MULTIFUNCTIONALITY AND FARM CONCENTRATION IN HUNGARY

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Abstract: *In Hungary the concentration of land areas took place between 2005 and 2009 in such a way that the arable land used by farms of less than 50 hectares declined, while that of larger farms increased. This process was more intensive in private farms. This was equivalent to the loss of 122 000 jobs in agricultural enterprises. In the European Union there was a reduction of 1 658 million Annual Work Unit (12.4%) in those employed in agriculture, between 2003 and 2007. This reduction was 9% in the EU-15 countries. In Hungary the decrease was 21% in terms of AWU per 100 hectares of agricultural land. This Hungarian process may be exacerbated by supports granted for the purchase of machinery aimed at improving competitiveness, since these payment schemes back up the endeavours of farmers to carry out all farm operations with their own machinery. They then need to utilise this increased capacity, but are unable to do so as other farmers also prefer to make their own investments. This unexploited machine capacity tends to influence both increases in farm size and, partly due to the latter and partly to the replacement of live labour, reductions in the number of employees. The proportion of payments made to aid machinery investments for conventional agricultural activities amounted to 13.2% of the resources available in the Hungarian national rural development programme between 2004 and 2006. During the 2007–2013 period 17.7% has been earmarked for this purpose. In order to discover farmer's motivation and reaction, our survey was carried out in 2008 involving 104 farmers in settlements belonging to three LEADER action groups located in Heves and Jász-Nagykun-Szolnok counties. On the surveyed farms there was a very modest proportion of market-driven, non-agricultural activities ensuring employment. The only really decisive elements of agricultural multifunctionality are heavily supported, non-market-driven activities and functions. Farmers intending to diversify did not consider diversification as a means of creating jobs for other people. Despite the tensions in their micro-regions due to unemployment, the need to introduce flexible forms of employment came near the bottom of their list of priorities. In response to another question, they clearly regard this as a task for the central government, and do not feel that they have any substantial role to play.*

Key words**:** *AWU, farm concentration, diversification****,*** *agricultural employees, farmers motivation****,*** *GIS interpretation.*

INTRODUCTION

What is the correct definition of "multifunctional agriculture"? Exists a lot of interpretation for this term/definition. Our interpretation and of its development into an agrarian policy paradigm was published in earlier paper (PETRICS and FEHÉR, 2009). In the late 1990's the European Union (EU) made multifunctionality one of the long-term aims of the European Model of Agriculture (EMA), developed partly for the purpose of WTO negotiations. The first signs of the practical application of this intention were visible in the reform of the CAP in 1999 but it was not until the 2003 reform that it was fully implemented. The interpretation of the EMA "puts farm households rather than farm businesses at the centre of concern and requires policy-makers to recognize the importance of agriculture in a region and the critical linkages between household livelihood strategies and the regional economic context in which they are situated" (POTTER, 2004). Seven EU member countries (Netherlands, Germany, Ireland, Italy, Spain, UK and France) carried out a survey of 3 250 professional farms within the framework of the IMPACT project in order to investigate the interaction

between policy and practice. The data (including number of farm households, added value, new job opportunities) provided a quantitative picture of the multifunctionality of european agriculture. The survey indicated that 1.4% of the farms carried out organic farming, 11% were involved in producing special quality products, 20% marketed their own products in short chains, 2% participated in agri-tourism, 7.3% provided nature protection services and 3.7% carried out other forms of diversification (KNICKEL et al., 2004).

Several detailed studies on multifunctionality in Hungarian agriculture have been published (SZABÓ and FEHÉR, 2004; FEHÉR, 2005, 2008; and PETRICS, 2008). The importance of research by ÁNGYÁN (2003) and KATONA-KOVÁCS (2007) should also be stressed. However, little work has been based on surveys carried out at the farm or farmer family level.

