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## Motivation and intentions of farmers as regards the development of multifunctional agriculture in micro-regions of Northern and Eastern Hungary

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### Abstract

There are an increasing number of references in the literature on the significance of the role of farm households and farm families in the development of multifunctional agriculture. The motivation and intentions of 104 farmers in three LEADER micro-regions in Northern and Eastern Hungary with respect to the present and future structures of their farms (including the expansion of non-agricultural activities and functions) were investigated using questionnaires and narrative interviews. Almost two-thirds of the respondents spoke of the existence of non-agricultural activities and functions, but few of these were market-driven. The farmers ranked the steps that should be taken to increase multifunctionality in their own micro-regions in order of importance and indicated which organisations they thought would be most competent for their implementation. They also noted what factors promoted or inhibited multifunctionality within their own farms.

### Keywords

multifunctional agriculture, LEADER, rural economy, interviews, Hungary

### Introduction

Despite a number of international attempts, *there is no uniformly accepted definition of multifunctional agriculture*. A summary of the appearance and interpretation of this term and of its development into an agrarian policy paradigm was published in our earlier paper (Petrics and Fehér, 2009).

In the late 1990s 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 recognise 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).

In the late 1990s 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

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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), Popp (2004) 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 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 picture the real situation of multifunctional agriculture in the investigated micro-regions,
- 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.

## Materials and methods

The databases used in the study were compiled for farmers in settlements belonging to three LEADER action groups located in Heves and Jász-Nagykun-Szolnok counties. In particular they are *Karcag micro-region* (in the database it is called “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. In the Karcag-micro-region only a third of the settlements belonged to operating LEADER group at that time. The remaining settlements got beyond only the first round and they won LEADER grants only in 2009. The location of the research area is illustrated in Figure 1.

*The following major aspects were taken into consideration when compiling the questionnaires and surveys and when conducting the interviews:*

- Separate sections should deal with the farm, the farmer, the farmer’s family and the farmer’s opinion on the introduction and spread of multifunctional agriculture in his own farm and in the given micro-region.
- There should be questions allowing the results to be compared with other foreign and Hungarian surveys.
- Both open-ended and closed questions should be included. The majority of closed questions should allow a certain extent of openness through the “other” (separately detailed) option.
- Different types of questions should be combined. We put also *dichotomous questions* which requested “yes” or “no” answers and *ordinal-polytomous questions*, in case of which the respondent has more than two ordered options, and *continuous questions*, where the respondent is presented with a continuous scale.
- For certain questions there should be opportunities to query to check the correctness of other questions.
- There should be no personal questions (e.g. finances, income) which could make the farmers mistrustful.
- The interviews should include family members working on the farm or with a substantial financial interest.

- Farmers from all the major settlements in each region should be included in the survey.
- In settlements where special crops (vines, fruit and vegetables) are typical, farms with less than 10 hectares of land should be included.
- The survey was planned as a personal in-home, researcher-administered survey. The respondents were interviewed in person, on their farm or in their home, ensuring full anonymity. The questions also formed the skeleton of the narrative interviews with the farmers, thus allowing project workers to become acquainted with the circumstances of the farmers (and their families) and the background to the replies given in the questionnaire.

The information requested about *the farms* was concerned mainly with the production structure, market relations, employment, mechanisation, informatics background, land use and self-evaluation by the farmer.

Apart from their age, qualifications and place of residence, *the farmers* were also asked about their motives for establishing and developing the farm, how they obtained information, and the extent to which they used a computer.

The basic information collected on *the family* included the number of family members, their sources of income and their qualifications. Separate questions dealt with the relationships between the farm and the family and the possibilities of inheritance and transferring of the farm inside the family.

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.

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.

