



E. Laczka Ph.D. | Deputy President Central Statistical Office | Budapest | Hungary

DOI: 10.1481/icasVII.2016.c21c

ABSTRACT

Thanks to the natural characteristics of the country, Hungarian agriculture has played an important role in our country's economy over the past centuries and this is still the case nowadays. In 2015 the share of Agriculture in GDP was 3.7 percent. The total gross output of agriculture was more than 2 000 billion HUF, out of which crop production represented 58 percent, animals and animal production 35 percent, agricultural services and secondary activities 7 percent. From the 9.3 million hectares surface area of Hungary 5.3 million hectares are agricultural land area (in the European Union it is only in Denmark that this proportion is higher).

According to the Agricultural Census 2010, in the period of the census 8.6 thousand enterprises (legal units engaged in agricultural activities) and 567 thousand private holdings performed agricultural activity. 54 percent of the enterprises were exclusively engaged in crop production, 6 percent in animal husbandry only, while the proportion of enterprises with mixed activity amounted to 40 percent. The proportion of the different types of activities performed by private holdings differed to some extent. Nearly half (49 percent) of private holdings dealt with crop production, 22 percent with animal husbandry, and 29 percent with both activities. In Hungary the census has been observing for more than 10 years the purpose of the production of private holdings as well. According to the 2010 census data 60 percent of private holdings produced exclusively for own consumption. There has been a change in the proportion of private holdings producing specifically for the market (it increased from 8 percent to 20 percent over the past decade). The rest of the private holdings sold the surplus remaining after own consumption.

The distribution according to the legal forms of farming of agricultural product output provides also important information on the structure and efficiency of Hungarian agriculture. This is especially the case when the proportion of the output is presented for different legal forms of farming, size categories or in the case of private holdings according to the purpose of the farming as well. There are significant differences in farming methods, the use of internet, adopting precision agriculture or incorporating new or improved machinery, etc. by legal forms of farming and size categories.

If a country intends to have a competitive, modern agriculture and make a better use of its natural resources, it is indispensable to form well-trained qualified experts and - as the age of Hungarian farmers is quite high - to promote a change of generation as well. With a view to implementing this change, the Hungarian Association of Young Farmers (AGRYA) in cooperation with Hungarian agricultural statisticians launched 5 years ago a special research. Using the statistical data available (supplemented by special surveys) statisticians analysed the situation, characteristics, innovation of farms managed by farmers under the age of 40. We used for this purpose the databases of agricultural and population censuses, regular statistical surveys (including surveys on social issues too). Two separate publications have been published up to now, the purpose of the presentation is to present the results of the research as well. The collaboration between statisticians and the AGRYA can be an example of how to support decision makers with statistical data, information.

Keywords: structure of agriculture, efficiency, education, collaboration with users

PAPER

1. Introduction

Thanks to the natural characteristics of the country, Hungarian agriculture has played an important role in our country's economy over the past centuries and that is still the case nowadays. In 2015 the share of Agriculture in GDP was 3.7 percent. The total gross output of agriculture was more than 2 000 billion HUF, out of which crop production represented 58 percent, animals and animal production 35 percent, agricultural services and secondary activities 7 percent. From the 9.3 million hectares surface area of Hungary 5.3 million hectares are agricultural land area (in the European Union it is only in Denmark that this proportion is higher).

The distribution according to the legal forms of farming of agricultural product output provides important information on the structure and efficiency of Hungarian agriculture. This is especially the case when the proportion of the output is presented for different legal forms of farming, size categories or in the case of private holdings according to the purpose of the farming. There are also significant differences in farming methods, the use of internet, adopting precision agriculture or incorporating new or improved machinery, etc. by legal forms of farming and size categories.

2. Structure of Hungarian Agriculture

When we analyse the current farm structure in Hungary – for the sake of a better understanding – we have to go back to the period of the change of the political and economic system of 1990. The structural transformation of Hungarian agriculture at the end of the 19th century took place gradually and in various stages. The restitution of the land to the original owners and new applicants was not a smooth process, the transformation of the cooperatives of production and state farms caused considerable loss of assets.

In the 1990-ies different forms of holdings were created, a great number of small private farms with a less viable size emerged. Great part of the state farms and cooperatives were liquidated and replaced by different forms of farming. The change of property did not always entail the change of the type of farming, in many cases the property and use of the land diverged. Different forms of renting or use changed the situation prevailing during previous years, which would not have been a problem if it had contributed to a more rational and rentable form of farming.

