

DEBRECEN UNIVERSITY
Center of Agricultural Sciences
Faculty of Agriculture
Department of Land Use and Regional Development

**DOCTORATE SCHOOL OF INTERDISCIPLINARY AGRICULTURAL AND
NATURAL SCIENCES**

Head of doctorate school: **Prof. Dr. János Nagy**, Doctor of HAS

„PhD Thesis ”

**RELATIONSHIPS OF REGIONAL DEVELOPMENT AND AGRICULTURAL LAND
USE, REGIONAL MONITORING**

Prepared by:
Endre Harsányi

Supervisor:
Prof. Dr. János Nagy
University professor
Doctor of HAS

Debrecen
2004

INTRODUCTION, OBJECTIVES

The principle idea of my thesis is that in today's accelerated and globalised world, the development of underdeveloped regions is gaining importance. There could be a number of reasons behind the formation of underdeveloped regions. The most important of these are the *historic roots, tradition, globalization* and due to these factors the economy and politics have opened a new direction. As a result of these factors *certain regions have gained a new boost in their development, while other regions have taken the path of slow deterioration*. Regional development aims to promote the development of the latter mentioned regions. *Regional development* is an activity, with which the political elite - in collaboration with the regional economic, political and scientific leadership – tries to prevent and reverse negative processes. Thus – as it is illustrated by a number of examples – *the underdeveloped regions can efficiently be put back on the track of sustainable development*.

Presently, directly after our accession into the European Union, this is a central issue in Hungary. Hungarian agriculture has marked a new era from the aspect of the villages' and countryside's future and the consideration of EU expectations requires a new approach. The Common Agricultural Policy of the EU: ensuring sustainable development, the need for environmental protection. *I believe that agriculture has an accentuated position in the system of regional development*.

The reasons for this are the following: our country is poor in minerals, which prohibited all significant industrial developments. The conditions of agricultural production are good, but significant differences can be experienced according to geographical locations regarding soil, soil physical-, and chemical- characteristics, the natural productivity and water cycles of soils and regarding the climatic factors. Following the change in ownership structure, land use and production structure only corresponds partly with production site capabilities. The natural characteristics allow for the production of special, specific products in a number of agricultural regions.

Agriculture plays a significant role in the preservation of rural values, in the sustainable development of rural areas, in the shaping of rural society as well as in the moderation of social problems and regional differences.

Following the change of regime in Hungary, economic development and the consolidation of market conditions have taken place differently in certain regions and as a result the differences in development among regions have increased. *From the seven regions in*

Hungary, the Northern-Plains Region is one of the most underdeveloped regions on the basis of various statistical data series. In order to moderate its underdevelopment, I will evaluate the situation of the region, the possibilities of development in this thesis, with the primary objective of ensuring sustainable development as an accentuated strategical area in national agriculture development.

In my doctorate theisis, I will introduce the objectives of European Union and national regional politics. I would like to establish an overall picture about the progress of the past decades and what we can expect in the first years of EU accesion by evaluating the unique, regional characteristics of our country. I will search and evaluate the path of sustainable development and the possibilities of development in the region, by examining the reasons behind underdevelopment and regional disparities in Hungary, and especially in the Northern-Plains Region.

At the level of small regions, the structure of economic development is more mosaic-like. Both dynamically developing as well as regions with weaker positions, so-called peripheries can be found in the region. I would like to evaluate, on the basis of the statistical data of the KSH (Hungarian Central Statistical Office), the economic –social situation of the region, while trying to identify, whether the objectives - outlined in the XXI. regulaion of Regional Development and landscape management brought in 1996. – aimed at evening the regional development differences have been realized and whether the social-economic conditions of the region have improved as a result of the regional programs.

It is my primary objective, to reveal the possibilities of development by evaluating the agricultural capabilities of the Northern-Plains Region, the concept of regional development and agricultural landuse. I find it important to examine, whether the regional development and other funds allocated to the region have helped to put the economy of the region on the track of development.

METHODS AND MATERIALS OF THE RESEARCH

Firstly, I have studied the connections of regional historic roots, regional politics and the connections of regional development in Hungary. Along with the examination of European Union and Hungarian regional politics, I have evaluated current target areas and strategies of regional development along with the domestic emergence of regional development principles. I have reviewed the regulations of common agricultural politics and its reform, as well as the expected, domestic effects along with the characteristics of agricultural land use and sowing structure. Finally, I have presented the Regional Development Concept of the Northern-Plains Region.

The basis of my research comes from the annual reports about Hungarian Agriculture, as well the 1996. regulation about regional development, the related Parliamentary Decrees and enactments for execution, the National Development Plan and the Operative Programs. I have collected the data from the *Annual Regional Statistics Reports* of the Hungarian Central Statistical Office, the *Annual Agricultural Statistics Reports* and *other publications* related to land use and regional data. During my evaluations, the year 2000. played a decisive role, since the KSH has completed a general agricultural census (ÁMÖ 2000), between April 1-21., 2000. according to the XLVI. Regulations of 1999. This gives a detailed picture about the number of farms and non-farms, the structure of land, its average size, the method of land use according to planning-statistical regions and counties, as unit a level of areas, and possibly according to statistical small regions. The households that could not be qualified as farms because of their land size, animal stock, service activities and intensive horticultural activities were not qualified as farms.

Beyond the *statistical publications*, I have also used and considered scientific works compiled by the GIS Laboratory at the Soil and Chemical Research Institute of HAS and the Department of Regional Development and Land Use at the University of Debrecen, Center of Agricultural Sciences, when *evaluating agricultural land use*.

The evaluations prepared by the KSH and the related parliamentary decrees have provided a useful background while examining the differences of regional development. On the basis of data provided by the Regional Agency and county Development Agencies, I have examined whether the funds provided for various regional development objectives have served the

interest of improving the economic-social situation of the region, has economic development, agricultural- and regional development been launched.

I have used various statistical methods during the evaluation of the database. I have evaluated *the data of regional lines with ratios*, the inner structure of different multitudes with *distribution ratios* and used the tools of statistical description to display the results.

I have used *analytical trend calculation to evaluate the tendency of periodical sequences*, that were of special importance in my examinations. I have used the statistical program package of Excel when preparing the fitting of the function, by applying the most closely fitting function from the different function types for the data of the periodical sequences. I have used the results of short term forecasting based on the tendencies of periodical sequences during the SWOT analysis to evaluate the social-economic situation of the Northern-Plains Region for the current year of 2004.

