



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Judit Katona-Kovács ^{*1}, John Murphy, Andrew F. Fieldsend²,
Gábor Szabó ¹

¹ University of Debrecen Centre of Agricultural and Technical Sciences
Böszörményi 138., 4032 Debrecen, Hungary
katonaj@agr.unideb.hu
szabog@agr.unideb.hu

* The work was supported by the János Bolyai Research Fellowship of the
Hungarian Academy of Sciences

² Writtle College, Chelmsford, CM1 3RR, UK
fieldsend@agr.unideb.hu

Attitudes amongst farmers in Eastern Hungary and the East of England towards environmental, economic and social sustainability in a changing countryside

Abstract: Globalisation, climate- and demographic changes, as well as the current global financial crisis, are likely to have a strong influence on the future of the Common Agricultural Policy (CAP). These processes are closely related to the three dimensions (environment, society and economy) of sustainable development. Farmers across the EU are experiencing a period of change and uncertainty caused by changes to the CAP and compounded in the case of Hungary by EU accession. Theory suggests that the business development strategies of European farming households should be based on multifunctionality, diversification and pluri-activity. However, the farming community is not normally recognised for its ability to embrace change and in some regions support structures have been put in place to assist farmers to make the necessary transition. One such example was the „Agricultural Development in the Eastern Region” (ADER) project which was implemented in the East of England between 2000 and 2007 with the aim of helping farmers to identify new opportunities and develop alternative business approaches. In late 2006 and early 2007 ADER conducted a questionnaire survey amongst its clients on their attitudes towards environmental, economic and social sustainability in the light of probable future developments in agriculture, particularly with respect to CAP funding. For almost five years there has been increasing collaboration between rural development researchers in East of England (EE) and eastern Hungary, resulting in the establishment of an informal

partnership called the Cross-Border Centre of Expertise in Rural Development (HVTK). In early 2008, the ADER questionnaire was translated into Hungarian and distributed to farmers in the Northern Great Plain Region (NGP). This paper compares the attitudes of farmers in the two regions to sustainability in the light of anticipated changes in agriculture. *ding the mix of policies which will best support the nation's forests in the future.*

Keywords: attitudes amongst farmers, CAP, diversification, multifunctionality, sustainable development

Introduction

Sustainability is a horizontal, cross-cutting principle in European Union policies. When sustainable development is an objective to be achieved - at global, national, regional, local, branch and farm levels - it is desirable to establish the harmonisation of environmental, social and economic goals. In our view, **sustainability means a long term, sustained harmony between the economic, social and environmental dimensions.** The problem is that one of the three components depends on the rules of the economy and the global market, whereas social (political) considerations have a decisive impact on the other two – but not independently of the economy (Szabó and Katona-Kovács 2008).

The introduction of the paper structured in five parts. The first three follow the dimensions of sustainable development; the fourth tries to collect information which shows the possibilities for the future changes and the last outlines the hypothesis behind our work. In the introduction those facts and characteristics of agriculture in the two countries are collected which are important regarding the survey we carried out and the conclusions of our work.

The main statistics of agriculture in the UK and Hungary are presented on the basis of Eurostat data (Eurostat 2007a). These provide an insight into the statistics from the Farm Structure Survey (FSS) in the two countries for 2005. The data in Table 1 focus on holdings of at least 1 European Size Unit (ESU).

Table 1. Data from holdings of at least 1 ESU, 2005

Indicator	UK	HU
Number of agricultural holdings (in 1000)	183.4	155.4
Labour input (1000 AWU)	289	512
Average UAA/holding (ha)	37.6	26.0
Utilised agricultural area(1000 ha)	14961.6	4045.3
Arable land (1000 ha)	6042.9	3445.5
Permanent pasture (1000 ha)	8884.9	454.6
Permanent crops (1000 ha)	33.8	140.5
Total livestock (in 1000 LUs)	14273.8	2104.5
GVA at producer prices (million €)	7667.0	1945.5
Overall subsidies (million €)	4250.4	1000.4
Other gainful activities (in % of total holdings)	27.1	13.3

Source: Eurostat 2007a

On the other hand the role of holdings below 1 ESU regarding the sustainable future of rural areas is important as they use a high percentage of the total regular labour force, especially in Hungary, so some available data from these farms are also presented (Table 2).

Table 2. Data from holdings below 1 ESU, 2005

Indicator	UK	HU
Number of holdings, % of total	36.1	78.3
Regular labour force (person), % of total	26.2	71.0
Regular labour force (AWU), % of total	14.2	51.3
Agricultural area (ha), % of total	6.2	5.2
Livestock (LU), % of total	0.4	15.6
Holder 65 years old and older %, of total	36.4	29.7
Holder with other gainful activities %, of total	44.4	38.9

Source: Eurostat 2007a

The core factor of sustainable development is dynamic and harmonised development in economic and financial terms, the major indicator of which is the stable and optimal growth rate of GDP (Szabó and Katona-Kovács 2008). The percentage of GDP represented by agriculture has declined substantially in the last decade, from 1.8% to 0.9% of GDP in the UK between 1995 and 2005, and from 6.7% to 4.3% in Hungary during the same period (Eurostat 2007a). **The role of agriculture in the economy** is however much higher if we take the whole agribusiness sector into account.

Agri-food markets and **supply chain structures** are changing in dynamic and unprecedented ways (Vorley and Proctor 2008). Market liberalisation, changes in consumer preferences and purchasing power and modernisation of food processing and retailing – including the rise of supermarkets and globa-

lisation – are primary drivers of change. It can take developing and transition economies (including Hungary) as little as ten years to reach the levels of agri-food market restructuring that took five or more decades in Western Europe (including the UK) or North America. As a result of the land ownership reforms, currently in the Central European Countries (CEC) there is a mixed farm structure including various combinations of relatively large scale and large number of small farms (Csáki and Forgács 2008), while family farms of increasing average size are dominant in Western Europe. How farmers with different background can find their role in the supply chain is very important as the gap between different parts of the sector seems to be growing. These are also stated in a whole food chain analysis produced by the UK Department of Food and Rural Affairs (Defra), which shows that the difference in average GVA per employee is three or four times higher in some sectors e.g. food manufacturing than in farming (Defra, 2007).

