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## **Characteristics of human capital among people employed in Hungarian agriculture after the EU accession**

**Abstract.** A high decline in employment was one of the negative consequences of economic transformation in Hungary in the past few decades. The activity of rural population continues to decrease in the EU. Agriculture has a very special role in forming the employment. The aim of the research is to examine characteristics, trends, changes of qualification and skills of employees working in Hungarian agriculture in the period from accessing to the EU till nowadays. The education of employees in agriculture despite of distinct improvement is still low. The majority of producers manage their company with only practical experience or even without it. The lack of sufficient expertise makes farmers be less receptive to innovative solutions, insist more on production methods based on their previous experience, thereby inhibiting popularisation of the modern, competitive technologies. For the competitive and efficient agricultural production, the human capital, appropriate skills and educational attainments are essential, they can help the agricultural sector to catch up with the more developed West.

**Key words:** agriculture, grain sector, employment, qualification, vocational training, human capital, social determinants.

### **Introduction**

In the 1990's during the economic transformation, fundamental changes were taking place in the job market as well. After the democratic transformation the number of employed people decreased dramatically. On the one hand the proportion of unemployed people increased, on the other hand the number of inactive people in rural regions grew extraordinarily [Czagány & Fenyővári 2008].

The employment and activeness reached its lowest degree in 1996-97 and then, as an effect of economic stabilization and because the investments went up, until 2000 there was a reasonably fast increase in them. From then until the middle of 2007, except one or two temporary periods, they were at a nearly stagnation level and they turned into a deterioration from the autumn of 2007 [Pólya 2009].

According to a workforce survey by the Hungarian Central Statistical Office (HCSO), we can say that from 1998 to 2010 the unemployment rate went up from 7.8% to 11.2%.

The decline of employment was over the average level in agriculture. In the 1990's, the biggest dropout among the sectors of national economy was from agriculture, the number of those in employment reduced by nearly 700 000 [Czagány 2008]. The proportion of employees in agriculture was 7.4% out of the total number of employees in 1989, however by 2010 it was only 4.5%.

The employment proportion of the main groups of agricultural and forestry jobs decreased from 3.6% to 2.6% in one and a half decade.

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The number of those who were employed in agriculture, forestry-, hunting and fishing industry declined from 275 000 in 1998 to 174 000 in 2008, by 2010 this number was 172 000.

Meanwhile, in 1998 the proportion of unemployed who were working in the main groups of agricultural and forestry jobs was 3.4% of the total number of unemployed, by 2010 this number was 2.2%. The same proportion referring to the sectors of forestry, hunting and fishing industry within agriculture decreased from 8.7% to 5%.

The activeness of rural population has also declined in other countries of the European Union in the past few decades. This phenomenon has turned an attention to the fact that agriculture, apart from food producing has an important function in employment as well, by means of forming the social and public environment of the rural areas [Czagány 2008].

In the interests of increasing employment, the improvement of competitiveness is also essential. In order to make it come true, it is necessary not to put on the Hungarian citizens' shoulders heavier loads by legal rules than those put on their competitors [Göögös 2009].

The present ruling government [Fazekas 2011] considers it as a particularly important task to increase the employment and it deals with agriculture as one of its stressed tool. In the National Country Strategic Plan, that looks out into the future until 2020, among the goals and aims the first ones are preserving jobs in the country, if possible improving them, right after that preserving rural population and resetting the demographical balance. So the main goal of the changes in the next few years is to increase the number of those in employment in agriculture.

The main difficulty in rural economic restructuring is the discrepancy between real demands of economy and the structure of vocational training. The number of workforce that has the needed expertise and qualification for prospering economic sectors is low, mainly because of migration in the 15 rural areas. The knowledge of self-employed farmers is incomplete, mainly the knowledge about the EU is missing (market and output regulation, sponsoring system, quality protocols of products, rules of animal husbandry, protocols of environment protection) and they are in a great lack of expertise and capability in farm management and marketing. This situation is getting more difficult because of the advisory system and the adult education in non regular school system faults which need a concern [Új... 2007].

## **Characteristics of companies in grain sector**

One of the negative consequences of the economic changes in the past decades was the great decline in employment that affected each of economic sectors quite differently. As it was also mentioned in the introduction, the fall of labour-demand came up in agriculture in the most drastic way.

According to the results of the population workforce survey of 2010, 3.7 million employees were in employment, the same as the previous year. Within agriculture, forestry, hunting and fishing industry altogether 172 000 people were employed, 4.5% of the total number of those in employment.

After a slight increase in 2009, the volume of labour-outgoings in agriculture, in compliance with the long-term trend, decreased more. The importance of agriculture in employment, not as a consequence of basically the crop falling out by unfavourable weather, fell in 2010. The use of unpaid labour was lower than in 2009 by 2.3%, the paid

labour by 2.8%. The volume of agricultural labour-outgoings declined by 18% in 5 years, the unpaid labour fell most significantly, by 20%, the paid labour by 9% as compared with the data from 2006. The significant reduction of labour with the unpaid agricultural labour outgoings together can be traced back to the decrease of private farms at a rapid pace. The scheme of labour-outgoings did not change significantly as compared with the year of 2009, the paid labour amounts to one quarter of the total in 2010 as well [Fazekas 2011].

