

**University doctoral (PhD) dissertation abstract**

**THE SITUATION AND ROLE OF RURAL RESOURCES  
IN THE ECONOMY OF HÓDMEZŐVÁSÁRHELY  
MICRO-REGION**

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## **1. THE BACKGROUND, OBJECTIVES AND HYPOTHESES OF THE RESEARCH**

There have already been development programmes for Hódmezővásárhely micro-region, like Agricultural Structure and Rural Development Programme, LEADER+ programme for the micro-region, Local Rural Development Strategy (2007-2013) and Micro-regional Development Programme (2007-2013). Due to the lack of thorough scientific examinations no realistic account for natural resources has been done, the different relationships were not investigated and the sustainable growth path of rural economy was not determined. Therefore the competitiveness and sustainability, the stable well-being of the inhabitants as well as the population retaining ability and the ability to economically provide for population of the micro region is uncertain. A proper, relevant development programme must consider all the above-mentioned factors.

I approached the topic **from interdisciplinary point of view** in my research, which follows from the features of the resources being comprehensive, colourful, involving several fields of science as well as the complexity of the rural economy. Within such frames the research had several difficulties since the examination of the resources required knowledge, skills, experience and data collection in numerous types of fields. This was real challenge, at the same time meant the beauty of the research for me. My research focuses on the investigation of the resources of the micro region, however it is not, cannot be extended to every possible aspect, considering the complexity of the topic.

**The principle objective of my research** to classify, analyse and assess the local rural resources of the micro-region, to synthesize this knowledge, to find new relationships and create new knowledge in this field.

My **objectives** connected to certain resources are the following:

- To present the situation and the direction of changes of the human resources of the micro-region, according to the hierarchy of human resources.
- To present and evaluate the characteristics of the soil as the main ecological feature determining the ecological endowments of a certain area.

- To determine the total biomass-supply, of the micro-region, the amount of renewable (regenerable, reproducible) biomass, the amount of biomass actually suitable for energetic purposes.
- To investigate the landscape characteristics of the micro-region (landscape ecological matrix, patches and corridors, respectively ecological network)
- To present the land use features of the protected areas of national importance, and also the place and role of these territories in the micro-region.
- To analyse and evaluate the land use changes as results of the socio-economic processes.
- To assess the presence and occurrence frequency of the institutions supplying services to fulfil the demands in the settlements of the micro-region and to find out the role of the settlements in the settlement network system of the micro region, through their function. Furthermore to present the tighter and wider effect of the SZTE MFK (University of Szeged Faculty of Agriculture) providing educational and cultural services, on the human resources, to determine their educational catchment area and also the micro-regional characteristics of the experts graduated at the Faculty.
- To analyse the allocation of the grants provided by the operational programmes of the First National Development Plan (első Nemzeti Fejlesztési Terv = NFT I.) within the micro-region in the period of 2004-2006, and through that to evaluate the resource absorption ability of the micro-region and its settlements.
- To analyse the development process of the non-profit sector of the micro-region and to investigate its main structural and operational characteristics.
- To assess and determine the factors most hindering the development of the LEADER areas and the rank of importance of the tasks to be completed by the local action groups (LAGs). Connected to the latter, to summarize the impact mechanism and determinations of the LAGs operation.

In connection to the above, my **research was aimed to contribute** to the activities of actors (local governments, civil organisations, private enterprises, development agencies and other institutions) in the micro-region so that they can form their strategy and organise their activity considering and using the results and the reliable achievements. In my opinion the development programmes, conceptions and strategies mentioned

earlier need further research at local level (settlement, micro-region), which can provide useful information for programming processes, and have crucial importance in the development of the local community. With regard to the above mentioned, together with the active involvement and co-operation of local actors an action programme can be implemented, which is built on local endowments as well as the possibilities of the past and present. Through making the economic and social activity more varied, it can improve employment, enhance the competitiveness of the micro region, increase the equality of chances, and help preserve the natural and cultural values, improve life quality and increase the population retaining ability.

According to the objectives set out and the previously acquired knowledge and experiences in the micro-region, I formulated some **hypotheses** underlying the research.

