Studies in Agricultural Economics

Volume 119, Number 3

Editor-in-Chief
Andrew F. FIELDSEND
Agrárgazdasági Kutató Intézet, Budapest, Hungary

Chair of the Editorial Board
JUHÁSZ Anikó
Agrárgazdasági Kutató Intézet, Budapest, Hungary

Editorial Board
Vilija ALEKNEVIČIENĖ
Aleksandro Stulginskio universitetas, Kaunas, Lithuania
Jerzy BAŃSKI
Instytut Geografii i PZ PAN, Warszawa, Poland
Sabine BAUM
Halle (Salle), Germany
Štefan BOJNEC
Univerze na Primorskem, Koper, Slovenia
Richard M. CRUSE
Iowa State University, Ames, USA
Sophia DAVIDOVA
University of Kent, Canterbury, UK
Thomas DAX
Bundesanstalt für Bergbauernfragen, Wien, Austria
FARKASNÉ FEKETE Mária
Szent István Egyetem, Gödöllő, Hungary
FEHÉR Alajos
Debreceni Egyetem, Debrecen, Hungary
FELFÖLDI János
Debreceni Egyetem, Debrecen, Hungary
FERTŐ Imre
Magyar Tudományos Akadémia, Budapest, Hungary
Mariantoinetta FIORE
Università degli Studi di Foggia, Foggia, Italy
Matthew GORTON
University of Newcastle, Newcastle, UK
David HARVEY
University of Newcastle, Newcastle, UK
Wim J.M. HEIJMAN
Wageningen University, Wageningen, The Netherlands
Carmen HUBBARD
University of Newcastle, Newcastle, UK
JÁMBOR Attila
Budapesti Corvinus Egyetem, Budapest, Hungary
KATONÁNÉ KOVÁCS Judit
Debreceni Egyetem, Debrecen, Hungary
KEREKES Kinga
Universitatea Babes-Bolyai, Cluj-Napoca, Romania
MAGDA Róbert
Szent István Egyetem, Gödöllő, Hungary
Jan W. OWSIŃSKI
Instytut Badań Systemowych, PAN, Warszawa, Poland
POPP József
Magyar Tudományos Akadémia, Budapest, Hungary
Vladimír SZÉKELY
Geografický ústav, SAV, Bratislava, Slovakia
TAKÁCSNÉ GYÖRGY Katalin
Óbudai Egyetem, Budapest, Hungary
TÓTH József
Budapesti Corvinus Egyetem, Budapest, Hungary
VÁSÁRY Viktória
Budapesti Gazdasági Egyetem Budapest, Hungary
Hillka VIHINEN
LUKE Luonnonvarakeskus, Helsinki, Finland
Hans VROLIJK
Wageningen Economics Research, Den Haag, The Netherlands

Technical Editor
BARNAFI László
Agrárgazdasági Kutató Intézet, Budapest, Hungary

Contents

Manuscripts should be prepared in English and sent via e-mail to the Editor-in-Chief at studies@aki.gov.hu.

The cost of printing this issue is supported by the Hungarian Academy of Sciences.

© Agrárgazdasági Kutató Intézet, 2017
1463 Budapest, POB 944, Hungary
https://www.aki.gov.hu/studies
ISSN 1418 2106 (printed)
ISSN 2063 0476 (electronic)
Established 1962

Foreword

Where are all the women in economics? This was the question posed in a recent article[1] on the BBC website. In the USA, only about 13 per cent of academic economists in permanent posts are women, while in the UK the proportion is only slightly better at 15.5 per cent. The article explores some of the possible reasons for this gender imbalance. Of particular concern is that the fact that the lack of women in senior roles has meant that many young women do not view themselves in those positions.

An extensive study of the composition of the editorial boards of 57 management journals by Metz and Harzing (2009)[2] showed that 80 per cent of the journals had 20 per cent or fewer women on their editorial boards, a situation that has subsequently improved only modestly. They also demonstrated a strong correlation between female first authorship and the proportion of female editorial board membership. They point to the 'pipeline effect' of the former enhancing the latter, but there is also evidence that the composition of a journal's editorial board influences the willingness of prospective authors to submit their work to it.

For *Studies in Agricultural Economics*, an aspiration towards gender balance on the editorial board is an integral part of a holistic approach that also includes diversity of academic expertise and geographical location. As a consequence, the percentage of women on the board has increased from 7 in early 2011 to 39 currently. Coincidentally, 41 per cent of papers in this volume of the journal (i.e. number 119) have female first authorship.

Fittingly, the first three papers in this issue have female first authors. The results of a survey of Hungarian consumers of short food supply chain (SFSC) products reported by Szabó showed that almost 70 per cent of the respondents are potential customers of SFSC products. Support rises with increasing age, and is higher among women, the more highly educated, those that are economically active or retired, and those with an average income.

Hooks, Macken-Walsh, McCarthy and Power present a critical discussion of the concepts of farm-level viability, sustainability and resilience, which are typically discussed separately in the literature. While farm viability and sustainability are important for family farms to survive, resilience is most deterministic of long-term survival. The authors conclude that agricultureal development models should be focused on all three concepts.

