

# 1. COMPARISON OF FSS 2013 AND AGROCENSUS 2000 RESULTS

## AGRICULTURAL HOLDINGS AND THEIR LEGAL FORMS

Data for 26 246 agricultural holdings were obtained in the frame of Farm Structure Survey 2013, of which 88.9% were natural persons and 11.1% were legal persons. Out of 23 345 natural persons were 16 523 (70.8%) agricultural entrepreneurs and 5 118 (21.9%) small-scale farmers (not registered, without identification number). Among legal persons (2 091 holdings in total) the greatest share was represented by limited liability companies (55.7%) followed by joint stock companies (21.7%) and cooperatives (17.8%).

Since the year 2000 the total number of agricultural holdings declined by 1.1%. The number of natural persons decreased (-1.6%) while the number of legal persons went up (+2.7%). Significant growth was recorded in the number of limited liability companies (+23.4%) and a less distinct one in joint stock companies (+4.7%) while the number of cooperatives declined (-30.3%).

Table 1: Agricultural holdings and their utilised agricultural land

		FSS 2013		AGC 2000		Index 2013/2000
		abs.	(%)	abs.	(%)	
Agricultural holdings, total	Agricultural holdings	26 246	100.0	26 539	100.0	98.9
	Utilised agricultural area (ha)	3 491 818	100.0	3 604 400	100.0	96.9
	Average acreage (ha)	133	x	136	x	98.0
Holdings of natural persons	Agricultural holdings	23 345	88.9	23 714	89.4	98.4
	Utilised agricultural area (ha)	1 063 960	30.5	923 775	25.6	115.2
	Average acreage (ha)	46	x	39	x	117.0
Holdings of legal persons	Agricultural holdings	2 901	11.1	2 825	10.6	102.7
	Utilised agricultural area (ha)	2 427 858	69.5	2 680 625	74.4	90.6
	Average acreage (ha)	837	x	949	x	88.2
Business companies & partnerships	Agricultural holdings	2 295	8.7	1 948	7.3	117.8
	Utilised agricultural area (ha)	1 695 943	48.6	1 578 841	43.8	107.4
	Average acreage (ha)	739	x	810	x	91.2
Limited liability companies	Agricultural holdings	1 616	6.2	1 310	4.9	123.4
	Utilised agricultural area (ha)	804 960	23.1	783 686	21.7	102.7
	Average acreage (ha)	498	x	598	x	83.3
Joint stock companies	Agricultural holdings	630	2.4	602	2.3	104.7
	Utilised agricultural area (ha)	875 498	25.1	779 696	21.6	112.3
	Average acreage (ha)	1 390	x	1 295	x	107.3
Cooperatives	Agricultural holdings	516	2.0	740	2.8	69.7
	Utilised agricultural area (ha)	702 695	20.1	1 059 447	29.4	66.3
	Average acreage (ha)	1 362	x	1 432	x	95.1

## SIZE STRUCTURE OF AGRICULTURAL HOLDINGS

The utilised agricultural area was concentrated in holdings of legal persons (69.5%); this share decreased since 2000 to the benefit of holdings of natural persons by 4.9 percentage points.

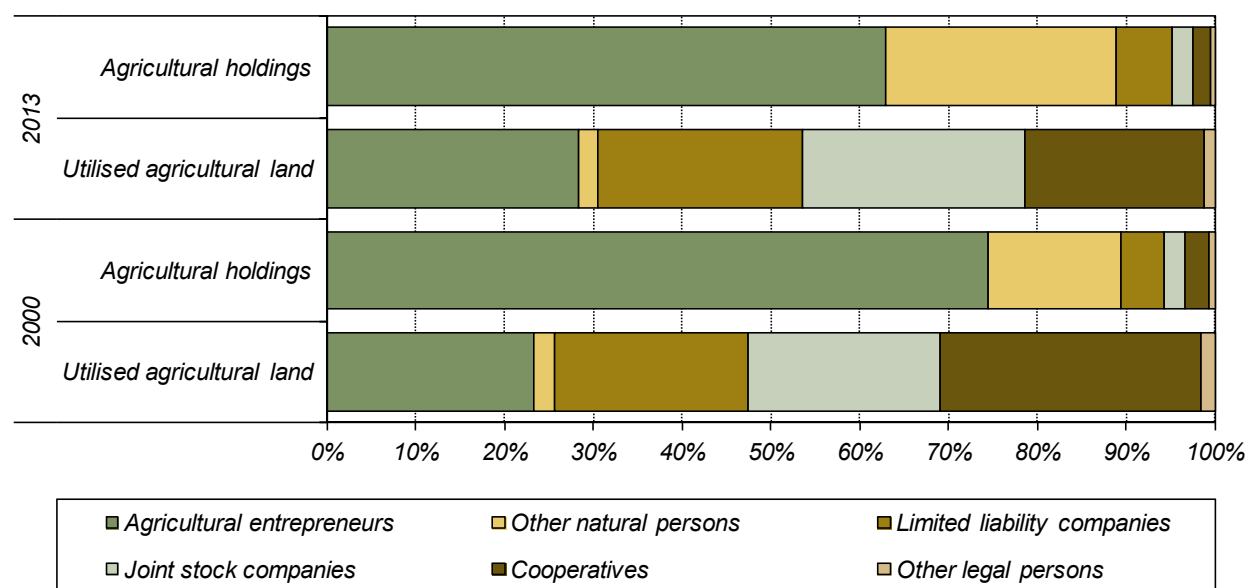
Holdings with 10–50 ha of utilised agricultural area prevailed (35.6%), while the smallest share belonged to holdings without UAA (1.1%), and, on the other side, to holdings with more than 2 000 ha of UAA (1.2%). Holdings with more than 500 ha comprised only 6.9%; however, they shared 70.1% of the total agricultural area. On the contrary, holdings with less than 50 ha (73.0%) utilised only 7.3% of the UAA.

Holdings of natural persons utilised usually smaller acreages than holdings of legal persons. For example, among holdings with less than 50 ha of UAA natural persons shared 97.0% of the total number of holdings while, on the contrary, category above 500 ha of UAA comprised mainly holdings of legal persons (84.8%)

In comparison with 2000 the size structure did not change distinctly. A slight increase was recorded for holdings up to 50 ha of UAA (+11.2 p. p.) and at the same time the number of holdings above 500 ha of UAA minutely decreased (-0.3 p. p.). Only small proportion of UAA was moved from large holdings to small

ones (by 3.8 p. p. up in size group up to 50 ha of UAA, and by 6.8 p. p. down in size group above 500 ha of UAA).

Graph 1: **Structure of agricultural holdings**



## AVERAGE AGRICULTURAL AREA PER HOLDING

The average utilised agricultural area per holding decreased from 136 ha to 133 ha in the period 2000–2013. In holdings of natural persons it grew by 17.0% (from 39 ha to 46 ha) and in holdings of legal persons it decreased by 11.8% (from 949 ha to 837 ha). The most distinct decrease occurred in limited liability companies (–16.7%) but exceptional were joint stock companies where the average acreage grew by 7.3%.

## ORGANIC FARMING

In total 2 635 agricultural holdings dealt with organic farming in 2013, of which 2 342 (88.9%) performed solely agricultural production (i.e. did not utilise conventional and organic production methods together). Organic production methods were applied on 443 157 ha of the utilised agricultural area (12.7% of the total UAA). In the year 2000 there were only 413 holdings involved in organic production (of which 257 with solely agricultural production) and 132 244 ha of the UAA under organic farming. Therefore, the number of holdings dealing with organic farming grew six times and the acreage of agricultural area under organic farming rose almost 3.5 times.

