

**SZENT ISTVÁN
EGYETEM**

GÖDÖLLŐ

**ANALYSIS OF THE EFFICIENCY OF
RURAL DEVELOPMENT SUPPORT IN HUNGARY**

Theses of doctoral (PhD) dissertation

Keszthelyi Krisztián

Gödöllő

2020

Doctoral school:

Name: Enyedi György Doctoral School of Regional Sciences

Discipline: Regional sciences

Secretary: **Prof. Dr. habil. Tóth Tamás**
university professor
Szent István University
Faculty of Economy and Social Sciences,
Regional Institute of Economic and Rural Development

Supervisor: **Prof. Dr. Tóth Tamás**
university professor
Szent István University
Faculty of Economy and Social Sciences,
Regional Institute of Economic and Rural Development

.....

.....

Approval of supervisor

Approval of secretary

CONTENTS

1	PRECEDENTS OF THE WORK, OBJECTIVES.....	4
1.1	Justification and timeliness of the research subject.....	4
2	MATERIAL AND METHOD	9
2.1	Methodology of the research	9
2.2	Databases	9
3	RESULTS	17
4	CONCLUSIONS AND PROPOSALS	24
5	NEW AND NOVEL RESULTS	27
6	MAJOR PUBLICATIONS ON THE SUBJECT.....	29
7	BIBLIOGRAPHY	35

1 PRECEDENTS OF THE WORK, OBJECTIVES

1.1 Justification and timeliness of the research subject

*„Success is not about you, not even your performance.
Success is about us, and the way we observe your
performance.”*

Barabási Albert-László

I have chosen this quote from Barabási Albert-László, because he has been investigating for a long time what makes a performer successful, what models exist to predict success. The success of an agricultural business, and within it a livestock holding, depends on numerous factors, and only some of them can be quantified. But then, what can decide whether an agricultural business is successful? The quality and size of the land, or whether it is in the hands of the owner? The animal species kept, the husbandry technology, record yields? Capitalisation, professional management, quantity and quality of employees? And I could continue the list of issues that we think can influence the success of agricultural businesses.

We can just as well organize known indicators in a database and test its success, but there will still be companies whose success cannot be estimated with these quantified indicators, since there are factors that cannot be clearly measured, such as network connections.

It is possible that we only consider an agricultural business to be successful because many people know it and think so about it. In this case, it is not the quantified indicators, but rather the network connections and their quality, as well as the reputation, that determine whether the company is successful or not. Is it coincidence that farmers of the year are chosen from among those who regularly participate in this type of event every year?

The situation is similar in the case of tenders. What quantifiable indicators determine the success of aid applications, and what factors guarantee that the amount of aid will also be drawn down? In this case too, it is open to question whether the application to win is the one submitted by an undertaking considered

otherwise successful, or whether the applicants' network connections have a role to play in the examination of aid applications.

We are surrounded by databases, we collect a large number of data, by quantifying them, linking them together and organising them into a database we can give many answers to the above questions. Obviously, this would be an enormous amount of work that goes far beyond the volume of my doctoral dissertation, and could even be a professional programme for some research organisations in the future. I intend to take only the first step on this path – linking the databases currently available, and showing a method how to make use of these data, how to draw further conclusions from them.

Once the database is compiled and the territorial dimensions are also examined, will the objective be within reach to examine the impact of domestic rural development programmes on territorial development and the reduction of territorial disparities? Since rural development support and by the way any other support for economic development must have an impact on local economy and its development.

The examination of tendering systems of different types and related to different sectors has a long history, which has been largely influenced by the quantitative and qualitative aspects of economic, natural and human resources, as well as by continuous changes in related political will, furthermore, the examination of the issue has never been off the agenda due to its complex impact on social and economic processes. Most of the research carried out so far on this subject aimed to reveal the set of problems affecting most of the tendering systems. In many cases, research has been carried out on vulnerable economic structure, unfavourable social and demographic trends, ageing, migration, unemployment and the improvement of sectoral efficiency. In addition to causal factors, cross-cutting issues based on historical specificities have been explored. The overall picture emerging is that there is a strong need for a more efficient operation of the domestic agricultural support system, and there are very large reserves for achieving efficiency gains.

The basic motivation for my paper was to examine the functioning and impacts of the Hungarian tendering system for agricultural and rural development, since, after a thorough analysis of this issue, I intend to contribute to the further development and construction of the system by suggesting several amendments, to facilitate what I consider a more efficient way of operation.

If we look only at the period after the change in the political system, it can be said that Hungarian agriculture underwent a significant change in the 1990s. Compensation, the privatisation of agricultural cooperatives and public farms, the transformation of sectoral integrations, the complete transformation of ownership structures, the sale of state-owned land, and EU accession, the Common Agricultural Policy – and this is not an exhaustive list – all had a significant impact on agriculture during the transformation. As a consequence of all these effects, the entire Hungarian agricultural regulatory system also transformed, which also required the transformation of the related support system.

The previous regulatory systems based on full observation were untenable due to the fragmentation of agricultural businesses, the increase in the number of holdings to be monitored, and the heterogeneous structure of agricultural holdings established, meaning that the previous statistical systems became unreliable and could no longer meet the data needs of domestic agricultural policy.

In addition to changes in internal demands, the regulatory system preferred by the European Union has also become a determining factor, which has created an unprecedented need for information. The more and more tangible EU accession has prompted domestic decision-makers to adapt their support schemes to the EU's expectations more and more. Once the system was fully developed, the domestic operators in the sector had to become familiar with the conditions for operating under the changed conditions, as well. All of this to develop the most appropriate support structure for them.

Hungary, with its accession in 2004 and even beforehand, was eligible for pre-accession funds such as ISPA, SAPARD, PHARE. The EAGGF was the only fund to finance the Common Agricultural Policy. In 2006, it was split into two parts, one being the EAGF, the European Agricultural and Guarantee Fund, the other the EAFRD, the European Agricultural Fund for Rural Development (BUDAY-SÁNTA 2010, DORGAI-UDOVECZ 2009, FAZEKAS 2010). These two funds finance the two pillars of the Common Agricultural Policy. The two pillars account for more than a third of the EU budget. This is all the more important because Hungarian agriculture accounts for a significant share, 4-5 % of the domestic GDP.

For these reasons, community transfers have played a significant role in recent years in maintaining the population levels of rural areas. Fair support for farmers reduces the uncertainties associated with the incomes of the sector, and helps to create a well-functioning land ownership structure, which is essential for retaining

the population in rural areas. In spite of this, however, the number of holdings fell by almost a third between 2013 and 2016, which means that the system still needs to be improved.

The objective of my paper is therefore to professionally confirm or refute the ideas set out in the hypotheses on the basis of the relevant literature and the results of the related studies. At the beginning and during my research, the following questions have arisen in me:

- Do the tender evaluation systems applied really lead to the objectives formulated in the development programmes?
- Will the experience gained during the implementation of the previous development programme be fully integrated into the new development programme?
- Is each tender assessment criterion applied according to its weight?
- Are the eligibility criteria set out in the calls in line with long-term development objectives?
- Is the monitoring data required by EU standards adequately collected, organised and compared with available data?
- Does the evaluation of territorial aspects indeed lead to a decrease in territorial disparities in Hungary?
- Is it possible to improve the tender evaluation systems on the basis of available data or with minimum additional data collection, can there be a statistically supported solution that gives appropriate weight to specific criteria in order to achieve the best possible result?

By rethinking and selecting these issues, adapting them to the research options and restructuring them, I have formulated the following hypotheses. Although in this research it was not possible for me to address all the issues raised here, they all have made an integral contribution to the development of hypotheses and the choice of examination methods.