The AWU (Annual Works Unit) index per 100 ha agricultural land dropped in all 27 countries of the EU between 2003 and 2007, but there were great fluctuations (1,9-41%). Below-average values were reported for Austria, Belgium, Denmark, the Netherlands, Ireland, Poland, Luxemburg, UK, Malta, Spain and Sweden, average values for France, Greece, Germany, Italy and Slovakia and values that were above average, but less than twice the average for the Czech Republic, Cyprus, Romania and Slovenia. The decrease was more than twice the average for Bulgaria, Estonia, Finland, Latvia, Lithuania, Hungary and Portugal (EUROSTAT, 2010). According to data from the Hungarian Central Statistical Office (HCSO), the AWU index/100 ha agricultural land decreased by 34% in Hungary between 1998 and 2008, with a reduction in farm employment corresponding to the loss of 307 000 full-time workers. Within the 10 years period figures for the period before EU accession (1998-2003) were 13%, or 162 000 full-time workers, while a further 24%, or 145 000 full-time workers were lost after EU accession (HCSO, 2009). The decline in farm employment and in the AWU per unit area can be regarded as a characteristic process in member states of the EU in the second half of the first decade of the 21st century. Hungary belonged to the group of countries where this reduction was more than twice the EU average, despite the fact, that between 2000 and 2008, three Hungarian governments gave priority to an increase in rural employment. According to the ex-ante evaluation of the New Hungary Rural Development Programme (NHRDP), the average farm size will increase by 68%, the number of farms will decline by 30% and the number of people employed on farms will drop by the equivalent of 140 000 AWU between 2005 and 2013 (The plans also foresee a decrease in those working in the food industry). An expansion of 38 000 workers is planned for the secondary and tertiary sectors of the rural economy, which will clearly not be sufficient to absorb those laid off by farms or to improve rural employment (NEW HUNGARY, 2007). The present work aims to fill this gap, with special emphasis on the LEADER micro-regions, rural spatial units that have been formed since 2006. The objectives of our research were as follows:

- to analyze the real situation of multifunctional agriculture and diversification in the investigated three LEADER microregions,
- to explore the factors and conditions stimulating or inhibiting the multifunctionality of the agriculture at farm and micro-regional level,
- to systematize the relationships basing on the analysis of the motivation, reaction and plans of the surveyed farmers.

MATERIAL AND METHODS

The database, on which the work was based, was taken partly from the digital and printed publications of EUROSTAT and the Hungarian Central Statistical Office (HCSO) and partly from our surveys of 104 farmers situated in three LEADER microregions of two

counties (Heves and Jász-Nagykun-Szolnok). In particular they are *Karcag micro-region* ("A"), Tarna Mente Micro-regional Spatial Development Association ("B") and Tisza-Tarna-Rima-menti Action Group Association ("C"). Tarna Mente Micro-regional Spatial Development Association won a LEADER grant in the second round in 2006 and it operated as an action group in 2006–2007. The location of the research area is illustrated in *Figure 1*.