In 2010, according to the data of institutional labour statistics, a number of 76 000 permanent employees worked full-time in agriculture nationwide, 14 000 employees worked in vegetable farms, 62 000 employees in farms with mixed activities. The number of temporarily employed workers was 27 000 altogether in 2010.

The number of family labour is approximately 1 million in the private farms, half a million work in vegetable farms.

The professional formation of those in employment in agriculture is widely different from the one of all the employees. Among them, the proportion of brain-workers is significantly smaller.

There was remarkable owner and structure changing in the Hungarian agriculture during the democratic transformation. Owner and work structure of agriculture has changed. Big firms were changed to micro- and middle size companies and individual farms. Farms also got in new situation, lost previous integrating connections, basically given by a collective farm. This way a new group of contractors started up, that was out of market experience, connections and funds [Varga 2001; Molnár & Farkasné 2003]. The changing procedure of agrarian sector appreciably affected employment, which later also affected structure of education [Szabó 2011].

One of difficulties in changing the economic structure was that a disharmony came up between needs of economy, the structure of education and the structure of vocational training. It is ordinary in rural areas that only few highly qualified professionals with modern knowledge want to settle down. Most of them migrate to other regions and only few employees stay that have the needed qualification to revive the sector. Flare and enriching of education and training are basic and important in modernising agriculture. Beside practical experience, developing knowledge of employees in agriculture and sylviculture, mainly managers, are particularly important on those topics that were dropped out in the previous studies. For example: the sustainable treatment of natural resources, correspondence requirements in landscape protection and developing, environmentally sound production methods, market and management skills, implementation of new, innovative production technologies. It is very important to work up and develop the ability of self-learning, furthermore to raise the awareness in learning methods (consulting, using electronic sources in learning).

In food processing sector the primary task is to raise extant qualification level, develop acceptance for the new, modern and innovative knowledge [Új... 2007].

In Hungary, the education level of those in employment in agriculture, as in grain sector, is still low, despite the fact that it has improved a lot in the past one and a half decade [A mezőgazdaság... 2008]. In the agricultural sector, the proportion of employees with primary education is quite high as compared with other national economic sectors, the proportion of the ones with secondary school education is the same, the proportion of the ones with a university degree or college education is much lower.

Among the population of private farms, farmers who produce for sale are the most educated. The HCSO 2008 study says it is a consequence of their age composition, because

they are much younger than the ones who produce mostly for their own consumption and sell only the spare products.

The proportions of the agricultural education of private farmers have hardly changed in the past years. Even during the times of FSS of 2007, only near 2% of them had a higher education in agriculture, 6% of them had an agricultural education at an intermediate level and another 6% of them had it only at a basic level. It says that a critical majority of them, near 87%, possesses only a practical experience or manages their businesses even without any experience.

The HCSO 2010 data referring to private businesses tell that only 15 031 out of 567 446 men have a higher education, most of them, 445 340 men use only a practical experience.

In general, men have a higher agricultural education. This is not surprising, because agriculture is one of the subjects, which traditionally belong to 'manly' education.

Changes in higher education affected specialties in different rate. The position of agrarian higher education is depending on the crisis in agriculture. The lack of general capitalization and lack of ability to produce sufficient income in this sector has a negative effect on innovative processes. After democratic transformation there was a very loud opinion that the number of students applying for agrarian school would dramatically decrease, as well as the interest in this profession [Horn 2002].

In the first decade of the democratic transformation there was a dynamic rising both in the whole number of students and students in agrarian education. From 2000, the growing rate of higher education seemed to moderate, but the number of students in agrarian higher education has been dramatically decreased and it still stays so nowadays.

The interest in agricultural education decreased nationwide between 2002-2007 both at the secondary and higher levels of the schooling system, and in the adult education as well, outside the schooling system.

Agriculture is a traditional activity in Hungary, thanks to the excellent natural capabilities of the country. But the sector's function and importance is changing and that affects the number and consistence of students starting in agrarian education, so as the requirements they desire to meet. Those who finished their studies before democratic transformation could be sure of having job in a big firm, nowadays it is a possibility only for few. In the agrarian sector, the number of new investors is low, the labour market seems to show a prevalence of supply over demand [Szabó et al. 2008].

The agricultural production means a special kind of lifestyle that passed through generations. Universities and colleges in Western-Europe have the power of giving knowledge through generations, most of the students start with family connections and vocational experience. Hungarian people working in the agrarian sector will send their children to the same line much more rarely, so this family and vocational connection is getting weak [Hajdu et al. 2002].

Due to the characteristics of agriculture, the education that can be gained within the frames of higher education is quite diverse and branching out. The interest in the traditional subjects of agricultural universities (engineer in vegetable farming, engineer in animal breeding etc.) has fallen in the past few years. At the same time, professions such as food engineer, landscape building engineer, economist and agricultural engineer, environmental engineer, countryside developing engineer, mechanical engineer have been attracting more and more attention.