In the knowledge of professional correlation among the factors described by different regional sequence data, which define the development of small regions, I have expressed the relationships in figures with the help of correlation and regression calculations by applying the method based on the principle of smallest squares. I have determined the nature and tautness of correlation between coefficient variable and result variable, selected on the basis of professional considerations, with the help of correlation coefficient. By using regression analysis, I have quantified the correlation between the examined variables. I have determined the correlation coefficient and the parameters of regression functions with the help of Excel statistical program packages. Finally, by organizing and summarizing the results of my examinations I have formulated my conclusions and suggestions.

IMPORTANT RESULTS AND FINDINGS OF THE THESIS

Hungarian agriculture plays an important role in the sustainable development of rural areas, in the shaping of rural societies and in the mitigation of regional differences. The fundamental resources of agricultural production still mean a comparative advantage for the whole national economy and thus for those who live rural areas.

Prior to the political and economic change of regime, Hungary had the most diverse plant-company structure – most of them among the agricultural companies, that had already been tested at an international level and performed well due to their level of organization, technical standard and overall economic performance. Beyond the good inner supply, the agricultural sector has exported a lot to both East and West, and played a balancing role in sustaining the foreign trade – financial contact system of the country.

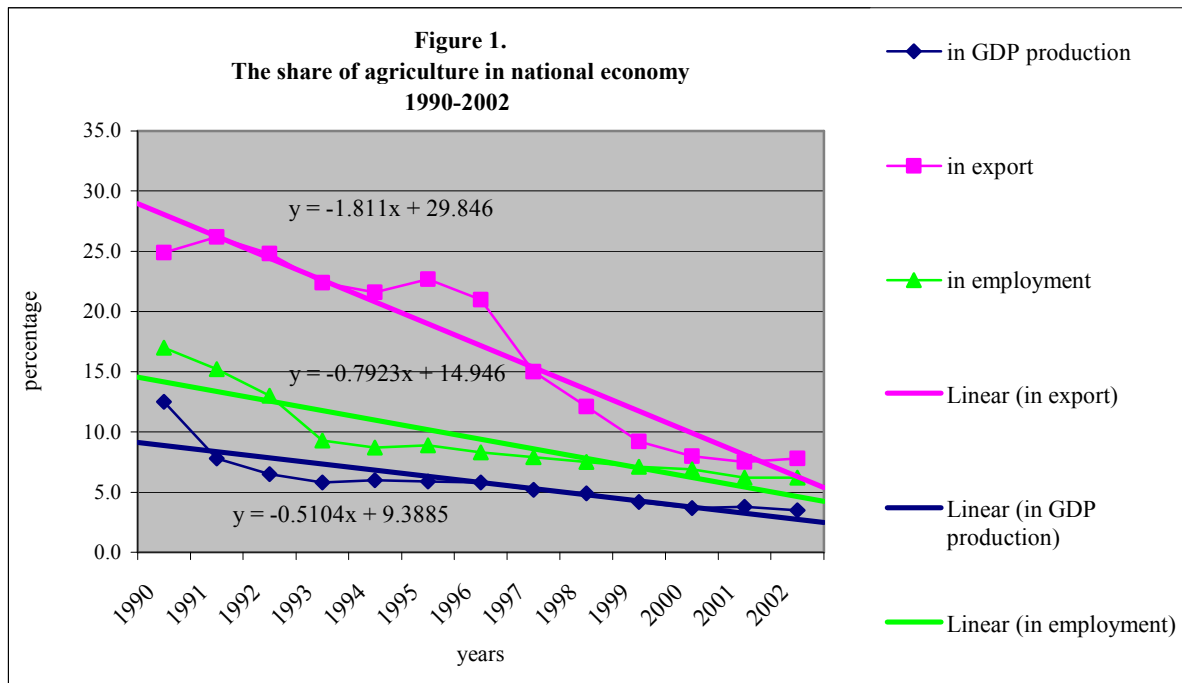
In the first half of the 1990's, agriculture had become the most visual stage of problems in national economy: the most drastic decrease in employment, the lowest wages, the most muddled ownership conditions, a disintegrated plant-company structure and production has decreased by almost 40%. *The basic reason for the crisis in agriculture was the backlash of the crisis in the national economy. The second reason was the drastically narrowing market, which occurred as a result of narrowing domestic market and the significant decline in living standards and making it the most significant and most widely expanding reason. Along with the loss of eastern markets, the European Union has increased its agricultural protection system. The third reason behind the crisis was the new mindset in agricultural politics and governmental practice. The positive effect of agricultural crisis was the switch to market economy and the ownership reform as a precondition, or in other words establishing the dominance of private ownership.*

The position of agriculture in the national economy

The agricultural sphere has gotten an outstanding role in Hungarian national economy up to this day. It still has an important role rural employment and sustaining the foreign trade balance but does not have a decisive contribution anymore.

The linear trends of the 1. figure display - regarding the GDP production, employment ratio and share from the export - how significantly agricultural performance indicators have declined due to the changes in ownership and organisation, decline in domestic food consumption and loss of traditional eastern markets in the past decade. The GDP share of

sector decreased to the third of the original between 1990 and 2002 while the ratio of those employed agriculture decreased by almost two thirds. The ratio of full time employees in agriculture has halved. As a result, rurally based people – making up 36% of the population – make up 54-55% of total number of unemployed.