The **structure of CAP support** affects the patterns of agricultural production and farming practices which, in turn, determine the environmental impact of agriculture. Price support and subsidised prices for inputs such as fertilisers, pesticides, water or energy have generally encouraged higher production and led to intensification of agriculture. Compensating farmers with more direct income support, such as area payments, or conditional payments requiring set-aside or agri-environmental measures, may benefit low-income farmers or those with less intensive production methods (EEA 2001). In the early years the CAP focused on increasing agricultural productivity and one of the main strands of support has been on the use of intervention prices to maintain producer prices above world levels. Price support addressed three major regimes: cereals, beef and dairy, and resulted in changes in crop and animal production structure.

Climate change can also affect the structure of production in the long term. The potential positive impacts of climate change on agriculture in general are related to longer growing seasons and new cropping opportunities in northern Europe, and increased photosynthesis caused by higher atmospheric CO₂ concentrations throughout Europe. These potential benefits are counterbalanced by potentially negative impacts including increased demand for water and periods of water deficit, increased pesticide requirements and crop damage, and fewer cropping opportunities in some regions in southern Europe. In general, changes in atmospheric CO₂ levels and increases in temperature are changing the quality and composition of crops and grasslands and also the range of native/alien pests and diseases. These may affect livestock and ultimately humans as well as crops. In addition, the increase in ozone concentrations related to climate change is projected to have significant negative impacts on agriculture, mainly in northern latitudes (EEA, 2008).

The expansion of agricultural production can be achieved by expanding the land area under production (especially for crops and beef cattle), raising crop and livestock yields through technological improvements, or a combination of both. Based on trends in farm production and land area over the period 1990-92 to 2002-04, OECD categorised countries into four broad groups:

- Group 1: Increasing production and expanding land area
- Group 2: Increasing production, but on a reduced or near stable land area
- Group 3: Decreasing production and land area
- Group 4: Decreasing production, but on an expanding land area

Grouping countries in this way helps to identify the implications for the environment. Both the **UK and Hungary belong to Group 3**. The difference is that for the UK, the input levels until now have been above the OECD average whilst for Hungary agricultural production levels and input use fell sharply following the transition to a market economy in the early 1990s, although as these countries moved towards EU membership in the late 1990s production levels and input use began to rise (OECD, 2008). Examining indicators which form part of the driving forces group inside the DSR (driving forces – state – response) model, the pressure of agriculture on the environment in HU and in the UK compared to the EU-15 in 2000 is illustrated in Figure 1.

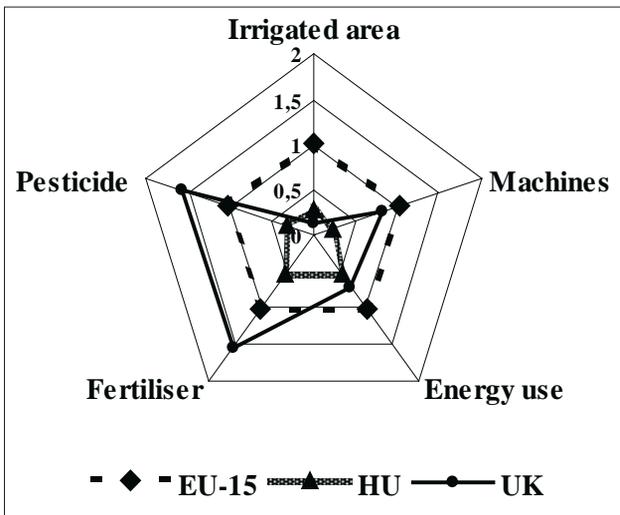


Figure 1. Driving forces related to the EU-15 average in 2000
Source: own illustration on the basis of OECD (2002) data

Farm management practices are characterised from the response indicators of the OECD DSR model. Around 7 million hectares (44% of the 15.8 million hectares UAA) of farmland in the UK (Defra 2007) and 1.5 million hectares in Hungary (25% of the 5.9 million hectares UAA) (Katona-Kovács 2007) are managed under **agri-environment schemes**. The share of organic farming area in the total UAA was 4.59% in the UK and 1.77% in Hungary in 2002 (EEA 2005). The survey results in Hungary of Kormos-Koch (2007) indicate that the establishment of environmentally conscious agriculture requires extended participation in agri-environmental programmes and financial subsidies, because the findings show that among farmers **environmentally conscious behaviour** is not particularly ingrained.

Table 3. Labour force in agriculture (1000 AWU)

	1995	2000	2005
EU-25	:	10540	9310
EU-15	7209	6529	5797
UK	391	334	299
HU	780	676	521

Source: Eurostat (2007a)

The farm workforce in the EU25 is getting increasingly older (SERA, 2006). The size of the labour force in agriculture is decreasing (Table 3) and there is no indication that this trend will change. On the other hand, in the CEC countries **holdings below 1ESU** still account for a significant share of the total number of farms, although they play an important social rather than economic role. Over 38% of the holders responsible for a small unit in the EU-27 were at least 65 years old, 29.7% in HU and 36.4% in the UK (Eurostat 2007a). Data from the SERA study (2007) show that the proportion of young people under 35 in agriculture rises with increasing size of family farms (16% on holdings with less than 5 ha and 24 % on holdings with more than 50 ha in the EU15). In Hungary the number of holdings under 2 ESU is over 700,000 (90% of total holdings), but their economic contribution is small, as their share in Standard Gross Margin is 23%.