A survey by Kerekes, Pirău, Kis and Abrahám identified the following main factors influencing the decisions regarding educational choices of rural youth from Cluj county, Romania: the parents' attitude towards continuing education, the age, the number of siblings, the school performance and the computer skills of the respondents. To be effective, corrective measures will require adequate resources and continuity of implementation.

In the first of two papers on the dairy value chain, Gërdoçi, Skreli, Zhllima and Imami found that that trust, uncertainty and investment in specific assets are key determinants of sustainable relationships between small ruminant farmers and milk buyers in Albania. Dairy owners/managers should improve communication and increase information exchange with farmers, while government subsidy schemes should be further refined.

Price transmission on the Slovak dairy market after the end of European Union milk quotas was studied by Kharin, Lajdova and Bielik. The estimation of the price transmission elasticity supports the assumption that price changes are not transmitted efficiently from one level to another. However, symmetric price transmission exists between farm-gate and processor prices for whole milk in the long term.

This issue concludes with two international papers. Ejimakor, Quaicoe and Asiseh investigated agricultural factor use and substitution in the south-eastern United States. A substantial reduction in the use of farm chemicals could be achievable by increasing their price. Most of the factors are substitutes with the exceptions of capital and energy, and land and chemicals, which were found to be complements.

Finally, the impact of participation in micro-irrigation development on households' welfare in northern Ethiopia was measured by Gebrehiwot, Makina and Woldu. Their model takes the possibility of selection bias into account. The impact of irrigation use on the two outcome variables was positive and significant: income by 8.8 per cent and asset formation by 186 per cent as compared to non-users.

All readers are welcome to submit their research for possible publication in *Studies in Agricultural Economics*, a journal that attaches great importance to the principle of inclusiveness.

Andrew Fieldsend
Budapest, November 2017

[1] http://www.bbc.com/news/business-41571333
[2] https://www.jstor.org/stable/27759191?seq=1#page_scan_tab_contents

Reviewers

Dr. BAKUCS Zoltán ● Dr. Thomas DAX ● Dr. Liesbeth DRIES ● Dr. hab. Jan FAŁKOWSKI ● Dr. Matthew GORTON
Dr. MAGDA Róbert ● Dr. Jan OWSIŃSKI ● Prof. Dr. POPP József ● Dr. SZAKÁLY Zoltán ● Prof. Dr. SZÉKELY Csaba
Prof. Dr. TAKÁCSNE Katalin ● Dr. TÓTH József ● Prof. Hilkka VIHINEN

Editorial Advisory Panel

CSÁKI Csaba, Budapesti Corvinus Egyetem, Budapest, Hungary ● Mária KADLEČÍKOVÁ, Slovenská poľnohospodárska univerzita v Nitre, Slovakia
KISS Judit, MTA Világgazdasági Kutatóintézet, Budapest, Hungary ● LEHOTA József, Szent István Egyetem, Gödöllő, Hungary
POTORI Norbert, Agrárgazdasági Kutató Intézet, Budapest, Hungary ● SZAKÁLY Zoltán, Debreceni Egyetem, Debrecen, Hungary
SZÉKELY Csaba, Soproni Egyetem, Sopron, Hungary ● TAKÁCS István, Óbudai Egyetem, Budapest, Hungary

Technical report

KESZTHELYI Szilárd and MOLNÁR András

An analysis using FADN methodology of Hungarian farms in the EUR 2,000-4,000 SO size class

The Hungarian Farm Accountancy Data Network (FADN) consists of around 1,600 individual and almost 400 corporate sample farms. The Research Institute of Agricultural Economics (AKI) is responsible for the collection of micro-economic data on the costs and incomes of these. The results are published annually by AKI and may be downloaded from the AKI website (www.aki.gov.hu) or requested in printed form from aki@aki.gov.hu. These farms are representative of the approximately 106 thousand commercial Hungarian agricultural producers in terms of farm type, economic size and legal form, but smaller farms are not normally included in the analysis. This report presents the results of a first attempt by AKI to apply the FADN methodology to these smaller farms.

The primary task of the Farm Accountancy Data Network (FADN) system is to provide information about the full-time, market- and profit-oriented agricultural holdings. In recent years the FADN system has received several critical comments for not providing information on the smaller farms that play an important role from the perspective of rural development. There are two main reasons for that. One is that FADN data collection rules have been set to target only those agricultural holdings which can be reached and influenced by traditional agricultural policy measures. The other is cost efficiency, as significant cost savings in one of the European Union (EU)'s most expensive data collection exercises can be achieved by concentrating only on those bigger, commodity producer holdings which are relevant to the most important indicators (output, profit generation, utilisation of human resources).

Taking into account these considerations, in 2012 and 2013 we attempted to gather information from below-threshold level farms of EUR 2,000-4,000 Standard Output (SO) size. For this, we used a simplified version of the regular FADN data collection methodology, gathering not all the financial data. On the other hand, our questionnaire was extended to include household statistics elements.

The sample was based on the 2010 Hungarian Agricultural Census, according to which there were 73,203 small farms (14.9 per cent of the total population) in the EUR 2,000-4,000 SO size category. However, their agricultural output was only 1.06 per cent of the sector's total agricultural output. Data collection was done on 300 sample farms using regular FADN selection and weighting methodology.