Table 2: **Agricultural holdings involved in organic farming and their utilised agricultural area**

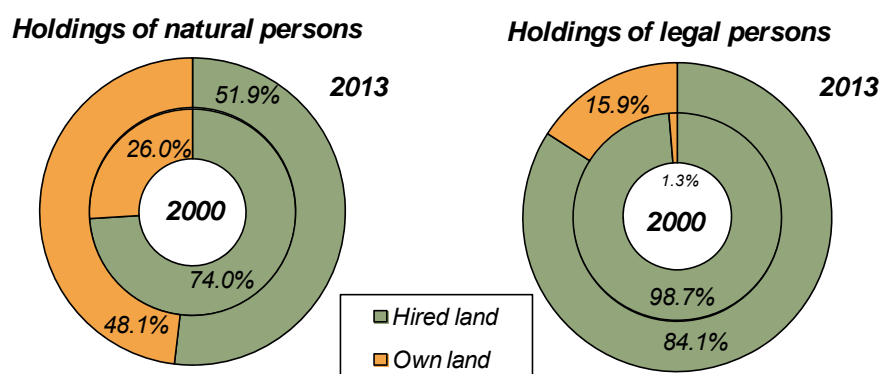
	FSS 2013		AGC 2000		Index 2013/2000
	abs.	(%)	abs.	(%)	
Agricultural holdings, total	26 246	100.0	26 539	100.0	98.9
of which holdings applying organic methods (certified or in conversion period)	2 635	10.0	413	1.6	638.0
of which holdings performing solely organic production (certified or in conversion period)	2 342	8.9	257	1.0	911.4
Utilised agricultural area, total (ha)	3 491 818	100.0	3 604 400	100.0	96.9
of which organically utilised area (certified or in conversion period) (ha)	443 157	12.7	132 244	3.7	335.1
of which utilised area in holdings performing solely organic production (certified or in conversion period)(ha)	403 051	11.5	71 436	2.0	564.2

## AGRICULTURAL LAND OWNED AND HIRED

In total 291 agricultural holdings (1.1%) did not possess any agricultural area in 2013. Most holdings with agricultural land utilised hired land (74.3%), only 25.7% of the utilised agricultural area were owned by holdings. The share of own land decreased with increasing total UAA: holdings with less than 3 ha of the UAA kept 85.3% of own land on average while holdings with more than 2 000 ha owned only 14.9% of the UAA. Since 2000 the share of own land in holdings rose from 7.6% of the UAA. The most distinct growth – by 24.0 percentage points – was recorded in the size group 100–500 ha.

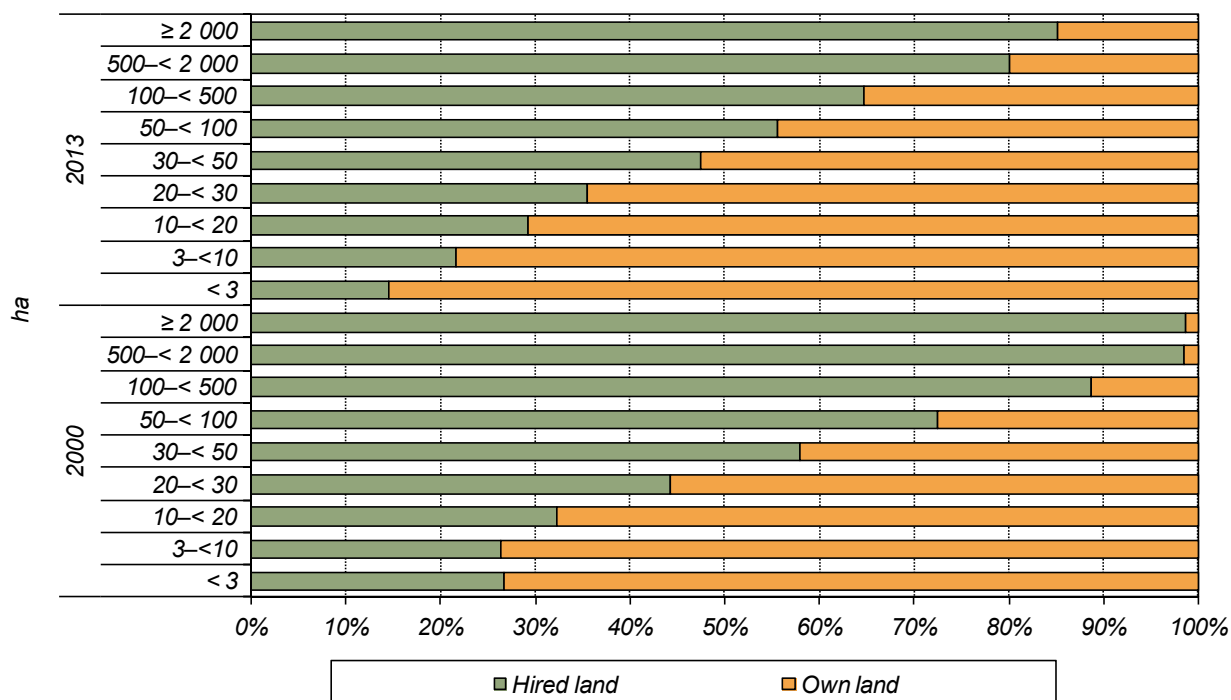
In holdings of natural persons represented their own land almost one half of the total UAA (48.1%). The smallest share was 38.6% for the size group above 2 000 ha, while in holdings up to 50 ha it was more than one half and in the smallest holdings up to 10 ha even more than three quarters of their UAA. On the contrary, holdings of legal persons preferred hiring the agricultural land: their own land represented only 15.9%. Holdings up to 10 ha owned one half (50.9%) of the UAA while holdings with more than 500 ha only 15.3% of the UAA.

Graph 2: Hired and own land, by legal form



The percentage of hired land distinctly decreased in holdings of both natural and legal persons during the period 2000–2010. This decrease accounted for 22.1 p. p. in natural persons and for 14.6 p. p. for legal persons. The greatest increment of own land was recorded in holdings of natural persons with 500–2 000 ha (+40.0 p. p.) and holdings of legal persons with 50–100 ha of the UAA (+20.5 p. p.)

Graph 3: Hired and own land, by size of holding

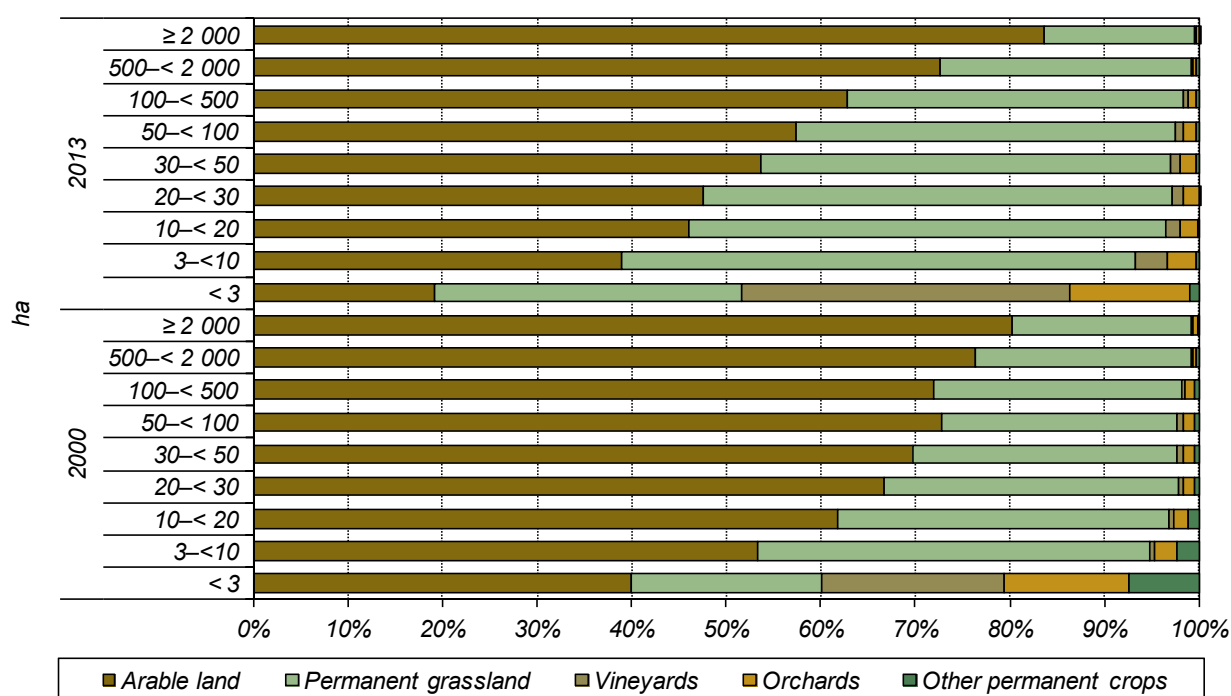


## AGRICULTURAL LAND USE

In 2013 utilised agricultural land covered 3 491 818 ha, i.e. 44.3% of the area of the Czech Republic. A loss of 1.4 percentage point occurred since 2000 to the benefit of artificial area or wooded land. Acreage of the utilised agricultural area went down by 3.1% (i.e. by 112 582 ha) and acreage of arable land even by 9.1% (i.e. by 249 354 ha). The share of arable land decreased during the period 2000–2013 by 4.7 percentage points. A certain part of arable land was grassed on the basis of subsidies provided by the European Union and from this reason the acreage of permanent grasslands rose since 2000 by 16.8%, i.e. by 138 319 ha. Vineyard area increased by 40.4% while area of orchards decreased by 5.1%.

