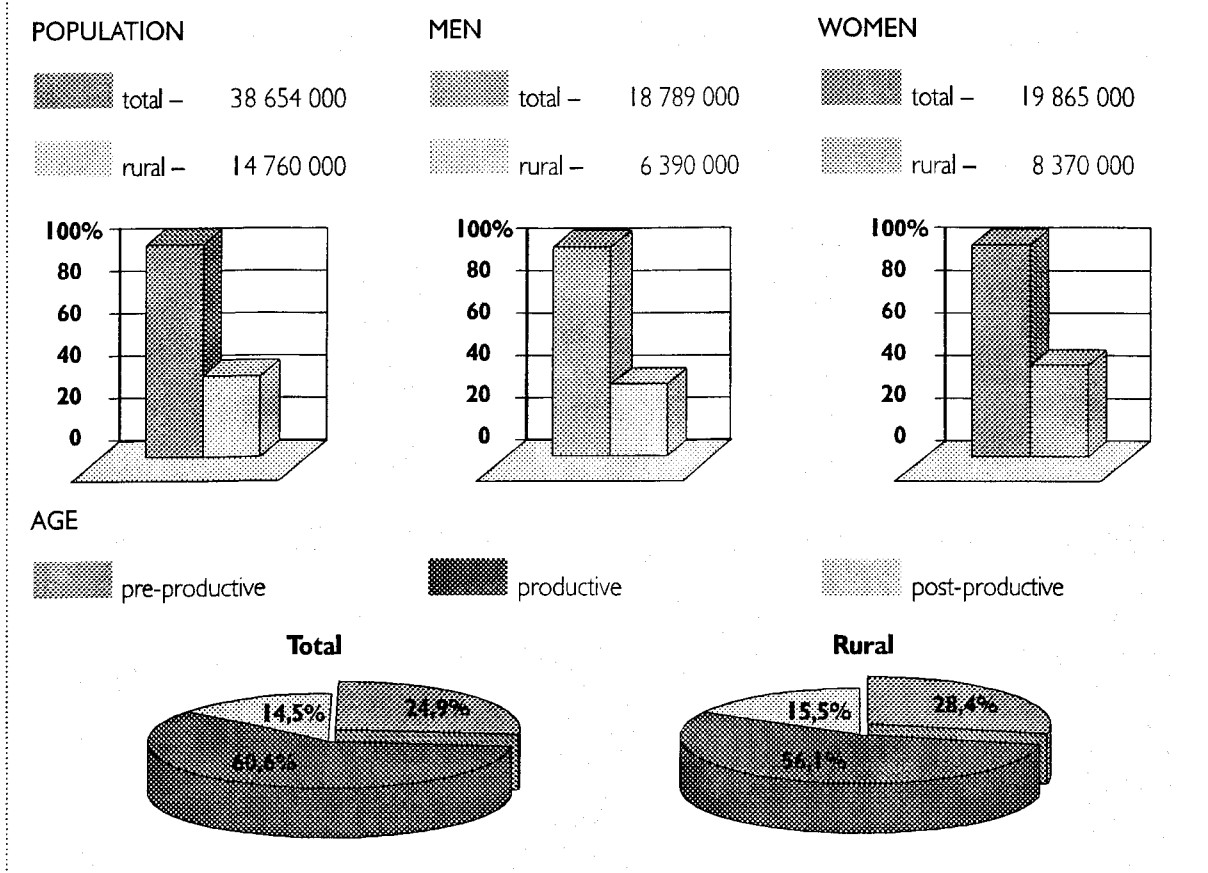
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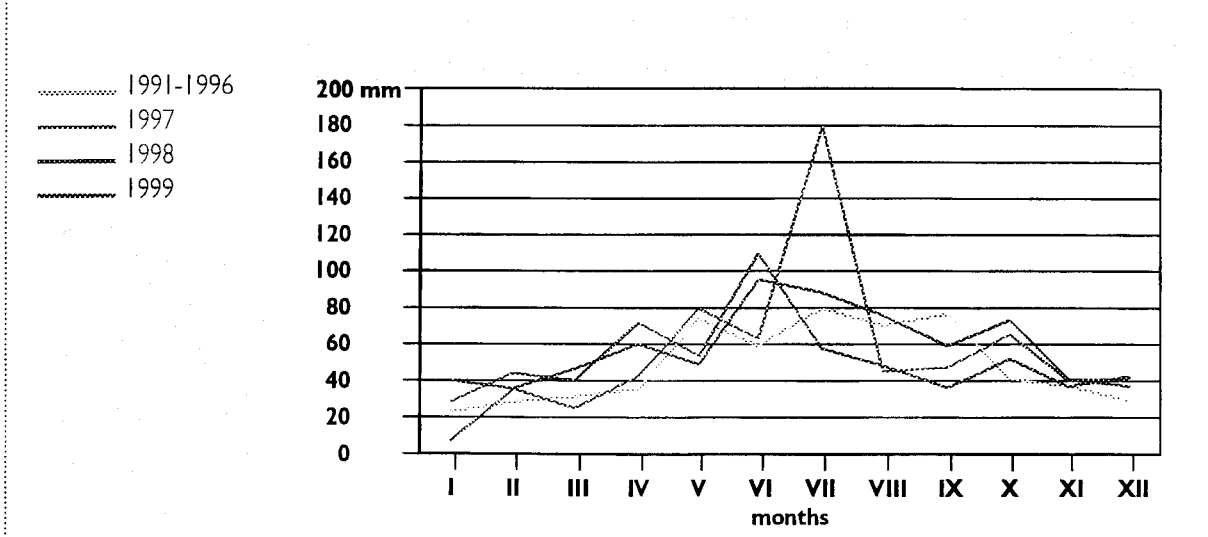
**Fig. I. Population of Poland: structure by sex and age as in 1999**



Source: CSO (Central Statistical Office)

Areawise (over 312 000 sq km) Poland is ranked 9th in Europe and 69th worldwide, whereas the number of population earns it a higher position both in Europe (8th) and globally (29th). Over the last couple of years, the country's population has stabilised reaching almost 39 million inhabitants out of which 14.7 million reside in rural areas. Approximately 66% of rural population is directly or indirectly linked to agriculture.

**Fig. 2. Total of average monthly precipitation in Poland (in mm)**

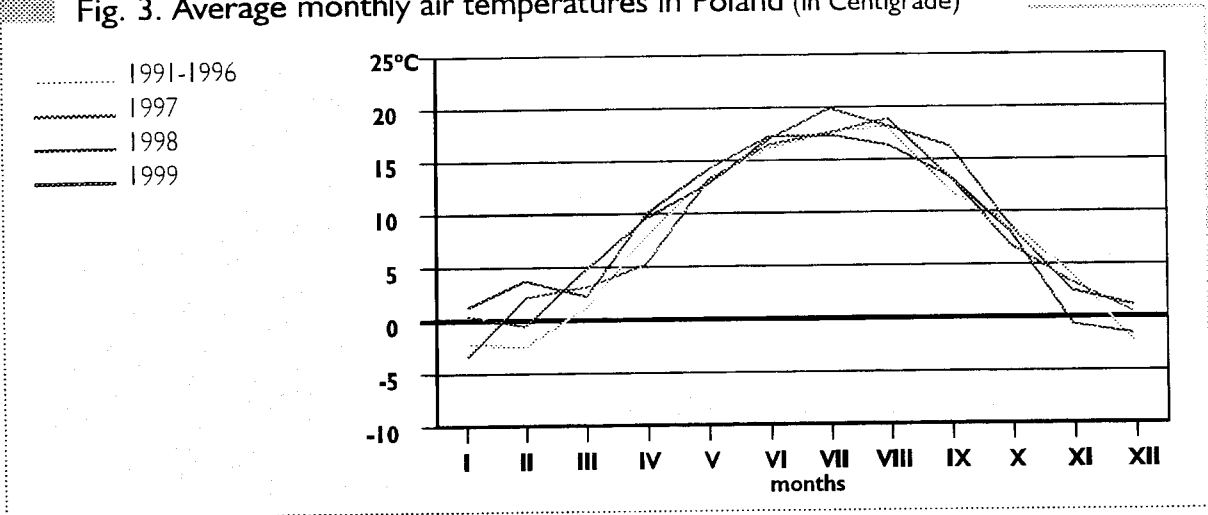


Source: CSO

Most of Poland's territory is located in the lowland belt stretching from the Atlantic Ocean up to the Ural Mountains, with highlands and mountains of elevation over 500 m above the sea level occupying only 3% of the country's overall surface. The climate is typical for temperate zone, although frequent encounters of humid Atlantic atmospheric fronts with predominantly dry currents of air from the Russian lowlands and the Asian continent add to the fickleness of Poland's weather pattern.

Agricultural production is very much dependent upon weather conditions, especially on the pattern of temperatures and the amount of precipitation. Precipitation is pivotal as the country's main source of water providing ca. 97% of the overall annual water supply. The remaining 3% comes from the river tributaries. Although arable land occupies as much as 59% of Poland's territory, most of the soil is of medium and low quality. Almost 28% of the country is covered by forests.

Fig. 3. Average monthly air temperatures in Poland (in Centigrade)



Source: CSO (Central Statistical Office)



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# AGRICULTURE



## AGRICULTURE

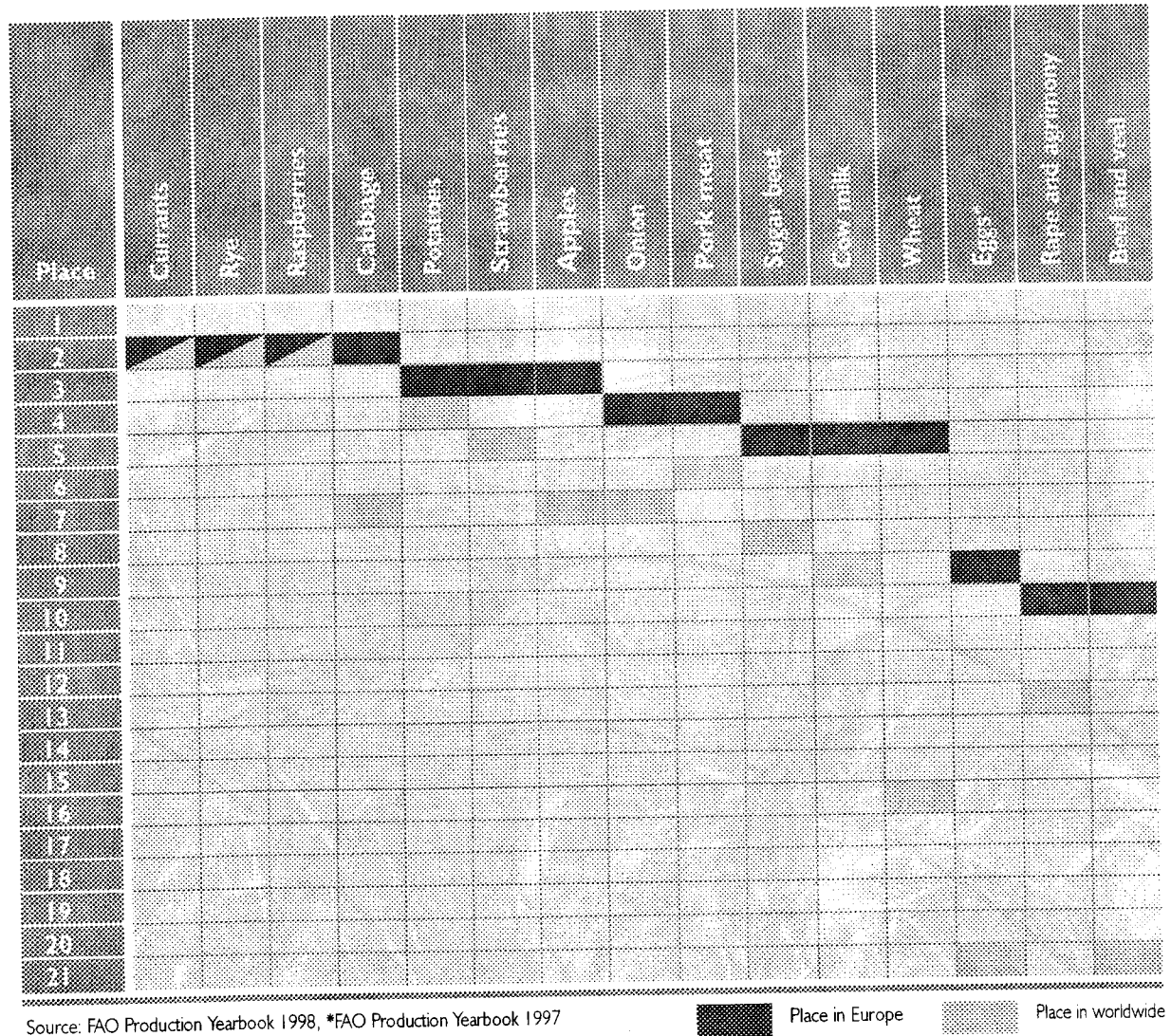


### General

■ The number of individual crops puts Poland into a dominant position not only among the European growers but also worldwide. Above all, this pertains mainly to fruit and vegetables. Poland is ranked second in Europe as producer of berries including raspberries and currants. Poland's agriculture continues to be the top supplier of onions, cabbage, cauliflower as well as strawberries and apples. The country's quality of soil makes Poland the world's top producer of rye and potato. These two crops serve as a basis for animal husbandry in which Poland also excels worldwide.