As a result of **liberalisation** of the world agricultural market European farmers face the problem of cheap products from different part of the world. The European Agricultural Model, which emphasises **multifunctionality** of agriculture, tries to address this problem. Huylenbroeck et al (2007) state that, in the broadest sense, multifunctionality of agriculture includes four kinds of functions provided by agricultural enterprises:

1. The green functions consist, amongst others, of landscape management and the upkeep of landscape amenities, wildlife management, the creation of wildlife habitat and animal welfare, the maintenance of biodiversity, improvement of nutrient recycling and limitation of carbon sinks.
2. Other public benefits that can be created by agriculture are the blue services and contain water management, improvement of water quality, flood control, water harvesting and creation of (wind-) energy.
3. Yellow services refer to the role of farming for rural cohesion and vitality, ambience and development, exploiting cultural and historical heritage, creating a regional identity and offering hunting, agro-tourism and agro-entertainment.
4. Finally, many authors acknowledge the white functions produced by agriculture, such as food security and safety.

Bearing in mind the consumers' needs in Europe nowadays, these functions are on their list. The green, blue and white functions have close relationships with the environment dimension of sustainability, and the yellow one with the social dimension.

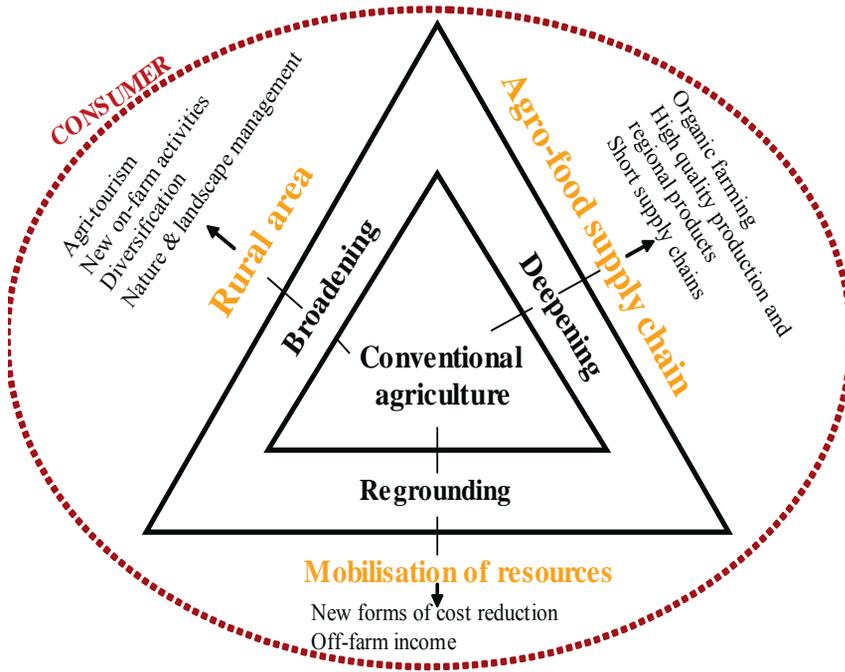


Figure 2. Possibilities for conventional farmers for change

Source: Ploeg and Renting (2004) completed with the consumer circle by the authors

Conventional farmers, especially those with small ESU, must find new ways in which they can meet the new demands of the consumers. Ploeg and Renting (2004) describe three ways to shift (Figure 2). Farmers must be aware of the resources at their disposal and make decision which way to move.

The questionnaire carried out between farmers in the two regions of the UK and Hungary aimed to compare their attitudes in the light of the above expected changes in agriculture, along the three dimensions of sustainable development. Our “null hypothesis” was that we will detect no differences in attitudes between farmers in the two regions, although in fact there are a number of factors which suggest that significant differences are in fact likely to exist.

Methodology

The questionnaire was designed by drawing upon the experience of the ADER officers working in the rural sector everyday (Murphy 2007). The main issues that keep arising were highlighted and condensed into 18 statements (the statements and primary results of the survey are in the Appendix) to which each participant had six choices in how they answered; strongly agree, agree, neither agree nor disagree, disagree, strongly disagree and not applicable. A five point Likert-scale was chosen due to its simplicity in regards to compiling and inputting the data into a statistical package. Age, gender, county of resi-

dence, membership of environmental groups in the case of East of England, and size of the farm in the case of Hungary were also requested to allow deeper analysis of the results. The design of the questionnaire had two aims; to be quick and easy to complete and to create a personal and emotional reaction within the individual which would provoke an opinion on each statement. The questionnaire was restricted to one side of A4 paper and 18 statements. These were designed to be extremely relevant to each farmer and were based around current and future **environmental, economic and social issues** about which a farmer would be likely hold a private personal opinion but would perhaps not regularly articulate.

In England the data were mostly collected at ADER events because these provided quick and widespread access to farmers in the industry. In Hungary the data were collected different ways: HVTK posted the questionnaires to farmers in the region, data were collected at the Farmer Expo in Debrecen and also students from the Faculty of Agricultural Economics and Rural Development were asked to collect data from their family or neighbours working in agriculture. 377 questionnaires were collected in England and 105 in Hungary. Once the questionnaires had been returned, the data were manually inputted into a SPSS computer package. The UK data were cross-tabulated by age, gender and the Hungarian data also by the size of the farm to find significant relationships in the sample. This was done by SPSS as was the calculation of the Mean and the Standard Deviation. The cross-tabulated results were then tested for significance by using the Chi² test at the 5% level of significance.

As the aim behind this survey was to assess the feelings and opinions of farmers, it was felt that farmers were qualified to interpret the results of the survey. Therefore the results were put in front of focus groups who were simply asked to discuss the results that they found interesting.

Results

In both regions the percentage of women who participated in this survey was quite low (14%) and the highest number of participants were from the age group 36-55 years old. Actual percentages were as follows: 18-35 years old: 16% (HU), 20% (UK); 36-55 years old: 61% (HU), 50% (UK); over 56 years old: 23% (HU), 30% (UK). The share of questionnaires did not represent the Hungarian farm structure, as farmers with farm size between 10-50 ha represented the highest percentage of the participants (≤ 5 ha 8.9%; 5<-10 ha 12.9%; 10<-50ha 42.6%; 50<-100 ha 14.9%; 100< 20.8%), while farmers with less than 5 hectares give the highest number of Hungarian holdings (Vásáry-Osztrogonác 2008).