Arable land covered 71.3% of the total utilised agricultural area; more than one quarter of the UAA (27.5%) was covered by permanent grasslands. Other permanent crops (hop-gardens, vineyards, orchards, kitchen gardens, other permanent crops) represented only 1.2% share in the UAA. In holdings of natural persons the share of arable land (60.4%) was distinctly lower than in holdings of legal persons (76.0), especially joint stock companies and cooperatives (both 81.3%). The shares of particular crops in the period 2000–2013 were relatively stable, mainly in cooperatives (changes by less than 1.0 p. p.) while holdings of natural persons recorded a decrease in the share of arable land (–8.1 p. p.) to the benefit of permanent grasslands (+8.2 p. p.).

Graph 4: Share of arable land, permanent grasslands and permanent crops, by size group



Although permanent crops cover only small portion of arable land, they form a considerable part of the agricultural production in small-size holdings. In holdings of natural persons with less than 3 ha of the UAA, vineyards comprised 34.6% and orchards 12.8% of their acreage. In holdings of legal persons these shares were 32.4% and 12.0%, respectively. On the contrary, large agricultural holdings focused mainly on arable land crops: in the size group of 500 ha of the UAA and more their arable land covered 67.8% of the UAA in holdings of natural persons and 77.8% in holdings of legal persons.

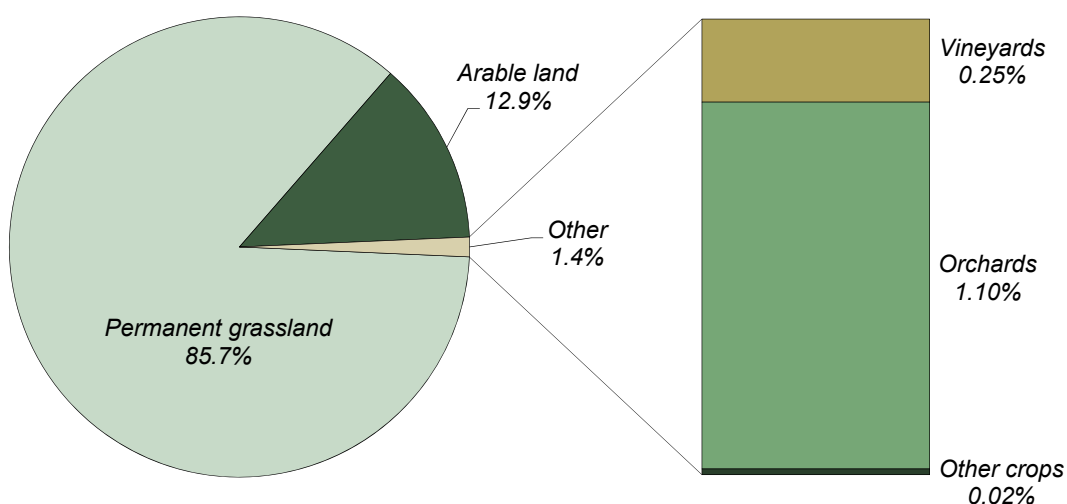
Permanent grasslands were typical for holdings of natural persons with 3–10 ha of the UAA where they shared more than one half of their agricultural land (54.7%) and holdings of legal persons with 100–500 ha where they covered 37.1% of the UAA.

**Table 3: Agricultural land use, by legal form**

	Year	Agricultural holdings, total	in holdings of						
			Natural persons, total	Of which agricultural entrepreneurs – natural persons	Legal persons, total	of which			
						Business companies & partnerships	of which		Cooperatives
							Limited liability companies	Joint stock companies	
Agricultural holdings	2013	26 246	23 345	16 523	2 901	2 295	1 616	630	516
	2000	26 539	23 714	19 746	2 825	1 948	1 310	602	740
Utilised agricultural area (ha)	2013	3 491 818	1 063 960	990 262	2 427 858	1 695 943	804 960	875 498	702 695
	2000	3 604 400	923 775	842 044	2 680 625	1 578 841	783 686	779 696	1 059 447
Arable land (ha)	2013	2 488 996	642 924	608 491	1 846 072	1 257 565	533 968	712 045	571 125
	2000	2 738 350	633 402	581 846	2 104 948	1 211 058	560 555	639 882	863 284
Hop-gardens (ha)	2013	5 155	779	765	4 376	3 330	2 356	975	1 017
	2000	6 966	1 245	1 048	5 721	3 853	2 717	977	1 788
Vineyards, total (ha)	2013	14 852	5 500	4 223	9 352	7 918	4 274	3 591	1 182
	2000	10 581	2 852	2 077	7 729	6 031	2 518	3 267	1 349
Kitchen gardens (ha)	2013	195	134	68	60	8	1	7	1
	2000	4 617	2 999	2 344	1 618	734	396	328	514
Orchards (ha)	2013	21 011	8 234	7 060	12 777	10 425	6 905	3 437	2 167
	2000	22 130	6 062	5 268	16 068	11 155	5 317	5 707	4 581
Permanent grassland, total (ha)	2013	960 076	406 081	369 399	553 995	416 547	257 350	155 412	126 152
	2000	821 756	277 215	249 461	544 541	346 010	212 183	129 535	187 930

Organic production methods were applied predominantly on permanent grasslands, which formed 85.7% of the total acreage of organically utilised agricultural area. Out of the total permanent grasslands area, 39.6% were utilised organically. Organic production was practised also in fruit orchards (23.3% of their area) while for vineyards it represented only 7.4 of their total area and for arable land even only 2.3% of total area.

**Graph 5: Share of particular crops on organically utilised agricultural area**



## AREAS UNDER CROPS

In 2013 agricultural holdings utilised 2 488 996 ha of arable land. The largest share comprised of cereals (57.4%), especially wheat with more than one half (58.3%) of cereals' acreage. Another one quarter (24.4%) was sown with barley. In comparison with 2000 the most remarkable finding is that areas of maize for grain increased more than twofold (+139.5%) while barley areas declined by 21.6%.

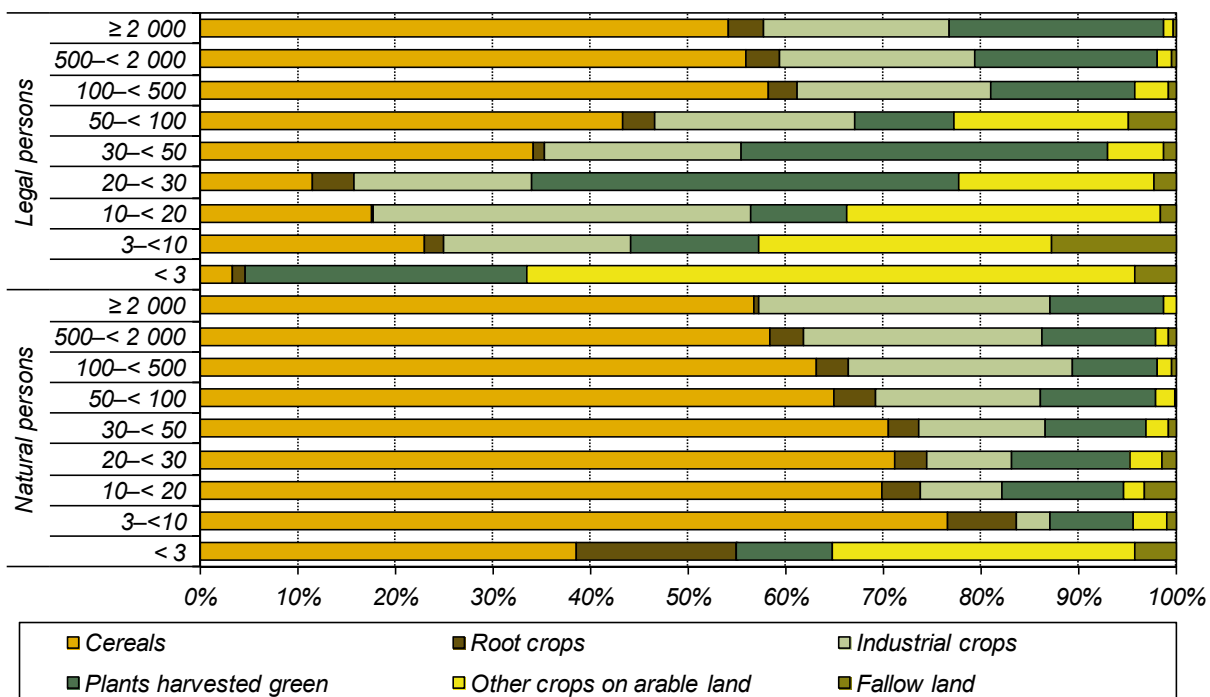
Compared to 2000, areas of industrial crops grew by 64 thousand ha (+15.1%). Planting of rape contributed the most to this increase as its areas grew by 88 thousand ha (+26.8%); in 2000 it shared 12.0% of sown areas and by 2013 its share grew by 4.7 percentage points. This situation was influenced by growing demand for rape seed for production of fatty acid methyl ester – basic compound of biofuels. Areas of other industrial crops (e.g. energy crops) expanded almost twenty times from 134 ha to 2 555 ha. Areas of soya grew three times (+223.6%) since 2000.