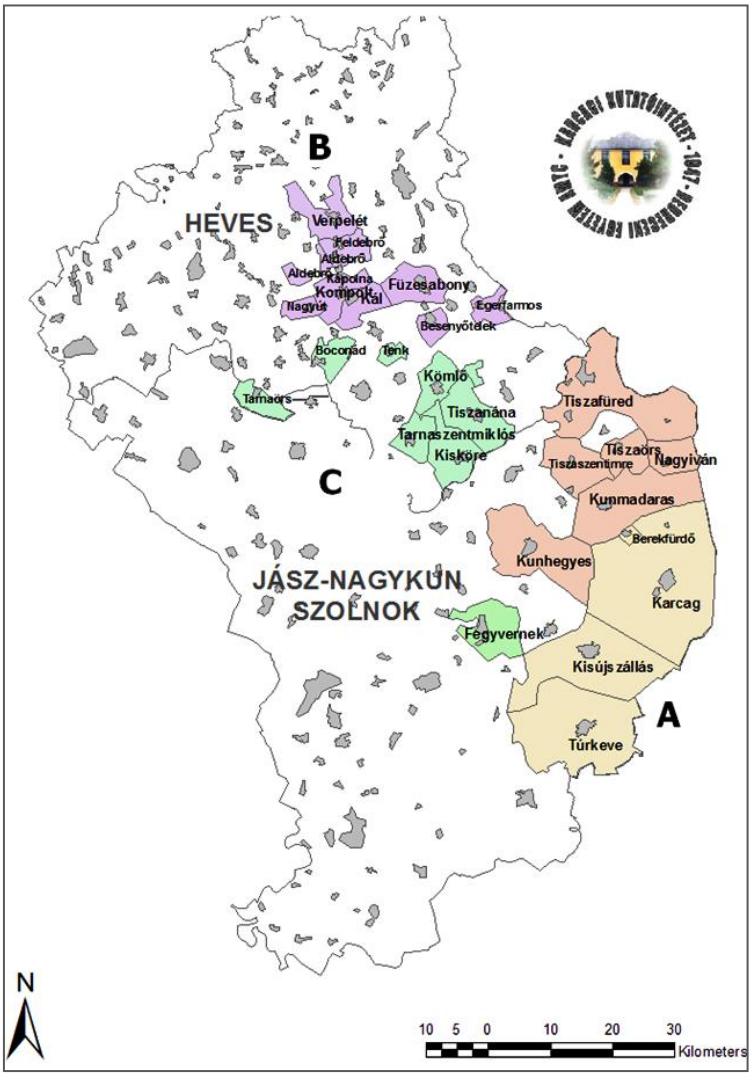

Figure 1.: Research area in the three LEADER micro-regions

Simple statistical methods (grouping, comparison, concentration analysis) were used to process the data, and most of the results are also presented in the form of graphs, and we use GIS methods too. At the sample selection we applied the non-probability, convenience sampling approach. The sample of respondents was determined as 5% of farmers with more

than 10 hectares land in the average of three micro-regions. At farmers with 10,1-50,0 hectares this rate was 2%, at those with more land the proportion was up to 10%. Farmers with less than 50 hectares of land made up 21% of the sample, those in the 50,1-100 hectare category 16%, the 100,1-300 ha farms 44% and estates of over 300 hectares 19%. The mean farm size (own + rented land, or land used without payment) within the four categories was 26-, 66-, 191 and 1,258 hectares, respectively. The research results and the conclusions drawn from them are basically only true of the population examined. However, the size of the sample makes it possible to draw conclusions valid for the micro-regions in question.

With respect to multifunctional agriculture, the farmers were asked about the source of their information, the circumstances under which multifunctional agriculture was introduced and developed in the given farm and region, stimulating and inhibiting factors, and measures that needed to be taken.

RESULTS AND DISCUSSIONS

Based on data from Eurostat for 2010, the number of farms in Hungary declined by 35% between 2000 and 2007, while the land area per farm increased by 43% (*Table 1.*). The 20% rise in the average area of Hungarian farms from 2003–2007 and the 42% rise in ESU per farm considerably exceeded the growth rates for the EU-15 countries.

Table 1.

Farm concentration in EU and Hungary

Denomination		**2000-2007**	**2003-2007**
Reduction in the number of farms (%)	EU-15	16.4	9.2
	Hungary	**35.0**	**12.4**
	EU-27	-	8.8
Increase in the average area of farms (%)	EU-15	17.5	8.9
	Hungary	**43.0**	**20.0**
	EU-27	-	11.9

Source: EUROSTAT and HCSO databases

- This Hungarian process may be exacerbated by supports granted for the purchase of machinery aimed at improving competitiveness, since these payment schemes back up the endeavours of farmers to carry out all farm operations with their own machinery.
- They then need to utilise this increased capacity, but they are unable to do so as other farmers also prefer to make their own investments. This unexploited machine capacity tends to influence both increases in farm size and partly due to the latter and partly to the replacement of live labour, reductions in the number of employees.
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- The proportion of payments made to aid machinery investments for conventional agricultural activities amounted to 13.2% of the resources available in the Hungarian National Rural Development Programme between 2004 and 2006. For the next period (2007–2013) 17.7% has been earmarked for this purpose.