Formulating research hypotheses

H1: I assume that, on the basis of the evaluation systems applied, the viability of applications receiving high scores cannot be demonstrated.

H2: It is possible to develop a better tender evaluation system on the basis of available and collected data, since there are financial and economic indicators on the basis of which the success of an application can be better estimated.

- H3:** Project companies are significantly less likely to implement their supported investments than enterprises with a longer history.
- H4:** Among the NHRDP support measures, the modernisation of livestock holdings has had an impact on rural development, and the indicators related to rural development have improved by districts.
- H5:** By fine-tuning territorial aspects of evaluation, it would be possible to develop assessment criteria that could contribute to the reduction of territorial disparities in Hungary, evidenced by data.
- H6:** The aid amounts paid are not correlated with changes in the county output data at the meso, i.e. county level.

2 MATERIAL AND METHOD

Investments in the livestock sector are of particular importance within agricultural investments, as these investments have the greatest multiplier effect in agriculture. Thus, the development of livestock farming and the efficient spending of aid amounts are strategic issues, which is why this issue has got into the focus of my examination.

2.1 Methodology of the research

Many researchers have found that Microsoft Office Excel and the SPSS statistical programme package can satisfy all needs for sociological research, rural development data discovery, analytical tasks and data processing related to the fields of social sciences and rural development. The programme is particularly suitable for the selection of data from large data files, aggregation, collation of several files, filtering, i.e. producing a dataset for analysis. (CSALLNER 2015) In this dataset we can produce indicators, indices, and the data file supplemented with new variables can be used as the basis for further multi-variable analyses, or can be exported to other formats readable for other programmes, such as geospatial programmes” (TÓTH-KÁPOSZTA 2014).

I have also applied the above methodology to the data collected on the basis of the database used for the NHRDP Ex post analysis. In the first part of the methodology, I will describe the process of compiling the database, and then discuss the conduct of the investigation. I used economic-statistical indicators of settlement series to examine the successful applications in Hungary.

2.2 Databases

In the course of my research, I linked the data accessible for the Agricultural Economic Research Institute, obtained from the Integrated Administration and Control System (IACS) set up by the ARDA – which contains the support and payment data – with the reports of partnership enterprises provided by the National Tax and Customs Administration of Hungary (NAV), in order to examine not only the support and payment data, but also the relationship between the specific management data of the applicants. In addition, as regards spatial data, I used data from the TeIR.

The Hungarian Regional and Spatial Development Information System (TeIR) is the most frequently used database in territorial and regional research, which can

be accessed via the portal at www.teir.hu. This information system was developed by the Hungarian Regional Development and Urban Non-profit Company (VÁTI) – at present, the system is operated by Lechner Nonprofit Kft. on behalf of the Ministry of Finance. The aim of the system is to provide objective, accurate and up-to-date information to bodies carrying out territorial development and land use planning activities and decision-support bodies assisting the process. The TeIR is a very complex database, which fact is evidenced by its content, since it contains alphanumeric and graphical data on numerous thematic groups, e.g. demography, society, economy (industry, agriculture, tourism), technical infrastructure networks, financial instruments for territorial development, municipal balance sheets, etc. (TÓTH-KÁPOSZTA-PUSKÁS 2014)

The IACS is a supporting IT case management system responsible for receiving and assessing applications for sectoral support financed from sources determined by the EU's Common Agricultural Policy and from resources provided by the Hungarian budget, and paying benefits to beneficiaries. The system handles all aid applications related to the CAP, from area payments to investment titles. The system provides paperless administration, thanks to continuous improvement.

I received the data derived from the IACS per registration numbers anonymously and without precise location (municipal data only), i.e. anonymity was ensured during the investigation. For that matter, the individual aid data are considered to be data of public interest and can be accessed individually from the website of the Hungarian State Treasury (formerly from that of the ARDA).

The IACS data comprised the following data fields:

- Client identification number – registration number,
- Title code (ÁTK I, ÁTK II, etc., abbreviation for Modernization of livestock holdings),
- Uniform status (rejected, approved, withdrawn, deleted),
- Detailed status (completed with clearance, refused, refused due to lack of resources, entitlement ceased, subject to succession or deceased, excluded, transferred, renounced, withdrawn, supported),
- Date of finalisation of the decision,
- Municipality, i.e. place of implementation,
- Aid amount requested, in HUF,
- Aid amount approved, in HUF,
- Amount requested for payment,
- Aid amount paid.

The NAV database contains corporate income tax, balance sheet, profit and loss account and other data for information relating to the financial year in question from 1992 to 2016. For taxpayers with a non-differing business year, this is the same as the calendar year. For the main data of balance sheets and profit and loss statements, accounting consistency is ensured in the database. Errors that do not interfere with accounting consistency (e.g. unit errors, HUF instead of HUF 1 thousand) are revealed only upon individual examinations. The main figures can be verified on e-beszamolo.im.gov.hu on the basis of published reports. Partnership enterprises provide data once a year, but this is done at different times by enterprises with a normal or a differing business year. The data suppliers submit the tax return by a specified deadline. The NAV processes, verifies the data (Table 1) and forwards them to the Agricultural Economic Research Institute (NAIK AKI).

Table 1: NAV data used in the investigation

I. Net sales revenue (01+02)	tac002
IV. Materials (05+06+07+08+09)	tac007
V. Personnel costs (10+11+12)	tac012
VI. Depreciation	tac016
A. Profit or loss on operating activities	tac019
E. Profit before tax (C+_D)	tab001
The Fixed Assets	tah200
I. Intangible assets	tah186
II. Tangible fixed assets	tah033
III. Securities	tah043
IV. Funds	tah044
Total assets	tah061
D. Equity	tah046
I. Subscribed capital	tah001
III. Capital reserves	tah048
IV. Accumulated reserves	tah189
V. Contingent reserve	tah208
F. Obligations	kot000
I. Qualified liabilities	tah209
II. Long-term liabilities	tah051
III. Short-term liabilities	tah054

Source: compiled by the author, 2019.

The data were linked as follows:

1. In the first round, I have merged the databases ÁTK I, ÁTK II, ÁTK III, ÁTK IV and BATEK (abbreviation for Modernization of poultry holdings) on the basis of data of the same type.
2. Since the data of aid applications and payment requests were accessible in different tables, the two data tables had to be matched on the basis of the application barcodes. One aid application could be linked to several payment requests, therefore aggregation was needed, as well.
3. In the third step, I filtered from the database private individuals, primary producers, private entrepreneurs, and non-legal entities other than private individuals, e.g. secondary schools, universities, that carry out agricultural production activity and were able to meet the eligibility criteria. These applicants do not make reports and are therefore not present in the NAV database.
4. The next step in compiling the database was to find the ‘common denominator’ for aid applications submitted in different periods.

According to the year in which a specific aid application was posted – let us call it t –, the application data had to be matched by registration number with the data of the NAV database for the years $t-1$. 21 data columns were extracted from the NAV database, which had to be transposed. For all ÁTK applications, I examined the data for the year preceding the submission, thus avoiding the problem, for example, of examining the year 2006 in the case of an application submitted in 2012.

In the next step, I examined whether the companies qualify as project companies on the basis of some of their data. In all cases, I examined the minimum wage data for the year preceding the submission. The exact definition of what clearly qualifies as a project company is defined in different ways in the literature. On the basis of certain indicator values, it is possible to define it, and many tendering systems take this opportunity so as not to support fortune-hunter enterprises founded only to submit a given aid application and receive funds, and they use a filtering system to do so.

Since the aid data did not include holding size and company history, the calculations for project companies had to be carried out on the basis of the report data. A later development option would also be to use holding size data that can be extracted from the IACS or to use the period of operation of the undertaking.