On the contrary, potatoes are an example of a crop whose acreages declined by two fifth (–39.2%) due to combination of lowered consumption and increased import. Distinct declines were recorded also for pulses for grain (–50.1%), vegetables (–27.3%) or forage plants on arable land (–24.5%) affected by decline in cattle number. The greatest plummet (expressed as a percentage) was noted for fibre flax (from 5 691 ha to only 20 ha, i.e. by 99.7%).

Shares of arable land crops in particular legal forms were similar with rare exceptions. On the other hand, there are distinct dissimilarities among size groups of holdings. In all types of holdings growing of cereals is the most frequent production type. However, in holdings of natural persons utilising less than 3 ha of the UAA there is only approximately one third (38.5 %) of arable land used for cereals, in size group 3–10 ha it was 76.6%, and for larger holdings it continually slightly decreased up to 56.7% for holdings with more than 2 000 ha. Holdings of legal persons up to 3 ha planted cereals on even only 3.3% of arable land and in higher categories the share rose to more than one half (the largest proportion was 58.2% for the group with 100–500 ha).

For holdings of natural persons with less than 3 ha of the UAA typical activities were growing of vegetables (14.6% of their area), potatoes (14.3%), or flowers and ornamental plants (10.8%). Holdings of legal persons focused on growing of flowers and ornamental plants (48.5% of their area) or strawberries (4.6%). Holdings with more than 2 000 ha dealt with growing of rape (25.5% of arable land for holdings of natural persons and 16.8% for holdings of legal persons) or green maize (6.2% for holdings of natural persons and 12.3% for holdings of legal persons).

Graph 6: Shares of selected crops on arable land



## AGRICULTURAL HOLDINGS WITHOUT AGRICULTURAL LAND

A little group of agricultural holdings (152 holdings of natural persons, i.e. 0.7%; and 139 holdings of legal persons, i.e. 4.8%) did not utilise any agricultural land and specialised on animal production. Compared to 2000 the number of such holdings decreased by more than a half (-56.2%); out of them the number of holdings of natural persons went down by almost two thirds (-65.9%) and the number of legal persons by one third (-36.7%).

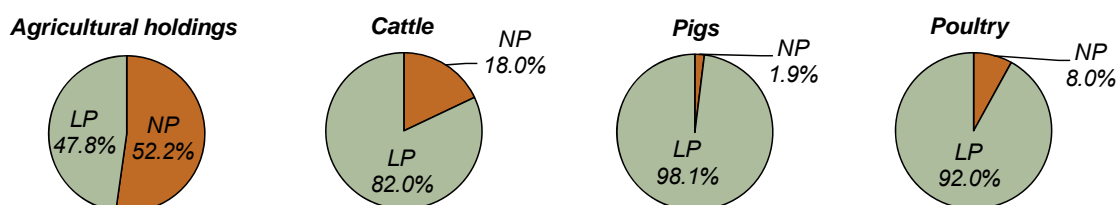
Table 5: Agricultural holdings without agricultural land

	Agricultural holdings, total	in holdings						
		of natural persons, total	of which agricultural entrepreneurs – natural persons	of legal persons, total	Business companies & partnerships	of which		Cooperatives
						Limited liability companies	Joint stock companies	
Agricultural holdings	291	152	97	139	130	88	42	3
Cattle (heads)	3 918	703	624	3 215	3 202	1 163	2 039	-
Pigs (heads)	727 707	14 164	13 006	713 543	709 429	69 077	640 352	3 553
Poultry (heads)	16 957 752	1 360 936	1 338 233	15 596 816	15 455 523	8 857 687	6 597 836	141 200
Average number of heads per holding without agricultural land								
Cattle (heads)	13	5	6	23	25	13	49	x
Pigs (heads)	2 501	93	134	5 133	5 457	785	15 246	1 184
Poultry (heads)	58 274	8 954	13 796	112 207	118 889	100 656	157 091	47 067
Share of legal forms on agricultural holdings without agricultural land (%)								
Agricultural holdings	100.0	52.2	33.3	47.8	44.7	30.2	14.4	1
Cattle	100.0	17.9	15.9	82.1	81.7	29.7	52.0	x
Pigs	100.0	1.9	1.8	98.1	97.5	9.5	88.0	0.5
Poultry	100.0	8.0	7.9	92.0	91.1	52.2	38.9	0.8
Share on total number of agricultural holdings (%)								
Agricultural holdings	1.1	0.7	0.6	4.8	5.7	5.5	6.7	0.6
Cattle	0.3	0.2	0.2	0.3	0.5	0.5	0.5	x
Pigs	46.2	10.7	10.9	49.5	60.2	33.7	65.8	1.4
Poultry	66.9	63.7	65.9	67.2	71.4	74.7	67.4	9.2

Although agricultural holdings without agricultural land represent only a negligible group of holdings, they share an important part of animal production. In 2013 these holdings raised two thirds (66.9%) of all poultry numbers and almost half (46.2%) of all pig numbers.

The largest proportion of livestock belonged to holdings of legal persons which involved 98.1% of pigs, 92.0% of poultry and 82.0% of cattle. In total 88.0% of pigs and 52.0% of cattle were kept in joint stock companies without agricultural land. Limited liability companies shared 52.2% of poultry. Only negligible share (up to 1%) was recorded for cooperatives in all livestock categories. Agricultural entrepreneurs without agricultural land kept 15.9% of cattle, 7.9% of poultry and 1.8% of pigs.

Graph 7: Share of legal forms on agricultural holdings without agricultural land



In comparison with 2000, concentrations of pigs in holdings without agricultural land rose more than twofold from 1 088 heads per holding to 2 497 heads per holding and concentration of poultry went up from 19 593 heads per holding to 58 184 heads per holding; concentration of cattle decreased from 28 heads per holding to 13 heads per holding. As for holdings raising pigs, the share of joint stock companies went up (from 67.8% to 88.0%) while share of limited liability companies fell (from 21.6% to 9.5%). Limited liability companies focused on raising of poultry; share of such holdings grew from 38.6% to 52.2%.

## ANIMAL PRODUCTION

During the period 2000–2013 the number of livestock declined in all principal categories. The sharpest plummet was recorded for pigs (–54.1%) and less distinct ones for poultry (–16.4%) and cattle (–11.4%). Raising of pigs was ceased in 56.1% of holdings, raising of poultry in 25.6% of holdings, and cattle raising in 22.5% of holdings. This fact led to increased concentrations of livestock in particular agricultural holdings. During the abovementioned period, increments were recorded for sheep by 202.6%, for goats by 121.2%, and for horses by 45.1%.

However, there were exceptions from abovementioned trends for each livestock category in particular legal forms: they were recorded, for example, for cattle in natural persons (+14.8), for poultry in limited liability companies (+46.7%), or for goats in cooperatives (–63.5%).