The size of the small farms corresponds to size class 2 of the EU farm typology. Farms with 3.1 ha of wheat, 2.3 ha of maize, 1.2 ha of grapes or fruits, one cow or four sows can fall into this category. This farm size, on the other hand, is not big enough to provide a decent living for a family, therefore it is probable that agricultural production plays rather a supplementary role in these households. The main goal is not commodity production but fulfilment of the family's own needs as well as supplementation of earnings.

The average utilised agricultural area (UAA) of the analysed farms was 1.86 ha/farm. Most (1.44 ha/farm) of the UAA was accounted for by arable land. In second place was meadows and pastures, with 0.33 ha/farm on average, while the area of permanent crops (grapes and fruits) was only 0.09 ha/farm. As regards the animal herd, there were 0.89 livestock units per farm. The most significant of these were pigs (0.28 livestock units/farm), sheep (0.25 livestock units/farm) and poultry (0.20 livestock units/farm).

The smallest farms above the FADN threshold (size class 3) cultivated more than 3.5 times as much land (6.79 ha/farm) as those in size class 2 (Table 1). The mid-size and big farms above the EUR 8,000 SO threshold had 66.9 ha of land on average. By contrast, farms of size class 2 used only 32 per cent fewer human resources for agricultural production than

Table 1: Important indicators of Hungarian farms in size classes 2, 3 and 4, 2012 and 2013.

Indicator	Unit of measurement	Class 2 EUR 2,000-4,000 SO	Class 3 EUR 4,000-8,000 SO	Class 4 > EUR 8,000 SO
Utilised agricultural area	ha/farm	1.86	6.79	66.91
Labour force	AWU/farm	0.35	0.51	2.14
Livestock	Livestock units/100 ha UAA	48.0	18.6	28.5
Total assets	HUF 1,000 per ha UAA	1,873	1,390	1,081
Gross investments	HUF 1,000 per ha UAA	59.3	31.4	100.8
Net sales	HUF 1,000 per ha UAA	555	307	454
Gross production value from agriculture	HUF 1,000 per ha UAA	694	443	605
Material costs	HUF 1,000 per ha UAA	313.4	160.3	61.4
Total costs of farming	HUF 1,000 per ha UAA	614	349	490
Pre-tax profit	HUF 1,000 per ha UAA	80.1	94.0	112.2
Pre-tax profit	HUF 1,000 per AWU	430	1,261	3,510
Return on total output	Per cent	11.54	21.19	0.19
Return on labour	HUF 1,000 per AWU	637	1,648	5,055

Source: own data

farms of size class 3, meaning that they used almost three times as much labour per hectare. Either they were involved in more work-intensive activities or they were compensating for the lack of machinery with hand work which reduced their labour efficiency.

In terms of livestock, farms below the threshold had 2.5 times as many animals per hectare as above-threshold farms, highlighting the significantly higher animal stocking density of below-threshold farms. Compared to size class 3 farms, animal husbandry in size class 2 farms was much less profitable and sometimes not profitable at all, owing to high prices of feedstuffs. Thus, the higher stocking density of the below-threshold farms was not intended to achieve higher profits, but only to satisfy the family's own needs.

Owing to the 3.5 times smaller area as projection base and to the higher animal stocking density representing higher value, below-threshold farms achieved higher sales and gross production value per hectare compared to those above the threshold level (EUR 4,000-8,000 SO). On the other hand, the rates of the material and total costs per hectare were even higher and almost double those of the values of the above-threshold farms. The lower cost efficiency caused by the smaller farm size prevailed on the analysed small farms, too.

Overall, the profitability of the size class 2 and 3 farms differed in terms of pre-tax profit by only 17 per cent (HUF 80 cf. 94 thousand per ha respectively). Thanks to the lower labour efficiency of the below-threshold farms, pre-tax profit per agricultural work unit (AWU) was only one third of that of the above-threshold farms. Differences between the two classes regarding the return on labour and return on total output were 2 and 2.5 times respectively.

Based on these data, it is evident that, owing to the low economy of scale and to the inefficient utilisation of labour, below-threshold farms were producing at high cost, hindering the profitability of their agricultural activities. In view of the seemingly high willingness to undertake livestock production despite the weak profitability, we can conclude that for farms of size class 2, self-sufficiency rather than outstanding profitability is the main motivation for production.

In the great majority of the analysed small farms, the produced goods were meant to supplement the rural household income and the own consumption of the family. Therefore, we attempted to assess the income of these households (Table 2).

The average number of people living in one household was 2.5 and the average annual net income was HUF 1,704 thousand. In those households where crop production is dominant, the annual net income was 20 per cent higher (HUF 2,051 thousand) than the average, while in households with animal husbandry or mixed farming activities net incomes were lower (HUF 1,493 and 1,582 thousand respectively).

Half of the income came from non-agriculture-related employment, indicating that this was the most important source of household income. The second most important source was pension, making up one quarter of the annual net income. Still noticeable was the income from agriculture-related employment (7.3 per cent) and self-employment (5.38 per cent).