I examined the project companies on the basis of five different criteria:

- 1a. Personnel costs are below the annual minimum wage of one person in year $t-1$ (data*12*1.29 contribution). The minimum wage in 2006 was HUF 62,500 per month, in 2008 it was 69,000 per month, in 2010 it was 73,500 per month, in 2011 it was 78,000 per month. Therefore, the undertaking did not employ at least one person for the whole year in the business year preceding the application for aid.
- 1b. The turnover does not exceed twice the personnel costs. Although there was an employee, the company did not carry out any actual production activity.
- 1c. The aid exceeds five times the turnover (tac002). Although the undertaking may have carried on production activities and may have had employees, the turnover of the production activity in the year preceding the submission is significantly lower than the volume of the planned investment.
- 1d. The aid requested is more than five times the previous year's assets, i.e. it had a turnover (e.g. it pursued trade activity), but did not do so with its own means of production.
- 1e. The value of assets of the previous year is zero, i.e. the enterprise was specifically founded to submit the application.

The separate treatment of project companies was justified by the fact that the analysis of the report data for year $t-1$ does not always have a result in their case, a significant part of the indicators calculated would give a result with zero divisor, which would affect the statistical relationships.

Based on the examinations related to project companies, I have found the following distributions among the partnership enterprises:

Table 2: Distribution of applicants by different project company criteria

	1a) based on personnel costs	1b) based on turnover and personnel costs	1c) based on aid and turnover	1d) based on assets and aid	1e) previous year's assets: zero
Not a project company	2046	2381	35	2086	2170
Project company	429	94	2440	389	305
Total	2475	2475	2475	2475	2475

Source: compiled by the author, 2019.

On the basis of Table 2, it can be concluded that we cannot apply all of the criteria, in the case of criterion (c) – i.e. the aid exceeds five times the turnover of the previous year – a significant proportion of the applicants could have been qualified as project companies, which does not reflect the reality. I have also excluded criterion (b) because this definition applied to only 94 companies. As a result, I concluded that I intend to distinguish project companies on the basis of the criteria set out in points (a), (d) and (e), i.e. if one of these criteria applied, I considered it henceforward to be a project company.

In Table 3, I will show the distribution of partnership enterprises submitting ÁTK applications on the basis of the three criteria of project companies applied:

Table 3: Distribution of applicants by using the combined indicator

	Project company or not, based on combined indicators (number)
Not a project company	2013 (81.3 %)
Project company	462 (18.6 %)
Total	2475 (100 %)

Source: compiled by the author, 2019.

Further databases used in the investigation

I examined the territorial data on the basis of the aid data derived from the IACS and the data of the representative information system of the Farm Accountancy Data Network (FADN) – known as the test operation system – operated by the NAIK AKI.

The survey is carried out on the basis of accrual-based accounting of 1900 holdings; the system also contains data on individual farms in a structure similar to that of companies, i.e. individual farms also have balance sheets and profit and loss statements. The Hungarian FADN represents more than 106 thousand agricultural holdings with a standard output (SO) of more than 4000. In addition to data at the holding level, the Hungarian test operation system contains data from the major plant production, livestock and horticultural sectors.

I filtered out arable crops production and horticultural holdings from the database, and I took into account only the data of specialised livestock holdings (at least 2/3 of the SO from livestock production) and mixed holdings in the examination of territorial data.

The sample holdings in the NAIK AKI test operation database and their weights estimate the investment of the whole population relatively well. In the sample database, 635 farms were specialised livestock farms, representing a total of 38,076 Hungarian farms. The aid amount for the development of specialised livestock farms during the 6-year period under review (2010-2015) amounted to HUF 101.6 billion, whereas in reality, according to IACS data, HUF 158 billion was paid in this period.

The difference may be due to the fact that support for livestock holdings was granted to a large extent to project companies, which could not be classified by activity, as well as to the fact that many undertakings received support that are not specialised livestock farms regarding their activities, with livestock farming accounting for less than 1/3 of the holding size. Accordingly, the comparison of the test operation data – as an examination of macro data – is of sufficient relevance for the macro-environmental examination of the aid amounts obtained on the basis of the IACS data.

When examining the county data, I took into account not only the data of partnership enterprises in the NAIK AKI test operation database, but also the data of private enterprises, and compared all the aid amounts obtained from the IACS with the change in the management data, regardless of the forms of enterprise. In the next step, I calculated with specific indicators that can be found in the literature and can be calculated from available report data, and which affect investments; these indicators are presented in the following.

Indicators used

In the development of each indicator, I paid particular attention to ensuring that their significant variability in volume did not affect the calculations, i.e. they were standardised indicators, as follows:

- 1. Whether the enterprise is a project company***
- 2. Aid in proportion with fixed assets***
- 3. Aid in proportion with turnover***
- 4. Liquidity***
- 5a. Profitability I***
- 5b. Profitability II***
- 6a. Capitalisation I***
- 6b. Capitalisation II***
- 7. Approved aid in proportion with accumulated capital***
- 8. Eligibility for financing***

9. Ratio of fixed assets

10. Turnover

11. Aid requested

I carried out my analysis using the methods detailed in the following sub-chapters. On the basis of these data, we can have a more nuanced picture of the status of the applications examined, the common or different features of the applicants. I illustrated the results obtained, as I have already mentioned, by using Microsoft Excel and QGIS programmes.

The methods used included descriptive statistical methods and complex statistical methods such as logistic regression (two-variable), box plot diagram, correlation analysis and a geospatial information technology tool (QGIS). In addition to integrating my practical experience, I also made my work more accurate by carrying out semi-structured in-depth interviews with promoters and winners.

3 RESULTS

Assessing the impact of rural development tenders is a very timely direction of research. In many cases, research has been carried out on vulnerable economic structure, unfavourable social and demographic trends, ageing, migration, unemployment, and the improvement of sectoral efficiency.

The overall picture emerging is that there is a strong need for a more efficient operation of the domestic agricultural support system, and that there are very large reserves for achieving efficiency gains.

The basic motivation for my paper was to examine the functioning of the Hungarian tendering system for agricultural and rural development, since, after a thorough analysis of this issue, I intend to contribute to the further development and construction of the system by suggesting several amendments, to facilitate what I consider a more efficient way of operation.

I reviewed the scoring systems of the NHRDP and the RDP, and categorized their assessment criteria, looking separately at the criteria related to business and financial plans and other relevant, but unassessed aspects:

- From among these criteria, the one I consider the most important is the *examination of the degree of preparation*.
- The *existence of the sources of funding* was not evaluated in either programming period.
- In the case of applications under the NHRDP and RDP, *previous project management experience* was not or not sufficiently evaluated.
- In addition to the previous aspect, other criteria not evaluated were those related to *external experts* involved in project preparation, planning and implementation to assist the internal project management: what qualifications they have, and what experience they have in project management.
- In the tenders, the question of *how long the enterprises had been operating* was not evaluated either.
- In addition to the above, we could determine numerous *other criteria*, such as the system of relationships of the management and owners of the enterprise, role played in other organizations (farmers' associations, producers' groups, representative bodies, chambers etc.).

I analysed the most common mistakes in scoring systems. Upon examination of the scoring related to investments, it can be concluded that there was no significant difference between the two programming periods.

I specifically analysed good or better solutions in the evaluation systems. I described the dynamic evaluation system, since one of the main features of project cycle management is the integration of experience gained from previous projects into new projects. This can essentially work not only at the level of calls, but also at the level of programming. I created the term 'dynamic evaluation system' for the evaluation system in which the specificities of previous evaluations and implementations are recorded in a database, the resulting data are analysed, and the scoring systems are fine-tuned accordingly.