Ranking the statements according to those with which farmers agreed most, four from the first five were the same in both countries. These were:

- S18. Over the next ten years, learning and taking advantage of new information will be critical for successful management
- S5. I am planning ahead with an eye on market trends and opportunities

- S7. I am willing to change my farming to satisfy customer needs
 S17. I'll continue to manage environmental features (field margins, hedges, etc.) even after EU funding ends

For the following statements the differences between the means of countries were above 0.5 resulting in a difference between agreement or disagreement between the countries (Appendix):

- S2. In the management of my farm, I don't distinguish between the landscape and production (1.8)
 S8. There are too many competing update events for farmers to attend (1.2)
 S4. I cannot afford to change the way I farm (1.0)
 S9. The next generation is actively involved in the long-term business decision making on the farm (0.6)

Gender

No significant differences were observed between the opinions of men and women in this survey. On the other hand, there were similarities between genders in the statements of the two countries. S1 *Compared with last year I will invest more capital in my business next year*. 43% in UK and 73% in Hungary of men agreed or strongly agreed with this statement compared to only 32% of women in the UK and 43% in Hungary. S7 *I am willing to change my farming to satisfy customer needs*. 87% in UK and 88% in Hungary of men agreed or strongly agreed with this statement compared to only 65 % of women in the UK and 64% in Hungary.

Age

A number of significant differences were noted between the age categories in relation to certain statements in England. In Hungary there were some differences between the three age categories in the case of two statements (S6 see Figure 3; S14 see Figure 4), but these differences were not significant (level of significance $p=0.084$ for S6 and $p=0.12$ for S14). One reason for this is the lower number of questionnaires in Hungary.

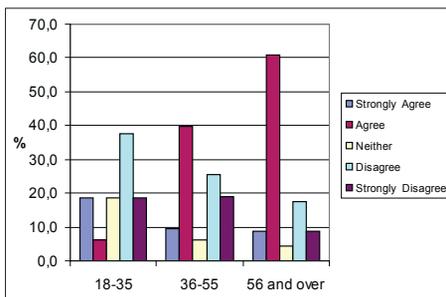


Figure 3. S6 HU

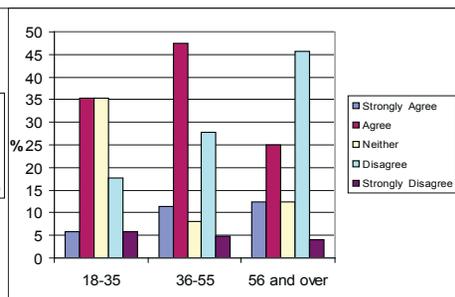


Figure 4. S14 HU

Farmers in England who were 56 years old and over were more likely to agree with statement S8 'There are too many competing update events for farmers to attend' than younger farmers (Figure 5, $p < 0.05$). This was not the case in Hungary (Figure 6, $p = 0.450$). In Hungary farmers from different groups rather disagreed with this statement. The mean was 4.0 in Hungary and 2.8 in UK.

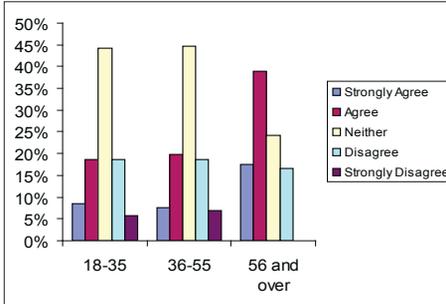


Figure 5. S8 UK

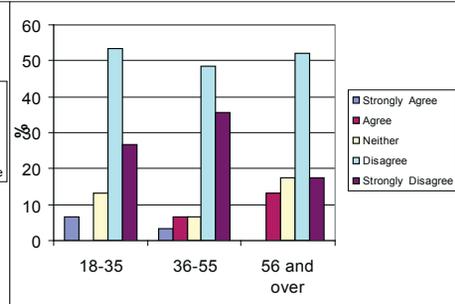


Figure 6. S8 HU

Farmers who are 56 years old and over tended to agree less with the statement S12 'There is a soil erosion problem across the country' and disagree more with it than younger farmers (Figure 7, $p < 0.05$). In Hungary there was stronger agreement with this statement, the mean was 2.3 (c.f. 2.8 in UK) and farmers who are 56 years old and over agreed more with it (Figure 8, $p = 0.903$).

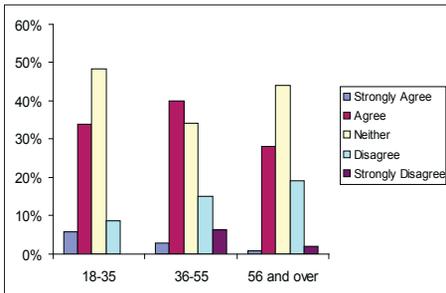


Figure 7. S12 UK

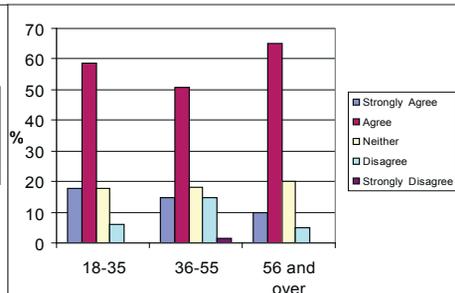


Figure 8. S12 HU

Farmers who were 56 years old and over tended to agree less and disagree more with statement S15 'Farming in the 21st century will focus more on environmental management than food production' than younger farmers (Figure 9). This was a just significant relationship ($p < 0.05$). The most common answer was agree or neither agree nor disagree in each age group in the case of Hungary (Figure 10, $p = 0.43$).