Source: Own compilation on the basis of KSH data

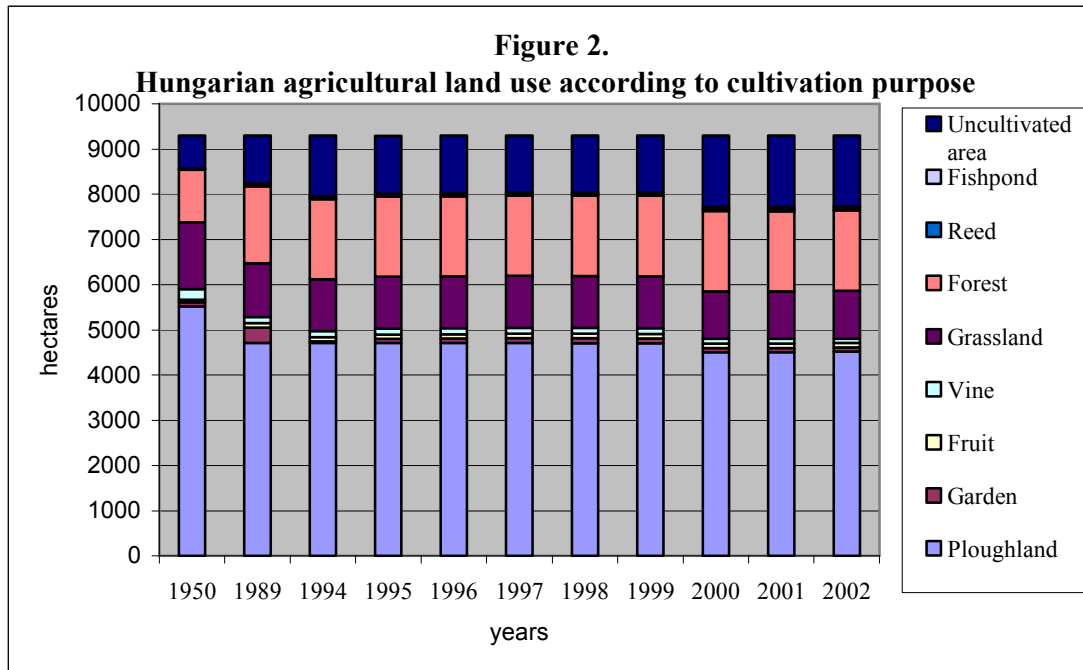
Presently, the share of agricultural production is surprisingly low from gross domestic production. Its role however, is a lot more significant.

Evaluation of agricultural land use in Hungary and in the Northern-Plains region

The most important natural resource of Hungary is soil. The factors influencing soil quality result in significant deflexions all over the country. The smaller regional units can be characterised with special production site capabilities, which allow the production of unique products typical of the region.

It is a general tendency in Hungary, that especially in certain periods of the XX. Century – the size of areas suitable for agricultural purposes has decreased considerably. In 2002, 83,1% of the total 9303 hectares of area in Hungary was used for agricultural production. In the past fifty years, the total size of production sites has decreased by 9,8% compared to 1950, while the ratio of areas exempted from production has increased by 215,8%. Currently, 75,9% of a production areas are used for agricultural cultivation, making up 5867,3 thousand hectares.

Ploughland is 4515,5 hectares, which makes up about half of the country's total area (48,54%). Nearly 50% of this is of outstanding agricultural potential, so its suitability for agricultural production is above average, however about 10% of it is located in sensitive areas from an environmental point of view. The current production standard is in accordance with extensive farming, which – considering the Hungarian agricultural potential – cannot be regarded as favorable. (figure 2.)



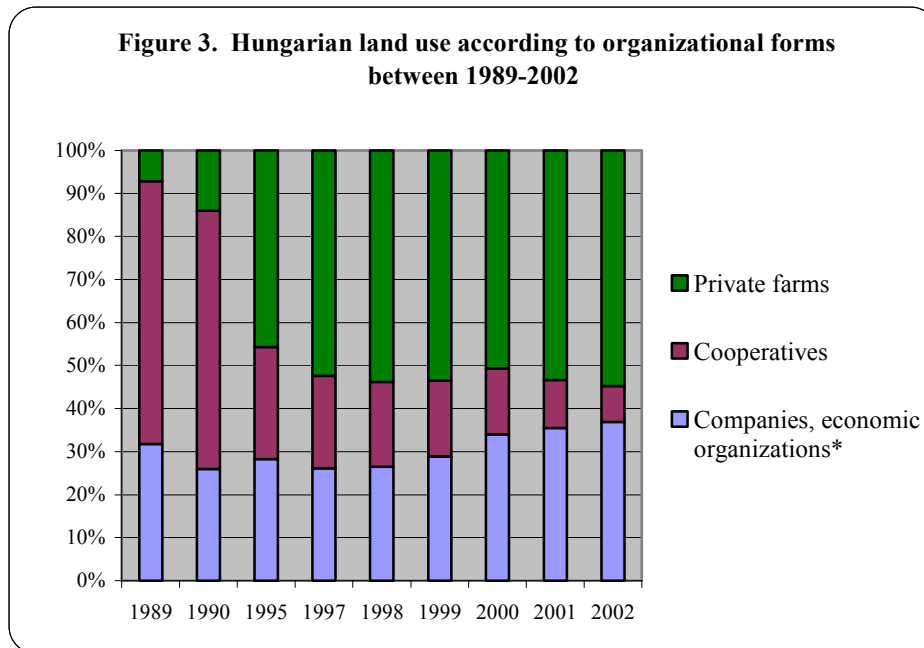
Source: Own compilation on the basis of KSH data

The distribution of cultivation purposes and changing of arable land sowing structure shows the transformation of our agriculture. Between 1950 and 2002 the 20% decrease of agricultural land is conspicuous, which is primarily due to the decreasing size of ploughlands and gardens. The ratio of agricultural land was 79,3% of the total area in 1950, and 69,6% in 1989, while this ratio decreased 63,1% in 2002. The rapid increase in the size of uncultivated areas reflects the decrease of arable land. The size of uncultivated area was 728 thousand hectares in 1950, 1067,5 thousand hectares in 1989 while in 2002 it was 1571 thousand hectares, if expressed in percentages the ratio from the total land size was 7,8% in 1950, 11,5% in 1989 and it further increased to 16,9% in 2002. The significant decrease of arable land can be clearly detected from these ratios. The ratio of agricultural land (ploughland, garden, orchards, vine, grassland) is still significantly high, exceeding 60%, contrary to the decreases to the decrease occurred in the past decade.

Only Denmark has come close to such a ratio from the European countries, the ratio of agricultural areas is around 50% in other countries. In Hungary, the ratio of agricultural area exceeds the average of European Union member states (EU 15) with 23%. The area of ploughland is 20% higher than the average of ploughland areas in the European Union.

The *Northern-Plains Region* is not rich in natural resources, its most significant natural resource is soil. The utilization of land is greatly influenced by soil quality, relief and climatic conditions. *The total area of the region is 1.816 thousand hectares*, according to the May 31, 2002, report of the KSH, from which 11% is forest, 1% is reed and fishpond, 17,7% is uncultivated area. 70% of the total land area, *1271 thousand hectares is agricultural land*. 19,1% of the country's arable land can be found in the Northern-Plains region, making it the second largest ratio after the Southern-Plains Region, which is 20,7%. It has the highest number of orchards (37,8%), the second largest area of ploughland (21,2%) and grassland (22,9%). From all the land used for agricultural purposes 461,8 thousand hectares or 36% can be found in Hajdú-Bihar county, 416,8 thousand hectares or 33% can be found in Jász-Nagykun-Szolnok county and 393,1 thousand hectares or 31% can be found in Szabolcs-Szatmár-Bereg county. 77% is ploughland, 19% is grassland, 4% is orchard and a small ratio is vineyard within the total 977,3 thousand hectares of agricultural land in the region. In the past 50 years the ratio of uncultivated areas has more than doubled, and agricultural land has significantly decreased in all cultivation sectors. Compared to 1950, the agricultural area of the region has decreased by 22%, which can be explained with the low profitability of bad quality soils but the change in land use structure also plays an important role.

