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ENVIRONMENTAL SUSTAINABILITY AMONG YOUNG FARMERS IN THE HOMOKHÁTSÁG

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Abstract: We pay special attention to the young farmers of the Homokhátság (Sand Ridge between the Danube and the river Tisza in Hungary) because we assume that they have to deal with special problems that are characteristic of this area. We present what role can young farmers play in the sustainable development of the region and to what extent, considering also size constraints. The results of our empirical analysis were based primarily on questionnaires and personal interviews. We have shown the correlation between the issue of economic sustainability and the supply of own machinery and assets. Primary research has demonstrated that the supply of adequate machinery and assets has a positive relationship with the issue of economic sustainability (development). We have shown that in the environmentally sensitive Homokhátság the most important problem is perceived to be not the aridification.

Introduction

Aridification is a great problem of agriculture, especially in the Homokhátság (Sand ridge between the Danube and the river Tisza in Hungary). The aging population partly entails the aging of the farming society, which is a serious problem throughout Europe, including Hungary. In the European Union (hereafter referred to as the EU), one-third of farmers are over 65 and over 50% have crossed the age of 55. So the role of young farmers, their thinking on environmental issues, attitudes to new solutions is getting higher importance.

The severity of the problem is indicated by the fact that in Hungary, according to data surveyed in 2000, the proportion of agricultural workers under 35 years was estimated at around 20% and the agricultural area they utilized was 12%. At the turn of the millennium, for every farmer under the age of 35, three farmers reached the age of 65. In 2010, this number has already increased to four, while in 2013 it has grown to nearly five. By contrast, the proportion of farmers under the age of 35 is only 6%, which shows that the change in generations is not happening at the appropriate rate, the farming society is constantly aging (Eurostat 2015).

In our research, we pay special attention to the young farmers of the Homokhátság area. We assume that they have to deal with special problems that are particularly characteristic of this region. The phenomenon of aridification, a characteristic of this area, is a problem that appeared decades ago in the 1960s and has become more noticeable since then.

The growing role of multifunctional agriculture was declared in the European Union's AGENDA 2000 document published in 1997. According to this, agriculture has three functions. Besides the production and social functions, the environmental function of agriculture also appears (Kovács 2012). Nowadays, one of the main goals of rural development is the protection of environmental and natural values, the preservation of the European rural heritage, in which the preservation of the environment, the elaboration of the need for environmentally friendly agriculture and the multifunctionality of agriculture are of particular importance (Buday-Sántha 2001).

In the 21st century, however, every landowner must be aware of the environmental impacts of their production and make efforts to maintain productivity in line with the environmental security of resources (Takácsné 2008). More and more focus has gone on the environmental

effects of agricultural practice in the Common Agricultural Policy (CAP). Due to the limitation of the paper, we do not deal deeper with the question. The environmental issues are also important when we are thinking of farming strategies. Tóth et al. (2018) highlighted that set-aside management under agri-environment schemes has profound effects not only on certain soil physical and chemical properties but on soil biodiversity and function as well. We agree with their thoughts, getting off farmland from crop production for at least two years, combining with other elements of Greening part of CAP can be an option but these aspects should be communicated among farmers. The problem with the Homokhátság, however, is that farming and land-use are not always in accordance with ecological conditions. Not going deeply into the problem, the old equipment system with low technical level, lack of current financial sources, low level of moral questions (i.e. what to put into the costs, from where the irrigation water comes, etc.) still should be highlighted. The general goals to meet the sustainable development of the Homokhátság must include the protection of resources, their sustainable utilization and the increase of its population retention capability (Csatári 2009, Kovács et al. 2017).

Climate change makes different effects on agriculture in European countries. An increase in frequency and intensity of weather extremes, eg. heavy rains, floods, a decrease of summer rainfall, drought, deepening groundwater, higher risk of soil erosion will be crucial problems in Hungary (Malatinszky et al. 2013) and the surrounding countries, too. Crop yields are also predicted to decrease (Figure 1.), higher importance should go on fertilization. Chemical fertilization should be carefully planned according to soil conditions. Since different treatments may have the same effect on yield, floristic and vegetation patterns of grasslands (Kizekova 2017) but with different costs, the farmers should make economic decisions, so the questions of externalities should be examined further.