Although these households produced a share of their foodstuffs, a sizeable amount of their incomes was spent on food. On average, 30 per cent of income was spent on food purchases but, because of the specific nature of the produced foodstuffs, for mixed farms this share was higher, at 37 per cent.

We also categorised the households according to other dominant sources of income. The relative asset value was the highest on the farms with the biggest income from self-employment. These farms are typically innovative and open to making risky investments. Conversely, the assets of farms with high social allowances had the lowest asset value. In general, these farms used more labour and fewer machines (Table 3). These differences were mirrored also in the index of gross output value per hectare. The output value of self-employed farms (HUF 1,204 per ha) was twice as much as that of farms (HUF 481 per ha) with high social security payments.

Table 2: The income situation of Hungarian size class 2 rural households, 2012 and 2013.

Indicator	Unit of measurement per farm	Total	Crop producers	Animal managers	Mixed farms
Number of family (people in a household) members	Head	2.50	2.65	2.55	2.48
of which: people between 18-62 years of age	Head	1.69	1.83	1.75	1.66
Output	HUF 1,000	1,142	1,209	1,221	969
Income from self-employment	HUF 1,000	91.8	96.6	89.6	33.9
Income from interest and rental fees	HUF 1,000	15.74	71.61	4.79	1.26
Income (wages) from agriculture-related employment	HUF 1,000	126	223	130	217
Income (wages) from non-agriculture-related employment	HUF 1,000	937	932	703	971
Pension	HUF 1,000	428	564	464	239
Social allowances	HUF 1,000	58.8	105.1	65.8	104.5
Other income	HUF 1,000	47.9	58.9	35.7	15.8
Money spent on food (gross)	HUF 1,000	516	646	484	587

Source: own data

Table 3: The most important farm indicators according to other income sources, 2012 and 2013.

Indicator	Unit of measurement	Income from			Pension	Social allowances
		self-employment	agriculture related employment	non-agricultural activities		
Utilised agricultural area	Hectare per farm	1.35	2.00	1.66	2.05	2.25
Labour force	AWU per farm	0.29	0.41	0.29	0.37	0.37
Livestock	livestock unit per 100 ha UAA	36.6	72.8	50.5	42.1	64.0
Total assets	HUF 1,000 per ha UAA	4,086	2,467	1,830	1,716	1,068
Net sales	HUF 1,000 per ha UAA	908	462	603	504	397
Gross production value from agriculture	HUF 1,000 per ha UAA	1,204	575	738	644	481
Material costs	HUF 1,000 per ha UAA	51.2	77.8	82.3	71.8	53.0
Total costs of farming	HUF 1,000 per ha UAA	725	699	688	530	438
Pre-tax profit	HUF 1,000 per ha UAA	479.6	-123.7	50.0	112.6	43.4
Pre-tax profit	HUF 1,000 per AWU	2,244	-609	286	626	264
Return on total output	Per cent	39.83	-21.52	6.77	17.50	9.01
Return on labour	HUF 1,000 per AWU	2,244	-258	573	791	436

Source: own data

AKI-NAK-FAO REU conference report

The environmental sustainability dimension of short-term outlooks for agricultural markets

Budapest, 9 May 2017

In Hungary, there is yet little awareness among stakeholders concerning the effects of agricultural production on natural resources. Sustainability issues are gaining more importance, and regulations aimed at mitigating the negative environmental impacts of the sector, as well as voluntary standards reflecting commitments, will inevitably influence market developments even in the near future. To this end, AKI, in cooperation with the FAO Regional Office for Europe and Central Asia (REU) and supported by the Hungarian Chamber of Agriculture (NAK), brought together experts from across Europe as speakers who, from their professional experience, shed light on agricultural market trends in the context of environmental sustainability, focusing on the animal feed and livestock product chains. The conference, which had almost 300 registered participants, offered unique industry insights: it drew the attention of stakeholders to the challenges posed by environmental sustainability requirements, both governmental and in the frame of Corporate Social Responsibility, and considered innovative ways and means to cope with these challenges to enhance competitiveness.

Participants were welcomed by Feldman Zsolt, Deputy State Secretary for Agricultural Economy at the Hungarian Ministry of Agriculture, Balázs Győrffy, President of NAK, and Vladimir Rakhmanin, FAO Regional Representative for Europe and Central Asia, whose presentation entitled *Sustainability and agriculture – FAO perspective* elaborated on the issues of sustainable development, particularly in the context of the UN 2030 Agenda.

Opening the first block of four specialist speakers, Guljahan Kurbanova from FAO presented the *Outlook for cereal markets in Europe, North Africa and the Middle East with a focus on protein content and mycotoxin contamination of feed stuffs*. A number of urgent and comprehensive measures should be taken to mitigate and eliminate safety risks in the feed supply chain with priorities on research, and control measures and adequate investments.

Nicolas Martin of the European Feed Manufacturers' Federation discussed *The importance of bio-industry co-products for the sustainability of the compound feed industry*. Many co-products from other sectors are already used as feed ingredients. To describe the resource efficiency of the industry, new indicators are required which go beyond the feed conversion rate and capture the nature of the resources used.