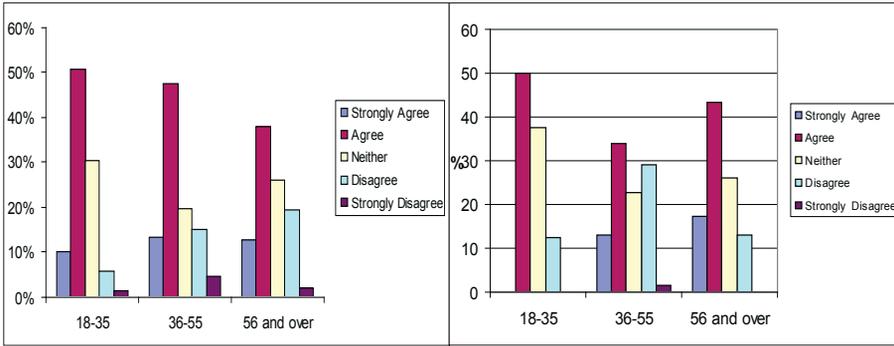


Figure 9. S15 UK

Figure 10. S15 HU

Farmers in the 36-55 age group disagreed more with the statement S16 ‘I believe strongly farming is only about production of commodity foodstuffs’ than the other two age groups (Figure 11, $p < 0.05$). Farmers in the 36-55 age group also disagreed more (Figure 12, $p = 0.14$).

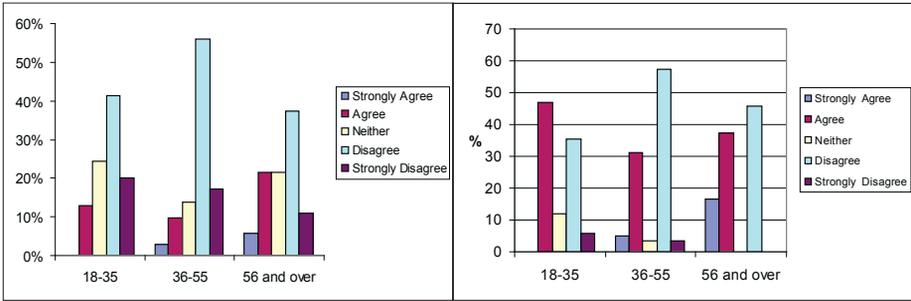


Figure 11. S16 UK

Figure 12. S16 HU

The farmers emphasised at the focus group meeting that their feeling is that the answers in the case of some statements differ depending on the size of the farm.

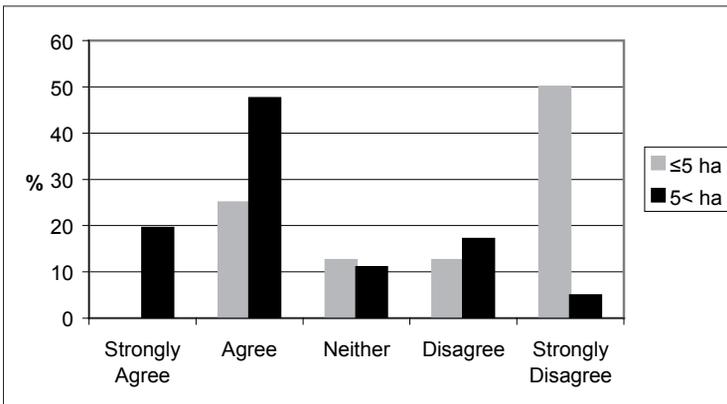


Figure 13. Responses by farmers in Hungary to statement S9 based on farm size.

Although because the low size of the sample in Hungary significance could not be shown, the farmers' opinion was underlined (Figure 13) by the responses to statement S9 *The next generation is actively involved in the long-term business decision making on the farm.*

Discussion

The statement-by-statement conclusions of the focus groups are used as the basis of our discussion.

S1. *Compared with last year, I will invest more capital in my farm business next year.* Focus groups from both countries stated that **age has an important role regarding investment**, as to see the return takes years. The members of the UK group were not sure that farmers are confident to invest for the long-term any more. In Hungary it was added that mainly those who applied for **EU subsidies** and have farms over 50 ha invest in farming. In the questionnaire, 80% of **farmers over 50 ha** agree or strongly agree with this statement, while this figure is 64% in the case of farmers under 50 ha.

S2. *In the management of my farm, I don't distinguish between the landscape and production.* We should note that the translation of the English version into Hungarian was in some cases difficult, to make it clear and understandable for Hungarian farmers. Even the UK focus group found the use of the word 'distinguish' difficult to define. This statement was translated into Hungarian as follows "I take care of landscape and production in the same way." In Hungary farmers said that they take the same care as a **consequence of subsidies**. The UK group believed that the **landscape/production dilemma is being driven by EU policy**. Younger Hungarian farmers added that they think smaller farms take more care, while larger farms are interested rather in the profit. They think that farmers today feel more responsibility for nature. English farmers did not believe that farmers distinguish between landscape and production as farming has always been a mixture of both. While the group conceded that some farmers are focussed solely on production, they believed that most people farming for the long-term want to manage both landscape and production correctly. The group felt that farmers need to get more people out on to farms and that school students should be educated about farming. An example of this from Belgium is the Network of West Flemish Visiting Farms (www.onthaalopdeboerderij.be) whose members host visits by schools and other groups (Fieldsend and Boone 2007).

S3. *I'm confident I can farm successfully after 2012 with no government support payment.* Hungarian farmers said they **cannot farm without support** because of input prices. They were sure that there will be support as there always were support behind farming even before joining the EU. Young farmers added the **problem of the supply chain**; there is not the same profit at different stages and if the balance were be better than may be they could farm without subsidies. There is still the problem of too many small farms. UK

farmers agreed that subsidies are also still being too heavily relied upon by many farmers. The group was surprised to see that some farmers had actually strongly agreed with this statement. It was suggested that these were probably farmers **who had decoupled completely from production** and were getting their income from alternative enterprises. It was also suggested that the large number of people disagreeing with this statement was due to **most farm incomes still being heavily reliant on production** and if this remains the case, then the group felt that most farms who have not diversified probably won't survive after 2012. When they were investigating the appendices it was noted that 38% of Essex farmers agreed with this statement compared to 29% in Cambridgeshire etc. The group believed this was because Essex farms enjoyed **higher land prices** due to development opportunities and that the **location** of Essex farms **in relation to urban areas** offered more opportunities in general.