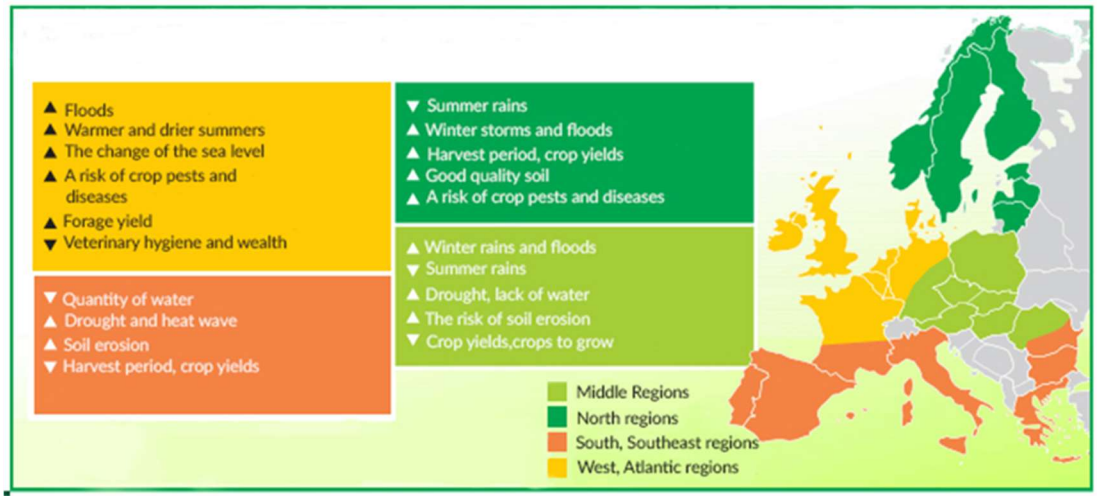


Figure1. Possible impacts of climate change on agriculture in the EU Member States
Source: European Commission-DG Agri (2013)
1. ábra Az éghajlatváltozás mezőgazdaságra gyakorolt lehetséges hatásai az EU tagállamaiban
Forrás: European Commission-DG Agri (2013)

Materials and methods

We present what role can young farmers play in the sustainable development of the region and to what extent, considering also size constraints.

The Homokhátság covers an area of approximately 10,000 km^2, with 117 settlements. In previous researches (Csatári 2004, Farkas 2006) 104 settlements have been identified as belonging to the Homokhátság, but the latest surveys already consider 117 settlements (Terra

Studio 2007). It is also often mentioned as being part of the Kiskunság, but it is not included in the systematic division of Hungary's natural landscapes, thus, the examined area cannot be included in one of the classical landscape categories. The area cannot be clearly defined in the public administration either. Most of it is located in Bács-Kiskun county, but significant parts extend to Pest and Csongrád counties. Csatári (2006) delineates Homokhátság as the intervention area of the government program aimed at reducing the adverse effects of the subsidence of subsurface water levels in the Danube–Tisza interfluves.

Hungary's location within the Carpathian Basin has implications for many factors, including landscape, climatic, economic, or social considerations. Summarizing the environmental, economic and social challenges of the region, Csatári draws attention to the need to assess the problems of the region with a systemic approach (Figure 2.).