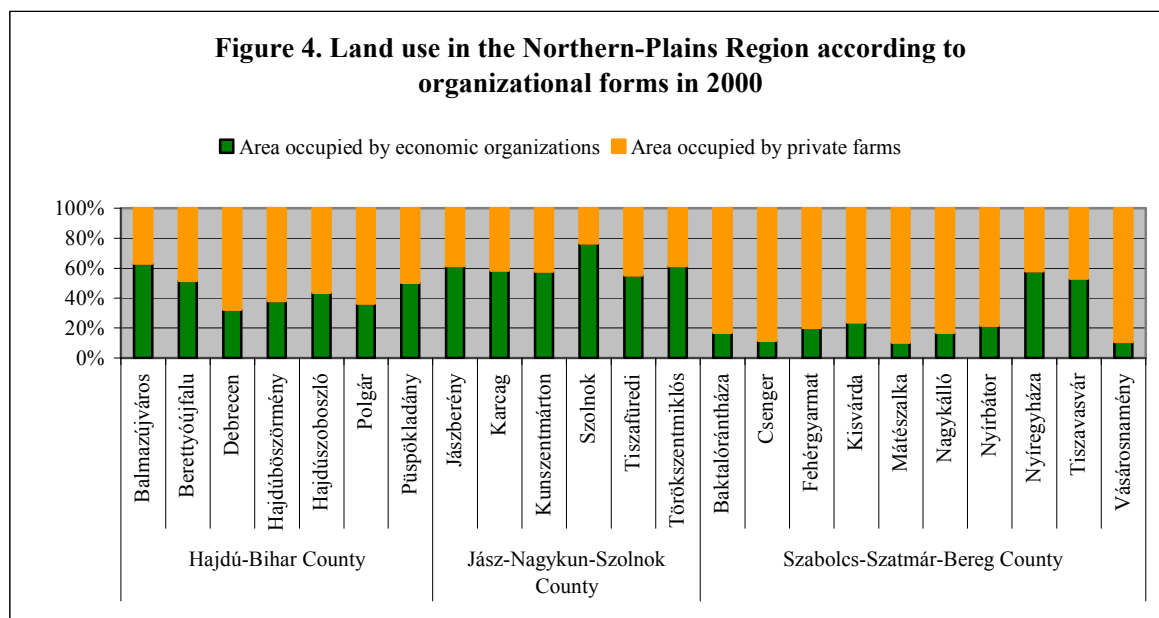
Hungary has become a member of the European Union on May 1., 2004. with such an agriculture that *sees a life-buoy in the agricultural policy of the EU*, but also forced to see that *this cannot help the ones who need it the most, living on small wages*. As a result of transformation in the nineties the lack of transparency, and a rather frittered ownership structure has come to life, where *the ratio of viable farms is still very low*. The role of individual farms is decisive, *in 2002 54,8% of all area was cultivated by individual farms*, where the *average property size was 2,8 hectares*. (figure 3.)



Beyond the property size that results uneconomical production, there are great problems with the EU related knowledge of individual farmers, as well as with lack of professional knowledge necessary for the establishment of an environmentally sound, competitive agriculture. *The National Development Plan regards the development of rural areas and disadvantaged individuals as its most important economic and social objective, placing the improvement of equal opportunities in rural areas in the center of its priorities, since rural areas have a power to retain the population and influence the social perspective.*

In the Northern-Plains 220.191 private farms take up 52% of the arable land while 1541 farming organizations cultivate 47% of the total area. The number of private farms is the highest in Szabolcs-Szatmár-Bereg county, 991882 to be exact, the total land used by them is 265,6 thousand hectares, the average size of a farm is 2,67 hectares. The number of private farms is 72410 in Hajdú-Bihar, their total land size is 212,4 thousand hectares, with an average size of 2,93 hectares. 48599 private farms operate in Jász-Nagykun-Szolnok on 160,4 thousand hectares, the average size of a farm is 3,3 hectares. The average size of individual farms decreases in the regions from west towards the east. In the small-regions of Szolnok, Karcag and Tiszafüred the size of farms exceeds 4 hectares, and excluding the low Debrecen area it is between 3,2-3,9 hectares, out of the 10 small-regions of Szabolcs-Szatmár-Bereg county 6 are below 3 hectares and excluding the 4 hectares of Fehérgyarmat, it is hardly more than 3 hectares. The number of economic organizations is the highest in Hajdú-Bihar, 678 to be exact, the total area used by them is 176,5 hectares with an average size of 260 hectares.

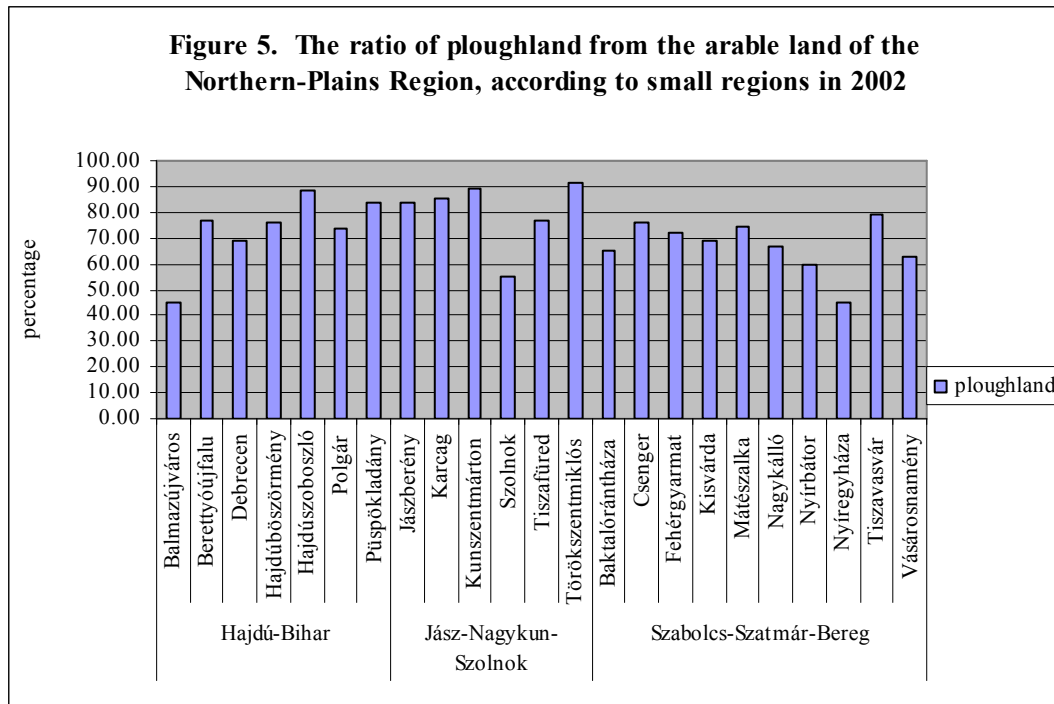
The number of economic organizations is 505 in Szabolcs-Szatmár-Bereg county, the total land area is 137,4 thousand hectares with an average size 272 hectares. The number of economic organizations in Jász-Nagykun-Szolnok is 364, the total land area is 281,3 thousand hectares with an average size of 772,8 hectares (figure 4.).