The change of ownership of the means of production was in the centre of the changes in agriculture, but it occurred extremely slowly and not always in the most suitable way. The establishment of productive types of farming, the optimal distribution of subsidies were not coupled with sufficient foresight and firmness. The means of production of the previous great farms and the lands were not distributed according to local needs. Many of the newly created holdings – lacking of the necessary means of production – had only a low-level production and quite a great number of farms did not even cultivate the land recovered.

While before 1990 agricultural enterprises for large-scale production were producing on nearly 90 percent of the land, at the turn of the millennium this proportion decreased by half. From 2005 land use of enterprises and companies has been increasing at the expense of private holdings, and other legal forms began to use land. Another characteristic of the processes was that land use of cooperatives (despite the creation of new forms of cooperatives) became negligible.

Land-use according to the legal forms 1990–2015

Year	Enterprises and Companies	Cooperatives	Private holdings	Other	Enterprises and companies	Cooperatives	Private holdings	Other
	hectare				proportion of land area, percent			
1990	2 867	5 147	1 289	..	31	55	14	..
1995	2 593	2 208	4 035	467	28	24	43	5
2000	2 711	1 160	3 902	1 529	29	13	42	17
2005	3 384	462	2 984	1 317	36	5	32	14
2010	3 488	290	3 016	1 144	38	3	32	12
2015	3 404	150	3 263	1 032	36	2	35	11

It was only in 1988 that land use of **private holdings** exceeded that of agricultural enterprises, it was the only year when it reached 50 percent of the territory of Hungary. After the turn of the millennium this proportion began to decline and ten years later the proportion has stabilised at the same level (enterprises and companies 36 percent – private holdings 35 percent). In 2013 – year of the last Farm Structure Survey – the average size of agricultural enterprises was 310 hectares, the land used by private holdings was 5.5 hectares.

3. Structure of Agriculture by type of activity

Although the Statistical System of the European Union classifies holdings according to a defined Typology, in Hungary we use to analyse agricultural holdings three types of farming – more suitable for our domestic conditions – livestock farming, crop farming and mixed production.

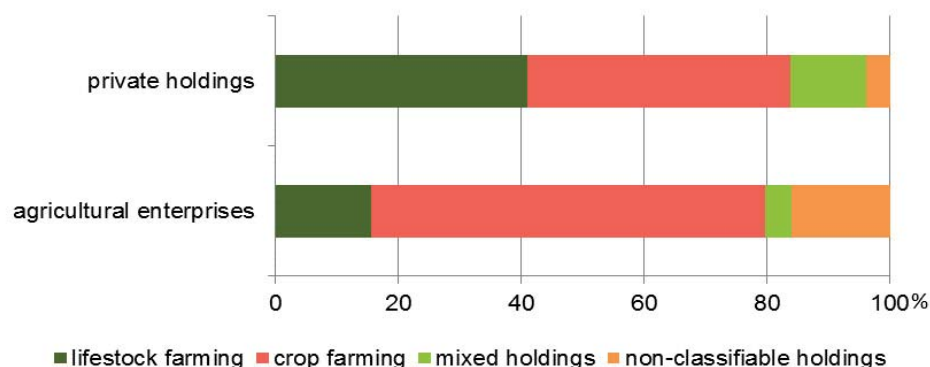
– **Livestock farming** are holdings where only the livestock has reached or exceeded the threshold applied for the census in 2000.

– **Crop farming holdings** are holdings where only land use has reached or exceeded the threshold applied for the census in 2000.

– **Holdings with mixed production** are holdings where both land use and livestock have reached or exceeded the threshold applied for the 2000 census.

In the year 2000, from the existing 5007 **enterprises** performing agricultural activity more than half (52 percent) were engaged in crop production, more than a quarter (28 percent) in mixed production and 20 percent dealt only with livestock production. The distribution of **private holdings** by type of production shows a different structure; while the share of livestock farming is higher, that of crop farming is lower.

Distribution of the holdings by type of production, 2013 (%)