In his presentation entitled *Environmental sustainability of US soybean production*, Brent Babb of the U.S. Soybean Export Council introduced the U.S. Soy Sustainability Assurance Protocol (SSAP), a certified aggregate approach audited by third parties. The approach is quantifiable and results-driven with mass balance international certification available. Over 9 million tonnes of SSAP certified soy were shipped in this marketing year.

Elisabeth Bömcke of Fertilizers Europe spoke on *Nitrogen fertiliser management strategies*. In order to understand more clearly the challenge posed by environmental sustainability requirements and their influence on near-future market development, her presentation provided some insight on how the European regulations designed to mitigate the negative environmental impacts of the agricultural sector have affected the use of fertilisers in the EU-15.

The first speaker in the second block was Richard A. Brown from Gira, the international food research and consultancy firm. He provided an *Outlook for European meat value chains from the aspect of environmental sustainability*, in which he commented on the size, structure and growth outlook of meat production in the European Union (EU). Environmental sustainability is well articulated in the EU but is still a major challenge.

The rise of the Spanish pig sector: how can integrations contribute to environmental sustainability? was the question posed by Pablo Bernardos Hernández from the Spanish Ministry of Agriculture and Fisheries, Food and Environment. He reviewed the main challenges facing the Spanish pigmeat sector in the short and medium terms, with a particular focus on the environmental challenges.

From Wageningen University & Research, Roel Jongeneel described the *Regionalisation in EU milk production and its environmental implications*. Based on a market outlook analysis at EU Member State level, he provided insight into the main drivers behind the regionalisation process and assessed the environmental implications, as well as the impact policy may have in counteracting specialisation trends since milk quota abolition.

The topic covered by Nan-Dirk Mulder of Rabobank was *Dealing with global food supply challenge: precision farming and environmental sustainability*. With rapidly rising global food demand and limited resources, governments and industries need to invest in smarter farm and value chains systems such as precision farming. There will be more direct linkages between grain surplus meat exporters and grain deficit importers.

Fernando Cisneros of DSM Nutritional Products concluded block 2 with his presentation on *Sustainability and environmental impacts of feed additives*. DSM is developing sustainable science-based nutrition solutions for producers worldwide that enable the production of dairy, meat and fish protein products for a growing population.

Juhász Anikó, General Director of AKI, offered some closing remarks on the morning session. In the afternoon two parallel group discussions were held, on Environmental sustainability of crop production, and livestock production, respectively, in Hungary.

The conference presentations can be downloaded in pdf format from https://goo.gl/o9TW3e

Abstracts of AKI publications

The results of AKI's research work are presented in detail in a series of Hungarian language publications. English language abstracts are reproduced below. The publications may be downloaded from the AKI website (www.aki.gov.hu) or requested in printed form from aki@aki.gov.hu.

STUMMER Ildikó (ed.)

The market developments of the most important agricultural commodities in 2016

Agroeconomic Information, published 2017

This publication discusses the market developments of the most important agricultural commodities in 2016, mainly by presenting price trends. The material is based on the price information and data of the Market Price Information System of the Research Institute of Agricultural Economics, and of various Hungarian and international sources. The producer price of milling wheat decreased by 15 per cent to HUF 41.2 thousand/tonne in 2016, while it fell for feed wheat by 14 per cent to HUF 38.4 thousand/tonne. The producer price of feed maize remained almost unchanged at HUF 41.4 thousand/tonne in 2016. Sunflower seed was 3 per cent cheaper (HUF 104.6 thousand/tonne) in 2016 compared to 2015, while the producer price of rapeseed declined by 2.5 per cent to HUF 109.5 thousand/tonne. In Hungary, 1076 thousand tonnes sugar beet were harvested in 2016, an increase of 18 per cent over 2015. As in previous years, in 2016 Hungarian pork prices tracked the prices in the European Union. The pig producer price was HUF 453 per kilogramme warm carcass weight, 5.9 per cent higher than one year earlier. The producer prices of slaughter chickens increased by 3 per cent compared to the previous year, to HUF 254 per kilogramme in 2016. In Hungary, the cattle and lamb producer prices fell by 8 and 4.4 per cent respectively in 2016, while the raw milk price decreased by 8 per cent. The production of fruit and vegetables increased in 2016 compared to 2015, and the producer prices decreased by 15–17 per cent. The processors' sale prices of wines without geographical indication and wines with protected geographical indication (PGI) increased by 4 per cent in 2016 compared to the previous year.