The features of the dynamic evaluation system are the following:

- it takes the results of the previous programming period, or mid-term review as its starting point;
- it collects the outcome indicators of successful projects, e.g. on the basis of number of employees, qualifications, practice, past, innovation, financial data, public visibility;
- in addition to the above data, it also summarizes the data of rejected applications, projects supported but not implemented, and projects implemented but not functioning;
- 'fine-tuning' of criteria is carried out on the basis of the resulting data.

According to my research, the requirements for evaluation criteria can be specified as follows:

- The scoring systems are sufficiently objective, and these objective criteria can be known in advance, i.e. the market operators are aware of how much chance they approximately have for starting.
- The verification of each criterion is ensured, it does not demand significant time spent or expenditures on the part of any participants.
- Each criterion is evaluated according to its weight.
- The scoring does not contain logical flaws, errors in adding up and quantification.
- Criteria that can be fulfilled by all the applicants or cannot be fulfilled by any applicants are not defined.
- Criteria are determined in such manner that the scores achieved by projects evaluated will vary significantly, so that it is possible to draw a clear dividing line between projects supported and those rejected.

- Scoring criteria and the related procedures are indisputable and objective, they do not give grounds for challenge.
- There should be a theoretical possibility for every market operator to fulfil or undertake to fulfil the scoring criteria, the criteria should not impose unrealistic requirements.
- The criteria should take the specificities of the target group into consideration.
- Scoring should mean selecting, i.e. scoring systems where all the applications are rejected or supported make no sense and have no significance.
- It must be accompanied by a realistic system of penalties which is accepted in the course of scoring.
- The scoring systems should be dynamic, i.e. the experience gained in previous tender periods should be integrated into subsequent periods, or programming periods, the same mistake should not be made several times.

As part of my research, I also carried out a more detailed examination of the support data. The purpose of my examination was to determine to what extent the (binary) dependent variable of success and failure in terms of the support requested and the support granted was determined by the financial data of the partnership enterprises in the previous year.

Summarising the results of my mathematical statistical examinations, I concluded that linking the report data with the support data could significantly improve the estimation whether the application for support will be successful or not, by examining the statistical data of the successful and non-successful applications, a proposal – supported by calculations – can be made for the scoring of applications.

On the basis of literature processed and analyses of documents, as well as my mathematical statistical examinations, I have produced the following results:

R1: I have systematized the eligibility systems and scoring criteria for tenders, highlighting the extent to which specific criteria can be productive or unproductive during implementation.

R2: I have presented some of the evaluation systems applied by EU programming cycles in Hungary, revealing their operational anomalies.

R3: I have identified financial economic indicators on the basis of which the estimation of the success of tender applications can be improved.

R4: I have formulated the requirements for tendering systems, the basic principles to be embodied, I have revealed frequent errors in evaluations, I have systematised, elaborated and presented the good practices.

R5: By linking the data of the IACS, data of the reports of partnership enterprises collected by the NAV, data of the Hungarian Regional and Spatial Development Information System (TEIR) and those of the test operation system of the Hungarian Agricultural Economic Research Institute (NAIK AKI), I was the first in Hungary to carry out the examination of the evaluation systems of applications, and, to my knowledge, I did so in a unique way.

R6: On the basis of the examination of the aid data by districts, I pointed out that the impact of the aid on the reduction of territorial disparities was negligible. If rural development is to be more pronounced in the case of investment supports, the weighting and criteria for scoring should be defined in a more complex way.

I have also shown the distribution of aid and the differences between districts on a map. For this presentation, first I had to find the ‘common denominator’ of the support data, on the basis of which I took the population numbers into account, i.e. I calculated the amount of aid received per person during the programming period by districts. I aligned the data and then determined the quartile values in order to get four groups, similarly to the district data.

It can already be seen from the quartile data that there is a significant variation between the values, for example there was no payment in the districts of Balatonfüred and Vecsés, while the per capita aid in the districts of Balmazújváros, Hegyhát and Mezőkovácsháza exceeded HUF 142.000, reaching HUF 189.223 in the latter. On the basis of the above, the district categorisations and the aid data are as follows:

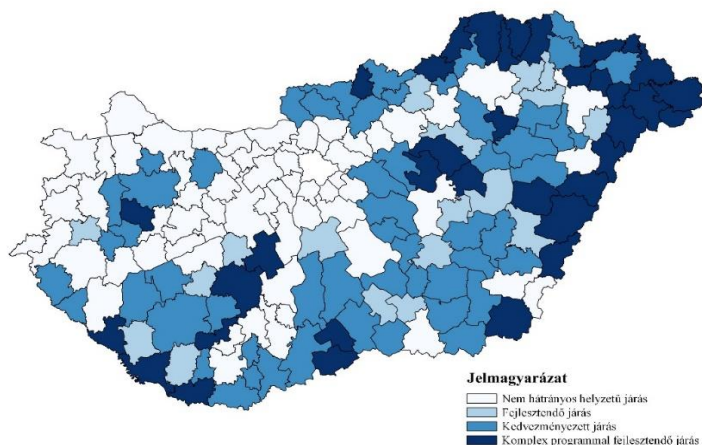


Figure 1: Districts according to level of development in Hungary
Source: On the basis of Government Decree No 290/2014. (XI. 26.)

[Legend / Not disadvantaged district / District to be developed / District to be developed by complex programme]

On the map (Figure 1), we can see the level of development of specific districts, i.e. that the areas where development is needed the most are Ormánság, Mezőség, South-Bács-Kiskun, Békés, Szabolcs and districts in Borsod, as well as part of Jászság and North-Kunság.

On the other hand, the districts not disadvantaged are almost the entire Pest County, the M3, M5 and M6 motorway route, Csongrád, the Balaton Highlands and North-West Hungary.

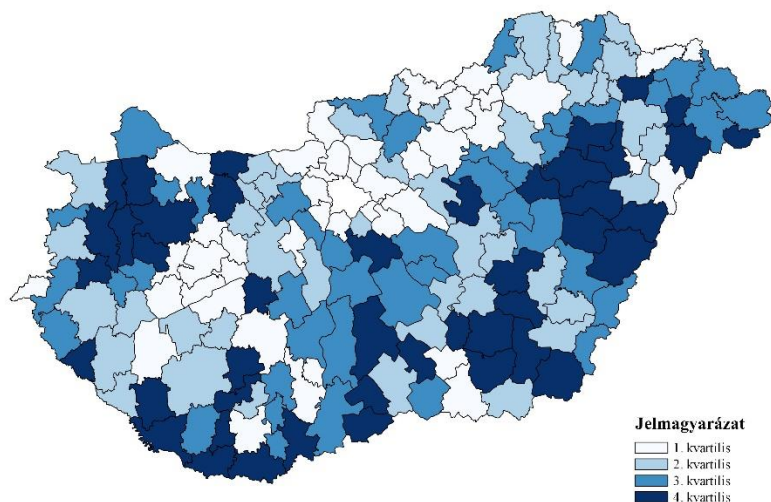


Figure 2: Distribution of aid per capita according to quartile data

Source: IACS and TEIR data

[Legend / 1st quartile / 2nd quartile / 3rd quartile / 4th quartile]

According to the map drawn up on the basis of the aid data (Figure 2), five major hubs can be observed according to the destinations of the aid: Hajdúság, the region of Sárvár-Csorna-Pápa, the region of Szarvas-Szentes-Orosháza, South-Bács-Kiskun, South-Baranya and Somogy. The latter two territorial hubs are the ones overlapping with the district categorisation.

In order to increase the overlap between the two maps, it would be necessary to evaluate the criteria presenting territorial differences in the assessment of aid applications with more weight and in a more sophisticated manner. Awarding 0 or 6 points according to district does not give sufficient weight to the evaluation criterion, and the contribution to the indicators of development cannot be

examined in this way. This would require the possibility to give different scores per type of district for projects that would create jobs or increase the personal income tax base, or to give a higher score for investments planned in districts more affected by migration, unemployment or public employment.