Source: Own compilation on the basis of KSH data

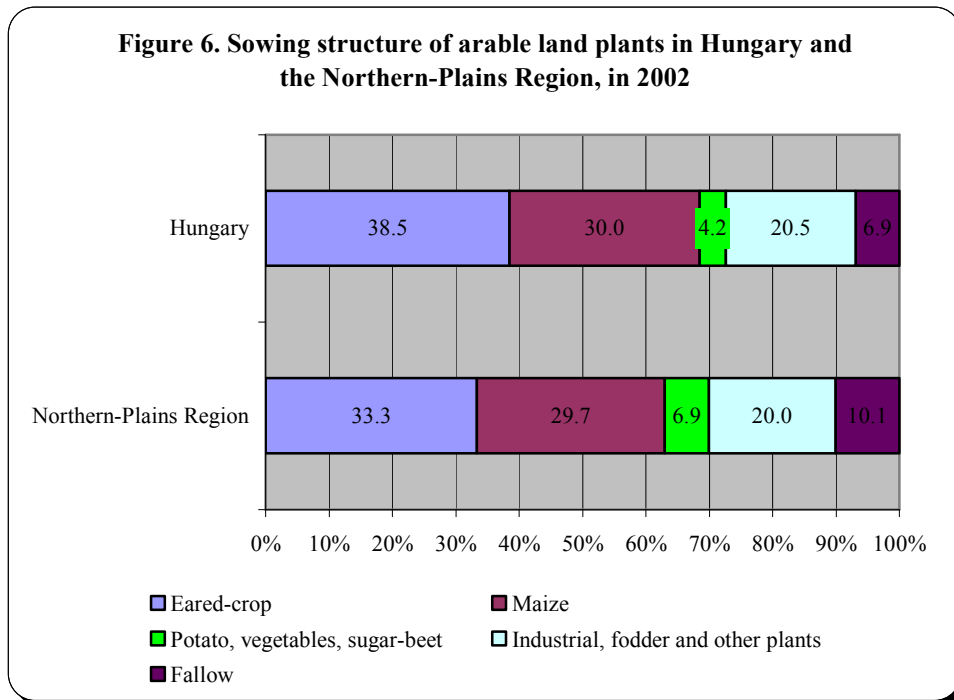
In the case of farming organizations, the differences regarding the area occupied by farms are greater than in the case of private farms. In the small-regions of Jászberény, Karcag and Szolnok, the average area used for farming is over a thousand hectares. In Hajdú-Bihar county the largest farm size can be found in the small regions of Balmazújváros and Berettyóújfalú, but even these are just around 860-890 hectares. In Szabolcs-Szatmár-Bereg the average area of cultivation only exceeds 880 hectares in Nyíregyháza, beside this only Tiszavasvár has similar (690 hectares), in the other regions it is between 90-320 hectares.

All three counties of the region are of agricultural nature and the ratio of the agricultural sector exceeds both the national and the EU standard and the share from the GDP is the also highest here. *The average gold-crown value of agricultural area (15,32 AK)* is below the national average (18,15 AK). The high number and ratio of agricultural enterprises is also typical.



On the areas cultivated by both the private farms and the economic organizations, there is primarily arable land plant cultivation in the region, since 70,18% of the arable land is ploughland, this ratio in the arable land of the country is 63,16%. Figure 5. illustrates that the area of ploughland is below the national average only in the small-regions of Balmazújváros, Szolnok, Nyíregyháza and Nyírbátor. The small-regions of Debrecen, Baktalórántháza, Nagykálló and Vásárosnamény have a ratio of ploughlands over the national average but below the regional average.

21,2% of Hungary's ploughland can be found in the Northern-Plains. Wheat and maize cultivation is decisive in the plant cultivation of the region. Crop is cultivated on 33% of the ploughland, while this ratio is 38,5% in the country. One of the reasons for this is the high ratio of fallow, making it the highest ratio of the country (31%), which is in context with low profitability. *As another cause, we can mention the high ratio of plants traditionally cultivated since these are typical of this region* (potato, sugar-beet, vegetables). The *ratio of these is not significant* (between 1-5%) here either, but *greater than the national average*. This is also indicated by the fact that 37% of the total area used for cultivating vegetables, 35% used for sugar-beet, and 29% used for potato cultivation can be found in the region. (figure 6.)



Evaluation of land use in the Northern-Plains Region

In *wheat production*, quality has to be in the center of attention. The *objective is to produce domestically-bred types* satisfying special needs of domestic consumption and that of the export. *Maize production is competitive even by EU standards*, but beside producing maize for fodder, it is necessary to cultivate sweetcorn and other types for consumption purposes. At the same time it has to be emphasized that both *wheat* and *maize* are so-called *industrial plants*, their cultivation is only profitable on better quality soils and in large quantities. On the basis of these it is recommended that *they should only be cultivated on areas where cultivation site and industrial size conditions are suitable*. In the interest of optimal land use and to establish profitability in the region, *it is required to increase the cultivation area of oil- and protein plants* on the basis of foreign market and processing needs. Complying with cultivation technologies, profitability is also ensured.

When cultivating *potato* is necessary to consider, that nowadays it is primarily worth producing for the processing industry. *Market needs can be satisfied with good quality products by keeping the currently cultivated area size*, but without increasing yield averages profitable production cannot be ensured.