4. Structure of Agriculture by purpose of production

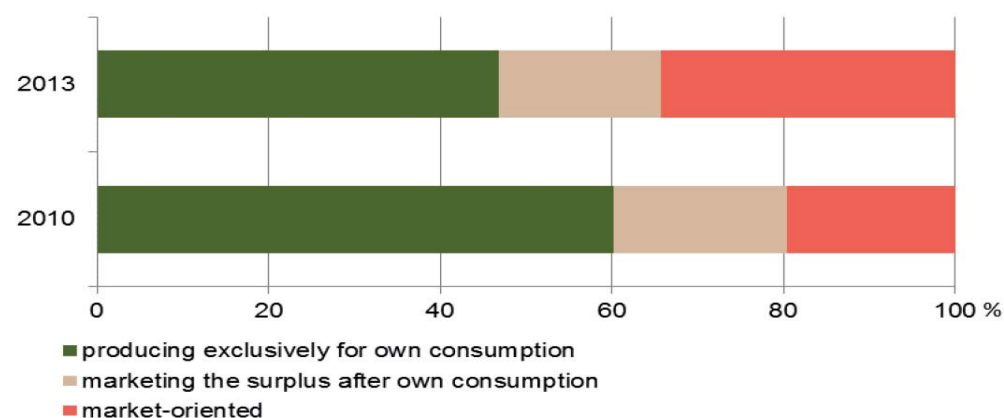
Great number of statistical tools are at our disposal to analyse holdings. **The size of the holdings can also be measured in innumerable ways.** The size of agricultural holdings can be characterized by the size of the area used, the size of livestock, the combination of different indices, labour input, the size of the output, the value of the products or services marketed or the gross value added produced. The – specific – Hungarian agricultural structure requires nevertheless the examination of other aspects as well.

Goods production is tangible, traceable and measurable. But what do we mean in Hungary by goods production? Can we call for example goods production if somebody sells regularly some eggs or some kilos of fruit (which still happens frequently in Hungary)? The answer is probably “yes” from the point of view of the producer/seller for whom it counts, it is a source of revenue, but from an economic point of view such a unit of production cannot be considered as a market oriented holding. It was the reason why we have defined a category such as producers **producing exclusively for own consumption** (these agricultural units are not holdings in the economic sense). In addition to the previous one we have established two additional categories; **holdings selling the surplus remaining after own consumption and the market oriented holdings.**

In the case of **agricultural enterprises** (legal units of production) the purpose of the production is undoubtedly market production, income, even if in certain cases they perform agricultural activity only as a complementary, ancillary activity, but the situation is different for **private holdings.**

For the above mentioned reasons, Hungarian censuses, surveys have been observing for more than ten years the purpose of production of private holdings as well. According to census and survey data, in 2010, 60 percent of private holdings produced exclusively for own consumption (despite the considerable decline of the number of private holdings, this proportion is the same than the one measured during the census of 2000). There has been a change in the number of private holdings producing specifically for the market, in 2010 they represented 20 percent of private holdings, the rest of the private holdings sold the surplus remaining after own consumption.

Distribution of private holdings by purpose of production, 2010-2013 (%)



5. Output of Agriculture, efficiency

From the point of view of the analysis of efficiency and productivity the distribution of agricultural gross output by legal forms and use provides valuable information. This is especially the case if we take into consideration the size categories of agricultural enterprises, the output of agricultural activity performed as main or ancillary activity, and in the case of private holdings the output of the holdings producing for own consumption, for the market and selling the surplus.

Since the turn of the millennium the gross output of the two main types of agricultural enterprises (agricultural enterprises, private holdings) has been more or less on the same level. It is not surprising, that in the case of **agricultural enterprises** two third of the output is produced by medium-sized and big enterprises performing agricultural activity as main activity. The picture is more varied if we examine the output of **private holdings** according to the purpose of production. It is not surprising that major part of the output is produced by the market-oriented private holdings.

Share of Agricultural Gross Output by type of organisations, 2013

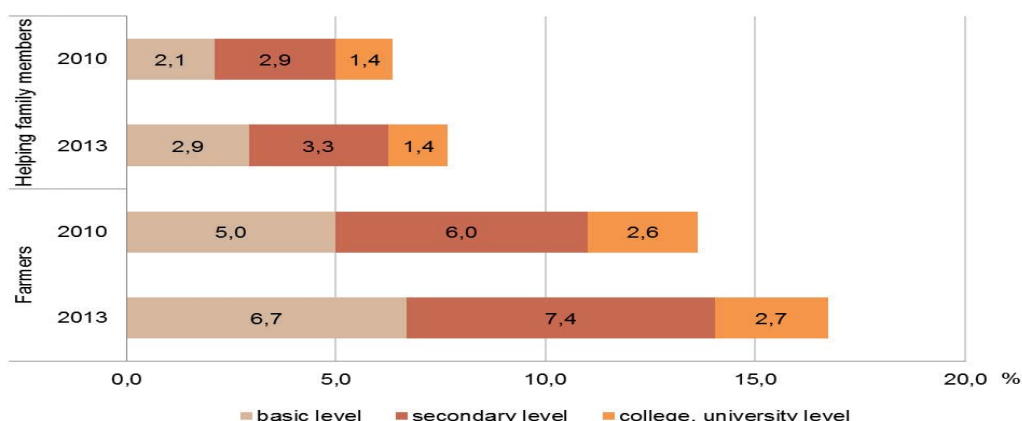
Corporations, enterprises (49,9%)		Private Holdings (50,1%)	
Agriculture, forestry and fishing under 5 employees	5,4%	Producing for own consumption	8,0%
Agriculture, forestry and fishing over 5 employees	39,8%	Marketing surplus over own consumption	9,5%
Other Industries than Agriculture, forestry and fishing producing agricultural products	4,6%	Market oriented private holdings	32,6%