KESZTHELYI Szilárd

Results of Hungarian FADN farms 2014

Agroeconomic Information, published 2016

The brochure presents the results generated from the data of 1,608 individual and 374 corporate sample farms. The selected sample farms are representative of the 110 thousand commodity producer agricultural holdings in Hungary according to farm type, economic size and legal form. At national level, the individual farms contributed 51.4 per cent of the overall net value added of the sector, while corporate farms accounted for 47.4 per cent. The shares in the previous year were very similar. The profitability of the agricultural sector increased significantly in 2014; the net value added at country level was 8 per cent higher than the previous year. The profit before taxes of individual farms grew by 3 percentage points (HUF 141.8 thousand per hectare), while for corporate farms the rate of growth reached 20 percentage points (HUF 93.24 thousand per hectare). The biggest increase in income was achieved by pig farming (90 percentage points), followed by poultry (25 percentage points), dairy (24 percentage points) and mixed farms (28 percentage points), but the profitability of arable crops and cattle and sheep rearing farms also witnessed strong growth (8 and 12 percentage points respectively). The vine growers suffered the biggest decrease in income (53 percentage points) followed by fruit producers (35 percentage points) and field vegetables growers (12 percentage points). Indoor vegetable farms experienced a much moderate decline in income (6 percentage points) compared to 2013.

KEMÉNY Gábor, LÁMFALUSI Ibolya and MOLNÁR András (eds)

Comparative study of precision arable crop production

Agroeconomic Book, published 2017

The use of precision technology among arable farms is still less widespread in Hungary but the increase in the number of producers using the technology has accelerated in the last two-three years. In this study, the incidence of precision and no tillage farming in Hungary and the level of used technology was examined among arable farms of the Hungarian Farm Accountancy Data Network (FADN) system by means of a questionnaire survey and in-depth interviews. From the results of the survey and the data available in the FADN system, comparative assessment was completed to explore the benefits / disadvantages of precision farming regarding attainable yield, input use, output, unit cost and income for the five most dominant arable crops in Hungary. The results confirmed that application of precision technology leads to increasing yields, output, per hectare profit and unit costs. In contrast to expectations, our investigations also showed an increase in input costs, which can be explained by the low initial level of input use, quite common among arable farms in Hungary. The change towards modern technology means that the intensity of input use needs to increase in order to achieve optimal economic performance, that is attainable with higher yields. With the available data, we carried out sector-level estimates of the macroeconomic effects, assuming farms with similar structural characteristics introduce precision farming. Finally, the cost-benefit of investment needed for the introduction of precision technology was assessed.

BÉLÁDI Katalin (ed.)

The cost and income situation of the major Hungarian agricultural products in 2013-2015

Agroeconomic Information, published 2017

This publication examines the cost and income situation of the major agricultural products in the period 2013-2015 on the basis of data from the farms of the Hungarian FADN system. The processed data concerns the so-called 'determinant producer farms' that provide the dominant part of domestic production. In addition to the mean data, the results of different farming groups are presented. The changes in the cost and income situation of arable crops, horticultural products (fruit and vegetables) and livestock products are analysed in separate chapters. The period under review was characterised by favourable weather conditions. In many cases, there were record yields in either 2014 or 2015. The changes in the amount of expenses were different, therefore the unit costs were also very different, especially in horticulture. Owing to subsidies, enterprises made a per-hectare profit in the case of all crops. This indicator presented different results for the livestock sectors. It is important to note that the profit of pig fattening constantly declined, counter to the situation with chicken fattening.

JANKUNÉ KÜRTHY Gyöngyi, SZÉKELYHIDI Katalin and Dudás GYULA (eds)

Examination of the factors influencing the agri- and food exports of Hungary

Agroeconomic Book, published 2017

Recent decades have been characterised by deepening trade connections and the elimination of trade barriers. There are more and more trade agreements among countries, and their integration is becoming deeper and deeper. Nowadays not only tariffs, but non-tariff barriers are essential parts of trade negotiations. This process is continuous as ongoing negotiations between countries and regional blocs proceed, for example between the European Union (EU) and third countries. Hungary's most important market is the EU, the destination for 85 per cent of its exports. These processes make it necessary to identify and examine those factors that influence foreign trade flows, especially for Hungary. In this study, we analysed almost 200 countries and organised them into separate regions based on their geographical location and political affiliation. Among others, we examined their macroeconomic environment, the importance of their food economies, foreign trade relations, trade agreements, tariff rates, SPS measures, and other non-tariff barriers of each region. We also used a gravity model to explain the foreign trade of Hungary's food economy. Our results suggest that distance, tariffs and non-tariff barriers are serious obstacles to trade. They seem to confirm many countries' efforts to establish deeper cooperation, not just to reduce tariffs but also non-tariff barriers, which often remain after tariffs are eliminated. The country analysis confirmed the results of the model. We also identified possible target markets and the barriers than could impede entry to them. In addition, we determined development areas for Hungary to improve its food exports.

BÉLÁDI Katalin

Cost and income data of the major products of Hungarian food industry 2014-2015

Agroeconomic Information, published 2017

This publication presents data about the production costs and sales income of the food industry's most important products in 2014 and 2015 compared to 2013. Firstly, the price changes of the major food product groups are briefly summarised and, secondly, tabulated data of individual food products are presented. These data show a general decrease in the production costs of meat products in 2015. It is the usual tendency that market prices followed trends in production costs in the case of almost all products. In the case of many meat industry products, the costs decreased more than the prices, so the profits were lower. In the poultry, dairy, milling and baking industries, as well as in the production of pasta products, there are decreasing raw material costs in different levels compared to the previous period, and the total production costs are also lower. In the milling industry, each observed product was profitable in 2015. The mildest degree of price and cost changes was in the baking industry, and the data of the products are still quite diverse.