Sustaining the production area of sugar-beet is only possible by increasing yield average and the standard of cultivation. *Tobacco production* has to be kept by all means due to the presence of favorable cultivation capabilities as well as in the interest of retaining population.

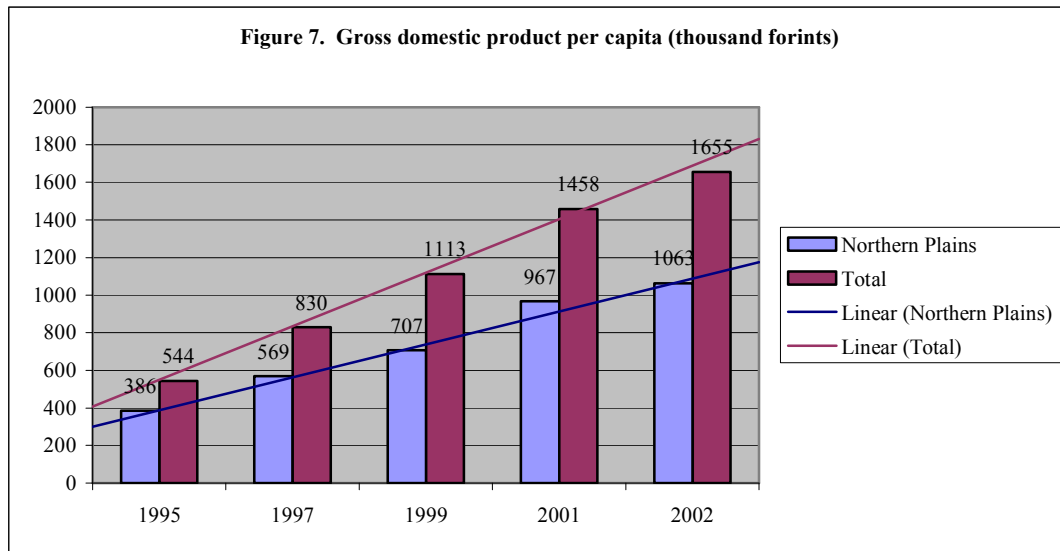
In the appropriate zones of the region *it would be justified to cultivate flax, hemp, poppy, marrow, sorghum on the basis of foreign market needs.*

There is also *possibility* in the region *for developing the horticultural sector*, based on the agro-ecologic characteristics, and this would be useful from various aspects : the Common Agricultural Policy (CAP) of the EU allows a great degree of freedom, which has to be exploited in the interest of producers. The other aspect is, that *the development of horticulture is the biggest opportunity to create workplaces in agricultural production*, but it also has a positive effect on employment in the food industry. Third aspect is the possibility to utilize *geometric energy*, in various parts of the Region, *in the interest of producing economical and good quality vegetables.*

From the aspect of fruit production, 60% of apple plantations can be found in the Northern-Plains, more than 37% of the sour cherry, 27% of walnut and plum while nearly 72% of the gooseberry can also be found in this region. *Sour cherry can be regarded as a Hungarian specialty*, if quality production is organized and stable quantity is provided, *significant export can be achieved.* In order to exploit our excellent conditions, we have to establish up-to-date plantations. As far as quantity and consumption are concerned, *apple remains the most significant fruit of the region.* But new plantations are needed, with types that are saleable on the international market, with up-to-date technologies. At the same time, it is important to see that with optimal agricultural land use, *due to differentiated development, a number of agricultural type of workplaces can and will disappear in the future*, which will mean great difficulties for the population living in rural areas, since their impact is expected to decrease in the economy.

Differences in regional development in Hungary and the Northern-Plains Region

The economic condition of the region is worse than the national average, and unfavorable even by Eastern-Hungarian standards. According to the latest 2001. data, *10,2% of the national GDP is produced in the Northern-Plains Region*, the GDP per capita is 967 thousand forints, 35% in the average of EU 15. This data is only 83,6% of the 1.157 thousand forint average of the six rural regions. *Figure 7. displays the formation of GDP between 1995 and 2002. (figure 7.)*

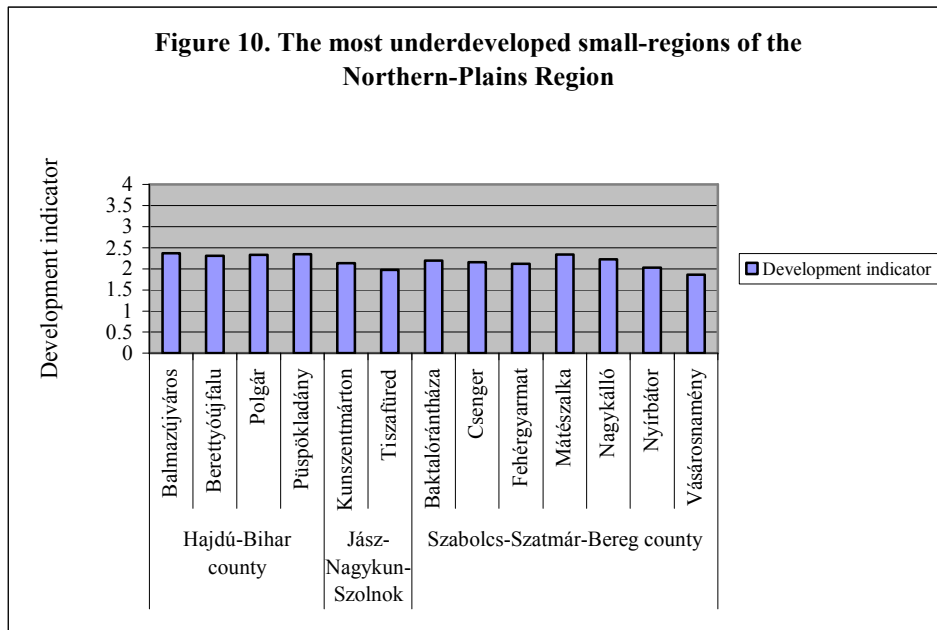


The gap between the linear trend line of the gross national average of the domestic product per capita and the average of the Northern-Plains Region *increases*, in other words *the region is increasingly lagging behind*. The national average of the gross domestic product per capita was 544 thousand forints in 1995, the same thing in the Northern-Plains Region was 386 thousand forints, 71% of the national average. In 2002 the national average was 1655 thousand forints, 64% of it in the region, 1063 thousand forints.