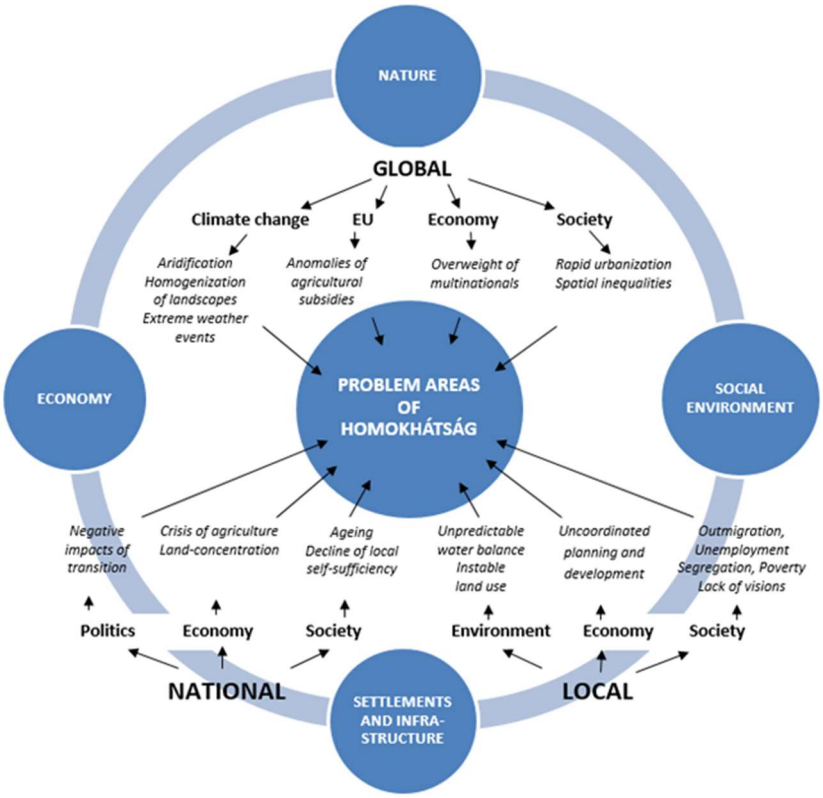


Figure 2. Main factors of Homokhátság's problems
Source: Kovács et al. (2017), based on the article of Csatári (2009)
2. ábra A Homokhátság problémáinak fő tényezői
Forrás: Csatári (2009) alapján Kovács et al. (2017)

The above-presented processes and problems of the Homokhátság region affect both the natural landscape and the social, urban, economic trends. Kovács et al. (2017) state that the region's complex rural development should primarily be an adaptation strategy developed for the treatment of aridification.

In addition to the processing and review of the literature on the topic (due to the limitations of the paper it was not our aim to summarize a higher amount of literature), the empirical research carried out independently can help in the exploration of the difficulties experienced in practice, which proves or rejects our assumptions.

The results of our empirical analysis were based primarily on questionnaires and personal interviews. After the questionnaire, we asked in-depth interview questions currently related to the topic. Previous experience has shown that completing the questionnaire entrusted to the farmer (either paper-based or online) results in a low return rate, so we chose a personal query.

It was important for us to include in the sample those who started their farms in the framework of a tender for young farmers, who, if necessary, started to engage in agricultural activities without any background.

In the initial phase of the research, we asked the help of village consultants, tender writers and the National Chamber of Agriculture for the selection of farmers. It was difficult for us that due to the rejections by the farmers, there were settlements where no interviewee could be found, so we didn't get any additional addresses or contacts from there.

The starting point for the research was to involve farmers over 40. The designation of the age group was based on the joint research of the Hungarian Central Statistical Office and the Hungarian Association of Young Farmers AGRYA (Situation of young farmers in Hungary 2013), as in the AGRYA association, unlike in international practice, people under the age of 40 are considered young farmers.

The sample was comprised of farmers working as private entrepreneurs. We have personally contacted the owners in the Homokhátság under 40, a total of 124 young farmers. The interviewees were selected using the snowball method. This procedure is usually used for exploratory purposes where sampling error is also higher. Questionnaires were distributed and interviews were conducted between October 2016 and March 2017.

We chose face-to-face interviews to include the questionnaires because the advantage is that the response rate is very high and any misunderstandings can be easily clarified. Another advantage is that we could take notes during and after the questions. Due to the additional tasks, the duration of the research was long, as each personal visit took 2 or even 3 hours. The in-depth interviews were conducted in the respondents' homes and farms, where they were able to immerse themselves in their feelings and thoughts, and most of them introduced their farm to us. In-depth interviews were conducted using a pre-written interview outline. In the interview outline, we recorded the topics to which we sought answers. In the preparation, the most difficult thing was to learn that we do not influence the respondent in any way, by the question, but still, all the questions that are important to us are included in the topics. Information about the respondent should be placed at the beginning of the questionnaire only if the interviewer must decide whether the respondent should be interviewed, ie. whether he or she fits into the pre-defined quota system. At the beginning of the questionnaire, it was important for us to filter out that the respondent was not older than 40 years old and he/she is working in the Homokhátság, so we asked the demographic and personal questions at the beginning of the questionnaire.