KEMÉNY, Gábor and LÁMFALUSI, Ibolya (eds)

Evaluation of the operation of the agricultural risk management system, 2016

Agroeconomic Book, published 2017

This publication presents the achievements and the operation of the risk management system in 2016. In the first pillar, the number of farmers and the compensation contribution increased due to some recent, favourable changes in the risk management system's regulations. In the weather conditions of this year, drought was of no significance compared to 2015, but hail and spring freezing caused serious damage. In total, the area of damage and the amount of contribution benefit substantially increased in 2016 compared to the previous year. Small and medium-sized fruit farmers mostly received the benefit. The number of farmers with subsidised insurance in the second pillar, together with the fee-stock and the compensation, increased considerably. All three categories increased the fees by over 30.0 per cent. The penetration in land area improved for all crops. The insurance compensation and the loss rate significantly increased, mainly for arable crops and plantations where hail, spring freezing and storms caused the most damage. The insurance premium subsidy increased from HUF 3 billion to HUF 4 billion in 2016 and was temporarily financed by the budget of the Rural Development Programme 2014-2020. The claims for subsidies again exceeded HUF 4 billion, so in 2016 it was necessary to redistribute the compensation, just as in the previous two years

ILLÉS Ivett and KEMÉNYNÉ HORVÁTH Zsuzsanna

The financial situation of agriculture and the food industry, 2016

Agroeconomic Information, published 2017

In this study, we examined the financial situation of corporations in agriculture and the food industry with double-entry bookkeeping in 2016 compared to the previous year. The 9,712 agricultural corporations accounted for 4.2 per cent of the total economy and 4.5 per cent of the profitable companies in 2016. Food industry corporations had a 2.3 per cent share of the total number organisations and a 2.1 per cent share of the profitable companies. The profit before tax of agricultural corporations did not change significantly: it increased from HUF 103.4 billion to HUF 105.4 billion. The profit before tax of the food industry organisations increased from HUF 129.8 billion to HUF 149.4 billion. In the food industry sectors, the financial operations increased significantly, and thus changed from being negative to positive. The income situation of agricultural corporations was as favourable as in the previous year, as the returns on sales and equity remained around 5 per cent in 2016. The income situation and liquidity of the food industry continued to improve: the sectors' returns on sales rose by 0.5 percentage points. Owing to the structural changes in equity, as rising shareholders' equity and declining liabilities, the level of indebtedness of the sector decreased.

Studies in Agricultural Economics

Information for authors

Studies in Agricultural Economics publishes original research papers, review papers, policy analyses and book reviews on agricultural economics, rural development and related topics including: agricultural production and competitiveness, environmental resource management, agri-food supply chain management, markets and marketing, international trade, econometrics, rural economic geography, rural economy and sociology, and development of information and knowledge based society in rural areas. *Studies in Agricultural Economics* is included in the Thomson Reuters™ Web of Science™ Core Collection.

Audience

Researchers, academics, policy makers and practitioners in agricultural economics and rural development, especially in eastern central and south-eastern Europe.

Submission of manuscripts

Submission of an article implies that the work described has not been published in English in any other peer-reviewed journal, is not under consideration for publication elsewhere, and that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out. The author will retain the copyright of the article but agrees to identify AKI as the original publisher. Papers will not normally exceed 6000 words including the reference list and figure and table captions. Authors intending to prepare a book review should first consult the Editor-in-Chief and such a review should not exceed 2000 words.

Shorter papers and comments, of up to 1500 words, will also be considered for publication. Such notes might deal with the economic aspects of policy, with the results of small research projects that do not justify a full-length article, or comment on articles previously published.

Manuscripts should be submitted in .doc or compatible format. They should be prepared using A4 format, TNR 12 pt text and 1.5 line spacing and be in single-column format with wide margins. Do not hyphenate words and use **bold** face and *italics* only sparingly, but use subscripts and superscripts where appropriate. Avoid the use of single-sentence paragraphs. Tables should be placed at the end of the manuscript and figures should be submitted as separate files, numbered accordingly. Page and line numbering (restart each page) must be used but no reference should be made to page numbers in the text. You should use the 'spell-check' and 'grammar-check' functions of your wordprocessor, which should be set to *English* English, to avoid unnecessary errors.

Manuscripts will be double-blind reviewed by at least two reviewers and may be returned to the author(s) for revision before acceptance for publication. The Editor-in-Chief will normally consider only one re-submission.

Article structure

Divide your article into clearly defined sections but do not use section or subsection numbers. Each heading should appear on its own separate line. For research papers you are urged to consider using the following structure:

- **Introduction.** State the objectives of the work and provide an adequate background with reference to the international literature, but avoiding a detailed literature survey or a summary of the results.
- **Methodology.** Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.
- **Results.** Results should be clear and concise.
- **Discussion.** This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section should normally be avoided. You should show how your results add to existing knowledge but avoid extensive citations and discussion of published literature.

Where it is not appropriate to use the above framework, you should finish the paper with conclusions.