**Table 5: Basic characteristics of animal production, by legal form**

	Year	Agricultural holdings, total	in holdings						
			of natural persons, total	of which agricultural entrepreneurs – natural persons	of legal persons, total	of which			
						Business companies & partnerships	Limited liability companies	Joint stock companies	Cooperatives
Agricultural holdings	2013	26 246	23 345	16 523	2 901	2 295	1 616	630	516
	2000	26 539	23 714	19 746	2 825	1 948	1 310	602	740
Utilised agricultural area (ha)	2013	3 491 818	1 063 960	990 262	2 427 858	1 695 943	804 960	875 498	702 695
	2000	3 604 400	923 775	842 044	2 680 625	1 578 841	783 686	779 696	1 059 447
Cattle (heads)	2013	1 368 813	336 892	314 836	1 031 921	652 555	250 081	399 424	367 848
	2000	1 545 309	293 522	270 628	1 251 787	658 773	263 431	389 710	574 478
Pigs (heads)	2013	1 574 399	132 273	119 302	1 442 126	1 178 164	204 808	973 335	253 489
	2000	3 432 950	355 958	330 876	3 076 992	2 116 380	611 513	1 498 837	931 276
Poultry (heads)	2013	25 344 798	2 136 508	2 030 687	23 208 291	21 640 915	11 853 137	9 787 737	1 531 879
	2000	30 321 070	4 815 570	4 191 842	25 505 500	21 762 693	8 081 112	13 681 581	3 609 453
Sheep (heads)	2013	199 376	167 524	136 787	31 851	28 119	24 404	3 111	2 262
	2000	65 890	50 799	42 365	15 091	11 851	9 587	2 046	3 094
Goats (heads)	2013	17 903	14 170	10 221	3 733	3 304	3 184	118	134
	2000	8 093	7 298	6 052	795	328	317	5	367

**Graph 8: Share of holdings on livestock totals, by legal form**



Organic production methods were applied mainly in raising of sheep (44.2% of their total number), goats (39.0%) and horses, donkeys and their hybrids (24.5%). In total 15.4% of cattle were ecologically reared; those were especially other (beef) cows which were kept ecologically in 46.0%. Raising of poultry and pigs using organic production methods is negligible (0.6% and 0.2%, respectively).



## RAISING OF CATTLE

In 2013 there were 1 368 813 heads of cattle in 11 534 agricultural holdings. Compared to 2000, the cattle number went down by 11.4% and the number of their breeders by 22.5%. It resulted in increased average number of cattle per holding from 104 heads to 119 heads. Cattle density declined from 43 heads per 100 ha of the UAA to 39 heads per 100 ha of the UAA.

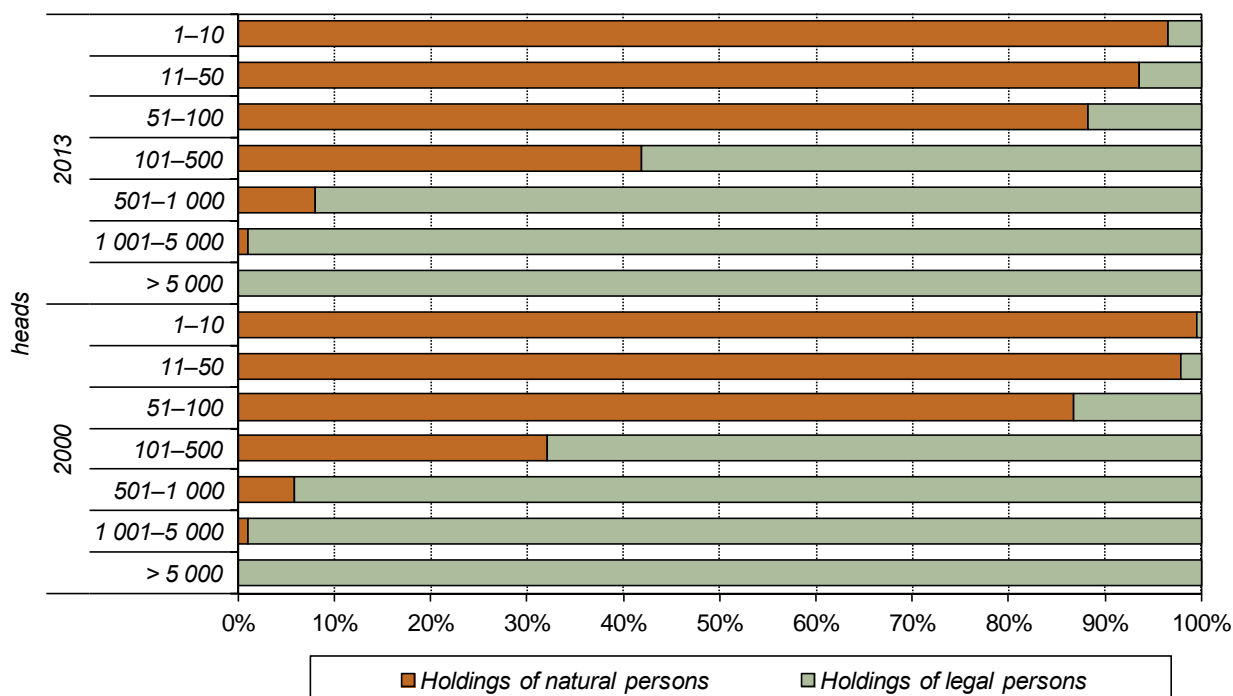
Three quarters (75.4%) of cattle were kept in holdings of legal persons; in 2000 this share was 81.0%. In holdings of natural persons the number of cattle increased by 14.8% and the average number per holding went up from 22 heads to 34 heads, while in holdings of legal persons the number of cattle declined by 17.6% and the average number per holding went down from 702 heads to 639 heads.

The largest share on the number of cattle in holdings of legal persons is represented by joint stock companies (29.2%) whose number increased by 2.5% since 2000. The overall decline in cattle breeding was caused mainly by plummet of cattle numbers in cooperatives (-36.0%); as the share of cooperatives on all cattle breeders was 27% it represents more than 200 thousand heads. A slight decrement was recorded also for limited liability companies (-5.1%).

Almost two thirds (64.4%) of cattle were concentrated in large holdings with more than 500 heads. However, there were distinct differences between particular legal forms: Holdings of natural persons reared typically small herds; only 16.7% of them reared more than 50 heads. This share grew since 2000 from 8.4%. On the contrary, in holdings of legal persons the most typical size category was 101–500 heads, recorded in 37.7% of cattle farms. Since 2000 the size structure in holdings of legal persons almost did not change (differences only by few percentage points).

The number of cows decreased in comparison with 2000 by 34 321 heads to 558 906 heads; their share on the total number of cattle rose from 38.4% in 2000 to 40.8% in 2013. In 2013 more than two thirds of agricultural holdings (66.2%) kept dairy cows. In comparison with 2000 the share of dairy cows went down by 17.5 p. p. and the total milk production declined despite its increasing yields. Raising of dairy cows is influenced by long-term trends in farmers' milk prices which were not favourable during the period 2000–2013. On the contrary, raising of beef cows was supported by subsidies from both national and European Union sources.

Graph 9: Shares of holdings by legal form in categories by cattle number per holding



## RAISING OF PIGS

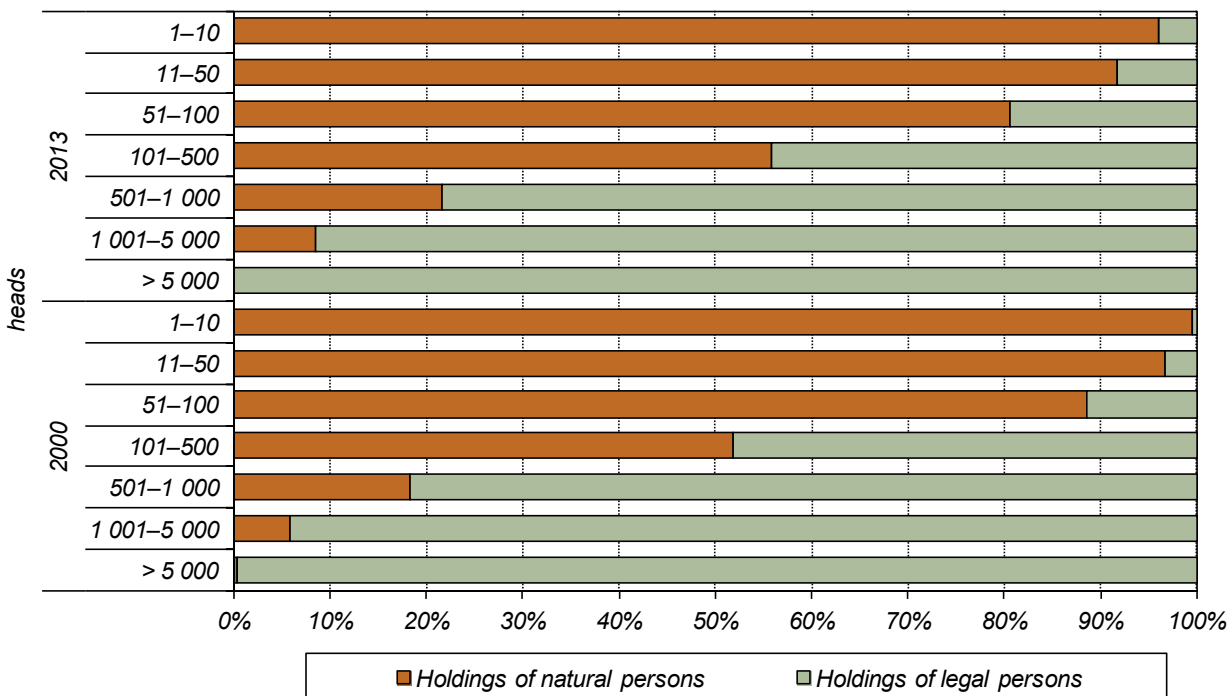
In total 1 574 399 pigs were kept in agricultural holdings in 2013; compared with 2000 their number dropped to less than a half (45.9%). The number of pig farms declined by 56.1% to 5 040 holdings. The number of heads per one holding increased only slightly (from 299 heads to 312 heads) while their livestock density went down since 2000 to one half: from 125 heads per 100 ha of arable land to 63 heads per 100 ha of arable land.