R7: On the basis of the findings of my research, it can be demonstrated that the aid amounts used did not have a decisive and consistently positive impact on the agricultural activity of the counties.

Overall, on the basis of the research I have carried out, it can be concluded that the domestic rural development tendering systems have significant development reserves, and there are a number of points where the evaluation and assessment of applications for support could be improved. Such research is particularly important in the middle of the programming periods, where there is still time to improve the planning and preparation of the following programming periods on the basis of much more detailed information. All this is necessary in order to reduce the workload of the evaluation system, and to ensure that projects assessed positively are implemented and operating as soon as possible, so that their impact on economic recovery and competitiveness is felt as early as possible.

I pointed out in my paper that such a significant support measure as the modernization of livestock holdings, for which more than HUF 600 billion was requested and for which more than HUF 224 billion was paid during the investigation period, had almost no impact on the reduction of territorial disparities, despite the fact that we are talking about a rural development programme.

On the basis of this criticism, it is legitimate to ask whether I am personally against development and innovation, which I wish to refute.

It is important to emphasize that I regard the Common Agricultural Policy as one of the most important achievements of the Union, and this is what I consider to be a truly common policy alongside monetary and trade policy. I see the greatest problem in the tendency that we want to maintain support for agriculture at Community level by vesting it with more and more new 'functions'. The development of agriculture is already called rural development rather than agricultural, while this is, in my view, harmful for several reasons.

On the one hand, because we are imposing more and more new requirements on a sector whose operators are atomised and are mostly unsuitable for carrying out research and development independently, therefore innovative developments can only be obtained from multinational enterprises who also demand a price for

them, thus diverting part of the income. In this environment, however, it is very difficult to meet newer and newer requirements for animal hygiene, animal welfare or reduction of greenhouse gas emissions without support. More than 70 % of the examined New Hungary Rural Development Programme, including agricultural and environmental management, was linked to such new requirements and functions.

On the other hand, I consider the naming of the programme as rural development programme to be harmful because, in the eyes of many people – especially those who are not aware of the background of the programme – it gives a false view that there is a real rural development programme in Hungary, a programme specifically intended to contribute to the reduction of territorial disparities and to ensure that our rural settlements are maintained. This makes many people think they have rural development off their hands – the problem is ‘ticked off’, even though there is no real rural development strategy, only partial elements of it can be found, such as the Hungarian Village programme, support for the creation of homes for rural families, the farm development programme or government support for rural settlements. However, their viability is questionable because of the low degree of integration.

On the basis of these considerations, I believe that we can bravely call our development policy agricultural development, and let us make it clear to everyone, including net contributors and Hungarian taxpayers, what newer and newer ‘functions’ necessitate agricultural development. Once we do so, we could also have enough courage to develop a real rural development policy – one reducing territorial disparities.

4 CONCLUSIONS AND PROPOSALS

The development of the agricultural sector and rural areas can be greatly influenced by access to available funding, their ability to apply and their skills. While political objectives and directions may be diverse, they are determined predominantly by the leaders' perspective, way of thinking, ideology and perception of spatial structures, and also by the specific features of the operation of related tendering systems and any anomalies that may arise, which I have detailed in my paper. In my view, I have revealed the typical problematic issues that hinder the activation of the existing resources of the applicants, which prevents them from implementing improvements due to errors hiding in the system. After the investigation, on the basis of the results, I evaluate the hypotheses formulated at the beginning of the paper as follows:

H1: I assumed that, on the basis of the evaluation systems applied, the viability of applications receiving high scores cannot be demonstrated.

I consider this hypothesis to be **only partially confirmed** because the examination of the aid data showed that the available funds were allocated in five application rounds, the funds previously awarded but not used were reallocated in the 4th and 5th round, the clients renounced a total of HUF 171 billion in the application rounds. However, in order to examine viability, it would be necessary to know the details of the applications withdrawn in more detail, and to know the scores given to specific applications awarded but withdrawn. In addition, in order to fully confirm the hypothesis, at least sample surveys would be necessary to examine the fate of investments not supported but still implemented. On the basis of withdrawals, it can be indirectly evidenced and reasonably assumed that applications with a high score are not always the most viable, but that viability is also affected by a number of other factors which are not taken into consideration among the evaluation criteria.

H2: It is possible to develop a better tender evaluation system on the basis of available and collected data, since there are financial and economic indicators on the basis of which the success of an application can be better estimated.

The findings of my investigation have, **in my view, confirmed** this hypothesis. The aid data can be linked to other collected databases, as a result, we can analyse anonymously the relationship between the support data and the report data. By using data mining methods – such as logistic regression analysis -, it is possible to identify the management data on the basis of which the success

of aid applications can be estimated with a 50 % higher efficiency. By examining the variability of the factors identified, concrete proposals can also be made for scoring financial data. In addition, the logistic regression calculation carried out on the basis of the produced indicators of management and of the obtained data pointed out what significant indicators are related to the success of the application. Knowing – and scoring – these indicators can improve the estimation of the success of aid applications by almost 50 %. By further refining the data and collecting other data, the evaluation system can be further improved so that commitments are made for aid applications of which a much higher percentage will be implemented.

H3: Project companies are significantly less likely to implement their supported investments than enterprises with a longer history.

In connection with the tender evaluation processes forming the research topic of this paper, I have pointed out that the project companies – i.e. the enterprises founded to receive funds and implement an aid application – do not implement their successful aid applications to the same extent as undertakings with a longer management background and experience. The reason for this is that a number of aspects are not assessed in the aid applications which the banks partly financing investments and pre-financing aid do take into consideration. As a result, the implementation of supported investments get stuck, and the funds are tied up permanently without any result. The logit model coefficient table of the logistic regression analysis also shows that the qualification of enterprises as project companies is significant from the point of view of success. On that basis, I consider this hypothesis to be **confirmed**.

H4: Among the NHRDP support measures, the modernisation of livestock holdings has had an impact on rural development, and the indicators related to rural development have improved by districts.

My examinations have refuted the existence of a detectable impact on rural development, since the change in economic data (improvement/deterioration) has shown very weak or no correlation with the support requested or paid. As a result, the funds paid out did not contribute to the reduction of territorial disparities, the change in disparities, whether it was catching up or lagging behind, was due to other economic effects such as general economic growth, the public employment scheme and the increase in wage payments.

H5: By fine-tuning territorial aspects of evaluation, it would be possible to develop assessment criteria that could contribute to the reduction of territorial disparities in Hungary, evidenced by data.

By examining the territorial data and showing them on the map, I pointed out that the support is not evenly distributed in the country, that in many municipalities there is no need for rural development aid, but that there is even greater concentration as regards the aid granted. As a result, the results of the aid regarding agricultural development are unquestionable, but its role in rural development – i.e. in reducing territorial disparities – is much more modest. Examining the reasons for this goes beyond the limits of the volume of this paper, therefore further research would be necessary on how rural development programmes could play a greater role in reducing territorial disparities.

Therefore, I consider this hypothesis to be **partially confirmed**.

H6: The aid amounts paid are not correlated with changes in the county output data at the meso, i.e. county level.

I consider this hypothesis to be **confirmed** because my inspections have proved that in some counties the change in livestock numbers (on the basis of SO data) was not parallel with the funds paid out, there were counties that produced a modest increase in SO despite significant use of aid amounts in only the period under review, whereas in some counties the livestock numbers significantly increased despite modest absorption of aid. The analysis of reasons for this also goes beyond the limits of my paper, further research should be carried out in order to determine the differences in development between specific animal production sub-sectors in specific counties.