According to HCSO data, the farm area concentration between 2005 and 2007 involved a reduction in the arable land utilised by farms of less than 50 hectares and an

increase in that utilised by larger farms. This process was more intensive for individual farms, that this could be attributed partly to the fact that the work force per unit area was smaller on larger farms, which means that they could not employ those from whom the land was rented or purchased. The farm structure can be seen in *Figure 2*.

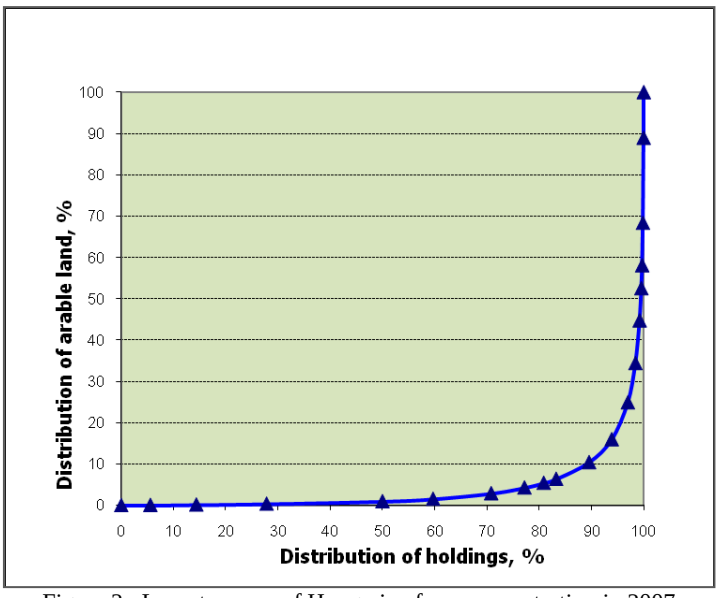

Figure 2.: Lorentz curve of Hungarian farm concentration in 2007

The terms farm diversification, pluriactivity and multifunctionality are often used together in the literature (BROUWER et al., 2008). An analysis conducted in France showed that diversified farms occupy more people than non-diversified ones, thus contributing to employment. On the surveyed farms there was a very modest proportion of market-driven, non-agricultural activities ensuring employment (*Table 2.*) Between 2000 and 2007, the ratio of Hungarian farms carrying out non-agricultural activities was around 5%, while their number dropped considerably (FEHÉR et al, 2011).

Table 2.

Farm diversification- pluriactivity

Denomination		**2003**	**2007**
Other activities on farms (%)	EU-15	8.65	9.88
	EU-27	6.20	9.94
	Hungary	**11.2**	**5.08**

Source: EUROSTAT and HCSO databases

Among the activities and functions that are not market-driven, substantial community and national supports and payments can be obtained for nature protection and agricultural environment protection. Landscape management receives less support or supervision at present and is difficult to quantify, as it contains a number of subjective elements. The level of support is even lower, if it exists at all, for market-driven activities.

The transitional category also occupies an intermediate position as regards support. It could be seen that on the surveyed farms there was a very modest proportion of market-driven, non-agricultural activities; in most cases the level was much lower than that recorded ten years ago in the framework of the european IMPACT project. In the micro-regions included in the present research the only really decisive elements of agricultural multifunctionality are heavily supported, non-market-driven activities and functions. There were considerable differences between the micro-regions as regards the ratio of farms involved only with agricultural production, but the reasons for this did not become apparent either from the questionnaires or from the narrative interviews. In the Karcag region the narrative interviews suggested that the better agricultural potential, the larger farm size and the higher standard of farming were the most important "conserving" factors.

The activities and functions detailed in the table can be divided into three main groups (*Table 3.)*. Some are *clearly market-driven* (on-farm sales of agricultural products, on-farm processing of agricultural products, local and community services, on-farm production of nonagricultural products, non-agricultural services), others are at present *not market-driven* (landscape management, nature protection, agricultural environment protection), while some represent a *transition between the two* (organic farming, energy production).

Table 3.