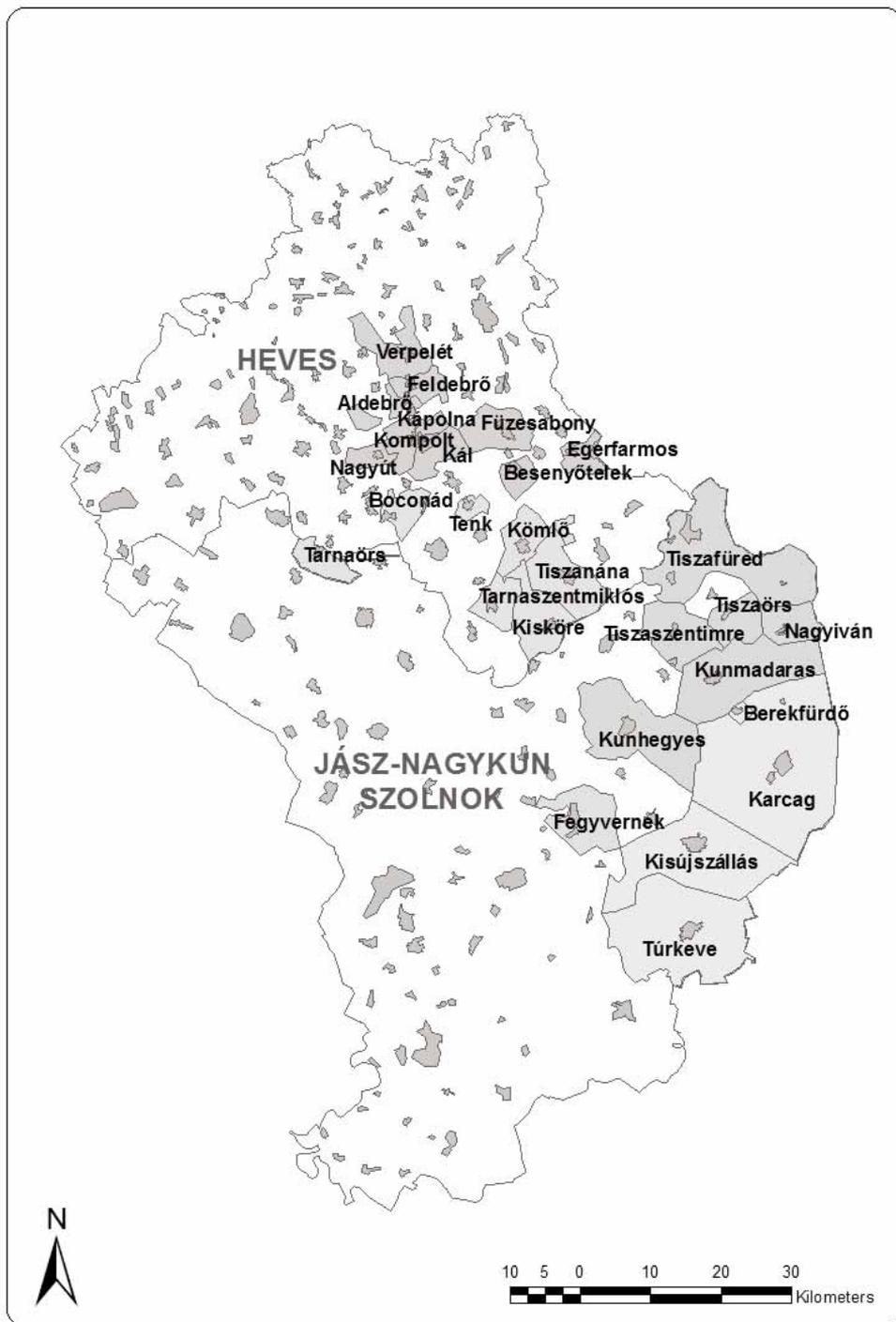


Figure 1: Location of the research area

Source: own work

### Motivation for setting up and developing farms

The farmers in the three regions (A, B, C) were asked to give their reasons for setting up and developing their farms. As they were able to designate more than one motive, the total exceeds the number of respondents. (Table 1)

Table 1

#### Order of motives given for setting up farms

Motive	LEADER micro-regions			Total
	A	B	C	
To provide a living for the family	I.	I.	I.	66
To continue a family tradition	II.	II.	II.	49
The desire for a more independent life	V.	III.	III.	34
Unqualified for anything but farming	III.	IV.	IV.	33
No other jobs available in the neighbourhood	IV.	V.	V.	23
Other	VI.	VI.	VI.	8

Source: own data and calculation

It can be clearly seen from the table that, despite certain regional differences in the order of motives, providing a living for the family was by far the most frequent motive, followed by the endeavour to continue family traditions. The desire for an independent life and the agricultural orientation of the farmers can also not be ignored. The significance of these motives was also revealed by research carried out by (Petrics, 2008).

In addition to the motives for setting up a farm, the motivation of development of farm business was also deemed extremely important. The results of this part of the survey are summarised in Table 2.