5 NEW AND NOVEL RESULTS

I have developed and formulated the following scientific results on the basis of the synthesis and evaluation of literature and the findings of my own research.

1. I have processed the relevant Hungarian and international literature, and carried out a critical examination of the Hungarian agricultural tendering system on the basis of the findings in the literature and systematic professional knowledge. I have processed the literature describing the domestic tendering systems, linking them with the system of definitions of the CAP. Based on the synthesis of the literature and what I learned from my prior research, I felt it necessary to link these issues more closely. In my view, the complexity of the subject makes it essential to interpret territorial and sectoral dimensions jointly.
2. I have formulated the requirements for tendering systems, the basic principles to be embodied, I have revealed frequent errors in evaluations, I have systematised, elaborated and presented the good practices.
3. In the course of my research, I have compiled a unique database using data accessible for the Agricultural Economic Research Institute, obtained from the IACS – which contains support and payment data – operated by the Hungarian State Treasury (formerly by the ARDA), which I have linked with the reports of the partnership enterprises provided by the National Tax and Customs Administration, so that I could examine in a novel way not only support and payment data, but also the relationship between the specific management data of the applicants.
As a result, by linking the data of the IACS, data of the reports of partnership enterprises collected by the NAV, data of the TEIR, and those of the test operation system of the NAIK AKI, I was the first in Hungary to carry out the examination of the tender evaluation systems, and, to my knowledge, I did so in a unique way.
4. As a result of my mathematical statistical analyses, I have identified financial economic indicators on the basis of which the estimation of the success of applications can be improved by more than 50 %. I concluded that linking the report data with the support data could significantly improve the estimation whether the application for support will be successful or not, by examining the statistical data of the successful and

non-successful applications, a proposal – supported by calculations – can be made for the scoring of applications.

5. On the basis of the findings of my research, it can be demonstrated that the aid amounts used did not have a decisive and consistently positive impact on the agricultural activity of producers. Interestingly, a close link between the aid granted and changes in the means of production is not always detectable.
6. When examining the aid data of districts, I pointed out that changing the triple categorisation had already led to a significant change in the distribution of the aid paid out among the different territorial units. I have shown by the statistical analysis of the data that there is no correlation between the aid data and changes in the economic data representing the development of specific districts, i.e. the aid amounts paid out did not contribute to the reduction of territorial disparities in the investigated period. On the basis of the map, I also concluded that the map of the aid amounts paid out did not fully overlap with the map of the disadvantaged districts, meaning that, from the point of view of granting the aid, the geographical location played only a minor role in practice, therefore the aid for livestock holdings – and thereby the aid for agricultural investments – contributed only modestly to rural development.

6 MAJOR PUBLICATIONS ON THE SUBJECT

In the process of publication:

1. **Keszthelyi K** (2020): The Features Of State Regulation (Institutional Framework) Of Agricultural And Rural Development In Hungary , Economic and Social Changes: Facts, Trends, Forecast VolRC RAS scientific journal
2. **Keszthelyi K** (2020): Current issues in the allocation of rural development investment grants and development opportunities in Hungary

Published:

3. **Keszthelyi K** (2019): Az Új Magyarország Vidékfejlesztési Program működési anomáliái STUDIA MUNDI - ECONOMICA 6:(4) pp. 42-55
4. **Keszthelyi K** (2019): Az Új Magyarország Vidékfejlesztési Program területi hatásai STUDIA MUNDI - ECONOMICA 6:(4) pp. 29-41
5. Artim, K; Bokros, K; Cseszlai, I; Dene, O; Kiss, A; Somogyvári, V; Fodor, Z; Juhász, A; Kemény, G; **Keszthelyi, K**; et al. (2015): Vidékfejlesztési program: kézikönyv, Budapest, Magyarország : Nemzeti Agrárgazdasági Kamara, 86 p. ISBN: 9786155307171 OSZK
6. Berényi, K; Csányi, Gy; Kujáni, K; **Keszthelyi, K**; Szabados, I; Várszegi, G; Sztahura, E (szerk.) (2015): Nitrát Gazdálkodói Kézikönyv Nemzeti Agrárgazdasági Kamara ISBN 978-615-5307-18-8
7. Agócs, B; Galambos, A; **Keszthelyi, K**; Sztahura, E (szerk.), Rezneki, R (szerk.) (2015): Agrár-környezetgazdálkodás, Nemzeti Agrárgazdasági Kamara (2015) ISBN 978-615-53-19-5
8. **Keszthelyi, K**; Pesti, Cs (2010): Tanulmány az úmvp állattartó telepek korszerűsítése jogcím eddigi eredményeiről Készült az FVM VKSZI megbízásából, Szerződésszám: VKSZI/737/2/2010,
9. **Keszthelyi, K** (2010): Az Új Magyarország Vidékfejlesztési Program végrehajtásának eddigi tapasztalatai In: Galló, F; Pataki, L (szerk.) Agrártámogatások és -pályázatok 2010. : Cserélhető lapos kézikönyv, Budapest, Magyarország : RAABE Tanácsadó és Kiadó Kft.,
10. **Keszthelyi, K**; Kiss, A; Tóth, T. (2009): Beszámoló az ÚMVP végrehajtását segítő fejlesztések specifikációjáról Kutatási jelentés
11. Ugrósdy, Gy; Tóth, T; **Keszthelyi, K**; Pesti, Cs. (2009): Tanulmány az ÚMVP I. tengelyes intézkedéseinek működéséről FVM VKSZI,
12. Galló, F. (szerk.); **Keszthelyi, K** (szerk.); Pataki, L (szerk.) (2008): Agrártámogatások és -pályázatok 2008. G 5/1. 1-15.: Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
13. **Keszthelyi, K** (2008): Az NDP kertében megvalósuló vidéki örökség védelméhez igénybe vehető támogatások részletes feltéteiről p. 130 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
14. **Keszthelyi, K** (2008): Az NDP kertében megvalósuló vidéki települések megújítására és fejlesztésére igénybe vehető támogatások részletes feltételiről: Agrártámogatások és pályázatok kézikönyv p. 120 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
15. **Keszthelyi, K** (2008): Az NDP kertében megvalósuló turisztikai tevékenységek ösztönzése p. 110 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,

16. **Keszthelyi, K** (2008): Az NDP keretében megvalósuló mikrovállalkozások létrehozására és fejlesztésére nyújtandó támogatások részletes feltételiről p. 100 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
17. **Keszthelyi, K** (2008): Az NDP keretében megvalósuló mezőgazdasági termékek értéknövelése p. 90 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
18. **Keszthelyi, K** (2008): A Nemzeti Diverzifikációs Program p. 70 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
19. **Keszthelyi, K** (2008): Beruházási támogatások elszívargása- Mennyi is marad a gazdálkodónál? p. 60 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
20. **Keszthelyi, K** (2008): Kertészet korszerűsítése In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó, p. 50
21. **Keszthelyi, K** (2008): Állattartó telepek korszerűsítése: Agrártámogatások és pályázatok kézikönyv p. 40 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
22. **Keszthelyi, K** (2008): Növénytermesztés korszerűsítése p. 30 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
23. **Keszthelyi, K** (2008): Élelmiszeripari termékek értéknövelése p. 20 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
24. **Keszthelyi, K** (2008): Kertészeti gépek, berendezések beszerzése p. 10 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
25. **Keszthelyi, K** (2008): Az NDP kertében megvalósuló vidéki örökség védelméhez igénybe vehető támogatások részletes feltéteiről p. -- In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
26. **Keszthelyi, K** (2008): Az NDP kertében megvalósuló vidéki települések megújítására és fejlesztésére igénybe vehető támogatások részletes feltételiről In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
27. **Keszthelyi, K** (2008): Az NDP kertében megvalósuló turisztikai tevékenységek ösztönzése p. --- In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
28. **Keszthelyi, K** (2008): Az NDP keretében megvalósuló mikrovállalkozások létrehozására és fejlesztésére nyújtandó támogatások részletes feltételiről p. &-- In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,