Fig. 4. Poland's position in Europe and worldwide in production of selected farming products in 1998

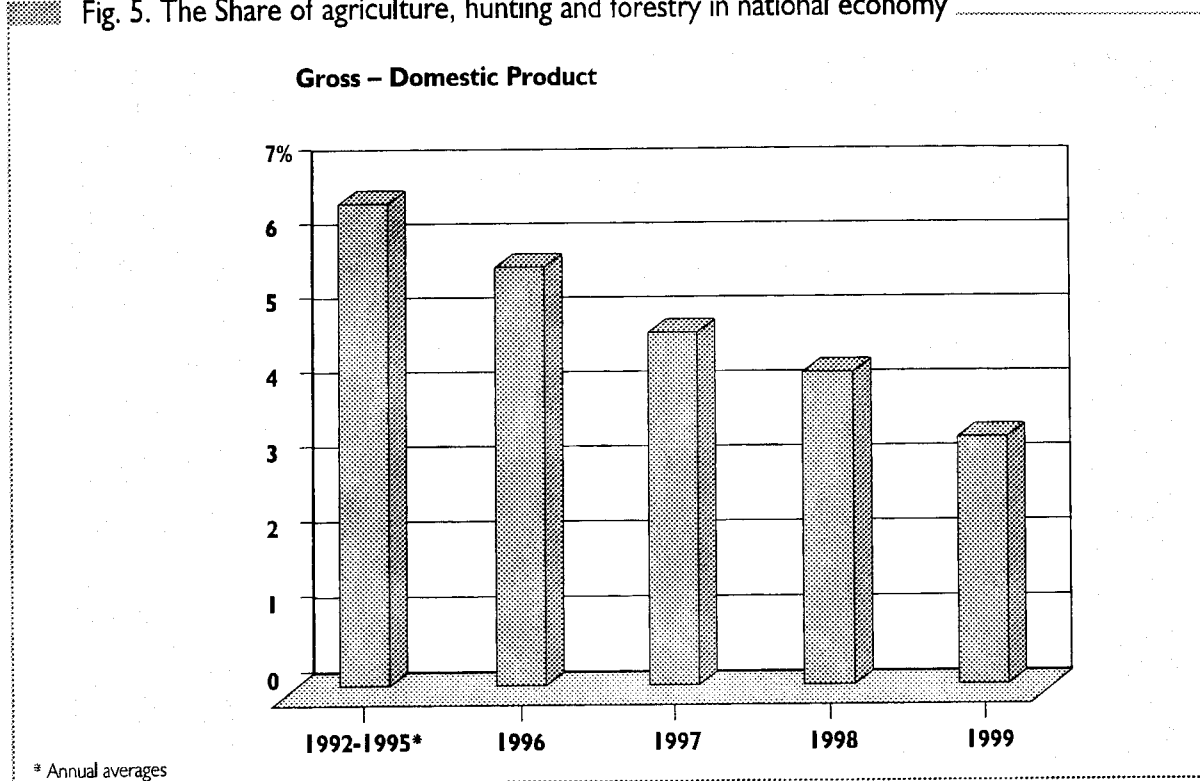


The pattern of crops is as much dependent on the soil and climate conditions as on farming know-how. The highest quality soils are found in the southern and western part of Poland. The cultivation of wheat and maize is predominant in those areas where favourable climate prevails and is most suitable for this kind of crops. The country's central, eastern and northern parts lend themselves to the cultivation of rye and potato as well as to pasturage. Most of orchards and berry fruit plantations are located in the vicinity of the city of Sandomierz and in southern Mazowsze as well as in the provinces of Wielkopolska (Greater Poland) and Lower Silesia. Animal production is well developed in those areas where there is an easy availability of fodder. Cattle breeding is at its best in the central and north-eastern parts of the country where meadows and pastures dominate whereas pig breeding thrives on the potato and rye cultivated areas and on other fodder crops. Agriculture's share (including hunting and forestry) in Poland's gross domestic product amounted to 3.3% in 1999 as against 4.2% in the previous year.

For several reasons, the year 1999 was quite difficult for Poland's agriculture. On the one hand, the nation had to cope with the inclement agro-meteorological conditions and on the other hand with the persistence of unfavourable pricing pattern for agricultural products.

The total agricultural output in 1999 declined by 5.4% in comparison with the previous year. The hardest hit was the sector of plant production which suffered a 8.6% setback whereas the animal production decreased only by 1.4%.

Fig. 5. The Share of agriculture, hunting and forestry in national economy



Source: CSO

Table I. Dynamics of total agricultural production (in fixed prices)

Previous year = 100	PRODUCTION		
	Total	Plant production	Animal production
1992	87.3	78.8	95.9
1993	106.8	123.2	88.9
1994	90.7	85.1	99.3
1995	110.7	112.2	108.7
1996	100.7	101.7	99.2
1997	99.8	95.8	105.4
1998	105.9	109.2	102.2
1999	94.6	91.4	98.6

Source: CSO (Central Statistical Office)

The agricultural production in the last decade was subject to substantial rate of growth fluctuations. Considerable decline took place during the years 1992-94, but spectacular growth in 1998 brought the agricultural production back up closer to 1990 level. However, the year 1999 sent the production again to the 1995-97 level which was already 7.5% lower than the reference 1990. The structure of agricultural production in 1999 remained stable in comparison with the previous year. Animal production accounted for over 45% of the total production as against almost 55% in case of plant production of which vegetables and fruits made up 14%.



The latter's share increased significantly compared to 1998 where it accounted for 11.0% of the overall output. The year-on-year comparison of the structures of total output values indicates a slight growth of the final production which rose from 68.2% to 68.7% with simultaneous decrease in the use of own raw materials. The structure of final production recorded a further steady rise in the share of commodities (up to ca. 87%) arising predominantly both from the boost of central purchasing (from 43.5 to 54.2%) and the higher marketplace sales which, with shrunk production, caused a subsequent decline in stocks and livestock. The combined effect of those factors increased a yield of marketable agricultural produce and the share of commodities in the total production rose from 56.6% to 59.5%, which after the 1993-96 meltdown brought it closer back to early 90-ties' levels. The structure of commodities also underwent a change increasing the share of plant production at the cost of declining animal production – slaughtered livestock especially. The combined effect of diminished production, rising costs and lower prices significantly deteriorated income position of agricultural producers. In spite of certain improvement in the second half of the year, producers' incomes never returned to their 1998 level. By and large, the incomes of agricultural producers are estimated to have decreased by 5-8% in comparison with the previous year mainly with the farms specialising in hogs and grains. Average prices of hogs sold in 1999 by individual farmers were by 9.3% lower than in the previous year and by 6.6% lower in case of grains.

The share of agriculture, forestry and hunting in the capital outlays in the national economy has been steadily declining since 1990 to reach 2.02% in 1998.

Fig. 6. Commodity structure of agricultural production in 1999 (in % of current prices)

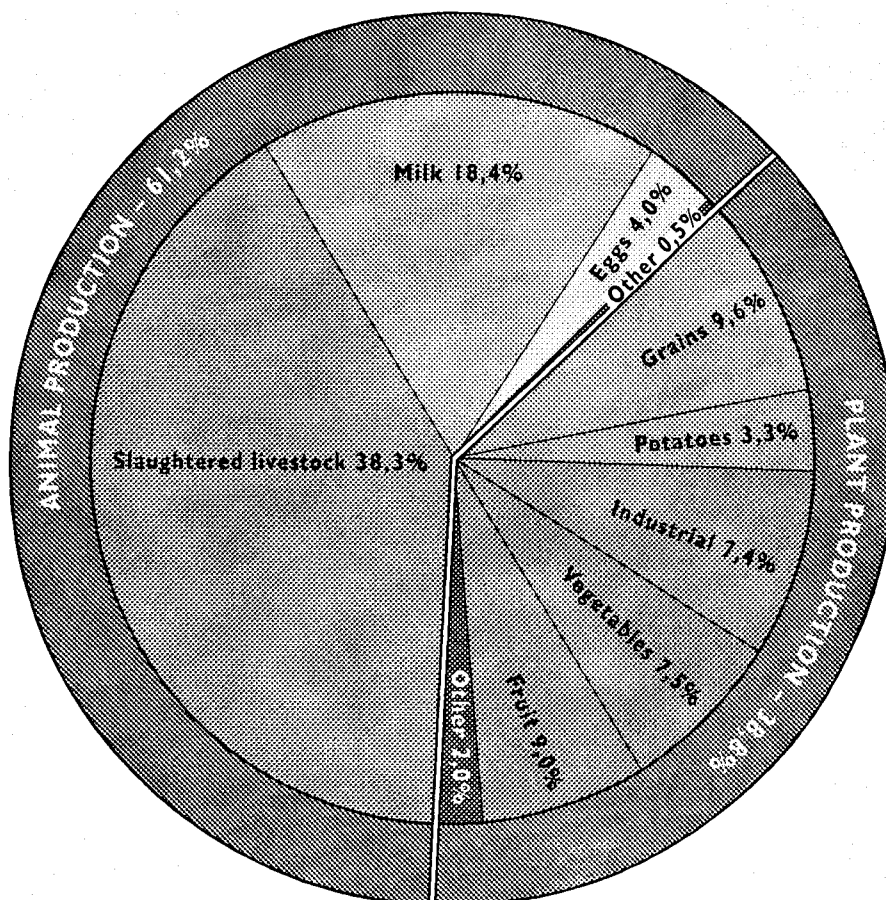


Table II. Capital outlays in national economy (in current prices, in PLN million)

Years	INVESTMENT		
	Total	Agriculture, forestry, hunting	
	in PLN million	in PLN million	%
1991-1995*	28 553.82	951.44	3.42
1996	65 622.0	2 390.6	3.64
1997	90 437.7	2 580.2	2.85
1998	112 813.5	2 290.6	2.02
1999	126 803.0	-	-

Source: CSO, \*Annual average

Table III. Structure of capital outlays in agriculture, forestry and hunting (in current prices)

Years	Type of investment			
	Total	Buildings and structures	Machinery, technical equipment and tools	Means of transportation
1994	944.5	377.0	298.8	270.0
1995	1 356.4	410.4	375.9	229.7
1996	2 390.6	501.7	787.5	507.0
1997	2 580.2	513.6	930.7	463.8
1998	2 290.6	528.6	1 025.3	461.2

Source: CSO

## Profile of farms and agricultural land

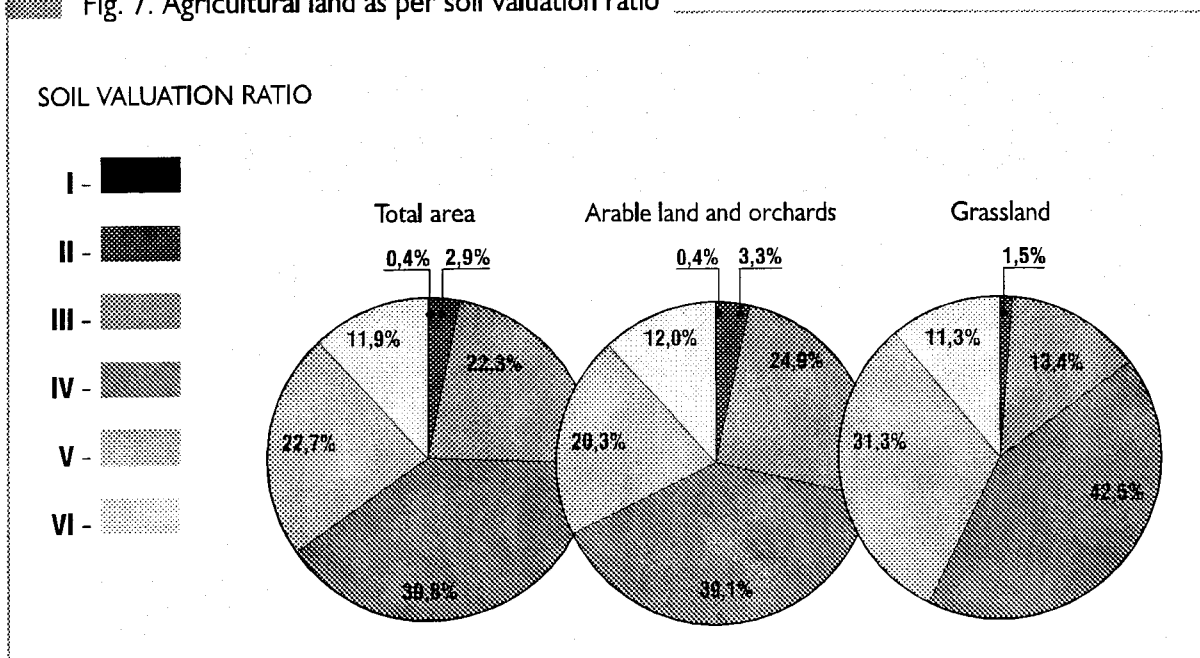
Poland is ranked third in Europe (excluding Russia and Ukraine) in terms of the size of agricultural land. Its total area amounts to 18,4 million hectares and constitutes almost 59% of the country's overall territory. Only France and Spain have at their disposal larger areas of agricultural land.