From the scale of statistical examinations, we chose the procedures that we thought to be the most suitable for conducting the desired examination and evaluating the results. Most of them were simple statistical methods, cross-tabulation analysis, factor and cluster analysis (Sajtos-Mitev 2007). During the factor analysis, we reduced the number of variables, and then, based on the reduced units thus obtained, we divided our observation units into groups, which is called cluster analysis. From the simple statistical methods, we applied the mean, the standard deviation and the distribution. The data were evaluated with SPSS. Using cross-tabulation analysis, we examined relationships between a total of 22 pairs of variables, however, only the relationships between the following questions related to the topic of the study are described (Table 1.).

Table 1. Questions of the cross-table analysis
1. táblázat A kereszttábla elemzések kérdései

1.	agricultural education of the farmer	environmental sustainability of farms
2.	form of farming (conventional, eco, mixed, transitional)	environmental sustainability of farms
3.	size of the land owned by the farmer	economic sustainability of farms
4.	per capita monthly net income of the family	use of renewable energy sources

Factor analysis is not a single statistical procedure but a collection of concepts. We use metric variables for factor analysis, but the use of dummy variables (0 and 1) is also allowed and widespread, so we could also apply it to the answers to the questions in the questionnaire. There are two types of exploratory factor analysis, of which the common factor analysis and main component analysis are distinguished (Sajtos-Mitev 2007).

With the help of factor analysis, we examined those issues affecting the future of the enterprises that could determine the future goals of young farmers. Issues that affect the environmental sustainability of young farmers' economies were also examined. The set of variables analyzed was determined based on the questions that could affect the environmental sustainability of farms (e.g. use of renewable energy, use of water, what the farmer is doing to protect the environment). We have also looked at issues relating to young farmer tenders among those who already had experience in the application. The questions asked were answered by young farmers who already had a successful tender.

The purpose of cluster analysis is to arrange the observation units into homogeneous groups based on the variables included in the analysis. It can be used primarily as an exploratory technique. Unlike factor analysis, it does not reduce the number of variables but the number of observation units (Sajtos-Mitev 2007). Clusters were obtained through factors influencing the future of farms and factors affecting the environmental sustainability of farms.

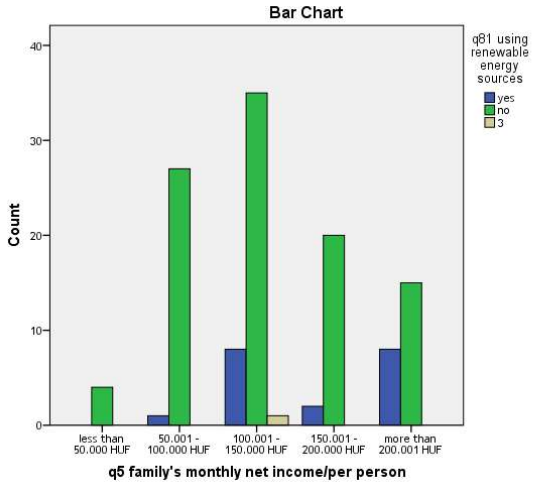
Results and discussion

Questions relating to environmental protection and sustainability

Looking at the environmental and economic sustainability of farms, it can be stated that most of the respondents (77.4%) think that their economy complies with environmental sustainability, 91.1% believe that their economy can develop shortly, so the principles of economic sustainability also prevail. During the personal conversations, it has become obvious that farmers who do not consider their farms to be environmentally sustainable are primarily concerned with the problem of water availability, its quality and quantity are both an issue. Both with plastic tunnel horticulture and in livestock farms the amount of water abstraction is worrisome for the future. The use of renewable energy sources is still quite new among the young farmers surveyed, with 20 of the 124 farmers using renewable energy sources (16.1%). Several farmers also indicated that due to lack of resources they could not obtain alternative energy sources so far, but if there was a tender available, they would be happy to use it or try one of its forms. Most households and farms use solar energy followed by biomass. 11 households only use solar energy, and 4 respondents use only biomass.