29. **Keszthelyi, K** (2008): Az NDP keretében megvalósuló mezőgazdasági termékek értéknövelése p. In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
30. **Keszthelyi, K** (2008): Az NDP keretében megvalósuló mezőgazdasági beruházások In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
31. **Keszthelyi, K** (2008): A Nemzeti Diverzifikációs Program In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
32. **Keszthelyi, K** (2008): Beruházási támogatások elszívargása- Mennyi is marad a gazdálkodónál? In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
33. **Keszthelyi, K** (2008): Kertészet korszerűsítése In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
34. **Keszthelyi, K** (2008): Állattartó telepek korszerűsítése p. In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó,
35. **Keszthelyi, K** (2008): Növénytermesztés korszerűsítése In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
36. **Keszthelyi, K** (2008): Élelmiszeripari termékek értéknövelése In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
37. **Keszthelyi, K** (2008): Tanácsok az állattartó telepek korszerűsítésével kapcsolatos kifizetési kérelemhez p. 170 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
38. **Keszthelyi, K** (2008): Tanácsok gépbeszerzési pályázatok kifizetéséhez p. 160 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
39. **Keszthelyi, K** (2008): Egy gazdaságátvevő fiatal gazda üzleti tervének mintája p. 150 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
40. **Keszthelyi, K** (2008): Pályázati tudnivalók gazdáknak és gazdaságátadóknak p. 140 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó
41. **Keszthelyi, K** (2008): Az NDP keretében megvalósuló mezőgazdasági beruházások p. 80 In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkiadó

42. **Keszthelyi, K** (2008): Kertészeti gépek, berendezések beszerzése In: Galló, Ferenc; Keszthelyi, Krisztián; Pataki, László (szerk.) Agrártámogatások és -pályázatok 2008. G 5/1. 1-15. : Cserelapos mappa Budapest, Magyarország : RAABE Tanácsadó és Kiadó, WEKA Szakkönyvtár, (2008)
43. **Keszthelyi, K;** et, al (2008): A cukoripar diverzifikációja (Nemzeti Diverzifikációs Program) Készült az EMVA Kft-ben, Gödöllőn 2008. szeptember, A tanulmány az Európai Unió és a Magyar Köztársaság Kormánya támogatásával, a Nemzeti Fejlesztési Terv Agrár- és Vidékfejlesztési Operatív Programja keretében készült el, az FVM AVOP Irányítóhatósági Főosztály megbízásából, Projektszám: VKSZI/276/1/2008,
44. **Keszthelyi, K;** Tóth, T (2007): Evaluation of progress in competitiveness of the Hungarian enterprises in comparison with the average European Union farm levels pp. 381-391. , 11 p. In: Nábrádi, András; Lazányi, János; Herdon, Miklós (szerk.) Agrárgazdaság, vidékfejlesztés, agrárinformatika : nemzetközi konferencia : [AVA 3] : International Conference on Agricultural Economics, Rural Development and Informatics Debrecen, Magyarország : Debreceni Egyetem Agrártudományi Centrum, 468 p.
45. **Keszthelyi, K** (2007): Az EMVA eddigi intézkedéseinek működéséről pp. 1-20. In: Galló, F; Pataki, L (szerk.) Agrártámogatások és pályázatok 2007 : Cserelapos mappa Székesfehérvár, Magyarország : Raabe Kiadó, (2007) p. 174
46. Nagy, H; Tóth, T; Káposzta, J; **Keszthelyi, K;** Pesti, Cs (2007): Az Európai Területi Együttműködés (ETE) Operatív Program és annak elemei In: Bujáki, G (szerk.) Felkészülés az Európai Unió forrásainak fogadására Budapest, Magyarország : Miniszterelnöki Hivatal (MEH), (2007)
47. Tóth, T; **Keszthelyi, K;** Pesti, Cs (2007): Beszámoló az EMVA Workshopról Szent István Egyetem, 2007. június 21,
48. Tóth, T; **Keszthelyi, K** (2007): Tanulmány az Agrár- és Vidékfejlesztési Operatív Program (AVOP) intézkedések pontozási rendszerének vizsgálatán alapuló, egyúttal a 2007-2013-as programozási időszakra az Új Magyarország Vidékfejlesztési Programkeretében készítenő alintézkedésekre vonatkozó pontozási metodikáról (2007) Készült a Szent István Egyetemen, Gödöllőn 2007. február, A tanulmány az Európai Unió és a Magyar Köztársaság Kormánya támogatásával, a Nemzeti Fejlesztési Terv Agrár- és Vidékfejlesztési Operatív Programja keretében készült el, az FVM AVOP Irányítóhatósági Főosztály megbízásából, Projektszám: AVOP -4.1.2.-2006-12-0003/10,
49. Ritter, K; Tóth, T; Vasa, L; Fogarassy, Cs; **Keszthelyi, K;** Pesti, Cs; Péter, B; Németh, P (2006): Tanulmány az AVOP program működéséről: Megállapítások és javaslatok szakmai összefoglalója Kutatási jelentés
50. Tóth, T; **Keszthelyi, K;** Pesti, Cs (2006): Beszámoló az AVOP Workshopokról Szent István Egyetem, 2006. május,
51. **Keszthelyi, K** ; Németh, P; Pesti, Cs (2005): Tendenciák a magyar agrártámogatások felhasználásában 2003-ban MAGYAR INTERNETES AGRÁRINFORMATIKAI ÚJSÁG 84 Paper: knp.doc , 6 p.
52. **K, Keszthelyi;** P, Németh; Cs, Pesti (2005): Analysis of Hungarian agricultural subsidies on the basis of FADN database Paper: SS8_981 In: European, Association of Agricultural Economists (szerk.) The Future of Rural Europe in the Global Agri-Food System. XIth Congress of the European Association of Agricultural Economists Hague, Hollandia : European Association of Agricultural Economists (EAAE),
53. **K, Keszthelyi;** P, Németh; Cs, Pesti (2005): Hungarian agricultural subsidies and competitiveness on the basis of FADN database ANNALS OF THE POLISH ASSOCIATION OF AGRICULTURAL AND AGRIBUSINESS ECONOMISTS 7 : 6 pp. 52-57. , 6 p.