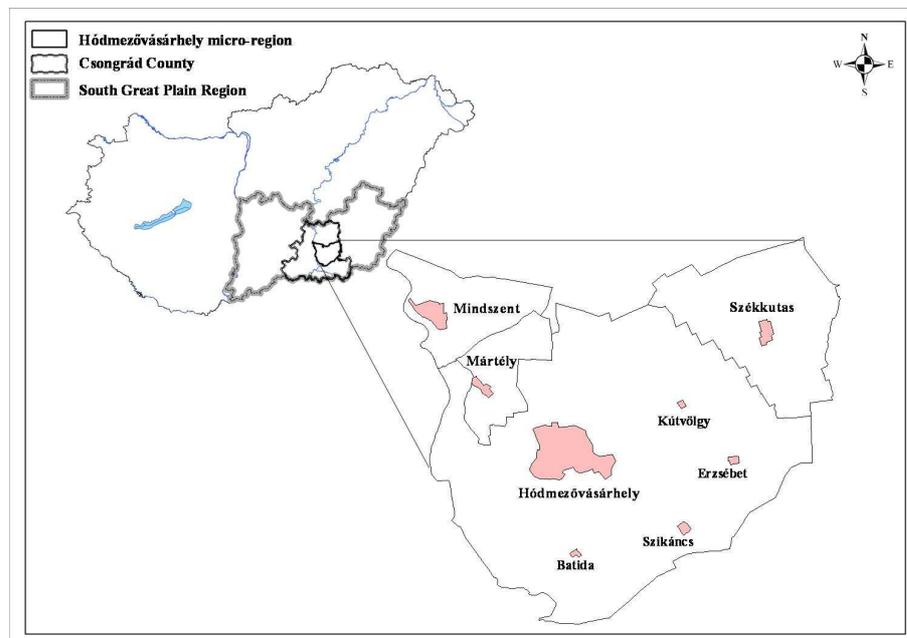
1. The economy of the micro region and its internal resources are inseparable from Hódmezővásárhely town. The dominance of the centre of the micro-region affects differentially the socio-economic processes, the direction and opportunities of development by resource groups.
2. The human resources are significantly differentiated by settlements, according to their position in the settlement hierarchy. Beside the general trends typical to Hungary and the South Great Plain Region several local speciality can be observed, which are also dominated by Hódmezővásárhely.
3. The natural endowments and production site conditions provide favourable opportunities to the number of sectors (agriculture, tourism) in the micro-region's economy. The protected areas represent a significant potential.
4. Significant part of the agricultural production, which represents the dominant land use in the micro-region, can be used for energetic purposes.
5. Civil organisations have an important role in the society of the micro-region, as well as the institution of bottom-up, participatory-based, community-led local rural development, the LEADER local action group (LAG).

## 2. RESEARCH METHODS AND DATABASES

The database and the applied methods of the research will be presented according to the examined resources. At first I briefly introduce the research area.

### 2.1. Delimitation of the research area

My research area is the Hódmezővásárhely micro-region (Fig. 1), which is situated on the left bank of river Tisza, in the central part of the South Great Plain Region and the eastern part of Csongrád County. The micro-region includes four settlements, covers an area of 708 square kilometres and has a population of around 58 thousand. The centre of the micro-region is Hódmezővásárhely town, which ranked its “county right” status in 1990. Based on the administrative area of the town (488 km<sup>2</sup>) it is the second largest settlement in Hungary after Budapest with a population of 47 thousand. Another (small) town of the micro-region is Mindszent, which was declared as town in 1993, with a population of 6 800. Additional settlements of the micro-region are Mártély és Székkutas with a population of 1 350 and 2 400. They became independent villages from the former farm centers of Hódmezővásárhely in 1950 after the administrative reorganization.

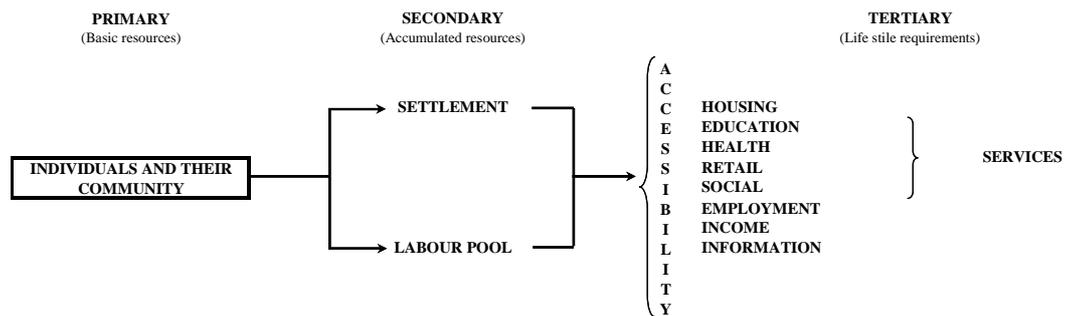


Source: Own construction

**Figure 1: Location of the Hódmezővásárhely micro-region and its settlements**

## 2.2. Hierarchy-based investigation of human resources

Investigations connected to the topic were carried out by the human resource system (Fig. 2) described in the work of Cloke and Park (1985). According to the authors mentioned above, rural people and the communities founded by them mean the first level of the human resources of rural areas. I examined civil organizations playing a decisive role in terms of rural communities in a separate chapter, among other resources. The second level of human resources can be interpreted as the accumulation of the first level of human resources formed by individuals and communities, involving rural settlements and labour pool. The needs related to lifestyle mean the third level of human resources, which play an indispensable role in the maintenance of first and second level of human resources. The investigation of settlements, the relevant institutions as well as their functions are dealt with in a separate chapter titled "The functional analysis of settlements".