S4. *I can't afford to change the way I farm.* Both the UK and Hungarian groups feel there is an **age issue** in this statement. Older people are not inclined to change but younger people can because they are not tied to the past. But **there is a risk** as these days young farmers can't afford to make mistakes because **margins are so tight**. Hungarian farmers said that the capital behind farming is difficult to move, and they do not see other possibilities which are better. Some in the group felt that **women** don't affect the core farm business but do **have a large impact on diversifications**. Farm diversifications are a different business from farming. The female participant was inclined to disagree. The group feel that they are at the **wrong end of the supply chain** as the middlemen make all the money. They felt that **farmer markets are a joke** in England as many of them are only held once a month, they can hardly be expected to be serious competition compared to the volumes that supermarkets sell daily.

S5. *I'm planning ahead with an eye on market trends and opportunities.* Hungarian farmers said this is obvious as this is how the economy works. On the other hand the UK group **did not believe that farmers are good marketers**, they felt that a farmer can't be everything. They noted that **farmers are locked into their production systems** and it is not easy to change. Young Hungarian farmers added that they think market is not transparent.

S6. *I can easily obtain the advice and information I need to develop my farm business.* Farmers in both countries agreed that there is **no problem with information flow**. In Hungary those, mainly small, farms who do not have IT access are less informed. The UK focus group highlighted an issue about the wording of the statement. They felt that most farmers interpreted the statement in **relation to access to production advice**. They believed that this sort of advice is easily accessible but if someone requires advice on **developing an alternative farm enterprise or income stream** then it is a nightmare to get the help they really need.

S7. *I'm willing to change to satisfy customer needs.* The Hungarian group said theoretically farmers are ready, but in practice they think this is missing, and Hungarian farmers are **“not good at the markets”**, are not well informed about it. Small farms are not prepared and the animal welfare institutions are against them. The result in the UK was similar as on the one hand the focus group agreed with this statement as they felt it was a case of necessity, but they believed that the stable period of the past, especially in regards to wheat production, had resulted in **farmers losing touch with consumers**. The group was unsure if the word customer in this statement should be interpreted as their grain merchant or a food consumer. They did not consider Tesco to be a customer because there are so many different components in the supply chain that the link is lost. Some farmers are trying to close the gap but others say it involves too much cost for too little benefit. They also believed that farmers have lost the trust of consumers when **quality assurance schemes are mismanaged** and that many consumers have lost confidence in the safety of their food. The group states that changing is fine if you believe that the **customer is backing you**. But the group did not seem to believe that they had that backing. Tesco is using environmental benefits as an edge to get customers in. The group believe that customers are not actually asking for this and that **supermarkets are misleading customers because the farmer on the front of the package has no relation to the food inside the package**. The group pondered as to would it be better if all farmers in Europe were tied to the same quality assurance scheme? This would create a level playing field. The group was upset as they believe that they are disadvantaged by having to adhere to **costly higher welfare standards while still having to compete on price with inferior products imports**.

S9. *The next generation is actively involved in the long-term business decision making on the farm.* This statement had higher importance in Hungary. On the other hand also in Hungary it was a statement **with the highest percentage giving not applicable answers**. Hungarian farmers said that it depends from the size of the farm, aligned with the results of the SERA project (2006, 68). Where the farm is big they take part only in the leading, the management and not in the field work. Where the farm is small they see only the hard work, so they look for other possibilities and when they do not find they carry on farming.

S10. *The public is a barrier to my farm business developments.* In the Hungarian version the translation was, those living around the farmer, not the public. So they asked who we understand as these people. Neighbours were mentioned as barriers, complaining about different things such as “smell”, mainly in the case of small farms.

S11. *Soil erosion is not a problem on my farm* and S 12 *There is a soil erosion problem across the country.* Farmers in both countries felt that this was not a big problem.

S13. *Climate change will affect my business.* Climate change will always be a problem but as it is very difficult to predict the future it is also difficult to plan ahead.

S14. *Diffuse pollution is a major issue for farming.* While in the UK the first idea on this statement was fertilizer, Hungarian farmers mentioned the problem of plastic. Farmers were of the opinion that much of the pollution today comes from non-farming activities. It is an issue but not only the fault of farming. Farming practices have changed dramatically in recent years due to fear of consequences in regard to regulations and also from litigation. Also the high cost of fertilizers means that farmers don't want to waste it in run-off.

S15. *Farming in the 21st Century will focus on more on environmental management than food production;* S16. *I believe strongly farming is only about production of commodity foodstuffs.* Farmers from both countries **disagreed with S15** because the population will still need to be fed. They said they have to produce feed for the population of the Earth, of course taking care of the environment. **EU funds** inspire to focus more on environment. The UK focus group said they strongly believe that the **landscape cannot be paid for and sustained without profitable food production.** The environmental agenda is being taken over by carbon footprints, **food miles** etc. They believed there will be a **shift away from imports** and that each country will have to learn to feed itself and that this will be good for UK farming. The group believed that climate change issues will be integrated more with food production. They strongly believed that the environment won't survive without food production. They believe that at the moment **farming systems are polarising between large commodity producers and niche market farmers.** If **large commodity producers** keep getting bigger by buying land from farmers leaving the industry, then this will **significant impact on the landscape.** If outside bodies keep having too much influence on agricultural practices then more farmers will have to sell up resulting in farms getting bigger but not better.

S17. *I'll continue to manage environmental features (field margins, hedgerows, etc.) even after EU funding ends.* Hungarian farmers thought **funds will not end.** The question is to whom, what and how to produce?