On the basis of the data it is legitimate to ask in the case of which agricultural enterprises efficiency and productivity could be analysed? In my opinion **the analysis of efficiency, productivity makes sense mainly in the case of agricultural enterprises and market-oriented private holdings**. This does not mean of course that we don't have to analyse the output of private holdings producing for own consumption, or selling the surplus, but in their case the focus should be more on the place and role they have in society with special emphasis on social questions.

6. Ageing, education

In Hungary the **age structure and qualifications** of Hungarian farmers reach the critical level. Despite all the efforts, the age composition of persons engaged in agricultural activity has not improved in the past years. In 2013, 31 percent of the farmers performing agricultural activity were above the age of 65, the proportion of farmers under the age of 35 was hardly superior to 6 percent. Similar efforts are needed to improve **the qualifications of farmers** as well. In 2013 only 3 percent of the farmers had college or university degree, the proportion of farmers with secondary school degree was also low (7 percent), the majority of the farmers performed agricultural activity relying on their practical experiences. The specialized (agricultural) qualifications of the persons employed in agriculture is also below the expectations and it has not been changing significantly.

Proportion of persons with agricultural qualification in private holdings



7. Technology of agricultural production

In the case of EU member countries Farm Structure Surveys (FSS) constitute the backbone of statistical data related to agriculture. The FSS system is composed of full-scope censuses carried out every ten years and sample surveys conducted every three years. Among the data surveyed, there are data which are surveyed in each case, but there are also data that are surveyed less frequently, there are additional modules in some cases. The latest case refers for example to the observation of technology of production. Due to our natural conditions I would highlight one important issue which is the irrigation.

In the case of irrigation only enterprises belonging to the bigger size categories possess irrigable areas. Irrigation equipment of higher capacity is mainly available in agricultural enterprises. Orchards have the highest proportion of irrigable area, but even this remains still below the ideal level.

8. How to support innovation by statistical data

Data on the Hungarian agriculture prove undoubtedly that further analyses, further proposals are necessary in relation to farm structure, the efficiency of farms, the age structure and qualifications of farmers, the technical background of production. The analysis of FSS data revealed in Hungary that young farmers, AGRYA could be the "flagship" of innovations and development. In Hungary 13 percent of private farms are managed by farmers under the age of 40. In their case the average size of the farm, qualification, the technical conditions of agricultural production, the efficiency of the production are more favourable than the average. The analysis of this situation led to establish a fruitful cooperation between statisticians and the AGRYA.

The AGRYA in cooperation with Hungarian agricultural statisticians launched 5 years ago a special research program. Using the statistical data available (supplemented by special surveys) statisticians have been analysing the situation, characteristics, innovation of farms managed by farmers under the age of 40. The statisticians and the AGRYA used for this purpose the databases of agricultural and population censuses, regular statistical surveys (including surveys on social issues as well). Two separate publications have been published up to now on the structure of Hungarian agriculture, social and market aspects of production focusing on the most intensive branches of agriculture like horticultural production. The collaboration between statisticians and the AGRYA can be an example of how to support decision makers with statistical data, information.

References

European Union, Regulation (EC) No 1166/2008 of the European Parliament and of the Council of 19 November 2008 on farm structure surveys and the survey on agricultural production methods and repealing Council Regulation (EEC) No 571/88, Official Journal of the European Union, L 321/14, 1.12.2008

Hungarian Central Statistical Office, Agrárcenzusok - 2010. évi Általános Mez gazdasági Összeírás (ÁMÖ 2010) (Farm Structure Surveys – Agricultural Census 2010;) Hungarian Central Statistical Office, http://www.ksh.hu/agrarcenzusok_amo_2010

Hungarian Central Statistical Office, Agricultural Census-FSS 2013, Hungarian Central Statistical Office, www.ksh.hu/agricultural_census_fss_2013

Hungarian Central Statistical Office – AGRYA, A fiatal gazdák helyzete Magyarországon, Központi Statisztikai Hivatal és a Fiatal Gazdák Magyarországi Szövetsége, 2013 (Situation of young farmers in Hungary, Hungarian Central Statistical Office and Hungarian Association of Young Farmers, 2013), Hungarian Central Statistical Office, 2013, 87.

Home page of the Hungarian Central Statistical Office, www.ksh.hu