Source: Drawn up after Cloke and Park (1985) and Fehér (2005)

**Figure 2: The human resource hierarchy**

To add contents to each level of human resources I relied on the study of Fehér (2005), who adapted Cloke and Park's human resources system in his research taking into account the peculiarities of the domestic rural economy. The data used for the research were provided by the database National Spatial Development and Spatial Organisation Information System (TeIR, 2011) of the Hungarian Regional Development and Urban Non-profit Company (VÁTI Kht.). Out of the database the spatial statistical data of Hódmezővásárhely micro-region (1990-2009), personal income tax (SZJA, 2009) and the data of the census in 2001 were available. I used Microsoft Excel spreadsheet programme for compiling the database of the research, for completing statistical and mathematical calculations and also for constructing tables and figures.

### **2.3. The investigation of the natural resources**

Considering natural resources, the analysis and evaluation of the most important soil characteristics – soil type, soil water types, soil pH, soil organic matter reserves, the soil fertile layer of thickness and soil fertility – largely determining the farming endowments the land use opportunities of the micro-region, were carried out in connection with the survey of landscape use. For the investigation of soil characteristics agro-topographic 1:100 000 scale (AGROTOPO) database, edited in the Soil Science and Agricultural Chemistry Research Institute, was used.

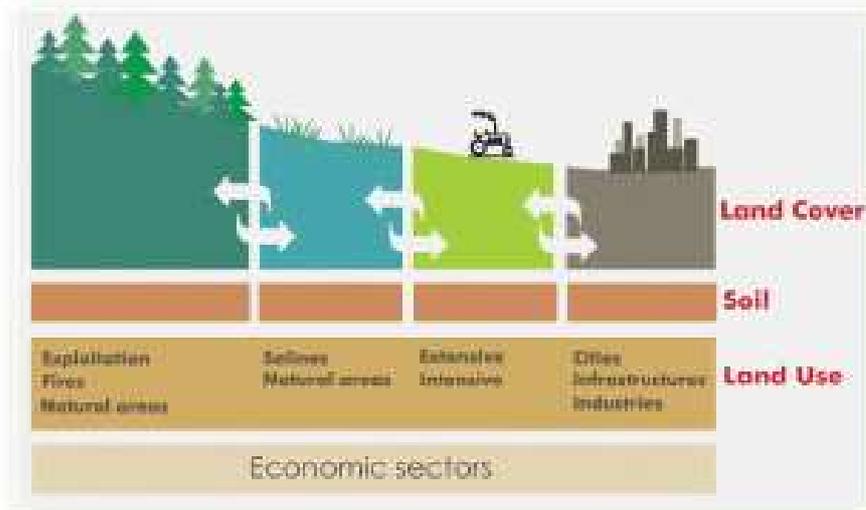
Then, the biomass potential used for the energy purposes was analysed adjusted to the specific place of the biomass types in the production-consumption chain (Láng et al., 1985), and the origin of biomass as a resource classification system (Bai, 2002). On this basis, the determination of the agriculture- and forestry-originated biomass potential of the micro-region was completed then taking into account the biomass potential of non-agricultural originated, municipal waste the total biomass supply, the reusable (regenerated, re-produced) biomass quantity and the actual biomass quantity recommended for energetic purposes were determined. The data used in the were provided by Csongrád County Land Office, the Central Statistical Office databases (the General Agricultural Census in 2000; Csongrád County Statistical Yearbook 2004, 2005; Agricultural Statistical Yearbook 2004, 2005), the Hódmezővásárhely micro-region Agricultural Structure and Rural Development Programme, the TeIR GIS database (TeIR, 2007), and also the second Chapter 2.2.2 subsection ("The biomass potential of the waste generated in the micro-region) of the study "The contexts of bio- and renewable energy production and utilization in Hódmezővásárhely area", my colleagues and I prepared together.