Table 2

#### Motives for farm business development, in order of importance

Motive	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 a 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

- It is clear from the table that, apart from the two top-ranked motives, there were again regional differences.
- The apparent lack of long-term planning was shown by the narrative interviews to be due to caution and suspicion with regard to the tax audit for increase of net wealth. The fact that 53% of the respondents put the slow, but sure development of the farm in first place, while the desire to leave as large a farm as possible to their children was ranked fourth, confirmed the existence and importance of long-term planning.
- The ranking of healthy food and environment was fairly high, but the narrative interviews suggested that obtaining community support was the real motive.
- The idea of providing jobs for other people appeared to be a negligible motive, with 35% of the respondents being emphatic about it being the last of their motives. This confirms that the statement made in the ex ante evaluation prepared in 2007 by Price Waterhouse Coopers in advance of the New Hungary Rural Development Programme, that “no substantial expansion of job possibilities could be expected in rural areas”, is certainly true of agriculture (Új Magyarország, 2007).  
According to (Knickel et al., 2004), “multifunctionality could be operationalised at the level of the individual farm household”. It can also be concluded from the present research that investigations on the relationship between the family and the farm are essential for farm-level studies on multifunctionality. This relationship was therefore examined from several aspects.
- The family played a decisive role (52%) in the establishment of the farm. This was manifested mainly (31%) in the need to ensure a living for the family and to a lesser extent (21%) in the continuation of family traditions.
- Providing a living for family members emerged as an extremely important farm business development motive, being ranked second. Family members (and business partners) made up 32% of the full-time and part-time employees, and this percentage was much higher on small farms.
- The farm was the main user of the land belonging to family members. All the farms that rented land were farming on the land of family members and relations. For two-thirds of these farms, this land made up the highest percentage of all the rented areas.
- The family played a major role in taking important decisions on the farm. In answer to the question “How are major business development decisions made on the farm?”, the answer “The family decides in such questions” was ranked second.

### **Status of and motivation for multifunctionality**

Information on multifunctional agriculture was available to 65% of the farmers surveyed. It should be noted that in the Tarna Mente micro-region, where the LEADER+ Programme had been implemented, this percentage was 87%, while in the Karcag micro-region, which withdrew from the second round in 2006, it was only 42%. The most frequent sources of knowledge were farm magazines and training courses or meetings organised within Hungary to exchange information. A very small role was played by agricultural books, the exchange of information on an international scale and village agri-economic experts, and little information was obtained from other farmers.

Some 98% of the respondents replied to questions on the existence of activities or functions other than agricultural production and 63% of them stated that their farms carried out functions in addition to agricultural production. The results for each micro-region are detailed in Table 3.

- 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. 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 non-agricultural 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).

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 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.

Table 3

**Percentage of non-agricultural activities and functions in the surveyed farms**

Activity or function	As a 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

\*As the respondents could designate several activities, the figures total more than 100%

Source: own data and calculation

Questions on future plans for non-commodity outputs were answered by 99% of the respondents, 57% of whom have no plans for such activities. The distribution of those considering future developments is illustrated in Table 4.

Table 4

**Percentage of farmers planning to introduce non-commodity outputs in the surveyed micro-regions**

Type of output	In the percentage of the respondents*			
	LEADER micro-regions			Mean
	A	B	C	
Strengthening the economy of their own micro-region	6	50	24	22
Improving food safety by increasing local sales	8	40	19	20
Increasing the recreation value of the region through landscape management	6	47	5	17
Increasing biological diversity	4	23	24	14
Moderation of natural risks	6	23	14	13
Preservation of the cultural heritage	2	0	0	1
There are no plans for non-commodity outputs	86	20	43	57

\*As the respondents could designate several activities, the figures total more than 100%

Source: own data and calculation

- The distribution over the three micro-regions of those planning new developments was similar to that for non-agricultural activities and functions. It is worth noting that, with the exception of two cases, all those planning new developments already carry out some form of non-agricultural activity or function.
- Among the farmers considering new developments a relatively large number were clear about the importance of strengthening the economy of their micro-region and of increasing the role of local food markets. This is in agreement with earlier research which showed that nowadays the emphasis in Hungary should be put on building up and stabilising the rural economy, using various approaches in each region (Fehér, 2005).
- Environment and nature protection aspects are ranked highly among the future developments.