Europewide, Poland's soils cannot be considered as the most fertile. Slightly over 3% of the arable land belongs to category I and II whereas as much as 35% is classified as category V and VI. The best soils are situated at Żuławy (Vistula delta) and in the provinces Lublin and Wielkopolska, whereas the weakest ones in central, north-western and north-eastern part of Poland.

Water drainage system underwent a remarkable improvement. Approximately 6.7 million hectares are estimated to have been improved upon what constitutes over 70% of all agricultural land requiring this kind of treatment. On the other hand, slightly over 400 thousand hectares have been included into the irrigation system which is a far cry to real needs exacerbated recently by severe drought.

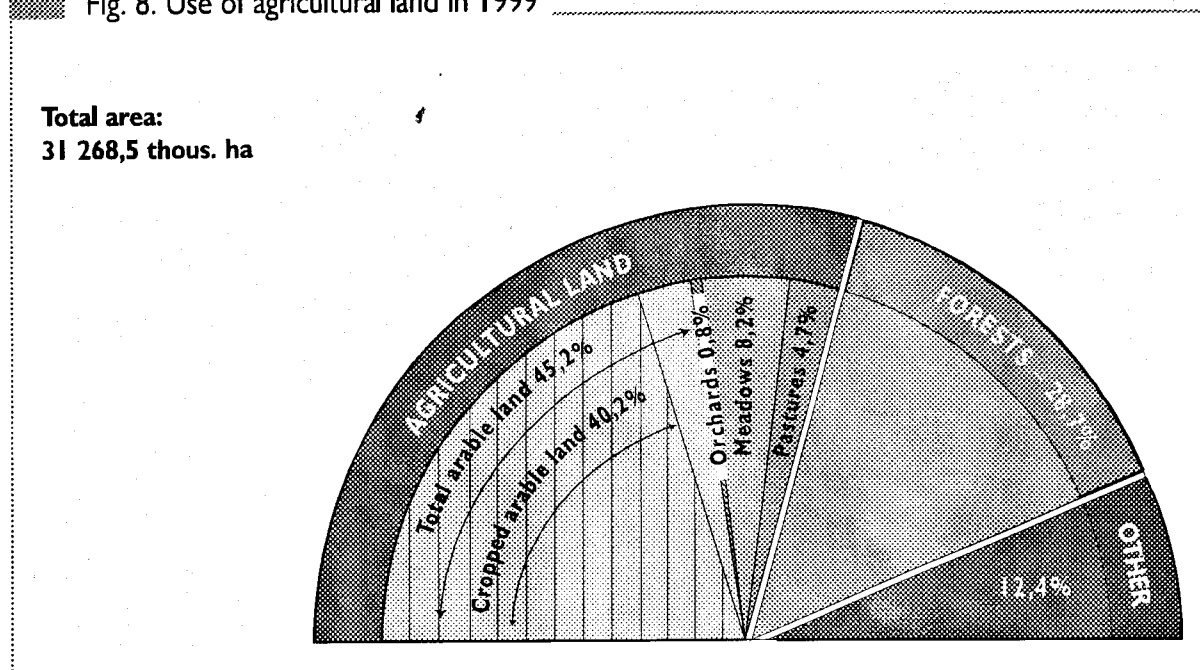
14,1 million hectares of arable land accounts for 76% of overall agricultural land, with meadows and pastures occupying 4 million hectares (12,9%) and orchards – 0,3 million hectares (0,9%).

Fig. 7. Agricultural land as per soil valuation ratio



Source: CSO

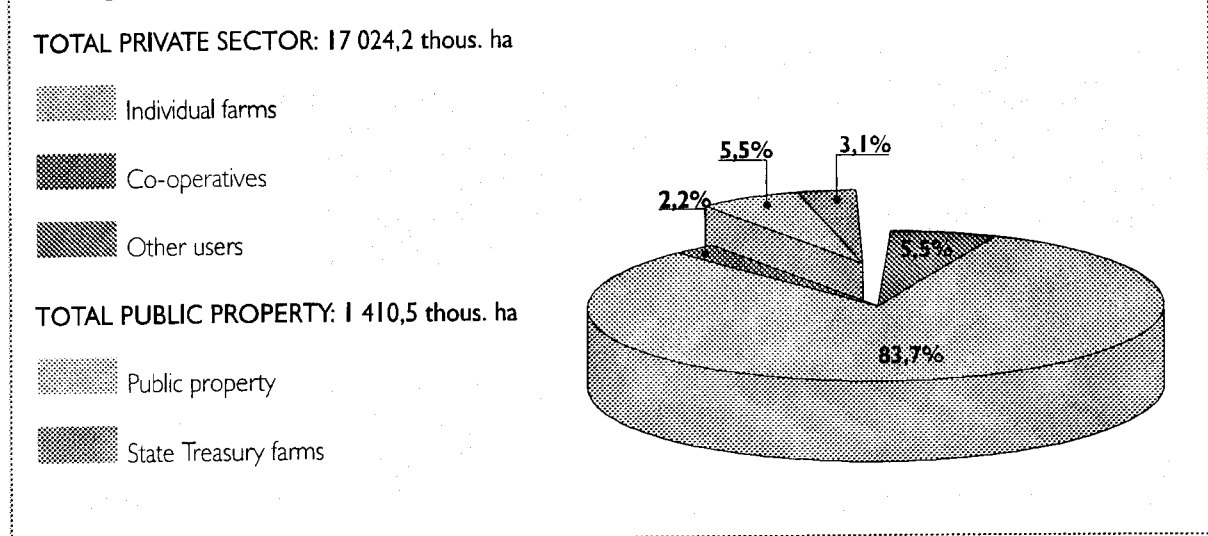
Fig. 8. Use of agricultural land in 1999



Source: CSO

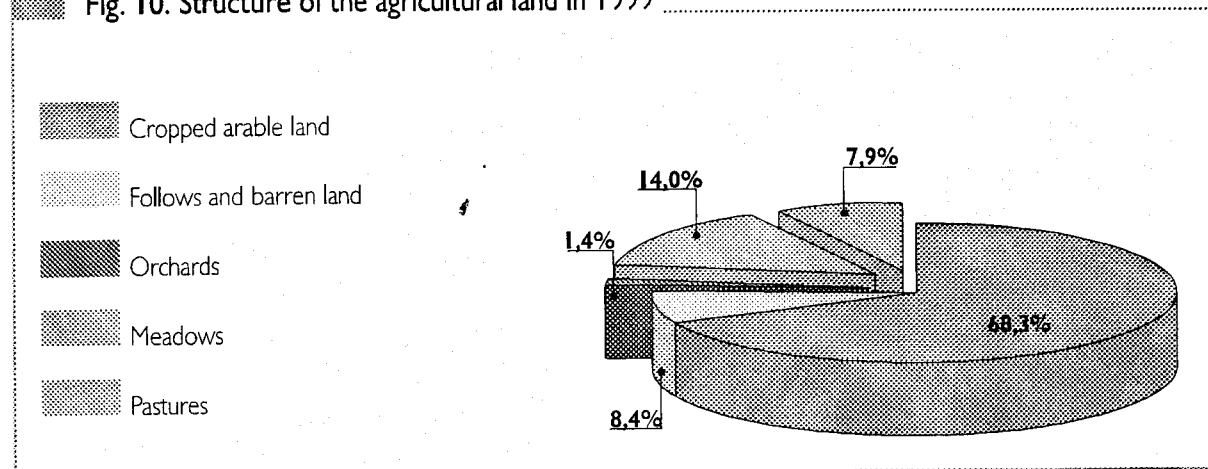
Land ownership is dominated by the private sector which accounts for 17 million hectares being equivalent to 92,3 % of Poland's overall agricultural land in 1999. The remaining 1,4 million hectares (7,7%) continues to be owned by the public sector although its share has been steadily declining from as high as 20% in early 90-ties owing to efficient work of the Government Agency of Agrarian Property charged with the management of land of the liquidated state-owned farms. By far, the highest percentage (15,5%) of the state – owned land is retained in the western province of Lubuskie, as against 14,2% in Warmia – Mazury and 13,6% in Lower Silesia.