There were 516 holdings of legal persons raising pigs; since 2000 their number decreased to one third (35.1%). They reared 91.6% of all pigs. One holding of legal person reared on average 2 794 heads; i.e. by 700 heads more than in 2000.

Out of 10 001 holdings of natural persons in 2000 only 4 524 did not ceased their activity until 2013. Number of their pigs declined almost by two thirds (-68.2%) to 132 thous. heads. There were on average 29 heads per one holding, by 7 heads more compared to 2000.

The most frequent way of pigs' rearing were large piggeries with more than 5 000 heads (61.1% of the total number); only one tenth (11.7%) was kept in groups of less than 1 000 heads. Groups up to 10 heads prevailed (71.7% of farms) among holdings of natural persons while the most frequent size category of holdings of legal persons was 1 001–5 000 heads (30.8%). Since 2000 the size structure changed to the benefit of smaller groups, but the difference accounts for only few percentage points.

Graph 10: Shares of holdings by legal form in categories by number of pigs per holding



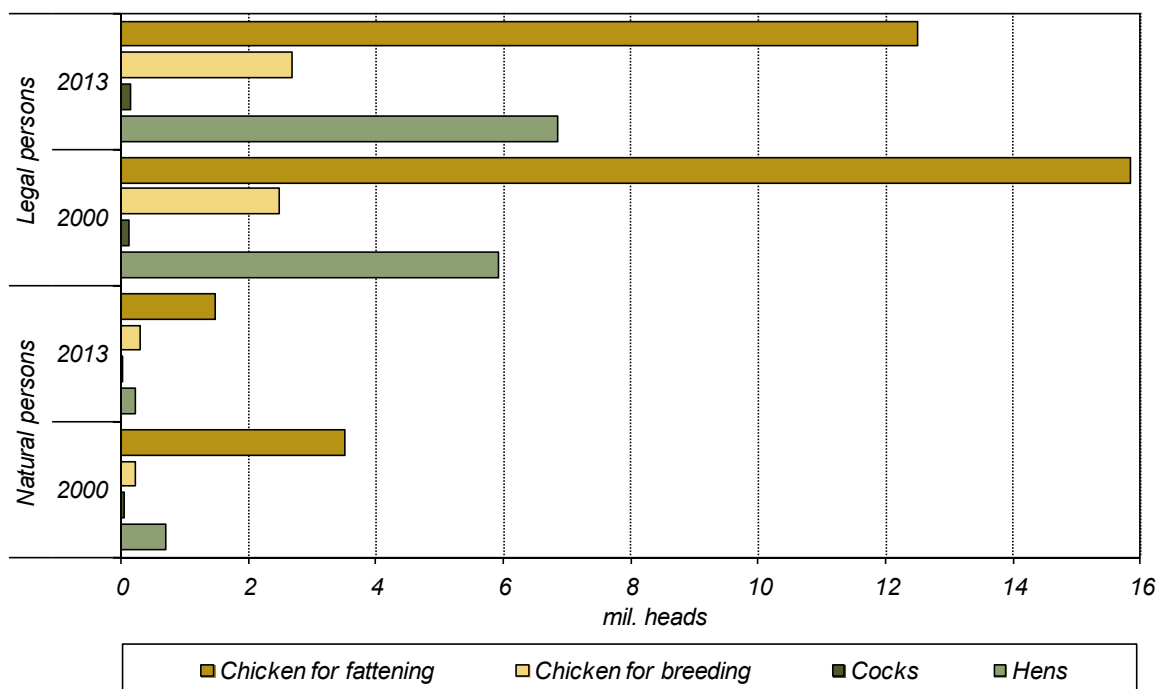
## RAISING OF POULTRY

In 2013 in total 8 278 holdings raised more than 25 million heads of poultry in the Czech Republic. Two thirds (66.9%) of poultry numbers were kept in agricultural holdings without utilised agricultural land. Holdings of natural persons prevailed (8 019 farms; i.e. 96.9%), but their share of poultry heads was only 8.4%. The remaining 91.6% of heads were concentrated in 259 holdings of legal persons.

During the period 2000–2013, the number of poultry decreased by 16.4% and the number of their breeders dropped by 25.6%. Number of heads per one holding rose by 337 heads to 3 062 heads per one holding. Poultry density went down from 1 107 heads per 100 ha of arable land to 1 018 heads per 100 ha of arable land. This decline was caused mainly by reduced number of chicks for fattening (–27.6%) while number of breeding chicks and hens slightly increased (+10.7% and +7.2%, respectively).

In holdings of natural persons the decline amounted to 55.6% for poultry totals and even 67.9% for hens. In holdings of legal persons, the total poultry number went down by 9.0% but number of hens rose by 16.0%. The number of poultry kept in cooperatives plummeted by more than one half (–57.6%) and another large decrement by 28.5% was noted in joint stock companies. On the contrary, limited liability companies recorded an increase by 46.7% to 11.9 million heads.

Graph 11: Raising of chickens, by legal form



Out of holdings of natural persons 95.7% raised less than 100 heads of poultry while more than half (58.6%) of holdings of legal persons had large farms with more than 10 thous. heads. The reduction of poultry raising since 2000 influenced all size categories of holdings of natural persons, out of them those with 10–50 thous. heads lost the most (–63.1% of heads; –59.7% of holdings). Interesting findings were recorded for holdings of legal persons where reduction occurred among large farms (size groups of 5–10 thous. heads and 10–50 thous. heads; both by 54.6% of poultry heads; and by 51.4% and 60.1% of holdings, respectively). On the contrary, number of small farms up to 100 heads together with their poultry numbers rose almost twofold (+91.6% of holdings; +92.3% of heads). Although only several tens of holdings are involved, it can be interpreted as a sign of growing interest in poultry raising with respect to animal welfare standards.

The shares of particular poultry species on the total poultry number did not change distinctly during the period 2000–2013. Breeding of chickens predominated: out of the total poultry number, there were 55.2% of chicks for fattening, 28.0% of hens, and 11.8% of chicks for breeding. Other poultry species were mainly turkeys (2.3% of total poultry) and ducks (1.7%). In 2000, raising of chicks for fattening prevailed as well (63.8%) followed by hens (21.8%) and chicks for breeding (8.9%), out of other species turkeys shared 2.9% and ducks 1.6% of the total poultry numbers.