We examined the relationship between the per capita monthly net income of the family and the use of renewable energy sources. Most farmers with higher incomes (100.000 HUF / person) can afford to use renewable energy sources (Figure 3.). Symmetric indicators are all significant, but there is a weak link between the two variables. It is characteristic of the producers involved in the research that renewable energy sources are not primarily used by farmers with homesteads. We did not find any significant correlation between the use of renewable energy sources and farmers with homesteads. This finding suggests that these farmers did not invest in renewable energy sources from the farm development tender but their sources.

There was no correlation between the opinion on the environmental sustainability of farms and the agricultural education of respondents. Of the 28 young farmers who do not think their farm is environmentally sustainable, most of them (15 persons) have college or university degrees, but there are also those with vocational training (5), one with a high school diploma, and seven with technician qualifications. Three of them did not have a degree in agriculture.



Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10,738[a]	4	,030
Likelihood Ratio	11,495	4	,022
Linear-by-Linear Association	6,979	1	,008
N of Valid Cases	123		

a. 5 cells (50,0%) have expected count less than 5. The minimum expected count is ,62.

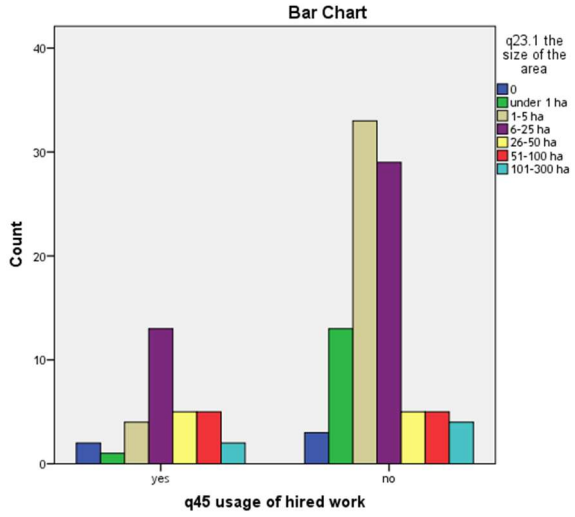
Figure 3. Relationship between the use of renewable energy sources and monthly net income per capita of the family (n=123)

3. ábra A család 1 főre jutó havi nettó jövedelme és a megújuló energiaforrások használata közötti összefüggés vizsgálata (n=123)

Of the 124 interviewees, eight are involved in organic farming, and 20 people plan to convert to organic farming. 95 people do not plan any transition from conventional farming. The main reason mentioned was: 'I do not believe that you can produce without chemicals'(25) and the 'labor shortage'(25). Among other things, it has been mentioned that the currently cultivated varieties can not be produced within the framework of organic farming (for example, apple plantations need plant protection treatments 23–28 times a year).

Under economic sustainability, we mean that the farms can at least achieve the result necessary for simple reproduction. Economic sustainability is not influenced by the size (ha) of its area. Owners of smaller and bigger farms also claimed to comply with the criterion of economic sustainability (development).

Farmers who own larger lands are also often subcontracting in the area (Figure 4.). They are primarily helping smaller farms that do not have the right power tools and machines to cultivate their own, typically smaller area, or to carry out the necessary harvesting and other work.



Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,291[a]	6	,027
Likelihood Ratio	14,994	6	,020
Linear-by-Linear Association	6,601	1	,010
N of Valid Cases	124		

a. 7 cells (50,0%) have expected count less than 5. The minimum expected count is 1,29.

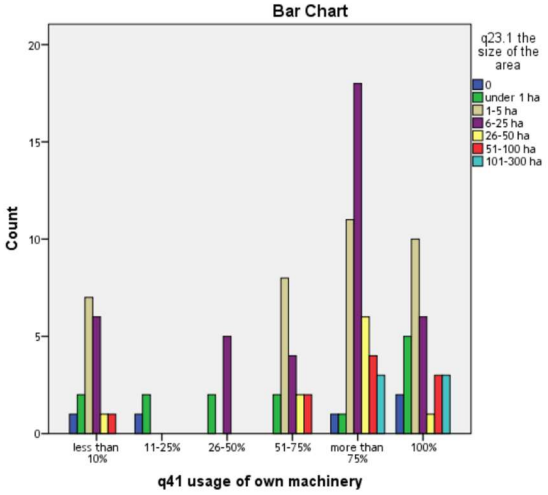
Figure 4. Relationship between the size of the area and usage of hired work (n=124)

4. ábra A saját terület nagysága és a bérmunka vállalása közötti összefüggés vizsgálata (n=124)

Symmetric indicators are significant but there is a weak link between the two variables. The fact that a young farmer is farming on a larger or smaller area does not affect whether they are engaged in full or part-time. Many of the farmers involved in the survey are producing crops under a plastic tunnel or in a greenhouse, so they are growing in a smaller area than crop farmers.