Fig. 9. Ownership structure of the agricultural land in 1999

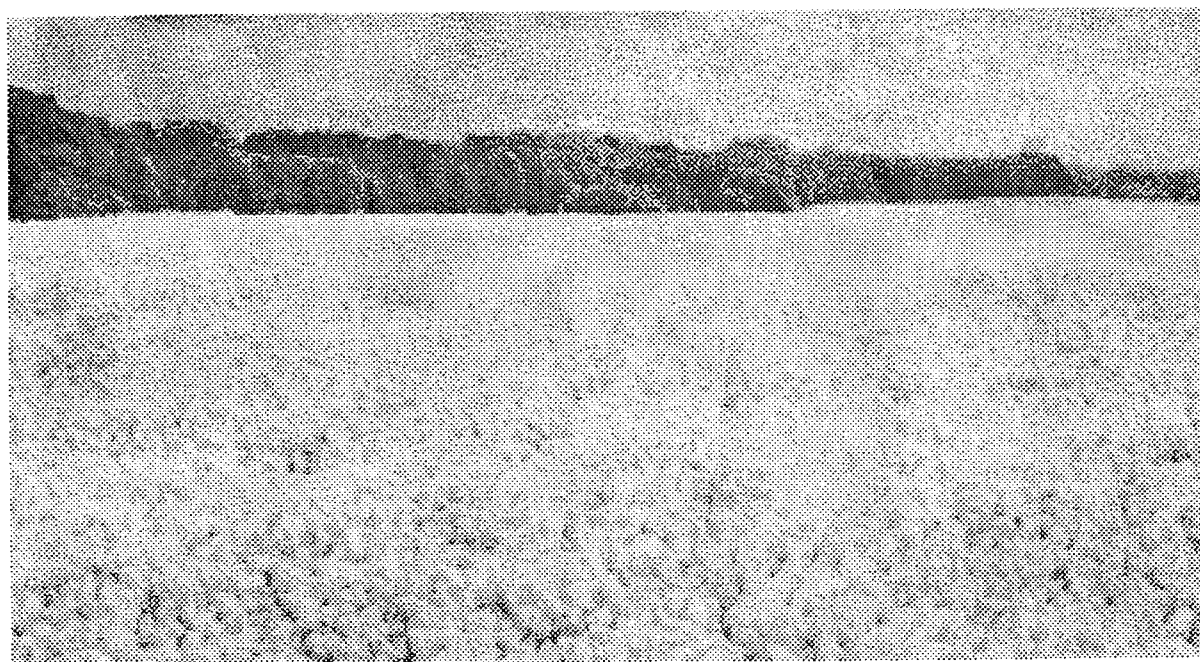


Source: CSO

Fig. 10. Structure of the agricultural land in 1999

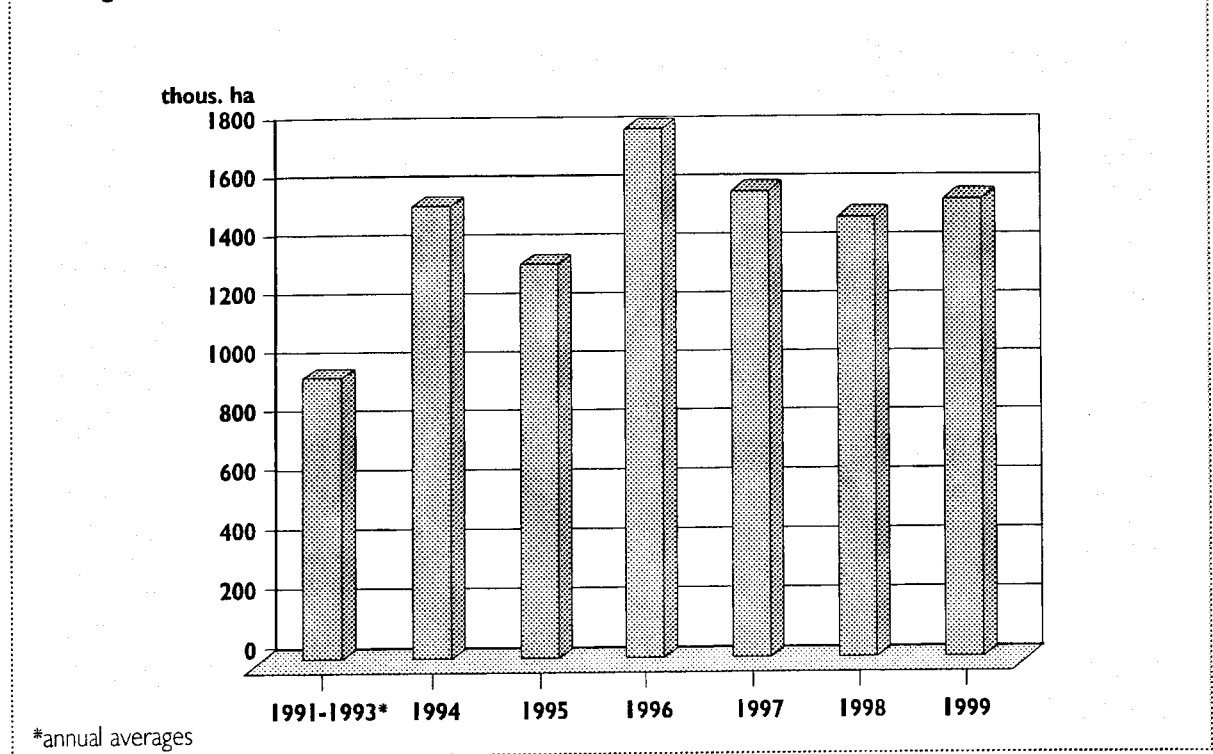


Source: CSO



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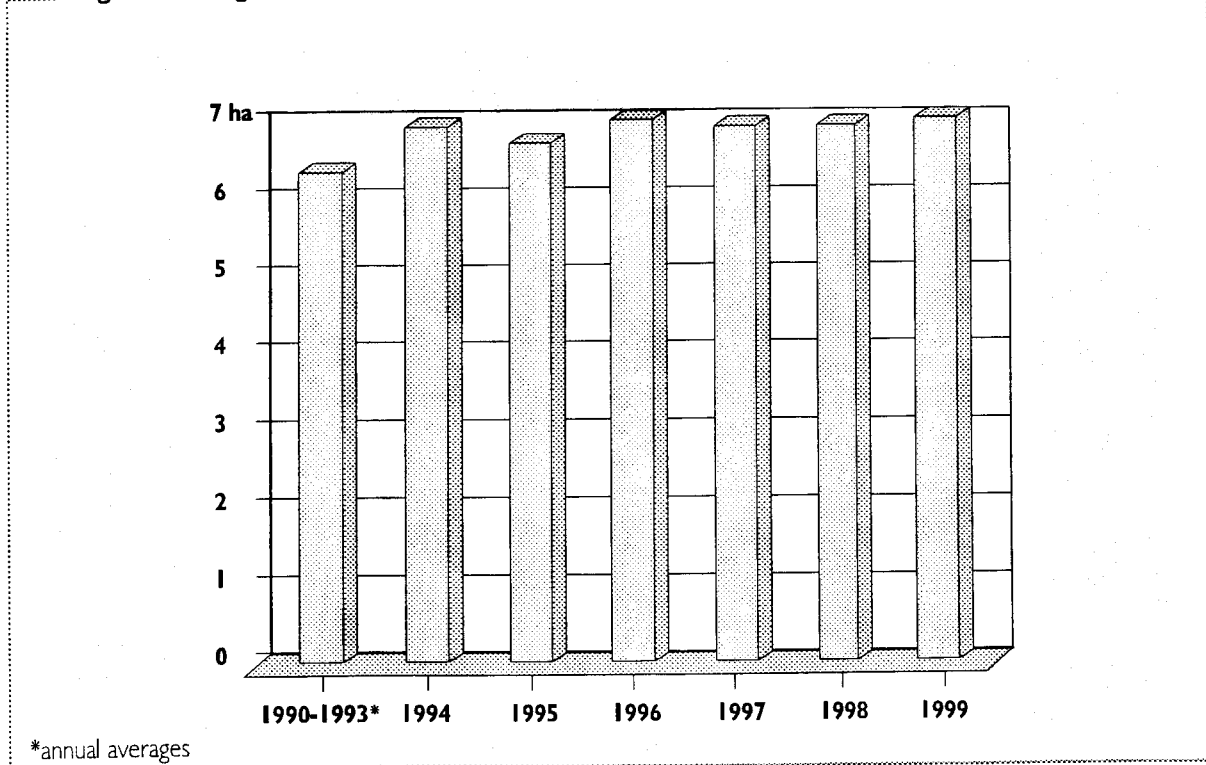
Fig. 11. Area of set asides and idle arable land (in thousand hectares)



Source: CSO

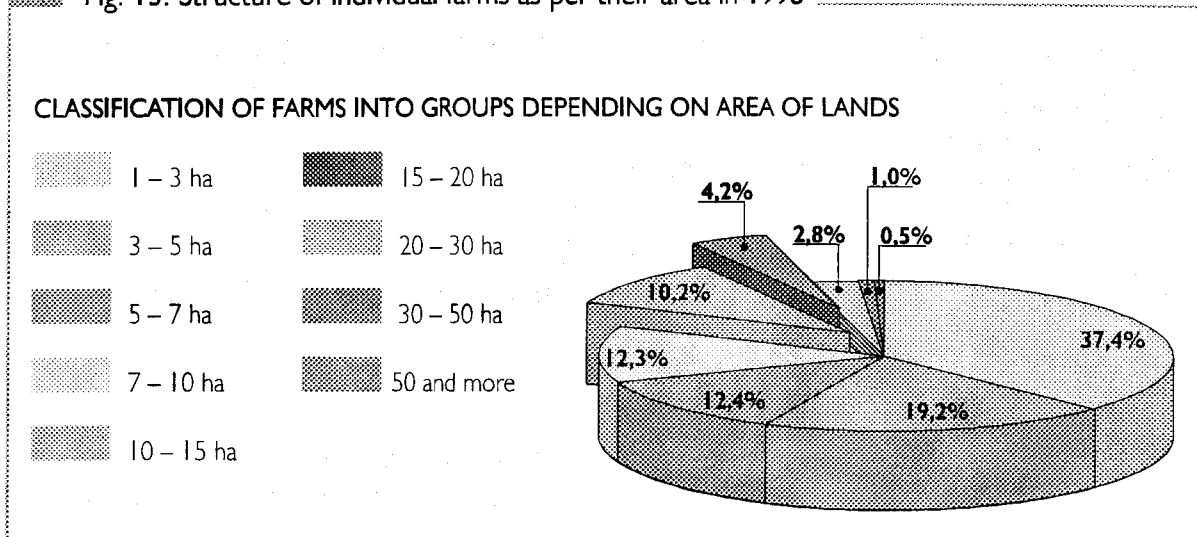
Average surface of an individual farm is estimated to be approximately 7 hectares. By far, the biggest farms are at the disposal of State Treasury where an average area amounts to 1550 hectares. An average of other forms of ownership totals several hundred hectares.

Fig. 12. Average size of individual farm (in hectares of agricultural land)



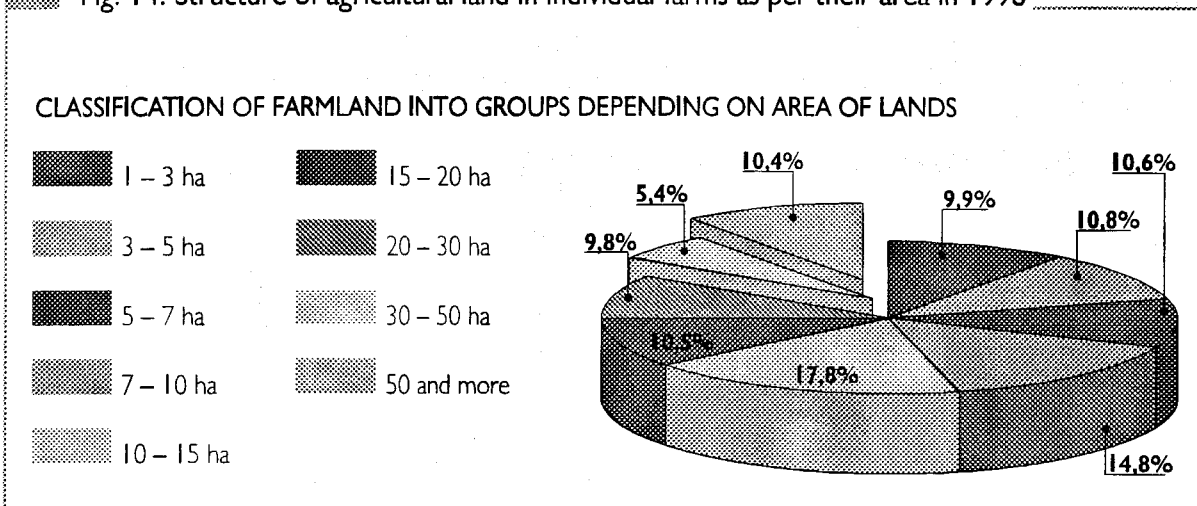
Source: CSO

Fig. 13. Structure of individual farms as per their area in 1998



Source: CSO

Fig. 14. Structure of agricultural land in individual farms as per their area in 1998

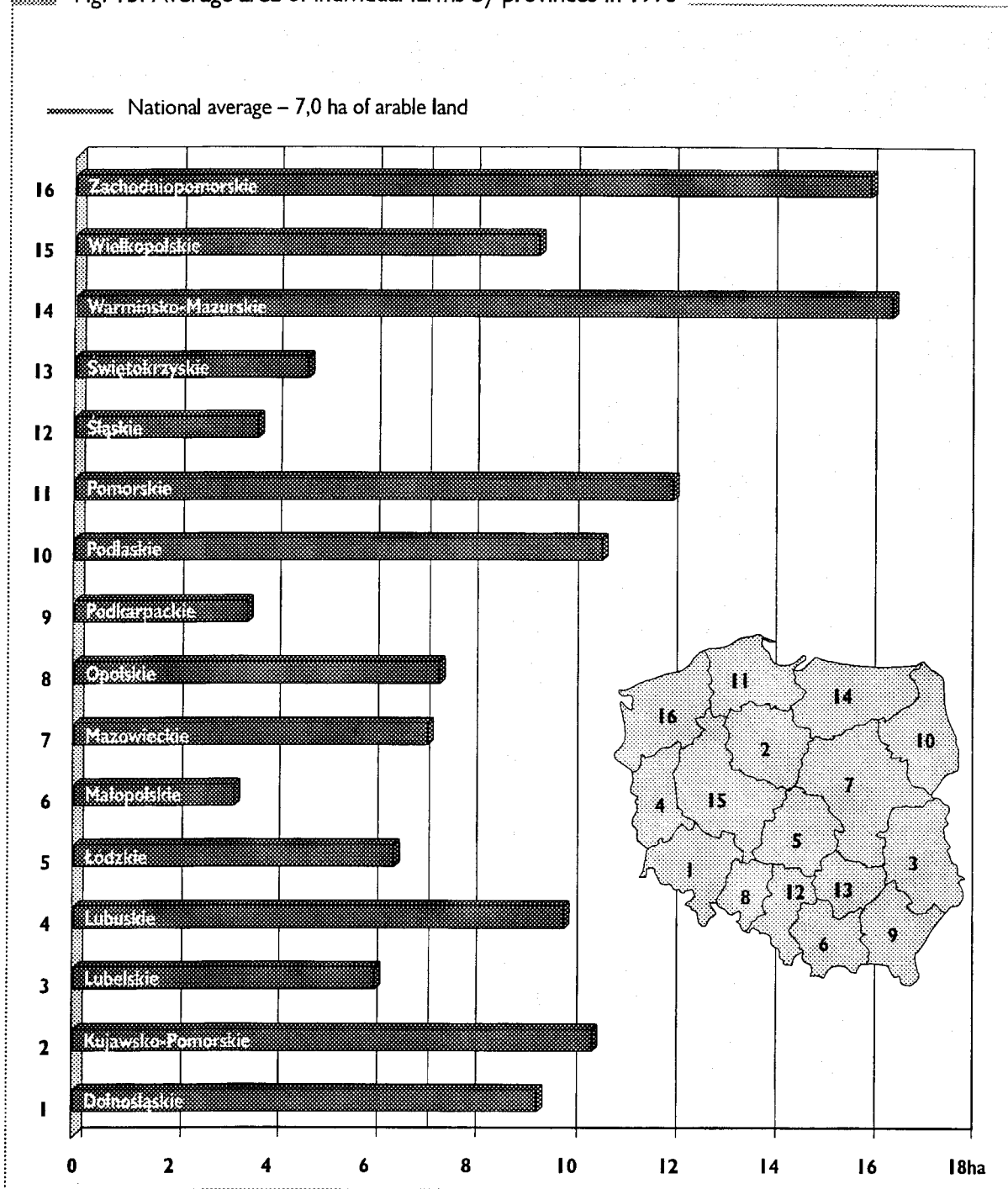


Source: CSO



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Fig. 15. Average area of individual farms by provinces in 1996