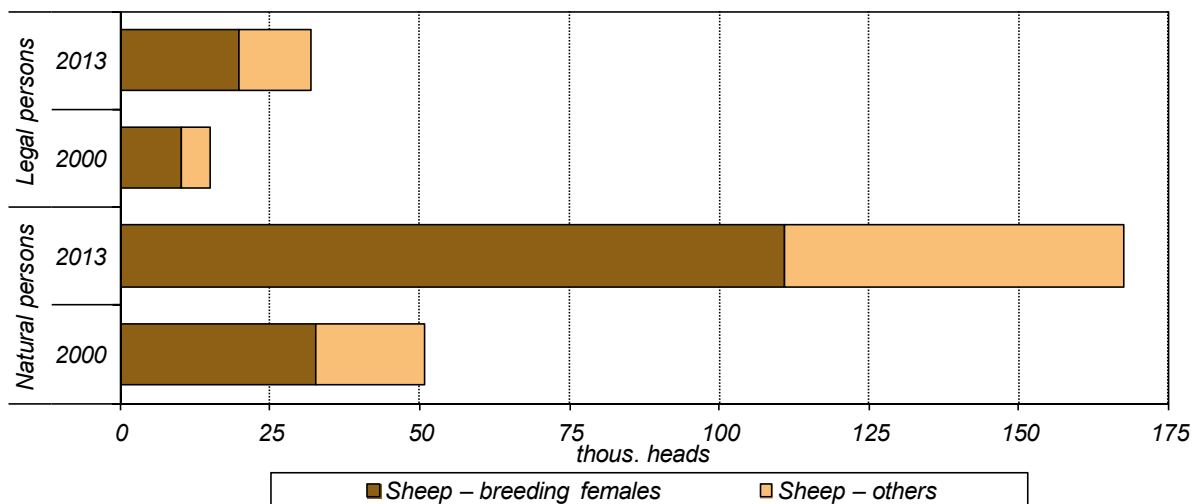
## RAISING OF SHEEP AND GOATS

Sheep and goats numbers recorded the highest increment among all livestock categories since 2000. The number of sheep rose threefold (+202.6%) to 199 376 heads and the number of goats more than twofold (+121.2%) to 17 903 heads. In 2013 there were 4 986 sheep breeders and 1 585 holdings raising goats. While number of holdings raising sheep went up by 69.4%, number of goat breeders dropped by 19.6%.

Raising of both sheep and goats was concentrated in holdings of natural persons; they involved 93.0% of sheep breeders and 91.1% of goat breeders; they kept 84.0% of sheep and 79.1% of goats. In comparison with 2000 there is a positive trend in number of these species among holdings of legal persons: their sheep numbers rose twofold (from 15 901 to 31 851 heads) and goats numbers almost fivefold (from 795 to 3 733 heads).

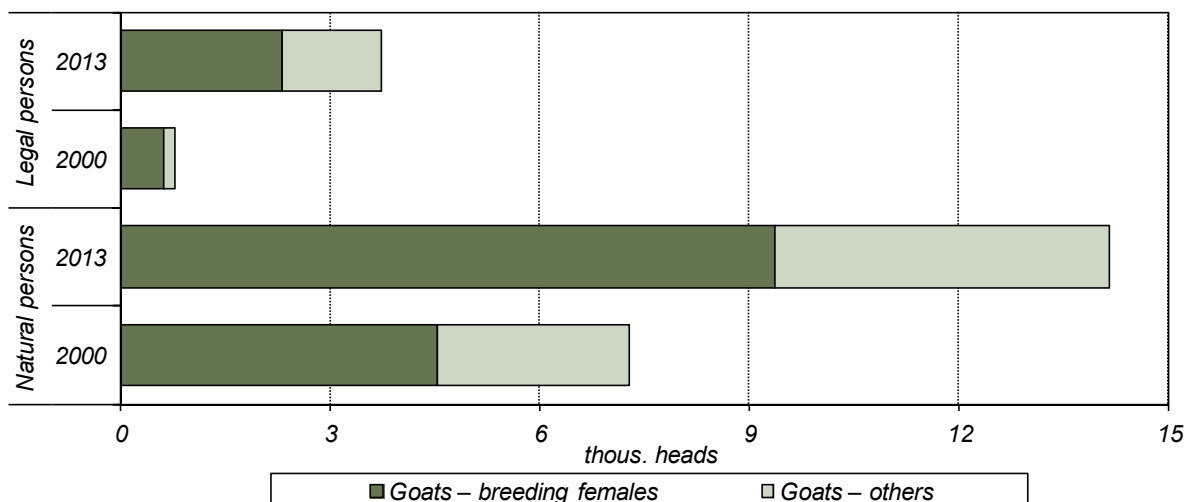
Sheep are kept mostly in flocks of 11–50 heads; this size category involves one half of farmers (52.1%) and one third of heads (29.4%); this concerns especially holdings of natural persons. Among holdings of legal persons this size group represented the largest share of the holdings as well (40.8%) but the largest share of sheep (22.4%) was concentrated in flocks of more than 800 heads belonging to only five holdings (1.5%).

Graph 12: Raising of sheep, by legal form



As for raising of goats, size group up to 10 heads per holding prevailed in both holdings of natural persons (77.3%) and legal persons (56.0%). Livestock concentration higher than 100 heads per holding was recorded only in 12 holdings of natural persons (0.8%) and 5 holdings of legal persons (3.5%).

Graph 13: Raising of goats, by legal form



## LABOUR FORCE IN AGRICULTURE

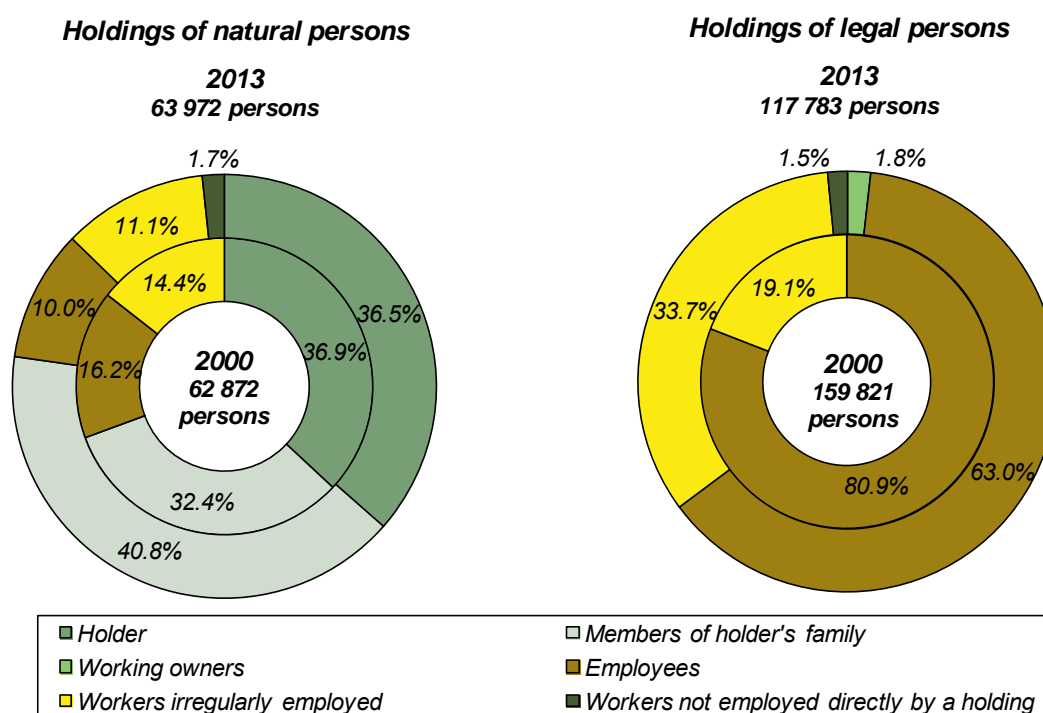
In 2013 in total 181 756 persons were involved in agricultural work; out of them 132 130 persons were regularly employed and 46 777 persons irregularly employed (i.e. working on the basis of contract of work or for services). Other 2 849 persons were employed not directly by agricultural holdings; those were either self-employed persons or employed by job agencies. Because of high seasonality of some agricultural work, this type of employment is widely utilised by agricultural holdings during work peaks.

Labour force regularly employed in agriculture consisted mainly of employees (61.0%). In holdings of natural persons, holders represented 41.8% and members of their families 46.7% of persons regularly employed; in holdings of legal persons 2.7% were working owners.

During the period 2000–2013 the labour force totals decreased by 40 937 persons, i.e. 18.4%. This decline was observed mainly in holdings dealing with animal production as the consequence of lowered interest in raising of main livestock species.

In holdings of natural persons in total 63 972 persons were working in 2013, i.e. by 1.8% more than in 2000. Compared to 2000 there were more family members involved in the farm work instead of employees and persons working on the basis of contracts. While in 2000 there were 16.2% of employees and 32.4% of holders' family members, in 2013 these shares were 10.0% for employees but 40.8% for family members. In holdings of legal persons even more distinct decline of labour force occurred. During the period 2000–2013, the number of workers decreased by more than one quarter (-26.3%) to 117 783 and the number of workers regularly employed by 41.0% to 76 311. Agricultural holdings frequently engaged persons working on the basis of contracts or employed by job agencies for short-term activities with high share of manual work (harvest of vegetables, fruits, or potatoes). In 2013, the holdings of legal persons engaged 39 690 persons working on the basis of contracts, 292 self-employed persons, and 1 489 persons employed by job agencies.