Essential title page information

- **Title.** Concise and informative. Avoid abbreviations and formulae where possible.
- **Running title.** Please provide an abbreviated title of no more than 60 characters (including spaces) that can be used as a running title on the page header.
- **Author names and affiliations.** Present the authors' affiliation addresses (where the actual work was done) below their names.
- **Corresponding author.** Clearly indicate the corresponding author who will handle correspondence at all stages of refereeing and publication, also post-publication. Please provide a telephone and fax number in addition to the e-mail address and the complete postal address.
- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated. The address at which the author actually did the work must be retained as the main, affiliation address.

Additional information

- **Abstract.** A single paragraph of 100-250 words should state the purpose of the research, the principal results and major conclusions.
- **Keywords.** Please provide a maximum of six keywords.
- **Abbreviations.** If necessary, define abbreviations that are not standard in this field on the first page of the article.

- **Acknowledgements.** If applicable, collate acknowledgements in a separate section at the end of the article before the references. List here those individuals and/or organisations that provided help, including financial support, during the research.
- **Nomenclature and units.** Follow internationally accepted rules and conventions: use the international system of units (SI) i.e. metre, second, kilogramme etc. or accepted alternatives e.g. day, litre, tonne.
- **Math formulae.** Present simple formulae in the line of normal text where possible. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text). For simple fractions use the solidus (/) instead of a horizontal line. Powers of e are often more conveniently denoted by exp. Give the meaning of all symbols immediately after the equation in which they are first used. Levels of statistical significance which can be mentioned without further explanation are: *P <0.05, **P <0.01 and ***P <0.001.
- **Footnotes.** Footnotes should be used sparingly. Number them consecutively throughout the article, using superscript Arabic numbers. Indicate each footnote in a table with a superscript lowercase letter.

Tables and figures

- **Tables.** Number tables consecutively in accordance with their appearance in the text. Each table should be accompanied by a title and fully descriptive caption. Column headings should be brief but sufficiently explanatory and standard abbreviations of units of measurement should be included between parentheses. Do not use vertical rules to separate columns. Large tables should be avoided. If many data are to be presented, you should consider dividing them over two or more tables. Reversing columns and rows will often reduce the dimensions of a table.
- **Figures.** Graphs, drawings or photographs should be supplied in digital format in monochrome and be of sufficient contrast. Figures prepared with Excel® software (or compatible format) are preferred. Captions should be included in the main manuscript, not attached to the figure, and should explain all symbols and abbreviations used. The text should include references to all figures. The use of figures from other publications is discouraged but, if used, permission of the author(s) or the copyright owner is necessary.

References

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically. For example: 'as demonstrated (Allan, 1996a, 1996b, 1999; Allan and Jones, 1995). Kramer *et al.* (2000) have recently shown ...' Citation of a reference as 'in press' implies that the item has been accepted for publication.

In the reference list, references should be arranged first alphabetically and then further sorted chronologically if necessary. They should not be numbered. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', etc. placed after the year of publication. The title of a non-English publication should be followed by the English translation in square brackets. Journal titles should not be abbreviated. Examples:

- **Reference to a journal publication.** Van der Geer, J., Hanraads, J.A.J. and Lupton, R.A. (2000): The art of writing a scientific article. Journal of Science Communication **163**, 51-59.
- **Reference to a book.** Strunk Jr., W. and White, E.B. (1979): The Elements of Style (3rd edition). New York: Macmillan.
- **Reference to a chapter in an edited book.** Mettam, G.R. and Adams, L.B. (1999): How to prepare an electronic version of your article, in Jones, B.S and Smith, R.Z. (eds), Introduction to the Electronic Age. New York: E-Publishing, 281–304.

For Web references, as a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates etc.), should also be given. Web sources should be included in the reference list alphabetically according to the author's surname or organisation's name.

Publication ethics

Studies in Agricultural Economics aims to comply with the standards outlined in the COPE Codes of Conduct for Journal Editors and Publishers. These can be accessed at www.publicationethics.org/resources/code-conduct.

After acceptance

The corresponding author will be provided, at no cost, with a PDF file of the article via e-mail. The PDF file includes a cover sheet with the journal cover image and a disclaimer outlining the terms and conditions of use. *Studies in Agricultural Economics* has no page charges or submission fees.

Complete full-text articles may be published on the AKI website in advance of their publication in a printed issue. These do not yet have volume, issue or page numbers, so cannot be cited in the traditional way. They are therefore given a Digital Object Identifier (DOI), which allows the article to be cited before it appears in printed form.

Studies in Agricultural Economics is accessible online at https://ageconsearch.umn.edu/search?ln=en&cc=1316 and at www.aki.gov.hu/studies. It is listed in EconLit, the Index Copernicus Journals Master List and the Directory of Open Access Journals (www.doaj.org), as a Commendable Journal in the Cabell's Directory of Publishing Opportunities in Economics and Finance, and is included in the Citations in Economics database (http://ideas.repec.org/s/ags/stagec.html). Papers are abstracted in the CABI Agricultural Economics Database (www.cabi.org) and indexed by Google Scholar.

The printed version of *Studies in Agricultural Economics* is designated by the publisher as the original version of the journal.