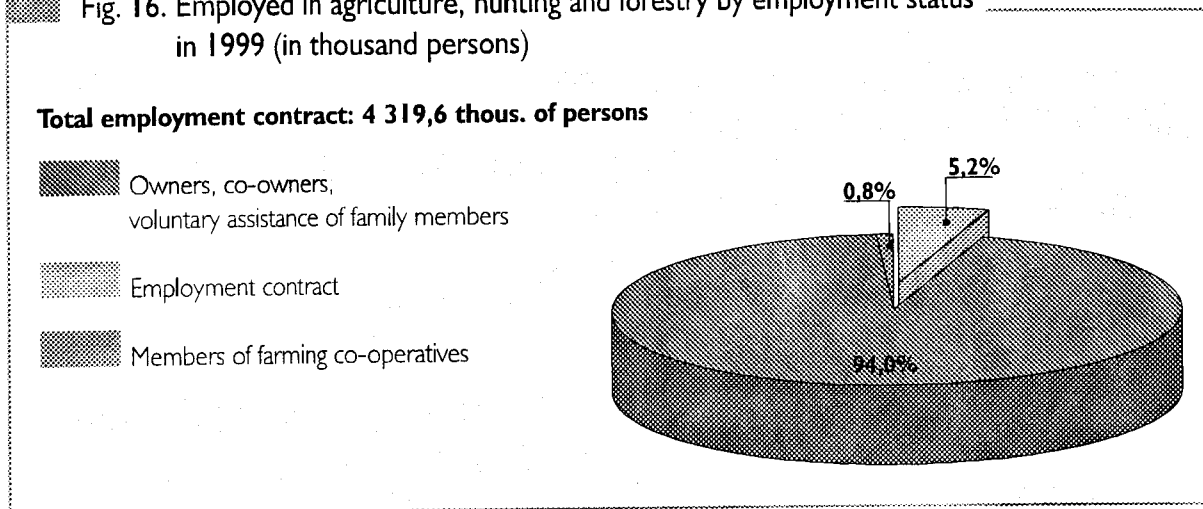
Source: CSO

## Employment in agriculture

Nowadays, 14.7 million people reside in rural areas out of which approximately 66% is linked to agriculture. In 1998, ca. 4.3 million were directly employed in agriculture, forestry and hunting – the owners of individual farms being by far the biggest employment category. Employment in agriculture constitutes almost 27% of all the employees nationwide. In the upcoming years the structure of employment will be evolving towards

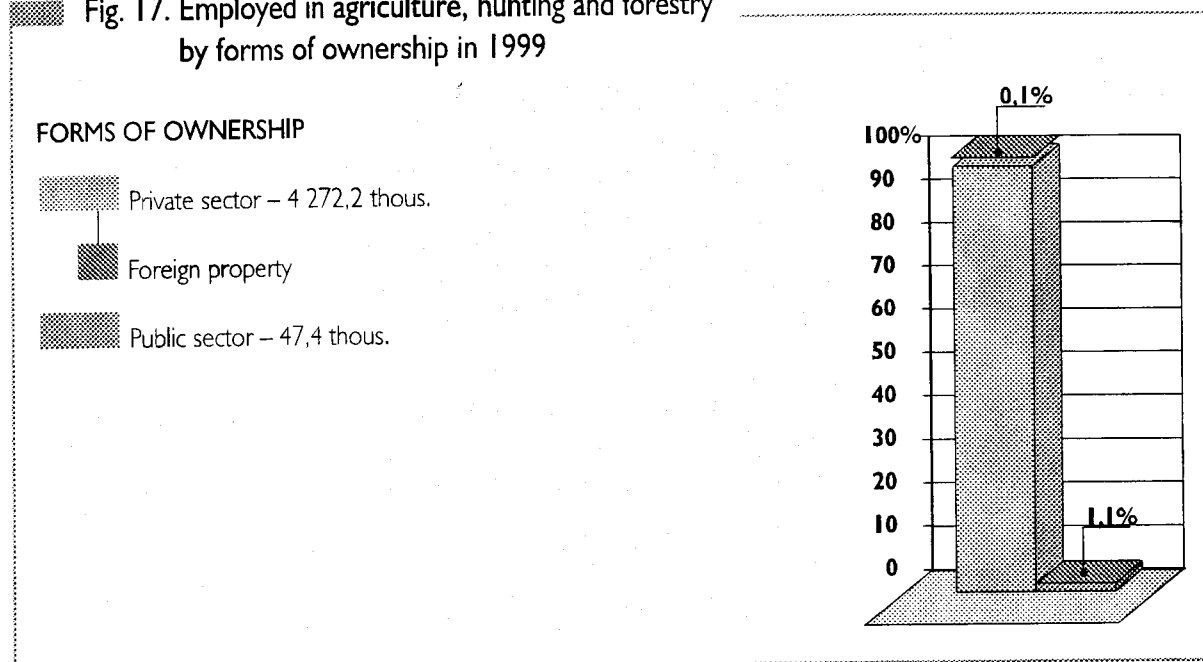
West-European levels where it stabilised at much lower levels. To this effect, a government programme was adopted in July 1999 entitled Comprehensive policy of structural development of agriculture and rural areas.

Fig. 16. Employed in agriculture, hunting and forestry by employment status in 1999 (in thousand persons)



Source: CSO

Fig. 17. Employed in agriculture, hunting and forestry by forms of ownership in 1999



Source: CSO

The latest National Census of 1996 revealed that 11.6 million people lived in the households with the user of individual farm. Altogether, 3.8 million people were employed at the individual farms out of which almost 45% were involved in the farms with an area of up to 5 hectares.

Rural unemployment is estimated to exceed 1.7 million people. The 1996 Census revealed hidden unemployment confirming that almost 900 thousand people could give up running their own farms.



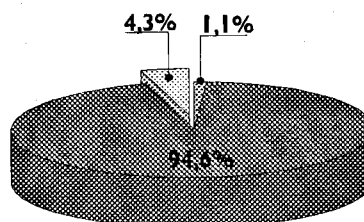
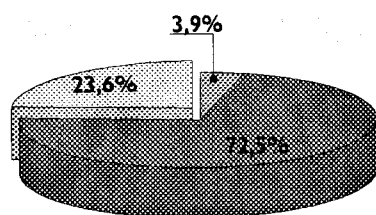
Fig. 18. Age structure of farm employees in 1996

POPULATION AT AGE

Pre-productive age      Productive age      Post-productive age

Working exclusively on their own farms – 3 723,7 thous.

Working mainly on their own farms – 112,6 thous.



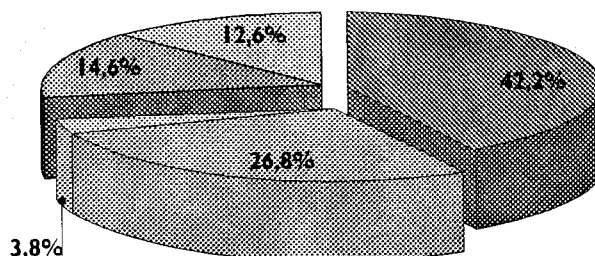
Source: CSO

Fig. 19. Means of subsistence of the individual farmers in 1996

HOUSEHOLDS MAKING THEIR LIVING EXCLUSIVELY OR PRIMARILY FROM

Working only on their own farms  
 Working beyond their own farms including those on their own account  
 From perquisites including pensions

Total employment - 2 035,7 thou.



Source: National Census in 1996

## Farm equipment, fertilisers, use of chemicals

Over the last 10 years the farms have been systematically improving their equipment and machinery park. Individual farmers increased the number of tractors from around 900.000 in late 80-ties to over 1.3 million ten years on. Last decade saw a marked improvement in all types of agricultural equipment owned by the individual farmers. The numbers of machinery like: combine harvesters, potato and sugar beet harvesters or colleting presses have multiplied in rural areas over the last decade. Preferential credits and funds from foreign aid available to the agricultural sector more than to other sectors of the economy were instrumental in making it happen. However, at the end of the decade the sales of agricultural machinery dropped due to the combined effect of deteriorating financial conditions of the rural areas and the paucity of funds from preferential credit lines and foreign aid. The number of tractors and combine harvesters sold in 1998 was estimated to be lower by 47% and by 40% respectively compared to the previous year. This negative trend even deteriorated in 1999.

Table IV. Number of agricultural machinery, cars and tractors at the farms

Machinery	1987		1996	
	Total	including individual farms	Total	including individual farms
Tractors	1 026 450	847 641	1 302 908	1 221 399
Passenger cars & trucks*	134 915	98 754	277 353	217 584
Trailers	597 543	403 935	668 008	612 091
Combine harvesters	68 382	30 354	97 058	83 065
Potato harvesters	38 497	28 037	76 467	74 112
Sugar beet harvesters	14 913	9 997	26 996	25 490
Forage harvesters	34 458	25 799	13 236	9 432
Fertiliser spreader	361 592	316 679	442 706	430 694
Manure spreader	358 751	311 346	484 223	472 213
Tractor mowers	597 781	266 614	439 699	432 368
Grab loaders	103 492	77 523	160 740	151 577
Potato diggers	221 133	201 628	331 983	328 739
Potato sowers	141 467	124 931	344 762	341 040
Collecting trailers	58 571	41 093	98 046	92 924
Collecting presses	55 754	31 260	104 669	97 853
Tractor sprayers	139 626	101 398	407 893	398 580

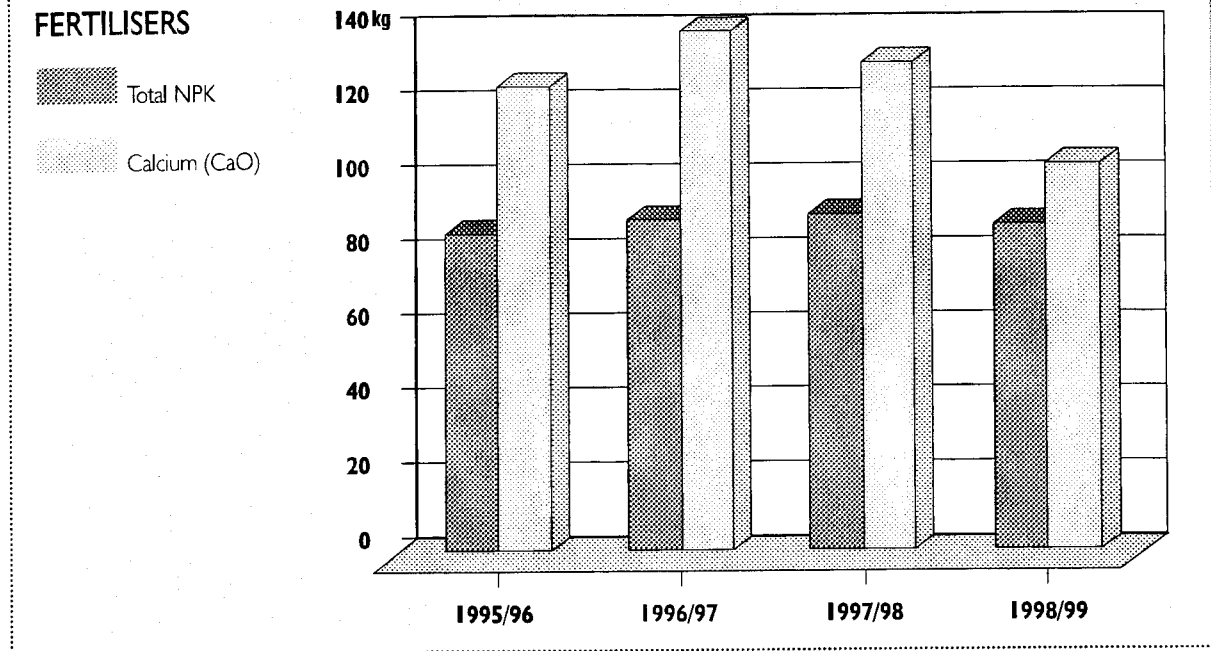
Source: CSO; \*including passenger-cargo

In 1999, the use of nitrogen, phosphate and potassium fertilisers converted into pure component amounted to 87.4 kg per hectare of the agricultural land what was 2.5% lower compared to the previous year. The use of nitrogen and potassium dropped by 2.8% and 3.6% respectively whereas the soil liming declined by 20.2% stabilising at 104.2 kg of calcium per hectare in 1999.