The survey also covered the measures that farmers thought were the most urgent in their own micro-region to promote multifunctionality in local agriculture. Urgency was evaluated on a 1–10 scale, the most urgent receiving a score of 10. The various measures were ranked on the basis of the total scores and divided into three groups. The three most urgent measures in each region were designated in the table by three dark blocks, the next three by two dark blocks and the least urgent three by one block. The question was answered by 98% of the respondents. In other words, a far larger number of farmers expressed an opinion on this matter than were actively considering non-commodity outputs.

The order in which the farmers ranked the various measures clearly indicated their desire to strengthen the economies of the micro-regions, indicating that the farmers appreciate the importance and urgency of developing the local economy.

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 2, 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 5

**Opinions of respondent farmers on the urgency of measures designed to improve multifunctionality in their micro-regions**

Type of measure		LEADER micro-regions									Mean		
		A			B			C					
Urgency of the measure in their micro-region	Increase in the production and marketing of healthy, safe foodstuffs	II.			V.			II.			II.		
	Improvements in cooperation between farmers in marketing, production and tool utilisation	V.			IV.			IV.			V.		
	Production and utilisation of energy crops	IX.			VIII.			VII.			VIII.		
	Expansion of nature protection and environmental services	VIII.			VII.			VI.			VI.		
	Increase in the economic and social adaptability of farmers	III.			II.			IV.			III.		
	Better consumer acceptance of local products and services	IV.			III.			III.			IV.		
	Improvements in living standards in rural settlements; better ability of the local economy to provide for a population	I.			I.			I.			I.		
	Flexible forms of employment (part-time jobs, telework, etc.)	VI.			VI.			VIII.			VII.		
	More rapid spread of computer skills, elimination of digital illiteracy	VII.			IX.			IX.			IX.		

Source: own data and calculation

Those who responded to the questions in Table 5 also indicated the level at which the individual measures should be implemented. The roles of the central government, the regional level, the local council and the farmer in the given measure were evaluated on a 1-5 scale, the most important role being awarded 5 points. The results are summarised in Figure 2.

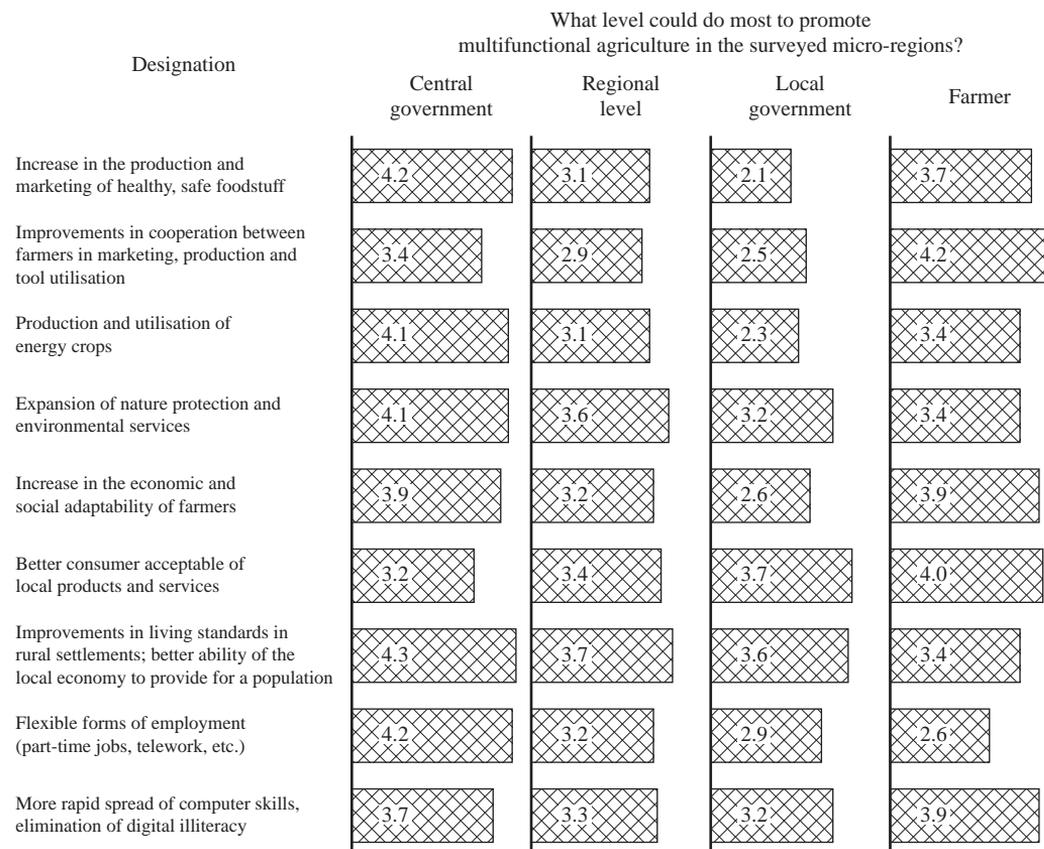
For some of the measures (e.g. improvements in cooperation between farmers in marketing, production and machinery utilisation, increase in the economic and social adaptability of farmers, better consumer acceptance of local products and services) the farmers' evaluation of the role of various levels appears to be realistic.