Ratio of non-agricultural activities and functions in the surveyed farms

Activity or function	**In the percentage of the respondents** *			
	LEADER micro-regions			**Mean**
	A	**B**	**C**	
Landscape management	27	57	67	44
Nature protection, agricultural environment protection	23	27	48	29
On-farm sales of agricultural products	8	20	5	11
Energy production	2	3	10	9
On-farm processing of agricultural products	6	7	5	6
Organic farming	2	3	4	3
On-farm production of non-agricultural products	2	3	-	2
Agri-tourism, village tourism	0	3	0	1
Local and community services	4	7	5	5
Other non-agricultural services	2	-	-	1
There are no non-agricultural activities	59	20	10	37

Source: own data and calculation (*as the respondents could designate several activities, the figures total more than 100%!)

The motivation of farmers already involved in non-agricultural activities and functions and of those considering new developments in non-commodity outputs was also investigated. The order established did not differ to any great extent from that listed in *Table 4.*, suggesting that security, ensuring a living for the family, the production of healthy foodstuffs and ensuring

a healthy environment also played a decisive role in the increase in multifunctionality. The farmers in question did not link multifunctionality with creating jobs for other people.

Table 4.

Motives for farm business development, in order of importance

Motives	LEADER micro-regions			Mean
	A	B	C	
To ensure slow but sure development	I.	I.	I.	I.
To provide a living from the farm for as many family members as possible	II.	II.	II.	II.
To produce healthy foodstuffs and ensure a healthy environment	III.	VI.	III.	III.
To leave as large farm as possible to their children	IV.	V.	IV.	IV.
To obtain as much community support as possible	V.	VII.	VII.	V.
To obtain maximum liquid cash income	VI.	IV.	V.	VI.
To increase their wealth	VIII.	III.	VI.	VII.
To provide jobs for others	VII.	VIII.	VIII.	VIII.

Source: own data and calculation

CONCLUSIONS

- In the opinion of the authors, the increase in farm concentration and the decline in the number of people employed in agricultural work on farms, expressed as AWU, can be regarded as simultaneous, interrelated processes which began well before the current financial crisis, not only in Hungary but in other EU member states.
- In terms of average farm size (both in hectarage and ESU), Hungary belongs to the group of countries with values well below the EU average. In addition, the country is characterized by a large labour force per unit area and a high rate of unpaid labour. Since EU accession both farm concentration and the rate at which jobs in agriculture are declining have reached a level far exceeding not only the EU average but also the average for the ex-socialist countries. This appears to confirm earlier predictions that "Hungarian agriculture would soon be laying off more workers than in previous years" (FEHÉR, 2005). At the time the solution was thought to be a radical increase in the rate of farm diversification and the spread of the European Model of Multifunctional Agriculture to Hungary, and this still appears to be the best solution during the current crisis.
- With regard to farm diversification and pluriactivity, however, Hungary trod a path quite different to that of the EU as a whole and of the other EU countries during the 2003-2007 periods, and the proportion of farms carrying out "other gainful activities" dropped to less than half during the first four years after EU accession (EUROSTAT, 2010). In addition to the increase in land concentration, the low level of non-

  agricultural activities appears to have played a role in the loss of jobs on Hungarian farms!
- It seems highly probable that farm concentration can be largely attributed to the desire of Hungarian farmers to expand their farms, primarily by means of land purchase. It

would also appear that the endeavour to ensure a better living for their families explains why even farmers who have diversified their farms to include non-agricultural functions are not really interested in creating jobs for non-family members. There is every likelihood that non-market-driven forms of diversification (landscape management, nature protection and agricultural environment protection), which are closely linked to EU payments but make only a modest contribution to creating new jobs, will continue to increase.

- The reduction in the number of jobs available on Hungarian farms is aggravated by investment supports aimed at improving the competitiveness of farms. Special attention should be given to the increasing ratio and total sum of machinery investment payments. The modest level of resources earmarked for farm diversification and the diversification of the rural economy also plays a role in the unfavourable trend in farm employment.

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