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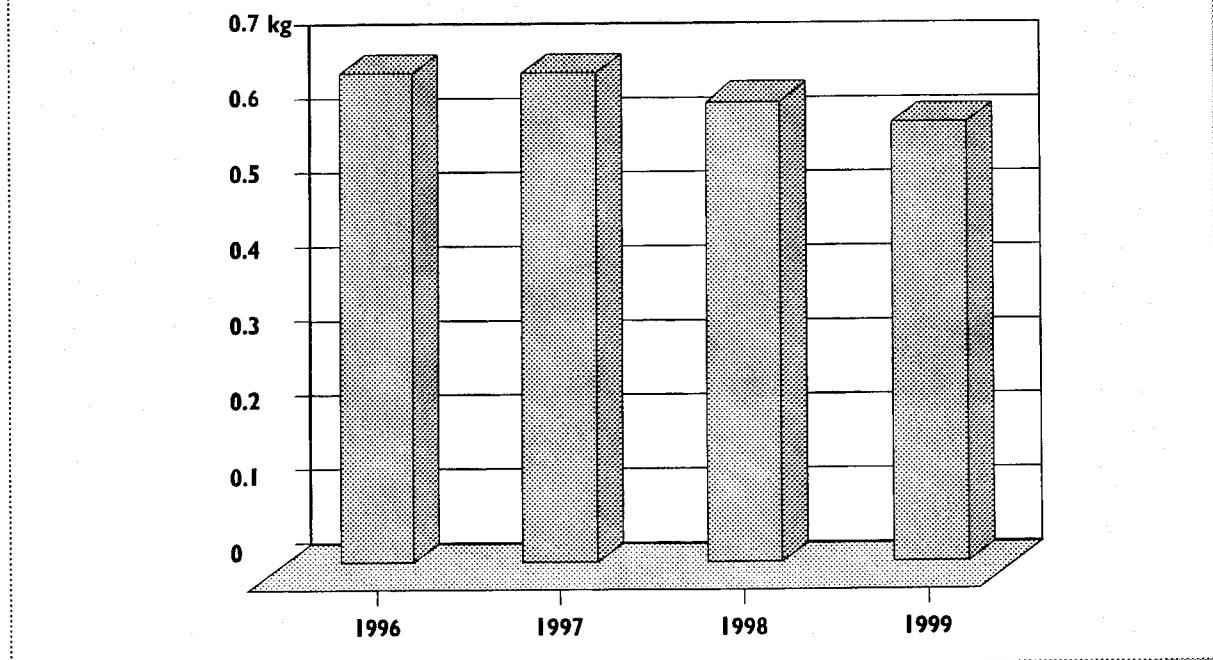
Fig. 20. Consumption of artificial and calcium fertilisers, in kg of pure component per 1 hectare of agricultural land



Source: CSO

The pesticide consumption decreased in 1999 as well. Overall, the consumption of all the pesticides, herbicides and fungicides converted into the active ingredient amounted to 0.59 kg per hectare – a slight drop compared to 0.61kg the year before. By and large, the use of pesticides increased significantly compared to early 90-ties when it totalled 0.5 kg per hectare converted into pure ingredient.

Fig. 21. Consumption of pesticides (in kg of active ingredient per 1 hectare of arable land and orchards)



Source: CSO

## Technical infrastructure of rural areas

The self-rule reform introduced in early 90-ties was instrumental as catalyst of positive change in rural areas. Both the rural areas and the individual farms underwent a sea change improvement in terms of modern technical infrastructure. Although rural areas are still lagging behind the nation's average, last year alone the number of telephone users per 100 residents rose to over 14. Likewise, the bringing of water supply and water sewage systems to the rural areas is making headway. Over 60% of the rural population residences were connected to water supply and water sewage systems around the middle of the last decade. Central heating and gas were available in one in ten rural area apartments. Progress continues apace due mainly to remarkable financial and organisational effort of local residents.

Table V. Number of buildings connected to telephone networks and water/gas supply systems

Year	Number of buildings connected to water mains (in thousand)	Number of buildings connected to gas supply system (in thousand)	Access to telephone - number of telephone users (per 100 residents)
1990-1995*	979.0	412.2	3.90
1996	1 464.7	563.7	6.72
1997	1 581.8	584.3	8.36
1998	2 082.0	689.3	9.75
1999	2 205.0	736.0	14.93

Source: CSO; \*Annual average

## Plant production

In 1999, over 12.5 million hectares – equivalent to 89.5% of all arable land were cropped. Private sector accounted for 12.2 million hectares including 11.1 million by individual farms. Compared to previous year, the acreage of grains and potatoes declined by 1.6% and 2.1% respectively, whereas acreage of industrial and fodder plants rose by 5.9% and 5.3% respectively. All other plants experienced a 14% growth including 10.8% for strawberry acreage.

In 1999, the yields of most plant crops grown in Poland were lower due to severe drought that affected the farmers in the summer. Crop of ground vegetables alone were by 12% lower than in 1998 with cauliflowers suffering the worst drop (by 21%) and cucumbers relatively the smallest (5%).

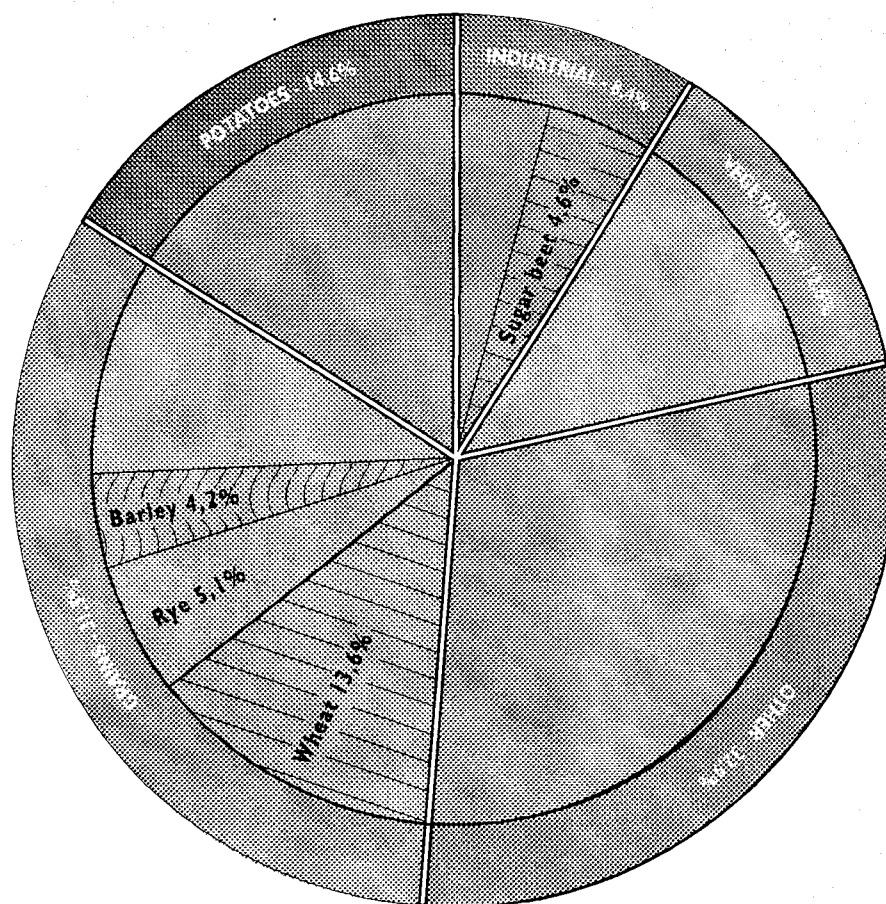
In 1999, lower supply of vegetables did not disrupt the market due to the bumper crop in 1998. Fruit production was also affected by the drought although to a lesser extent, because overall output dropped by 5.2% only including apples – 5% and pears – 20%. The balance was offset by an above-par crop of berries which were higher by 20% than in the previous year.

Table VI. Structure of base crops

Year	1991-1995*	1996	1997	1998	1999
<b>Area total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Grains</b>	63.3	70.4	70.6	69.6	69.1
including: wheat	18.2	20.2	20.5	20.9	20.5
<b>Maize</b>	1.8	1.8	1.8	1.8	1.8
<b>Pulses</b>	0.4	0.4	0.4	0.4	0.4
<b>Potatoes</b>	12.6	10.9	10.5	10.3	10.1
<b>Industrial</b>	6.5	6.1	6.1	7.1	7.7
including: sugar beet	2.9	3.7	3.4	3.2	3.0
rape	3.3	2.3	2.5	3.7	4.3
<b>Fodder</b>	11.8	7.0	7.3	7.3	7.8
<b>Other</b>	3.6	3.4	3.4	3.5	4.1
including: vegetables	2.1	1.9	1.9	2.0	1.9

Source: CSO; \*Annual average

Fig. 22. Structure of plant production in 1999 (in current prices)



Source: CSO

Table VII. Planted area, crops and yields of basic crops

Type of plantation	1991-96*	1997	1998	1999
<b>Grains</b>				
Area in thousand hectares	8 620.0	8 899.0	8 844.0	8 701.0
Yields in dt/hectare	28.4	28.5	30.7	29.6
Crops in thousand tons	24 535.0	25 400.0	27 159.0	25 750.0
<b>Wheat</b>				
Area in thousand hectares	2 453.5	2 555.0	2 631.0	2 583.0
Yields in dt/hectare	36.3	32.1	36.2	35.0
Crops in thousand tons	8 409.0	8 193.0	9 537.0	9 051.0
<b>Rye</b>				
Area in thousand hectares	2 350.0	2 298.0	2 291.0	2 242.0
Yields in dt/hectare	23.3	23.1	24.7	23.1
Crops in thousand tons	5 472.5	5 299.0	5 663.0	5 181.0
<b>Barley</b>				
Area in thousand hectares	1 133.0	1 242.0	1 138.0	1 107.0
Yields in dt/hectare	29.5	31.1	31.7	30.7
Crops in thousand tons	3 348.0	3 866.0	3 612.0	3 401.0
<b>Oats</b>				
Area in thousand hectares	633.5	626.0	561.0	572.0
Yields in dt/hectare	24.1	26.1	26.0	25.3
Crops in thousand tons	1 524.0	1 630.0	1 460.0	1 446.0
<b>Wheat-rye</b>				
Area in thousand hectares	673.0	630.0	636.0	660.0
Yields in dt/hectare	30.3	29.2	32.4	31.8
Crops in thousand tons	2 038.5	1 841.0	2 058.0	2 097.0
<b>Potatoes</b>				
Area in thousand hectares	1 518.0	1 306.0	1 295.0	1 268.0
Yields in dt/hectare	182.0	159.0	200.0	157.0
Crops in thousand tons	27 273.0	20 776.0	25 949.0	19 927.0
<b>Rape and agrimony</b>				
Area in thousand hectares	362.0	317.0	466.0	545.0
Yields in dt/hectare	18.2	18.7	23.6	20.8
Crops in thousand tons	677.0	595.0	1 099.0	1 132.0
<b>Sugar beet</b>				
Area in thousand hectares	418.0	419.0	400.0	372.0
Yields in dt/hectare	361.0	379.0	379.0	338.0
Crops in thousand tons	15 230.0	15 886.0	15 171.0	12 564.0
<b>Hay</b>				
Area in thousand hectares	2 487.0	2 598.0	2 506.0	3 817.0
Yields in dt/hectare	49.9	51.8	53.1	42.0
Crops in thousand tons	12 448.0	13 450.0	13 307.0	16 032.0

Source: CSO; \* Annual averages

Almost all kinds of plant production experienced a weaker crop than a year before. The grain harvest was 1.4 million tons less than in 1998 (5.2 % drop) whereas sugar beet with 2.6 million tons lower crop suffered relatively the biggest drop – 17.2%. Rape and agrimony did better cropwise achieving a 3% higher quantity than in 1998. After the bumper year in 1998 also pricewise, the producers took stronger interest in rape and agrimony increasing their acreage by 17%.

Table VIII. Planted area, crops and yields of ground vegetables

Type of plantation	1971-1975	1977	1998	1999
<b>Total vegetables:</b>				
Area in thousand hectares	257.1	237.0	255.1	241.5
Crops in thousand tons	5 239.0	4 936.2	5 918.5	5 249.5
<b>Cabbage</b>				
Area in thousand hectares	51.4	48.4	51.0	47.4
Yields in dt/hectare	348.0	366.0	396.0	361.0
Crops in thousand tons	1 778.3	1 770.1	2 019.9	1 709.2
<b>Cauliflowers</b>				
Area in thousand hectares	12.7	12.8	14.2	12.9
Yields in dt/hectare	189.0	186.0	201.0	175.0
Crops in thousand tons	239.2	238.6	285.6	225.4
<b>Onions</b>				
Area in thousand hectares	33.5	31.8	35.2	34.4
Yields in dt/hectare	195.0	192.0	215.0	200.0
Crops in thousand tons	651.2	610.9	756.3	688.3
<b>Edible carrots</b>				
Area in thousand hectares	31.1	29.6	33.4	32.7
Yields in dt/hectare	259.0	270.0	297.0	278.0
Crops in thousand tons	801.6	799.4	992.0	906.5
<b>Red beets</b>				
Area in thousand hectares	22.2	20.5	22.0	20.7
Yields in dt/hectare	232.0	235.0	246.0	235.0
Crops in thousand tons	513.1	480.5	542.4	485.8
<b>Cucumbers</b>				
Area in thousand hectares	33.2	27.9	29.1	26.8
Yields in dt/hectare	121.0	120.0	137.0	144.0
Crops in thousand tons	401.4	335.0	400.3	384.8
<b>Tomatoes</b>				
Area in thousand hectares	26.4	23.2	23.8	21.6
Yields in dt/hectare	117.0	94.0	150.0	154.0
Crops in thousand tons	314.5	219.0	356.0	333.1
<b>Other**</b>				
Area in thousand hectares	49.5	42.8	46.4	45.1
Yields in dt/hectare	118.5	113.0	122.0	115.0
Crops in thousand tons	585.2	482.7	566.0	516.4