Meanwhile, the total number of students participating in higher education fell from

424 161 to 361 347 students between 2005 and 2010, in agricultural education these numbers fell from 12 725 to 9 059 students by 2010. The number of those gaining a diploma or a scientific degree also decreased during these five years.

In agricultural education, at higher levels 463 students participated in college education, 389 students in university education, 4 913 students in BSc and 802 students in MSc programmes, 369 students participated in PhD education.

There was a change in job market for employees with an agricultural degree. Previously, agricultural professionals with specialized knowledge were wanted, today these employees need to have skills to execute special tasks and need to have a top level economic and financial knowledge in order to have a success in job market. The speciality of agricultural education realized in emergence in job market. Jobs that can be undertaken with agricultural qualifications typically bring a moderate income with a relatively big lot of working time. An agricultural career has remarkably lost its fascination in last decades, so employees with agricultural qualifications got weaker position in job market bargains. While previously, an entrant with an agricultural degree had a chance to choose, nowadays the employer has it [Szabó 2011].

Apart from the agricultural education of the youth in the schooling system, the adult education and further training of farmers in the grain sector is an overriding important task, as their level of education is reasonably low.

During the past few years, the number of people enrolling to out of school further trainings in agriculture, forestry and fishing industry heavily fluctuated.

In public education, 162 030 students participated in professional trainings in 2005, by 2010 this number went up to 181 082. Looking at the agricultural education, the number of 6 058 students in 2005 fell down to 5 758 by 2010.

A government's report summarized in 2011 that in the agricultural education, within the schooling system by the term of 2009/2010, the competence based module system of professional education fulfilled its purpose. In the current module scheme of the National Training Register there are 47 agricultural qualifications, but the total number of agricultural qualifications, due to the part-qualifications, branches and further trainings, is 215.

The publication of professional and exam demands of two new higher educational qualifications are in progress.

The appraisal notes of the professional course books, module learning material parts fitting to the new type trainings are publishing continuously. At the moment, approximately 330 different agricultural professional course books, notes, processed learning material that is available in electronic form, are at the students' disposal.

Practically there are 160 venues where agricultural education take place, but in many cases we can speak about courses of only a couple of students. Organising of institutions that are prepared to provide sectoral trainings into regional integrated educational centres from the point of view of schools where agricultural training takes place seems to mean a disadvantage.

## Summary, conclusions, proposals

Even today lots of people think, that agriculture, opposite to the other sectors of economy, is the area where you can manage without a proper professional knowledge. This is only partly true, as a part of manual jobs in agriculture is like that, and you can get by without education.

Agriculture, like other sectors, needs more and more qualified employees [Németi 2003]. The decrease of demand for unqualified workforce can result in serious employment tensions in the future, which can be solved only by educational programmes [Abayné et al. 2004].

The proper education and qualifications of human resources are the essential conditions of a competitive and efficient agriculture, as for a qualified labour the acquisition of modern entrepreneurial, market, marketing and technological knowledge, that are necessary in modern farming, is easier and simpler.

Patay [2007] says that it can not be a disadvantage for the economy to have lots of qualified people, as long as it means usable knowledge, since the basis of a well-being society can only be the highly qualified human capital.

The professional training is one of the key factors of agricultural development, as its essential task is to provide the youth with modern theoretical and practical knowledge that is competitive even at international level. If necessary, it should give to workers in agricultural sector an opportunity to learn new technological methods, legal rules and acquire market information.

According to the above mentioned HCSO study, the biggest problem of professional education these days is that it is less practice focused, the schools still put a stress on the theoretical knowledge. Students should learn more about manual jobs, however, creating places where practice could be done is quite difficult and expensive.

The government report about agriculture in 2011 said: one of the most important tasks of agricultural education is to promote the development of the countryside and the villages. Its strategic questions must be dealt with at every level. In areas, where the circumstances are favourable for agricultural production, making of quality goods must be conducive to developing of professional education, improving the efficiency and building up the scheme of processing and sale.

Higher education has an outstanding importance in supplying the grain sector with experts. The transformation of the institutional network in the higher education continued in 2010, the variety of courses at master level was completed. The radical reduction of state subsidized number of students has stopped, as it was a characteristic of the past few years, the government has confirmed the position of the agricultural faculties, besides the scientific and technological faculties. However, the valuation and re-examination of results of Bologna Process has become necessary.

To develop the human workforce it is indispensable to improve the level and accessibility of human infrastructure in rural areas. This needs an aligned and practical use of Hungarian and the EU co-financed programmes and subsidies. To improve the human potential and talents in rural areas, training programmes and advisory service can help. It is particularly important to enrich human conditions by supporting selected areas in acquisition of the missing qualifications in non-school adult education system [Új... 2007].

As the HCSO drafted in its publication about the state of development of agriculture in 2008, without a proper knowledge farmers are not sensitive enough to innovative solutions.

They insist on using production methods based on their former experiences, impeding the spread of modern, environment- friendly and at the same time competitive technologies and are holding back the joining up of the grain sector of the country to the developed western economies.

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