In other cases, however, the evaluation appears to be less sound. For instance, in the case of the measure "Improvements in living standards in rural settlements; better ability of the local economy to provide for a population" the farmers thought their own role was unimportant, and chiefly expected solutions from central government, the regional level or the local council.

The role of the central government was generally over-evaluated. This level scored highest (4.4). The over-evaluation is especially true in the case of measures aimed at "increasing the production and marketing of healthy, safe foodstuffs".

The respondents assigned the second most important role to the farmers. However the very modest role of farmers, according to the Figure, in the spread of flexible forms of employment is not realistic.

In general the surveyed farmers ascribed an over-modest part to the local and regional governments. On the contrary, the economic role of the local council is over-evaluated. Unfortunately, due to the low standard of development of local economies, they do indeed have a disproportional role in the employment and in the income transfers in most of the settlements surveyed.



**Figure 2: Opinions of farmers on the role of various administrative levels in the implementation of measures to improve multifunctionality in their micro-region**

Source: own work

The question on factors stimulating and inhibiting multifunctionality was phrased as an open-ended question. Some 70% of the farmers mentioned stimulating, on-farm factors. Of these, the majority (47%) put mainly economic factors (better profitability, having various sources of income, a better standard of living for the family, better exploitation of machinery) in this category. This was followed by the desire for an independent, healthy way of life and personal ambitions (22%), and the endeavour to make use of the farming knowledge of family members (16%). Inhibitory factors were listed by two-thirds of the farmers. Mention was made of lack of capital (32%), problems related to farm size (22%), lack of knowledge or ambition (21%) and the age of the farmer and lack of heirs (9%).

## **Conclusions**

The farming families play an important, complex role in both the establishment and development of the farms. On the one hand, the family is an economic factor (joint wealth, land use, source of labour), but on the other it is a subjective driving force in that it motivates the farmer to take economic steps that will ensure or improve the welfare of the family. This latter role is extremely important in farm-level surveys of multifunctional agriculture and in the implementation of measures aimed at enhancing multifunctionality. The method employed in the present work proved to be suitable for the survey in question and for the determination of correlations.

Neither the heads of farms already carrying out non-agricultural activities and functions, nor the whole of the farmers surveyed displayed any great motivation to create jobs for outsiders.

Almost two thirds of the farms reported the existence of non-agricultural activities and functions. However, the proportion of market-driven activities was low. The given level of multifunctionality was attributable to landscape management, agricultural environment management and nature protection.

More than a third of the farmers were planning new developments in non-commodity outputs. They were chiefly concerned to strengthen the economy of the micro-region, to develop local food markets and to improve the recreational value of the landscape.

The respondents considered the most urgent measures in their micro-regions to be the improvement of living standards for local inhabitants, an increase in the production and marketing of healthy, safe foodstuffs, and the greater economic and social adaptability of farmers. In some cases (e.g. improvements in cooperation between farmers in marketing, production and machinery utilisation, increase in the economic and social adaptability of farmers, better consumer acceptance of local products and services) the farmers' evaluation of the role of central government, the regional level, local councils and the farmers themselves appears to be realistic, while in other cases the evaluation was often contradictory.

The majority of the on-farm factors listed as stimulating multifunctionality were of an economic nature, but the desire for independence, personal ambitions and the desire to make use of their professional knowledge were also mentioned. The majority of the inhibitory factors mentioned were also of an economic nature, but the lack of knowledge and the age of the farmer were also decisive.

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