Primarily, agriculture is regarded as decisive in the region, since 20,4 % of gross added value created in national agriculture, forest management and fishery sector is created here (2001. data). It gets a share of 9-12% from the performance of other sectors, within this: 10,15 from industry and 9,4% from services.

Services dominate in the economic structure of the region with 59,71%, industry has a 26% share from new value production, *the share of agriculture is 8,6%, 143% of the national average*. 30% of the region's population works in agriculture, 23% of privately owned farms and 18,5% of the economic organizations operates here. *49% of the population that works in agriculture in the region lives in Szabolcs-Szatmár-Bereg county*. The highest number of people involved in agriculture live in the small regions of Nyíregyháza (66,5 thousand people), Debrecen (54,2 thousand people) and in Mátészalka (30,8% thousand people). (Figure 8.)

The average of the complex indicator measuring level of development, calculated on the basis of the 24/2001. (IV.20.) OGY decree, complemented with population number is 3,36. The statistical areas, where the complex indicator does not reach the national average, have to be regarded as underdeveloped from a social-economic aspect. Where the complex indicator, described above, does not reach 75% of the national average, have to be regarded as beneficiary regions from a regional development aspect on the basis of the 91/2001. (VI.15.) Gov. decree. The underdeveloped regions, together with regions of industrial structure change and regional development make up the beneficiary regions. The value of 2,75 was considered as a basis when calculating the threshold value of the complex indicator, measuring the level of development/underdevelopment, based on the 24/2001. (IV.20.) OGY decree when defining the most underdeveloped small-regions. Budapest represented the highest value with 4,28, which is 60% of the complex indicator. 42 small-regions can be found on the development scale below this threshold value, making up the circle of most underdeveloped small-regions with a development indicator of 2,56 or less. The settlements, where the unemployment rate has exceeded 1,75 times the national average were considered as areas with high unemployment rate. The average of the national unemployment indicator is 5,95, multiplied by 1,75 is 10,41. All the 23 small-regions of the Northern-Plains, except the regions of the three county towns, were regarded as beneficiary from a regional development aspect. The most underdeveloped small-regions of Szabolcs-Szatmár-Bereg, making up an area of 3600 km² with a population of 266 thousand, are located near the Ukrainian, Romanian border in the eastern part of the county. The lowest development indicator is: 1,86 of the Vásárosnamény small-region. Separated from this, in the southern and western part of Hajdú-Bihar, is the small-region of Tiszafüred in Jász-Nagykun-Szolnok county. It has a development indicator of 1,98, and an area of nearly 4300 km² with a population of 206 thousand people, thus belonging to the group of most underdeveloped regions. Beside the two settlements, in the southern part of Jász-Nagykun-Szolnok, is the small-region Kunszentmárton. It has an area of 710 km² and a population of 41 thousand – with a development indicator of 2,14 – thus belonging to the most underdeveloped small-regions. (figure 10.)



Even if we place the most underdeveloped small-regions of the region among the 42 most underdeveloped small-regions of the country we can see, that the position of these small-regions is unfavorable. *The average development indicator of the most underdeveloped small-regions is 2,19.*

The social-economic – development differences within the region are great and the population retaining capability in certain areas is critical. The increase of regional inequalities is a real danger, thus the realization of regional development activities is of special, strategical importance. The establishment of non-agricultural workplaces and the improvement of living standards for people living in rural areas, as well as actions taken in order to increase the population retaining capability of rural areas can compensate strengthening negative tendencies. *Economic development is still expected to concentrate around the economic development centers of larger towns and cities. It is essential to improve traffic and transportation conditions in the interest of development in underdeveloped areas.* In order to improve the population retaining capability of specific areas, it is necessary to ensure quality health care, excellent educational conditions, cultural possibilities and appropriate public infrastructure.

Regional development resources for the Northern-Plains Region

The quantity of funds aimed at decreasing the development differences in the region have been quite significant in the past 7 years. *The region has received a fourth of the regional*

development funds, however the GDP per capita has not increased but decreased rather. Thus, it can be concluded that the principle of additionality and concentration has not prevailed, and *the funds have not achieved the objective they were designed for.*

Between 1998-2002 the majority of the funds allocated for the Northern-Plains Region were aimed at evening regional differences. It can be seen, that from all three resources Szabolcs-Szatmár-Bereg county has received the most. *The funds aimed at moderating the differences in development have exceeded the annual 5 billion forints.* At the same time it can be seen from the evaluations, that a survey regarding the quantity and objective of funds received in specific small-regions was first prepared in 2002.

Regional monitoring

The need for impact assessment, at a settlement level, often comes up in connection with regional development funds and national economic development actions in Hungary. In other words the, it is required to survey how a central or decentralised fund contributes to increasing the social-economic potential or overall development of a specific region.

The European Economic Institute of the Miskolc University and the Land Use and Regional Development Research Team of HAS-Debrecen University, upon the assignment of the Office of Ministry, has outlined the following formula to examine the economy of a project and to apply *regional monitoring*:

The discount differences of project financial proceeds and funds is the value, which can be used a basis for determining the economic effect of a project, thus its social usefulness can established by using the following formula:

$$H = \sum_{i=1}^n [h_i(1+p)^{-i}] - \sum_{j=1}^m [t_j(1+p)^{-j}]$$

Where:

H – is the discount difference of annually occurring funds and proceeds (profit-present value)

h_i – the financial effect realized in the i year,

t_j – the amount of funds in the j year,

n – the expected period of proceeds realization (year),

m – the period of funding disbursement (year),

p – calculative interest rate.

If $H > 0$, then the social, economic effect of funding is positive. The Central Monitoring Committee uses a the T-MER regional development observation and evaluation system to evaluate regional processes and the prevailing of regional politics. In the case of T-MER, the theme of observation is the regional relationships of changes in regional processes in the social-economic conditions of the country and the realization of regional development politics.

Conclusions, suggestions

The Northern-Plains Region is *duratively the last in the rank of Hungarian regions regarding unemployment*, and as far as the *GDP per capita is concerned it is ranked sixth among the seven regions*. These facts prove that there was no structural change in the region, *the competitiveness of enterprises is limited*, which is partly due to the low level of technical background deriving from lack of capital. *The lack of capital can only be solved by involving external enterprise resources*, but governmental support is essential to promote investments. The strengthening of small- and medium-size enterprises can only be achieved through capital. Moreover, their equal distribution has to be ensured, which presently prevents the introduction of quality control systems and overall economic development, thus the production of products according to expected standards.