Next, we sought to find out whether having agricultural forebearers affects a farmer's willingness to lend his machines as a courtesy. It is known that elderly farmers are rather unwilling to cooperate due to the negative experiences of the previous system and are reluctant to lend out their machines. However, the analysis shows that young farmers involved in the survey are also reluctant to lend their machines, which is mainly due to personal experience.

The size of the land owned is related to the owner's machine and asset supply. It is characteristic that farmers with a larger area have their machine and equipment parks, thus solving a significant part of the workflows on the farm with their machines and needing no subcontracting work or external services (Figure 5.).



Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42,923[a]	30	,060
Likelihood Ratio	44,041	30	,047
Linear-by-Linear Association	3,463	1	,063
N of Valid Cases	120		

a. 33 cells (78,6%) have expected count less than 5. The minimum expected count is ,13.

Figure 5. Relationship between the size of the area and usage of own machinery (n=120)
5. ábra A saját terület nagysága és a saját gépellátottság megítélése közötti összefüggés vizsgálat (n=120)

Farmers who are currently growing in a smaller area will want to expand their territory in the future because they are planning to buy land within 5 years once they have the opportunity. The capital-rich farmers with a larger farm also tend to increase their holdings shortly, so the size of the current holdings does not influence the future intention to buy land.

In the case of the examined sample, the distribution of income from agriculture within total income is not affected by the size of the owner's area, since the production of crops in a greenhouse or under plastic takes place in a smaller area, thus even on that smaller area production can be profitable. This explains why we did not find any correlation between the size of the owned area and the percentage distribution of income from agriculture.

As far as the start-up support for young farmers is concerned, those launching additional services (e.g. tourism) received extra credit. It was not typical for the farmers participating in the survey that those submitting young farmer tenders would plan to start other services in the future, as there is no significant correlation between the answer to the two questions.

Questions on environmental sustainability issues

The question 'what does the phrase that we have borrowed the Earth from our grandchildren mean to you proved to be a difficult concept to understand and explain to most of the interviewees. Most of them interpreted it as 'I am trying to live and manage by it' and only a

few of them understood the true meaning behind it. Based on the opinions, to date, the majority of farmers do not take into account environmental protection rules or regulations.

This also predicts that a change in farming practices is needed as the current practice can not be maintained. Three of the young farmers mentioned the significant amount of water consumption for their farms, which, in particular, is a significant quantity for vegetable and greenhouse crops and livestock production. There are some farms where the water abstraction method is not even tied to permits. There are many unlicensed, illegally drilled wells in the area. The water used is not paid for by farmers, which leads to wasteful practices.

For fruit producers, especially in the case of apple farms, pesticide treatments up to 25–28 times per year are necessary, which is not beneficial to the fauna. According to the responding farmer, 'it would be good to reduce the number of sprays to a minimum, but the current varieties do not allow this, because buyers are looking for apples that are pretty and of good size.'
Several young farmers (21.17%) are trying to leave their land at least in the same shape as they have received it. There were some typical answers, 'I'm trying to manage like this,' or 'we would have to manage like this,' but to us, this did not mean that they farm like this. In addition to the general environmental aspirations ('we use organic fertilizer', 'do not burn plastic waste', 'oil does not drip from the machines', 'do not unnecessarily release a plant protection product') composting was also mentioned. No mention was made of fertilizing according to a nutrition management plan. As far as the farm is concerned, many use biological plant protection, gray-digestive bacteria and as far as possible try to replenish the nutrient content of the soil with organic fertilizers, or are using plant protection products in a timely and appropriate manner. In most livestock holdings, however, the issue of manure storage has not yet been solved, due to expensive investment costs. Packaging materials and chemicals are placed at collecting points and there was a farmer who mentioned that it is possible to place plastic packaging materials and foils at the local government. There have been some farms where organic farming is not yet a practice, but they use plant protection products that can be used in organic farming.