S18. *Over the next 10 years, learning and taking advantage of new information will be critical for successful management.* It is very important. The technology and science will not stop, improvements have to be known if we want to be competitive and among the leaders.

Conclusion

We conclude that our "null hypothesis" was not correct. Although farmers in the two regions have many attitudes in common, some clear differences exist.

Regarding statements on the environment, there is often a difference between stated and real behaviour (Kormos-Koch 2007). It can be an answer why farmers in both countries agreed with S17. Focus groups think that the answers on the environment issues are the result of the effect of CAP and its subsidies. Although maintenance of the environment is seen by academics and decision makers as a major component of multifunctionality of agriculture which deserves to be valorised, farmers in the UK already consider this to be an integral part of food production. One reason why in the case of Hungarian farmers environmentally conscious behaviour is not particularly ingrained (Kormos-Koch 2007), can be that they have been owners of the land from a shorter period. Hungarian farmers may attach more importance to EU subsidies as a driver to maintain the environment.

Farmers are aware of the importance of customer demand, but even in the case of the UK they feel themselves far from customers and they think do not have the knowledge on marketing. They said that the information they get is on conventional agriculture and not on the new ways to reach customers (Figure 2.). NGP farmers feel less able to afford to change the way they farm and are less inclined to agree that adequate advice is available. These differences may perhaps be ascribed to lower farm capitalisation, fewer local urban markets, a genuine lack of advice, and attitudes conditioned under the former economic and political system in Hungary. Kovács (2008) states that the success of farmers in Hungary differs, depending on their family's past role in agriculture.

In order to adjust to funding arrangements for agriculture post-2013, farm business diversification is considered to be the most important strategy by the focus groups. This is in line with the results of other research such as the Eurolan project, which underlined the importance of multifunctionality of agriculture (Brouwer et al. 2008). To this can be added pluri-activity, i.e. members of the family spending some or all of their time working off the farm. In this process of application for funds, the role of human and social capital is very important, which also requires adequate local institutions (Gatweiler et al. 2002). Good practices such as ADER can assist with this process.

References

- Brouwer F., van Rheenen T., Dhillion S.S., Elgersma A.M., 2008, *Sustainable Land Management. Strategies to Cope with the Marginalisation of Agriculture*. Edward Elgar Publishing.
- Csáki Cs., Forgács Cs., 2008, *Observation on Regional Level*. In: Csáki Csaba et al. (eds.), *Restructuring Market Relations in Food and Agriculture of Central and Eastern Europe: Impacts upon Small Farmers*. ISBN 978-963-502-883-2, 29-51.
- DEFRA, 2007a, *Agriculture in the UK*, Chapter 7. <https://statistics.defra.gov.uk/esg/publications/auk/2007/08%20AUK%202007%20Chapter%207.pdf> (accessed October 2008).

- DEFRA, 2007b, *Environment*, Chapter 15, <https://statistics.defra.gov.uk/esg/publications/auk/2007/16%20AUK%202007%20Chapter%2015.pdf> (accessed October 2008).
- EEA, 2001, *Indicator Fact Sheet Signals 2001*, Chapter Agriculture, http://themes.eea.europa.eu/Sectors_and_activities/agriculture/indicators/cap/ag09_16.5.01.pdf.
- EEA, 2005, *Area under Organic Farming*, (CSI 026), Assessment published Nov 2005, http://themes.eea.europa.eu/IMS/ISpecs/ISpecification20041007132106/IAssessment1116845979277/view_content (accessed October 2008).
- Eurostat, 2007a, *Agriculture. Main statistics 2005-2006*, Eurostat Pocket-books, ISBN 978-92-79-05698-7.
- Eurostat, 2007b, *Agricultural statistics. Data 1995-2005*, Eurostat Pocket-books, ISBN 92-79-02955-X.
- Fieldsend A.F., Boone J.M., 2007, *A Practical Guide to Stimulating Entrepreneurship in Rural Areas*, Essex C.C., Chelmsford, UK. 68 pp.
- Gatzweiler F.W., Judis R., Hagerdorn K., 2002, *Sustainable Agriculture in central and Eastern European Countries*. The Environment Effects of Transition and Needs for Change, Institutional Change in Agriculture and Nature Resources, vol. 10, Aachen, Shaker, ISBN 3-8322-0366-4.
- Katona-Kovács J., 2007, *Analysis of Agri-environmental Measures in Hungary – a Regional Perspective*, Studies in Agricultural Economies, 107, 79-96.
- Kormos-Koch K., 2007, *Characteristics of environmentally conscious production behaviour in agricultural waste management*, Studies in Agricultural Economies, 107, 97-108.
- Kovács T., 2008, *Gazdaportré* (Portrait with farmers), Agroinform Kiadó.
- Murphy J., 2007, *ADER Farm Survey 2006/07*, <http://212.219.114.60/documents/ADER%20Farm%20Survey%20complete%20doc>, 51pp., (accessed 14 March 2008).
- OECD, 2002, *OECD környezeti adattár 2002. Személyenyek az OECD környezetpolitikájából. Környezetvédelmi és Vízügyi Minisztérium* (OECD environmental indicators).
- OECD, 2008, *Environmental Performance of Agriculture in OECD Countries since 1990*, Paris, France, www.oecd.org/tad/env/indicators.
- SERA, 2006, *Study on Employment in Rural Areas*, Final Deliverable, Copus et al., Study commissioned by European Commission http://ec.europa.eu/agriculture/publi/reports/ruralemployment/sera_report.pdf (accessed 11 October 2007)
- Szabó G., Katona-Kovács J., 2008, *A fenntarthatóság, környezetvédelem és hatékonyság* (Sustainability, Environmental Protection and Efficiency), In: Szerk Szűcs I., Farkasné Fekete M. (eds.), *Hatékonyság a mezőgazdaságban* (Elmélet és gyakorlat), ISBN 978-963-502-889-4, 319-338.
- Vásáry M., Osztrogonác I., 2008, *A közvetlen támogatások implementációjának egyes hazai tapasztalatai* (Some effects of the implementation of direct payments in Hungary), Georgikon Napok, Keszthely, CD.