Source: CSO; \*Annual average; \*\* parsley, leek, celery, radish, salad, rhubarb, horseradish, dill, asparagus & other

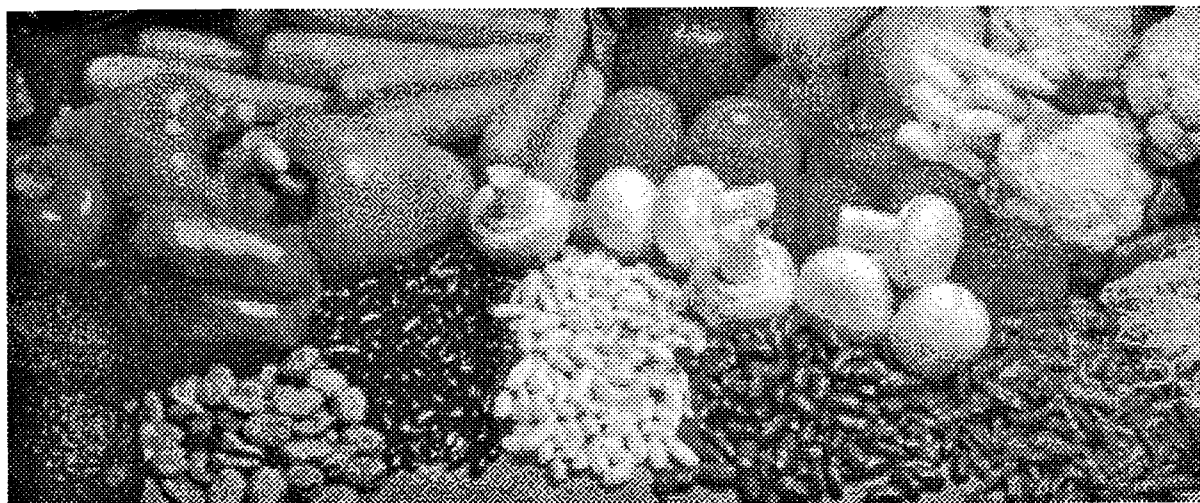


Table IX. Orchards and berry plantations – crops and yields

Fruit	1991-1993	1997	1998	1999
<b>Fruit of total trees: crops in thousand tons</b>	<b>2 042.6</b>	<b>2 470.9</b>	<b>2 091.0</b>	<b>1 958.1</b>
<b>No. of fruit-bearing trees in thousand</b>	<b>81 376.5</b>	<b>95 644.8</b>	<b>99 589.9</b>	<b>107 181.3</b>
<b>Apple trees</b>				
No. of trees in thousand	48 950.9	59 516.2	61 704.8	69 645.5
Tree yield in kg	34.7	35.3	27.3	23.0
Crops in thousand tons	1 704.4	2 098.3	1 687.2	1 604.2
<b>Pear trees</b>				
No. of trees in thousand	5 161.4	5 524.5	6 040.2	5 712.5
Tree yield in kg	11.6	10.5	13.7	11.6
Crops in thousand tons	59.4	58.0	82.7	66.5
<b>Plum trees</b>				
No. of trees in thousand	9 667.6	10 611.6	10 870.7	10 457.5
Tree yield in kg	10.1	11.9	9.9	8.7
Crops in thousand tons	98.3	126.8	107.1	90.8
<b>Cherry trees</b>				
No. of trees in thousand	13 208.9	14 568.8	15 321.2	15 734.5
Tree yield in kg	10.2	9.3	10.2	9.2
Crops in thousand tons	135.7	136.0	156.3	144.5
<b>Sweet cherry trees</b>				
No. of trees in thousand	2 586.5	3 046.1	3 213.3	3 098.9
Tree yield in kg	12.4	11.7	12.8	11.3
Crops in thousand tons	32.4	35.7	41.0	35.1
<b>Other: peach, apricot, walnut</b>				
No. of trees in thousand	1 805.6	2 377.6	2 439.7	2 532.4
Tree yield in kg	6.9	6.8	6.8	6.7
Crops in thousand tons	12.4	16.1	16.7	17.0
<b>Berry fruit - total: crops in thousand tons</b>	<b>467.7</b>	<b>416.4</b>	<b>425.5</b>	<b>428.9</b>
<b>Strawberries</b>				
Area in thousand hectares	56.5	50.2	52.6	58.3
Yields in dt/hectare	34.2	32.4	28.5	30.6
Crops in thousand tons	192.6	162.5	149.9	178.2
<b>Raspberries</b>				
Area in thousand hectares	11.6	12.7	12.8	12.6
Yields in dt/hectare	29.5	31.8	35.1	34.3
Crops in thousand tons	34.2	40.3	44.8	43.2
<b>Currants</b>				
No. of bushes in thousand	83 330.5	76 521.0	75 067.4	73 623.4
Bush yield in kg	2.2	2.1	2.3	2.1
Crops in thousand tons	186.7	161.6	175.1	153.3
<b>Gooseberry</b>				
No. of bushes in thousand	12 738.4	12 833.1	12 663.8	10 801.3
Bush yield in kg	3.3	2.8	3.0	2.9
Crops in thousand tons	42.7	36.0	38.1	31.5
<b>Other: aronia, highbush blueberry and other</b>				
No. of bushes in thousand	3 296.4	4 326.6	4 480.7	5 315.4
Bush yield in kg	3.4	3.7	3.9	4.3
Crops in thousand tons	11.5	16.0	17.6	22.7

Source: CSO; \*Annual average

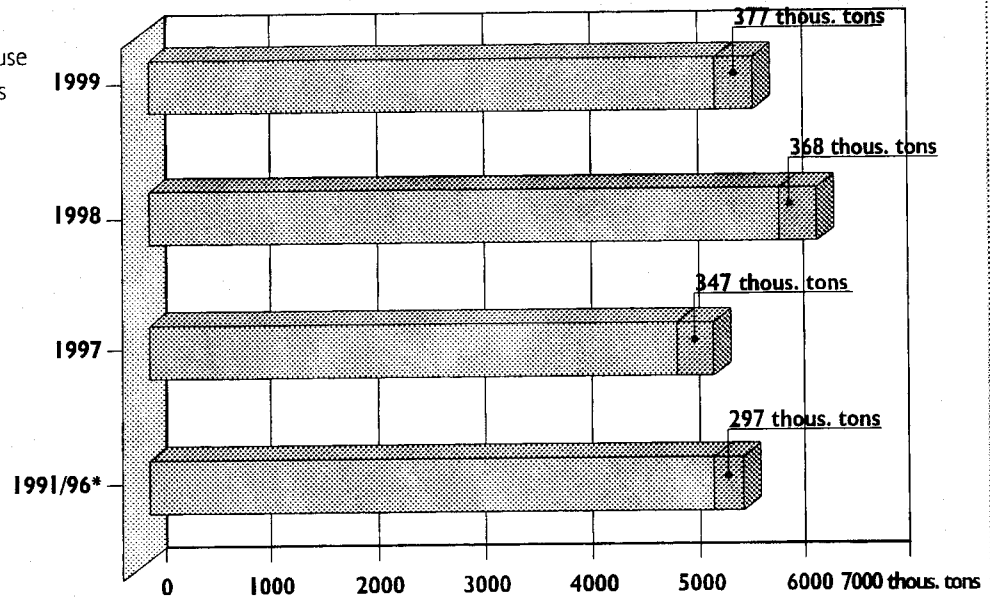


Fig. 23. Crops of ground and greenhouse vegetables (in thousand tons)

VEGETABLES

Ground vegetables

Greenhouse vegetables



\* annual averages

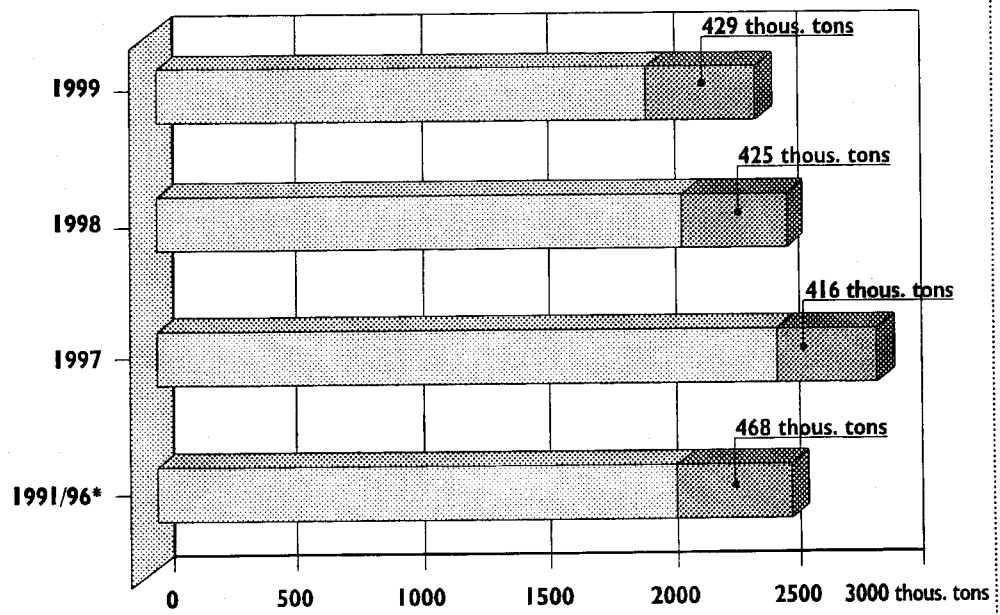
Source: CSO

Fig. 24. Crops of fruit (in thousand tons)

FRUIT

Tree fruit

Berries



\* annual averages

Source: CSO

## Livestock production

In spite of the high stocks of inexpensive fodder, situation of the livestock production was not all too satisfactory. The decline in demand (due to limited possibilities of export to eastern markets) as early as second half of 1998 brought about a decrease of livestock prices and lower rentability of breeding – hogs especially. Subsequently, later last year the prices increased due to the decline in the number of livestock and the resulting diminished market availability of slaughtered livestock. This was especially true for hogs and poultry for which the economics of breeding improved substantially.

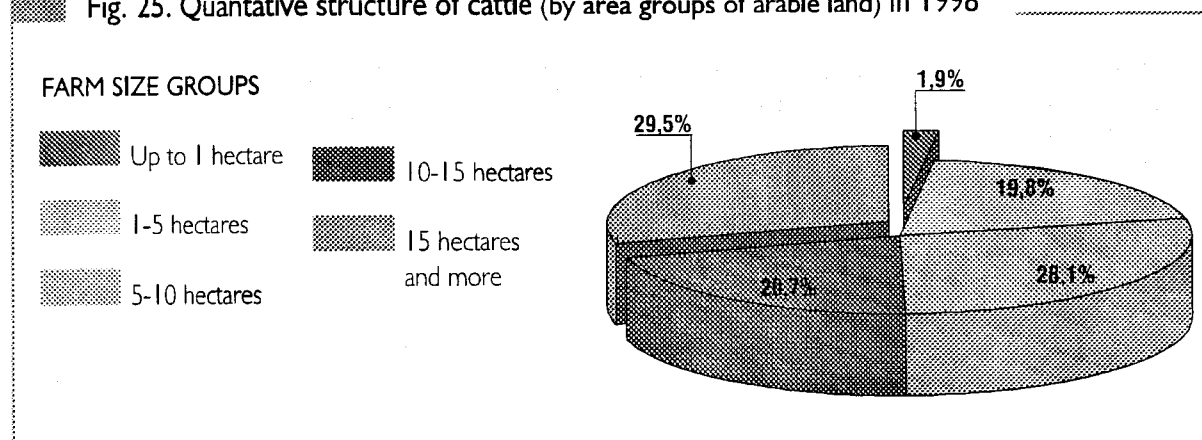
Table X. Number of livestock (in thousand) as of June 1999

Specification	1991-1995	1996	1997	1998	1999
	in thousands heads				
<b>Cattle</b>	7 942	7 136	7 307	6 955	6 555
incl. cows	4 052	3 461	3 490	3 542	34 118
<b>hogs</b>	20 540	17 964	18 135	19 168	18 538
incl. sows	1 928	1 677	1 756	1 929	1 771
<b>Sheep</b>	1 591	552	491	453	392
incl. ewes	959	350	315	284	247
<b>Horses</b>	787	569	558	561	552
<b>Chicken poultry</b>	38 246	44 142	49 286	47 599	46 257

Source: CSO; \*Annual average

The livestock production in Poland is dominated by hogs and cattle. That is the reason why rentability of most farms is dependent on the number of livestock, its quality, demand-supply ratio and market prices. Until very recently, the prevailing pattern of breeding focused on the so-called breeding of general use cattle i.e. bred for both the milk and the meat. This resulted in the low quality of meat as well as small milking yield of cows. Nowadays, this model of breeding is being phased out and replaced by more differentiated, specialised cattle breeding taking into account its ultimate usability. The black and white race of cattle, prevailing in Poland, is being improved upon by the application of semen from bulls of Holstein-Phryisian race to increase cattle's milking capacity and semen from simental race to enhance cattle's meat capacity.