Graph 14: Labour force structure in holdings of natural and legal persons



According to standard EU methodology, data on labour force in agricultural sector is expressed in Annual Work Units (AWU). One AWU is the full-time equivalent employment, i.e. the total number of hours worked divided by the average annual number of hours worked in full-time jobs in the country. The annual fund of working hours is set at 1 800 hours in the Czech Republic and is based on the number of working days with 8 working hours a day minus minimum statutory claim for holiday and minus the average number of hours not worked for incapacity for work.

Expressed in Annual Work Units, the labour force number in 2013 was 105 916 AWU, i.e. 58.3% share of the total number of working persons. For 2000 this value accounted for 166 365 AWU (i.e. there was a decline by 36.3% by 2013) and 74.7% share of the working persons total. The decrease of the ratio

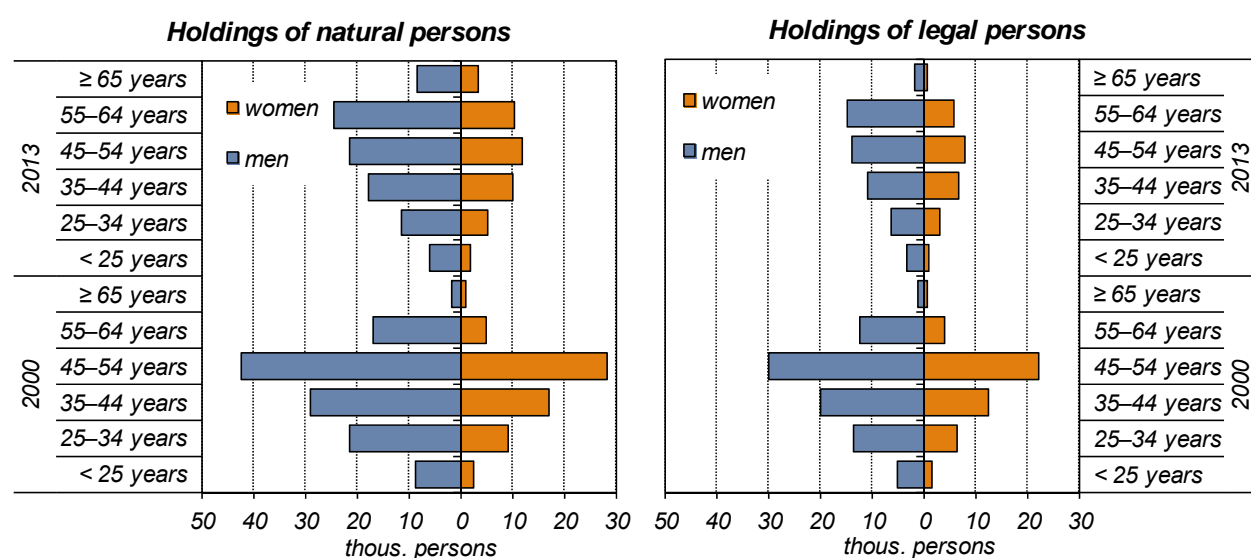
between number of persons and AWU shows increasing share of utilisation of part-time and temporary jobs in agricultural holdings. It was more frequent in holdings of natural persons, where share after recalculation was 52.6% (33 630 AWU) while in holdings of legal persons the share was 61.4% (72 285 AWU).

## AGE STRUCTURE OF LABOUR FORCE

The agricultural sector of the Czech Republic is negatively influenced not only by labour force loss but also by their ageing. Since 2000 the share of labour force regularly employed in the age group up to 34 years declined from 22.8% to 18.6%. This trend results from low popularity of the agricultural work together with frequently prolonged study and postponed start of work in this age group. Also share of middle-age generation (35–54 years) decreased, and, therefore, share of persons in pre-retirement and retirement age (55 years and more) regularly employed grew continually. Share of middle-age generation went down from 63.7% in 2000 to 46.1% in 2013, and share of employees aged 55 and more rose from 13.5% to 35.3%.

Differences among legal forms in the age structure can be seen during comparison of holdings of natural persons and of legal persons. Holdings of natural persons, usually small family farms, show more uniform distribution of age groups and there is a larger share of young workers up to 25 years (7.0%) compared with in holdings of legal persons (5.4%). Shares of age group 65 years and more are even more different: 16.6% for holdings of natural persons and only 3.4% for holdings of legal persons. Despite structural supports for young farmers the share of workers up to 34 years in holdings of natural persons went down by 8.4 percentage points since 2000 and share of workers above 55 years rose by 29.3 p. p. These changes were not so distinct in holdings of legal persons, where share of the age group up to 34 years declined by 2.8 p. p. and for the group above 55 years it went up by 16.8 p. p.

Graph 15: Age structure of labour regularly employed



## WOMEN EMPLOYED IN AGRICULTURAL SECTOR

The share of women on the labour regularly employed did not change much since 2000; it decreased from 34.4% to 32.5%. Their share rose mostly in the age group above 55 years (+5.7 p. p.) but a slight increment was recorded also for the group up to 34 years (+0.9 p. p.).

The share of women in holdings of natural persons was slightly lower (31.9%) than in holdings of legal persons (33.0%). Since 2000 the trends in both legal forms were different: the share of women in holdings of natural persons rose by 1.5 p. p., probably in connection with increased share of holder's family members working on the farm; on the contrary, their share in holdings of legal persons it declined by 3.1 p. p.

## MACHINERY AND EQUIPMENT IN AGRICULTURAL HOLDINGS

Machinery in agricultural holdings undergoes modernisation continually and trend to utilise smaller number of high-performance machines can be seen. One of key trends in contemporary agricultural production is massive employment of computer technologies.

In 2013 there were on average 295 tractors and tool carriers, 23 lorries above 3.5 tonnes, 102 cultivators and hoeing machines, 30 reapers, 40 combine harvesters, 10 cutter harvesters, 15 root crops or vegetable harvesters, and 95 personal computers, of which 89 were connected to internet, per 100 agricultural holdings. In all main categories of machinery the number of pieces decreased since 2000. It amounted for 7.5% for tractors and tool carriers (to 77 336 pcs.), for 60.9% for lorries (to 5 989 pcs.), for 29.1% for self-propelled combine harvesters (to 8 845 pcs.), and for 65.0% for self-propelled cutter harvesters (to 1 243 pcs.).

Almost one half (47.0%) of agricultural holdings used personal computers in 2013. It applied for four fifths (80.9%) of holdings of legal persons and two fifths (42.8%) of holdings of natural persons. Compared to 2000, the number holdings equipped with a computer grew more than twofold (+111.7%). Personal computer utilisation progressed since 2000 mainly in holdings of natural persons (+162.0%) while holdings of legal persons used computers more frequently in 2000 and therefore only 16.5% of them were newly equipped by 2013. Out of the total number of 25 011 computers, 45.7% is used by holdings of natural persons and remaining 54.3% by holdings of legal persons. In comparison with 2000, the difference between natural and legal persons became less distinct: in 2000 there were of 32.5% of all computers used by holdings of natural persons and 67.5% by holdings of legal persons. Almost all computers used in agricultural holdings (93.4%) were connected to internet: this share accounted for 94.2% in holdings of natural persons and 92.7% in holdings of legal persons. The number of computers connected to internet rose almost ten times since 2000 (+943.2% for natural persons and +962.9% for holdings of legal persons).

## RENEWABLE ENERGY PRODUCTION

Renewable energy production in agricultural holdings belongs to activities which are booming in recent years. Agricultural holdings that have established and operated any equipment for renewable energy production were surveyed in Farm Structure Survey 2010 and 2013. Differently from all other characteristics commented in this publication there are no data from 2000, but even for three years' period several distinct changes were recorded.

In 2013 there were 696 agricultural holdings dealing with renewable energy production; out of them 35 holdings utilised with two or more types of renewable energy sources. Since 2010 the number of holdings increased by 63.0% (427 holdings in 2010) but number of holdings using two or more types declined to one half (72 holdings in 2010). Sources used the most frequently were solar energy (398 holdings) and biomass energy (306 holdings). In 2010, on the contrary, biomass energy utilisation (147 holdings) prevailed over solar energy use (138 holdings). These two types recorded the greatest increment, which was almost three times for solar energy and twice for biomass energy.

Graph 16: Agricultural holdings producing renewable energy