Vorley B., Proctor F, 2008, *Small-scale Producer in Modern Agrifood Market*, In: Csáki Csaba et al. (eds.), *Restructuring Market Relations in Food and Agriculture of central and Eastern Europe: Impacts upon Small Farmers*, ISBN 978-963-502-883-2, 21-27.

van der Ploeg J.D., Renting H., 2004, *Behind the 'Redux': a Rejoinder to David Goodma*, *Sociologia Ruralis*, 44(2), 233-242.

van Huylenbroeck G., Vandermeulen V., Mettepenningen E., Verspecht A., 2007, *Multifunctionality of Agriculture: A Review of Definitions, Evidence and Instruments*, *Living Reviews in Landscape Research* 1(3), Online article Cited 6 December 2007, <http://www.livingreviews.org/lrlr-2007-3>.

Appendix. Primary results of the survey.

Percentage									
	Strongly agree (1)	Agree (2)	Neither (3)	Dis-agree (4)	Strongly disagree (5)	Not applicable	Not answered	Mean	Standard Deviation
S1. Compared with last year, I will invest more capital in my farm business next year									
UK	5.8	35.5	30.0	15.6	3.7	8.0	1.3	2.7	0.96
HU	8.6	59.0	10.5	15.2	3.8	1.9	1.0	2.5	0.99
S2. In the management of my farm, I don't distinguish between the landscape and production									
UK	1.1	19.1	19.4	29.4	19.1	9.0	2.9	3.6	1.40
HU	30.5	61.0	6.7	1.0	0.0	0.0	1.0	1.8	0.61
S3. I'm confident I can farm successfully after 2012 with no government support payment									
UK	4.5	21.2	22.8	23.3	18.0	8.8	1.3	3.5	1.41
HU	2.9	13.3	13.3	46.7	22.9	1.0	0.0	3.7	1.05
S4. I can't afford to change the way I farm									
UK	3.2	21.5	23.3	30.5	12.7	6.9	1.9	3.4	1.33
HU	15.2	48.6	11.4	20.0	1.9	0.0	2.9	2.4	1.05
S5. I'm planning ahead with an eye on market trends and opportunities									
UK	17.2	61.8	9.0	3.2	1.6	6.1	1.1	2.3	1.22
HU	21.0	66.7	6.7	3.8	1.0	0.0	1.0	2.0	0.72
S6. I can easily obtain the advice and information I need to develop my farm business									
UK	8.2	56.0	21.5	6.1	2.9	4.0	1.3	2.5	1.13
HU	10.5	39.0	7.6	24.8	16.2	1.0	1.0	3.0	1.32
S7. I'm willing to change my farming to satisfy customer needs									
UK	16.4	63.9	9.3	1.9	1.9	4.2	2.4	2.1	1.12
HU	18.1	62.9	7.6	6.7	0.0	2.9	1.9	2.0	0.75
S8. There are too many competing update events for farmers to attend									
UK	10.6	25.7	37.1	16.7	4.2	3.4	2.1	2.8	1.22
HU	2.9	6.7	9.5	48.6	28.6	2.9	1.0	4.0	0.97
S9. The next generation is actively involved in the long-term business decision making on the farm									
UK	7.4	32.9	23.1	13.5	5.6	15.9	1.3	3.2	1.58

Percentage									
	Strongly agree (1)	Agree (2)	Neither (3)	Dis-agree (4)	Strongly disagree (5)	Not applicable	Not answered	Mean	Standard Deviation
HU	15.2	40.0	9.5	14.3	8.6	10.5	1.9	2.6	1.24
S10. The public is a barrier to my farm business developments									
UK	4.2	19.4	29.7	26.8	12.7	4.8	2.4	3.3	1.30
HU	6.7	7.6	21.0	41.0	14.3	9.5	0.0	3.5	1.09
S11. Soil erosion is not a problem on my farm									
UK	10.9	49.9	17.5	11.4	2.4	6.4	1.6	2.6	1.30
HU	5.7	41.0	8.6	33.3	4.8	6.7	0.0	2.9	1.12
S12. There is a soil erosion problem across the country									
UK	3.4	34.5	38.2	13.5	3.4	4.0	2.9	2.8	1.07
HU	13.3	52.4	17.1	10.5	1.0	4.8	1.0	2.3	0.88
S13. Climate change will affect my business									
UK	11.4	54.4	22.5	5.0	1.6	3.7	1.1	2.4	1.08
HU	21.9	56.2	18.1	1.9	1.9	0.0	0.0	2.1	0.81
S14. Diffuse pollution is a major issue for farming									
UK	7.2	46.4	30.5	7.7	2.4	2.9	2.9	2.5	1.10
HU	10.5	39.0	13.3	29.5	4.8	1.9	1.0	2.8	1.14
S15. Farming in the 21st century will focus more on environmental management than food production									
UK	11.9	44.8	23.3	13.8	3.2	1.1	1.9	2.5	1.09
HU	11.4	37.1	24.8	21.9	1.0	1.0	2.9	2.6	1.00
S16. I believe strongly farming is only about production of commodity foodstuffs									
UK	3.2	14.3	19.4	44.8	15.4	1.1	1.9	3.5	1.15
HU	6.7	34.3	3.8	49.5	2.9	1.0	1.9	3.1	1.12
S17. I'll continue to manage environmental features (field margins, hedgerows, etc.) even after EU funding ends									
UK	10.1	52.5	18.3	9.3	3.7	4.5	1.6	2.5	1.22
HU	19.0	67.6	5.7	3.8	1.9	1.0	1.0	2.0	0.77
S18. Over the next 10 years, learning and taking advantage of new information will be critical for successful management									
UK	27.6	55.7	10.9	1.9	0.8	2.1	1.1	2.0	0.96
HU	38.1	52.4	5.7	1.9	0.0	0.0	0.0	1.9	0.67