Fig. 25. Quantative structure of cattle (by area groups of arable land) in 1998

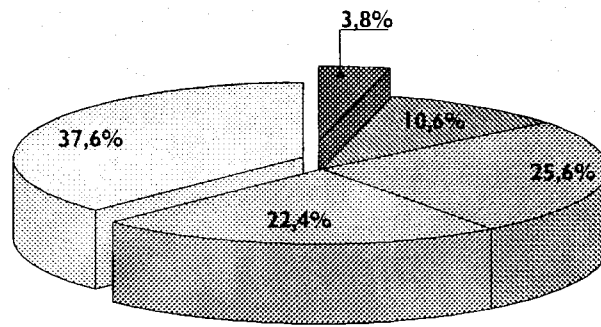


Source: CSO

Fig. 26. Quantative structure of hog (by area groups of arable land) in 1998

FARM SIZE GROUPS

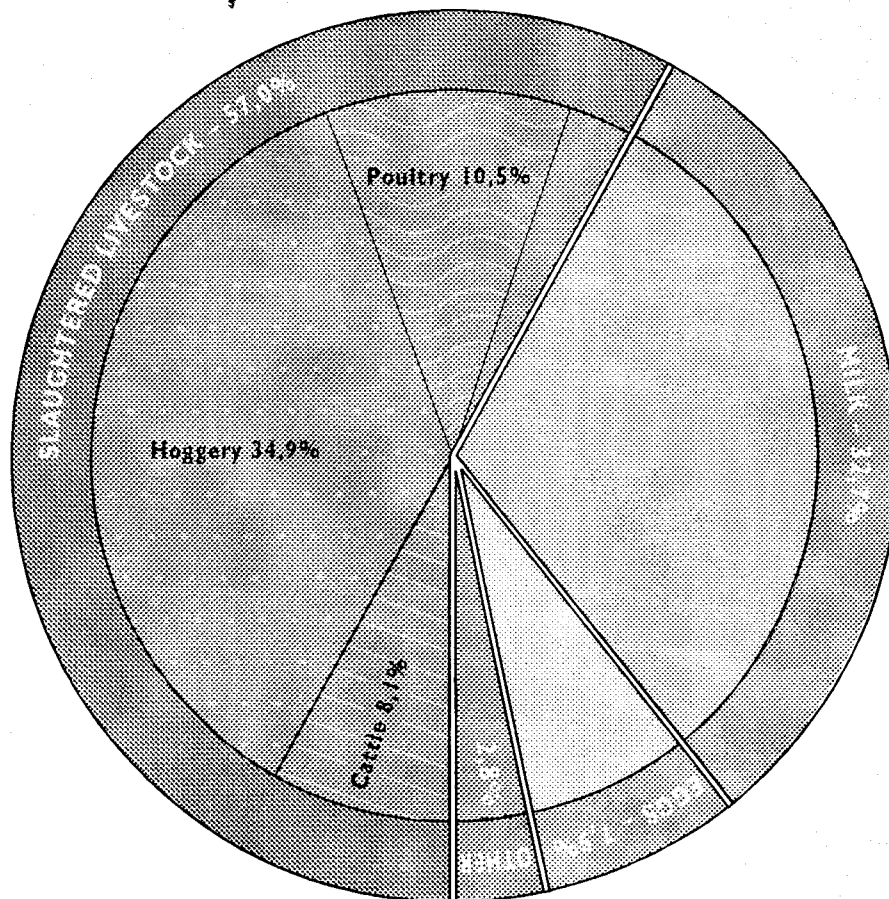
- Up to 1 hectare
- 1-5 hectares
- 5-10 hectares
- 10-15 hectares
- 15 hectares and more



Source: CSO

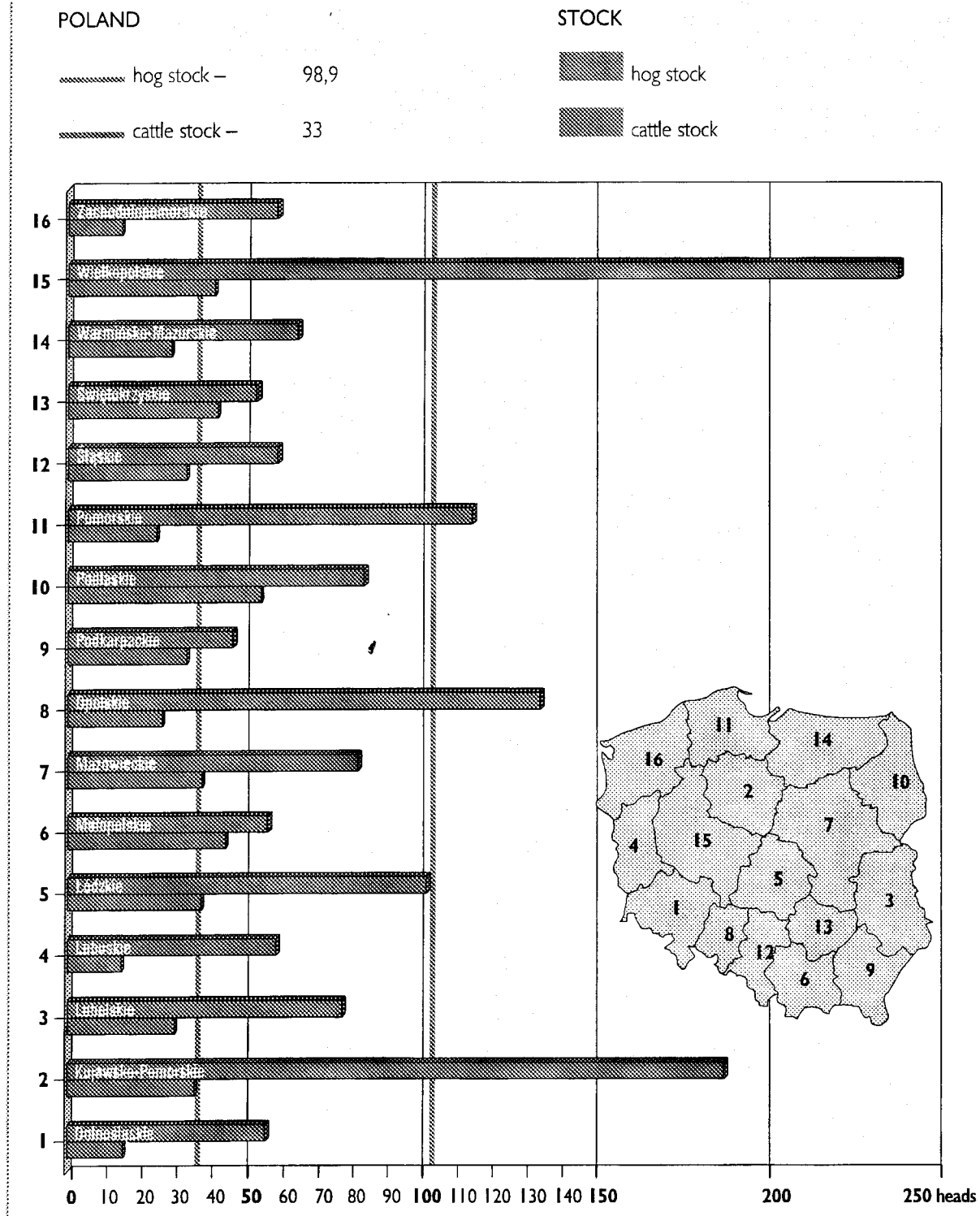
For many years, the pig breeding has been dominated by two races: Large White Polish and Polish White Landras. Recently, the pattern of breeding and feeding has been undergoing a change due mainly to the higher requirements of meat processing industry and exporters in the field of meat quality and fat tissue thickness. Individual farmers are also applying corrective measures to adjust to the new trend.

Fig. 27. Structure of total animal production in 1999 (in current prices)



Source: CSO

Fig. 28. The cattle stock and the hog stock in 1999 (in heads per 100 hectares of arable land by provinces - as of the end of the second half of the year)



Source: CSO

At the end of July 1999, the hog stock amounted to 18.5 million heads being 1.8% lower than at the end of March and 3.3% less than in the same period of the previous year. As early as March 2000, the hogs stock was estimated at the level of slightly over 17 million heads. The cattle stock counted 6.5 million heads in June 1999 what was 5.6% lower than in the same period of the previous year.

The breeding of sheep and horses is the second most important economic area of Poland's agriculture. The sheep are bred in three basic races: merino sheep, Polish lowland sheep and Polish long-wool sheep. Other races, mostly imported ones, are also present but their economic left is relatively smaller.

Last year, the stock of horses was estimated to have been at the level of 540,000 heads. Most of them are cold-blooded type used for field toils. Poland continues to be an important exporter of horses for slaughtering purposes. The two races worth mentioning are: the Greatpoland breed and Smallpoland breed which are also being increasingly used for horse-riding purposes. This kind of activity is growing in popularity in Poland creating for many an individual farm an attractive opportunity for an alternative source of income. The goat breeding has also become an interesting new field of agricultural economy. Goat milk, perceived as healthier than cow milk, is an article very much sought after in the market.

The poultry breeding is also developing quite intensively. Besides the chickens, turkeys and waterfowl are also gaining in importance. Throughout the last decade turkey meat became hot item winning over the taste and preferences of large clientele. Poland's furred animals also enjoy an international renown for their high quality.

Table XI. Production of major animal products

Type of production	Measurement unit	1991-1995	1996	1997	1998	1999
<b>Slaughtered livestock</b>						
<b>total**</b>	Thous.tons	4 058	4 108	4 021	4 307	4 360
including: pork	Thous.tons	2 512	2 657	2 429	2 632	2 675
beef	Thous.tons	877	745	770	802	710
veal	Thous.tons	86	77	74	90	88
poultry	Thous.tons	463	557	677	754	819
mutton	Thous.tons	56	14	9	8	8
horse	Thous.tons	54	49	52	55	52
<b>Milk</b>	Million liters	12 447	11 355	11 770	12 229	11 763
<b>Eggs</b>	Million pcs	6 061	7 056	7 661	7 277	7 543
<b>Wool</b>	Tons	5 386	1 963	1 733	1 496	1 374

Source: CSO; \*Annual average; \*\* Live weight

## Ecological Farming

Food production using ecological methods – in a clean and safe environment without artificial fertilisers and pesticides with limited use of agricultural machinery (threatening soil pollution) is becoming an essential element of world agriculture. The demand for such food is growing year by year and so does the price. The so-called genetically altered food has become a subject of growing controversy throughout the Western Europe triggering off a flurry of protests of many a consumer organisations. Ecological food is also becoming more popular on the Polish market. Its prices are generally higher than the traditionally produced food which provides for producers a unique opportunity to improve rentability. Although it is not easy to meet all the requirements imposed upon ecological farms, the interest to start new farms continues unabated. The International Federation of Ecological Agriculture (IFOAM) prepared qualifications criteria. The Polish Association of Ecological



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Methods of Food Production – EKOLAND also came up with its own nationwide regulations for ecological farming. Farmers running ecological farms are organised into the Association of Ecological Farmers – LUB-EKO.

In 1999, the number of Poland's ecological farms amounted to 430, which means a steady 20% annual growth but still a far cry to the latent potential revealing that almost 80% of Poland's arable land meets the criteria of ecological farming being both the natural soil composition and the absence of metal contamination. Most farmers fear the additional effort of labour and cost as well as the continuous production control which are not always compensated by higher purchasing prices. However, without stringent ecological control none of the supervising boards would recommend to the consumer the unique features of ecologically produced food.

Since 1999, the Ministry of Agriculture introduced a direct subsidising of ecological farms acknowledging that ecological farming is not only important for the nation's economy but also has an environment protection as well as social function to play. By and large, ecological farms are not only obliged to produce food without chemicals but also they have to take care of the entirety of the environment in which they operate. Subsequently, they have to deal with foresting, mid-field planting, production waste utilisation as well as the harnessing of the renewable sources of energy.

There are many telltale signs that ecological farming in Poland will be up for rapid growth in the coming years. This is especially true for Poland's north-eastern regions dubbed „nation's green lungs“ where further growth of industry will be limited to the necessary minimum. Until very recently, Poland's ecological farming has been the domain of a narrow bevy of ecological enthusiasts not always related to the traditional art of farming. Nowadays however, mainstream farmers also take up ecological farming. Undoubtedly, ecological farming may be opening up new vistas for a large number of unemployed and serve as catalyst of the restructuring of Poland's agriculture in the run-up to the accession to the European Union membership. A lot will depend upon the effective promotion of the idea of healthy food both nationwide and internationally where popularity of eco-food, in Western Europe especially, is on a roll. Further growth of the ecological food markets may mean for Poland a unique opportunity of not only rising sales in the internal market but also a great export specialisation. The nature has endowed Poland with very and many favourable conditions for ecological farming.