The greening initiative of CAP has divided the respondents. The issue does not affect farmers who are producing in greenhouses or under the plastic tunnel, because greening is only mandatory for arable crops and grasslands. Greening would be a good start because it would bring nutrients back to the soil, but depending on the crop structure, sowing time and soil compacting could reduce its effectiveness. Most believe that an impact study should be carried out on how useful this is for the environment. According to many, farmers are only doing it for the money, and there are no conscious environmental protection efforts or environmentally friendly farming practices behind it. Plant diversification and the abolition of monoculture are only implemented in exchange for the grants. There is still no progress in the formulation of attitudes, as in most cases it is the amount of support that matters and not environmental protection itself. The issues relating to environmental sustainability were analyzed.

During the analysis, the 6 factors have received the following names, which define the relationships of young farmers to environmental sustainability. Six different groups were defined, based on their attitudes:

1. Direct environmental protection measures of the household factor: those environmental measures were included here, which farmers themselves can decide if they want to undertake to protect their environment (e.g. sewerage system, waste separation).

2. Environmental protection measures of the household limited by capability: includes factors that are independent of the decisions of the farmers (e.g. selective waste and sewage collection in the settlement and the outskirts).

3. In the case of the greening of own area factor greening and arable crops take positive values, which shows that greening is a compulsory element for arable land above a certain size. The two values negatively correlate with the size of the area because arable crops could also be produced in smaller areas while greening is a 'task' for larger farms to gain extra subsidies.

4. In the case of a connection between plantation and livestock breeding factors, running a plantation does not entail animal husbandry.

5. Horticultural farms meet the criterion of environmental sustainability according to factor

6. Based on the last factor, meeting market needs, most farms do not want to deal with organic farming, at the same time they do not meet environmental sustainability standards either. Satisfying market demands and successful selling are their primary considerations.

Environmental protection measures in the households are influenced by the greening projects required as part of the environmental programs, as well as the cultivation branches, the priority of animal husbandry and adaptation to market needs.

Conclusions

We have shown a correlation between the issue of economic sustainability and the supply of own machinery and assets. Primary research has demonstrated that the supply of adequate machinery and assets has a positive relationship with the issue of economic sustainability (development). We have shown that in the environmentally sensitive Homokhátság the most important problem is perceived to be not the question of aridification. Owners primarily identify labor shortage as the biggest risk that influences future management of their farms. Typically, the majority of farmers do not realize that the current way of farming is environmentally unsustainable.

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References

Buday-Sántha A. 2001: Agrárpolitika-Vidékpolitika. Dialóg-Campus Kiadó, Budapest-Pécs. p. 463.

Csatári, B. 2009: Between the Danube and the Tisza - the past, the current dangers, and hopes for the future. Falu Város Régió (1.) (special edition) p. 79.

European Comission 2013: Possible impacts of climate change on agriculture in EU Member States.

Eurostat 2015: Agriculture, forestry and fishery statistics.

Kizekova, M., Feoli, E., Parente, G., Kanianska, R. 2017: Analysis of the effects of mineral fertilization on species diversity and yield of permanent grasslands: revisited data to mediate economic and environmental needs. Community Ecology 18: 295–304.

Kovács, A. D., Hoyk, E., Farkas, J. Zs. 2017: Homokhátság – A semi-arid region facing with complex problems in the Carpathian Basin. European Countryside 9(1): 29–50.

Kovács T. 2012: Vidékfejlesztési politika. Dialog-Campus Kiadó, Budapest – Pécs. p. 224.

Kőszegi, I. R. 2017: The importance of environmental protection from the perspective of young farmers in the Homokhátság region. Annals of the Polish Association of Agricultural and Agribusiness Economists 19(3): 137–142.

Kőszegi, I. R. 2018: Study of young farmers in the Sand Dunes Area. PhD Dissertation Szent István University, Gödöllő. p. 182.

Laczka É., Weisz M. 2013: A fiatal gazdák helyzete Magyarországon. KSH és AGRYA kiadvány. p. 88.