54. E, Majewski ; A, Was ; L H-Tobrägel ; **Keszthelyi, K** (2004): Impact of direct payments and MTR proposal on agricultural enterprises in Poland SCHRIFFTEN DER GESELLSCHAFT FÜR WIRTSCHAFTS UND SOZIALWISSENSCHAFTEN DES LANDBAUES 5 : 39 pp. 139-145.
55. **Keszthelyi, K**; Pesti, Cs; Tóth, T (2004): Regional comparison of farms on the basis of FADN database GAZDÁLKODÁS 8 pp. 71-79. , 9 p.
56. **Keszthelyi, K**; Pesti, Cs; Tóth, T (2004): Területi egyenlőtlenségek a magyar mezőgazdaságban- az FADN adatbázis alternatív felhasználása MAGYAR INTERNETES AGRÁRINFORMATIKAI ÚJSÁG 70 pp. 8-15. , 8 p.
57. L H-Tobrägel; **Keszthelyi, K** (2004): Auswirkungen des EU-Beitritts auf landwirtschaftliche Betriebe in Polen und Ungarn In: IAMO 2004, Institut für Agrarentwicklung in Mittel- und Osteuropa
58. Tóth, T; Pesti, Cs; **Keszthelyi, K**; Keszthelyi, Sz (2004): A magyar agrárvállalkozások versenyképességének és támogatási igényeinek vizsgálata a testüzemi rendszer adatai alapján OTKA Kutatás, Részjelentés F046881 AG4,
59. Tóth, T; Káposzta, J; Péter, B; Malomsoki, M; Pesti, Cs; **Keszthelyi, K** (2004): Alternatív gazdálkodás lehetőségeinek közgazdasági vizsgálata és adaptációjának módszertana a magyar mezőgazdasági régiók szerkezetátalakításának tükrében kutatási záró tanulmány készült az FVM megbízásából Gödöllő 2004. november,
60. E, Majewski ; A, Was ; L H-Tobrägel ; **Keszthelyi, K** (2003) Impact of direct payments and the CAP reform on agricultural enterprises in Poland In: 43. ahrestagung der Gesellschaft für Wirtschafts- und Sozialwissenschaften des Landbaus e.V. "Perspektiven der Landnutzung"
61. **Keszthelyi, K**; Pesti, Cs; Tóth, T (2003): Agrárvállalkozások regionális összehasonlításának egy lehetséges módszere In: Nábrádi, András; Lazányi, János (szerk.) Agrárgazdaság, vidékfejlesztés és agrárinformatika az évezred küszöbén (AVA) : nemzetközi konferencia Debrecen, Magyarország : Debreceni Egyetem Agrár- és Műszaki Tudományok Centruma, p. 269
62. **Keszthelyi, K**; Pesti, Cs; Tóth, T (2002): Mezőgazdasági vállalkozások regionális vizsgálata MAGYAR INTERNETES AGRÁRINFORMATIKAI ÚJSÁG 62 Paper: miauj2-1 , 7 p. (2003)
63. L H-Tobrägel; **Keszthelyi, K** (2003): Direct payments for Hungarian farmers - Impacts on production structure and income In: Nábrádi, András; Lazányi, János (szerk.) Agrárgazdaság, vidékfejlesztés és agrárinformatika az évezred küszöbén (AVA) : nemzetközi konferencia Debrecen, Magyarország : Debreceni Egyetem Agrár- és Műszaki Tudományok Centruma,
64. L H-Tobrägel; **Keszthelyi, K** (2003): Hungarian agricultural enterprises after EU accession: A case study In: 25th International Conference of Agricultural Economists : reshaping agriculture's contribution to society
65. L H-Tobrägel; E, Majewski; **Keszthelyi, K** (2003): EU accession, Consequences on Production Structure and Farm Income in Poland an Hungary In: ÖGA-Jahrestagung – Europäische Integration - Chancen und Risiken für den ländlichen Raum
66. Tóth, T; Káposzta, J; Péter, B; Malomsoki, M; Pesti, Cs; **Keszthelyi, K** (2003): Alternatív gazdálkodás lehetőségeinek közgazdasági vizsgálata és adaptációjának módszertana a magyar mezőgazdasági régiók szerkezetátalakításának tükrében kutatási részjelentés készült az FVM megbízásából Gödöllő 2003. november,
67. **Keszthelyi, K** (2002): Regionális gazdaságfejlesztés, jegyzet-részlet pp. 36-76. In: Tóth, T (szerk.) Regionális gazdaságfejlesztés Gödöllő, Magyarország : Szent István Egyetem Gazdaság- és Társadalomtudományi Kar,
68. **Keszthelyi, K** (2002): Az osztrák és magyar tejtermelés, feldolgozás és értékesítés összehasonlítása, tekintettel a közelgő uniós csatlakozásra In: Kovácsné, Gaál Katalin (szerk.) "Agrártermelés - Életminőség" 29. Óvári Tudományos Napok Mosonmagyaróvár, Magyarország: Nyugat-magyarországi Egyetem Mezőgazdaság- és Élelmiszertudományi Kar, p. 108

69. **Keszthelyi, K** (2002): A tejipar eszközzgazdálkodásának vizsgálata, összehasonlítása az élelmiszeripar egészével In: Magda, Sándor; Dinya, László (szerk.) A mezőgazdasági termelés és erőforrás-hasznosítás ökonómiája = Economy of use for agricultural production and resources : VIII. Nemzetközi Agrárökonómiai Tudományos Napok = 8th International Agrieconomic Scientific Days Gyöngyös, Magyarország : Károly Róbert Főiskola,
70. L H-Tobrägel ; **Keszthelyi, K** (2002): Die Zukunft der Direktzahlungen in der Landwirtschaft Zur Bedeutung von EU-Direktzahlungen für landwirtschaftliche Unternehmen in Ungarn GERMAN JOURNAL OF AGRICULTURAL ECONOMICS 51 : 8 pp. 428-434. , 7 p.
71. Sári, L ; **Keszthelyi, K** (2002): Gyógytermék helyett élelmiszer – új gyomorkeserű bevezetése a magyar piacon In: Kovácsné, Gaál Katalin (szerk.) "Agrártermelés - Életminőség" 29. Óvári Tudományos Napok Mosonmagyaróvár, Magyarország : Nyugat-magyarországi Egyetem Mezőgazdaság- és Élelmiszertudományi Kar, (2002) p. 194
72. Tóth, T; Puskás, J; Káposzta, J; Guth, L; Bélády, K; Kertész, R; Urbánné, M M; Péter, B; Nagyné, P K; **Keszthelyi, K** et al. (2002): Egyes élelmiszeripari termékek vertikális költség-, ár-, jövedelemviszonyainak vizsgálata Kutatási részjelentés, készült: az FVM Élelmiszeripari Főosztály megbízásából, 2002. március,
73. **Keszthelyi, K**; Ózsvári, L (2001): Resources of the hungarian milk industry in the last decade, considering the European integration pp. 163-169. In: László, Lehoczky; László, Kalmár (szerk.) 3rd international conference of PhD students : Engineering sciences; Vol. I. Miskolc, Magyarország : University of Miskolc, p. 482
74. **Keszthelyi, K**; Ózsvári, L (2001): A magyar tejipar erőforrásainak alakulása az elmúlt évtizedben az európai unió csatlakozás tükrében In: Polgár, J P; Tóth, I; Lengyel, Z (szerk.) VII. Ifjúsági Tudományos Fórum Keszthely, Magyarország : Veszprémi Egyetem Georgikon Mezőgazdaságtudományi Kar, (2001) p. CD

7 BIBLIOGRAPHY

1. BARABÁSI ALBERT-LÁSZLÓ (2018): A képlet - A siker egyetemes törvényei-, Budapest, Libri 280pp
2. BUDAY-SÁNTHA A. (2010): Vidékfejlesztés, Gazdálkodás, Budapest, 54. 7. 792-798 p.
3. DORGAI L. – UDOVECZ G. (2009): A közvetlen agrártámogatások feltételezett csökkentésének becsült hatásai Magyarországon, Gazdálkodás, 53. évfolyam, 2. szám 128-137.
4. FAZEKAS S. (2010): A magyar vidék talpra állításáért! Gazdálkodás. 54. 6. 583-586.
5. CSALLNER A. E. (2015): Bevezetés az SPSS statisztikai programcsomag használatába, Szegedi Tudományegyetem, Szeged, 133pp.
6. TÓTH T. - KÁPOSZTA J. (2014): Tervezési módszerek és eljárások a vidékfejlesztésben, Szent István Egyetemi Kiadó Gödöllő, 158p.
7. TÓTH T. -KÁPOSZTA J. - PUSKÁS J. (2014): Regionális gazdaságfejlesztés és menedzsment Gödöllő: Szent István Egyetemi Kiadó, ISBN:978-963-269-404-7) 124 p.