As a result of examinations, *the strengthening of regional competitiveness is of key importance*, which *requires the application of consistent development politics*. *Economic development* is the most important, which, if operates well draws the opportunity of establishing of welfare infrastructures. *Processing industry* is important, along with the *development of supply chains* and *involving external resources* to ease the considerable lack of capital. *The development of agriculture* also plays an important role in the transformation of economic structures, because the conditions of the region, its tradition and long-term competitive advantage are favorable for agriculture, thus it will represent a greater ratio than the EU average. *The modernisation of the agricultural sector can be promoted by supporting market access, quality development in agriculture and urging producer-retailer cooperations*. *The development of transportation and IT infrastructure*, along with *human resource development* is especially significant in the development of the region.

In conclusion, it can be stated that such a consistent regional development policy is required in the future – based on the strength of the region – which, by validating principles of regional politics, serves the interest of efficient regional fund utilization and prevents the irreversible lagging of the region and promotes overall development.

NEW SCIENTIFIC RESULTS

1. I have found, that *the ratio of agriculture in GDP production has decreased to fourth-, in export and and employment it decreased to a third* in the past ten years in Hungary. On the basis of linear trend function evaluations, export has decreased by an annual rate of 1,9% , the ratio of active wage-earners in agriculture by 0,8%, the contribution to GDP has decreased by an average of 1,5%, by 2002. The reason for this is the ground loss of the food industry, the loss of previous markets and the delay of adapting to the new environment.
2. By evaluating the social-economic situation of the Northern-Plains Region, I have concluded that *the GDP increase per capita, compared to the national average, is constantly decreasing*. Using correlation examination, I have found that *the decrease of GDP has a direct connection with the relative high ratio of agricultural production, within the region*. With the help of statistical methods, I have found that the establishment of one new economic organization in the region decreases the unemployment rate by 0,16%. There is strong correlation between the number of economic organizations and the income, as a basis of personal income tax, per capita, the correlation coefficient is 0,8. On the basis of the regression line, the establishment of one economic organization increases the income, as a basis of personal income tax, per capita by 3878 HUF.
3. As a result of evaluating agricultural land use and sowing structure I have found, that it is necessary to determine and plan the appropriate arable land use by considering cultivation site characteristics within the region. Efficient land use is a basic requirement for increasing the competitiveness of agriculture. I have identified the land use zones and profitable plants, by considering the natural characteristics of the Northern-Plains Region, I have also made suggestions for increasing or decreasing the sowing area of specific plant cultures.
4. On the basis of evaluating the number of regional differences – and the registered capital of companies, income, unemployment rate – I have found, that the structural change of the economy did not occur. One of the reasons why the Northern-Plains Region is lagging behind, is because the transmission of main roads is limited and the

there is lack of motorways, which make the region hard to access. The proof of this is the number of most disadvantaged small-regions; 2 in Jász-Nagykun-Szolnok county, 4 in Hajdú-Bihar county and 7 in Szabolcs-Szatmár-Bereg county. The other reason is the low number of tourist accomodation and their low quality, which reduces the possibilities of alternative income.

5. In the interest of developing the competitiveness of the region, it is necessary to develop the processing- and service industry by using external resources. The production-retail cooperation between agricultural producers has to be promoted, in the interest of profitability. The development of the region has to be established with maximum exploitation of structural and cohesive funds, thus gaining full advantage of EU accession.
6. *My research results and evaluations show, that it is essential to apply regional monitoring when evaluating the efficiency of completed development programs, in the interest of efficiently using funds.*

RELATED PUBLICATIONS

1. Harsányi E. (2001): A területfejlesztés és a mezőgazdasági földhasználat összefüggései, területi monitoring. DAB Tudományos tanácskozás, Debrecen
2. Harsányi E.- Nagy J.(2001): Correlation between rural development and agricultural land use. In: Current soil and results in under transicion agriculture. Szerk: Nagy J.- Rajkai K. Debrecen. 1999-2000.
3. Dobos A.-Nagy J.-Szabó J.-Dorka D.-Harsányi E.-Nagy P.-Taraczközi K.-Pásztor L.(2001):GPS/GIS technológiai alkalmazási lehetőségei a növénytermesztésben. Szakmai Konferencia.Nyíregyháza 2002.szeptember 20-22.Konferencia kiadvány.28-29.
4. Harsányi G.- Nagy A.-Harsányi E. (2003): Területfejlesztés térségi összefüggései az Észak Alföldi Régióban. Debreceni szemle 2003/1 86-100. old
5. Rátonyi T.- Megyes A.- Huzsvai L.- Harsányi E.- Nagy J. (2003): Nitrogen balance and leaching in a long-term tillage experiment. In: ALPS-Adria Scientific Workshop, 3-7 March 2003, Trogir Croatia.
6. Harsányi Endre- Sulyok Dénes – Nagy Attila János- Harsányi Gergely (2003): A magyarországi földhasználat ötven éve, VI. Falukonferencia Pécs 264-269.old.
7. Harsányi Endre- Sulyok Dénes – Nagy Attila János- Harsányi Gergely (2003) A Magyarországi földhasználat 50 éve között Debreceni szemle 2003/4 495-503. old
8. Sulyok Dénes –Harsányi Endre- Nagy Attila János- Harsányi Gergely (2003) Magyarország földhasználatának változása a huszadik század második felében Növénytermelés (in print)
9. Drimba Péter – Ertsey Imre - Harsányi Endre –Nagy Attila- Harsányi Gergely – Dövényi Nagy Tamás (2003) Kockázat elemzés eredményei a kukoricatermesztésben In: 50 éves a magyar hibridkukorica. Martonvásár 2003. szeptember 30. 121-125.old
10. Harsányi Endre (2003): A területfejlesztés célterületei, eszköz és intézményrendszere, a területfejlesztés jelene és fejlődésének távlatai. DAB Tudományos tanácskozás, Debrecen (In print)
11. Dénes Sulyok – Tamás Rátonyi – Attila Megyes – Endre Harsányi – János Nagy (2004.): The Economic questons of irrigated maize cultivation on the loess ridge of Debrecen. In: Proceeddings of the III. Alps- Adria Scientific Workshop, 1-6. March 2004, Dubrovnik, Croatia.
12. T. Rátonyi – N. Fodor – L. Huzsvai – A. Megyes – D. Sulyok – Endre Harsányi (2004.): Applying chloride tracer to quantify preferential flow in chernozem soil In:Proceeddings of the III. Alps- Adria Scientific Workshop, 1-6. March 2004, Dubrovnik, Croatia.