Maciejczak, M., Takács, I., Takács-György, K. 2018: Use of smart innovations for development of climate smart agriculture. Annals of the Polish Association of Agricultural and Agribusiness Economists 20(2): 117–124.

Malatinszky, Á., Ádám, Sz., Falusi, E., Saláta, D., Penksza, K. 2013: Climate change related land use problems in protected wetlands: a study in a seriously affected Hungarian area. Climatic Change 118(3-4): 671–682.

Sajtos L., Mitev A. 2007: SPSS kutatási és adatelemzési kézikönyv. Alinea Kiadó Üzleti Szakkönyvtár p. 404.

Szabó L. 1996: A környezetvédelem, a környezetvédelem kialakulása. In: Thyll Sz. (szerk.): Környezetgazdálkodás a mezőgazdaságban. Mezőgazda Kiadó, Budapest. p. 425.

Szlávik J. 2007: Környezetgazdaságtan. Typortex Kiadó, Budapest. p. 260.

Takácsné György K. 2008: Vállalkozásirányítás a XXI. században. In: Kay R.D., Edwards W.M., Duffy P.A. (szerk.) Korszerű farmmenedzsment. Magyar Agrárkamara Szaktudás Kiadó Ház Zrt., Budapest. pp. 3–14.

Takács-György, K., Takács, I. 2011: Risk assessment and examination of economic aspects of precision weed management. Sustainability 3(8): 1114–1135.
Takácsné György, K. 2018: The innovation process of precision crop production– along with economic theories. In: Milics, G. (ed.) PREGA Science Scientific Conference on Precision Agriculture and Agro-Informatics Budapest, Magyarország. Agroinform Média Kft., Budapest. pp. 17–19.
Terra Studio – ÁBKSZ Konzorcium 2007: Előzetes megvalósíthatósági tanulmány - A Duna-Tisza közi Homokhátság fenntartható fejlesztése című projekt megalapozásához, Vezetői összefoglaló – Kormányhatározat – tervezet. p. 51.
Tóth, Z., Hornung, E., Báldi, A. 2018: Effects of set-aside management on certain elements of soil biota and early stage organic matter decomposition in a High Nature Value Area, Hungary. Nature Conservation 29: 1–26.
Turek, R.A. 2013: Sustainable agriculture – between sustainable development and economic competitiveness. In: Turek R. A. (ed.): Sustainable Technologies, Policies and Constraints in the Green Economy. PA: IGI Global Publishing, Hershey. pp. 219–235.
Valkó G., Kincses Á. 2014: A gazdaságok hosszú távú fennmaradását valószínűsítő tényezők a mezőgazdaságban. Gazdálkodás 58(1): 3–12.

A KÖRNYEZETI FENNTARTHATÓSÁG VIZSGÁLATA A HOMOKHÁTSÁGON GAZDÁLKODÓ FIATAL GAZDÁK KÖRÉBEN

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Kutatásunkban kiemelt figyelmet fordítunk a Duna-Tisza közi Homokhátság fiatal gazdáira, mert feltételezzük, hogy olyan sajátos, speciális problémákkal kell megküzdeniük, melyek hangsúlyosan csak erre a tájkörzetre jellemzőek. Munkánkban többek között azt vizsgáltuk, hogy a Homokhátság mezőgazdasági termeléssel foglalkozó fiatal gazdái mennyiben és milyen szerepet játszhatnak a térség fenntartható fejlődésében, ezért a környezetvédelemhez, fenntarthatósághoz kapcsolódó kérdések kiértékelését ismertetjük. Az empirikus elemzésünk eredményei elsősorban kérdőívezésen és személyes interjúkon alapultak. Összefüggést mutattunk ki a gazdasági fenntarthatóság kérdése és a saját gépek és eszközök birtoklása, tulajdonlása között. Az elsődleges kutatások kimutatták, hogy a megfelelő gépek és eszközök megléte pozitív kapcsolatban áll a gazdasági fenntarthatóság (fejlődés) kérdésével. Vizsgálatunk eredményei azt mutatják, hogy a környezeti szempontból érzékeny Homokhátságban a legfontosabb probléma nem a sivatagosodás kérdése.