The natural resources include the so-called ecological and biological resources as well, which I reviewed and evaluated in connection with the survey of landscape use. The reason of this that I examined natural habitats and the relationships between them among the ecological and biological resources and these are land use methods which methodologically are more related to the topic of landscape use. I note that beyond the above mentioned the concept of natural resources is much broader, so as I did not examine mineral resources of local significance, such as solar or wind energy, which as part of the local natural endowments pose additional benefits for development of the micro-region.

## **2.4. The investigation of the landscape as resource with regard to utilisation**

The landscape refers to both the land use and the scenery of an area. During the investigation of the micro-regional landscape as a resource its area and land use were in focus, therefore within the frame of that I did not detail and evaluate the visual and aesthetic values of the territory and no scenery analysis was made. To investigate the landscape structure and land-use the land cover database of the Institution of Cartography and Remote Sensing (FÖMI) CORINE Land Cover 1:50 000 scale (CLC50) was used. For the survey of the protected natural areas of national importance and the areas belonging to the National Ecological Network the databases of the Nature Conservation Information System (TIR) of the Ministry of Environment and Water (KvVM) were used. The data on level of settlements (1990-2005) of the land use categories necessary to monitor the changes in land use was provided by the Csongrád Land Registry Office. The database necessary for the examination of the changes in land cover was downloaded from the European Environment Agency (EEA), European Environment Information and Observation Network (EIONET) CLC2000 website (<http://etc-lusi.eionet.europa.eu/CLC2000/>)

My studies were carried out along the three thematic priorities of the analysis of the European Topic Centre for Land Use and Spatial Information (ETC-LUSI) concerning the terrestrial environment (Fig. 3). Accordingly, I investigated the micro-regional characteristics of the soil (see at natural resources), land use and land cover. In the first step the land structure characteristics of the micro-region were surveyed using the land cover database (CLC50) and associated with that the ecological network of the micro-region with the TIR database. The next step was to analyze the land use characteristics of the protected natural areas of the micro-region with TIR and CLC50 databases. Then, using land registry data as well as CLC50 and CLC2000 databases, the changes of land use was investigated with regard to land use categories and land cover and the nature of the changes was determined based on the changes in land cover. To process and display geographic data the ArcGIS9/ArcMap9.2 GIS programme, while to process the information extracted from digital databases Microsoft Excel spreadsheet program was used.



Source: EIONET (<http://etc-lusi.eionet.europa.eu/>), (15.10.2008)

**Figure 3: The thematic priorities of the assessment of terrestrial environment**

Regarding the protected natural areas the survey of their position and role in the micro-region was investigated. The primary information necessary for the research was collected with in-depth interviews as a qualitative method. These in-depth interviews were compiled based on a pre-determined list of questions in the November-December months 2006 (on four occasions). To represent the concerned settlements the interviewees ranged from the mayor, deputy mayor or theme-competent experts from the mayor's office (environmental executive, town management administrator). In case of the protected areas the territorially (Körös-Maros National Park and Kiskunság National Park) competent nature reserve managers helped. There were separate series of questions for the interviews of municipalities (local governments) and the management of protected areas (the National Park Directorates). Most of the questions were mirror questions, i.e. both the local professionals and managers of protected areas were asked the same question thus revealing two aspects of the same question. Beside mirror questions there were a few specific questions concerning particularly for the settlements and the protected areas, respectively. The list compiled for municipals contained 28 questions, while that of the protected areas 29 questions. The questions can be classified in three main groups as follows:

- The first group of questions was designed to explore the relationships and cooperation as well as the openness and cooperation ability of the parties;

- The second group of questions relate to the evaluation of the role and impact of other party has in the micro-region;
- The third set of questions is for exploring the parties' ideas and strategy for the future.

## **2.5. The functional analysis of settlements**

One important feature of settlements is that they provide location for activities fulfilling the needs; on the other hand, they are closely related to fulfilling the needs of the people living there. The two are connected by the functions supplied by municipalities and the institutions providing them, which carry out their activities in the given settlement. In this way they facilitate the fulfilment of the need of local people and in case of certain functions of people living in the catchment area. During the investigation of the roles of the settlements of the micro-region the so-called inventory method was applied. Accordingly, item by item, the presence and quantitative data of institutions with central (urban) and local (village) roles were explored i.e. the frequency of their occurrence examined. In the study, the micro-regional presence of 64 institutions was taken into account. The institutions were grouped based on the tasks they perform and in this way seven institutional groups were formed: (1) justice and law enforcement, (2) education and culture, (3) health and social care, (4) recreation and sports, (5) trade and catering, (6) public administration, authorities and agencies, (7) enterprises, financial institutions and chambers. The data used for functional analysis are typically from a collection of my own (municipal websites, websites of institutions, laws), while a smaller part (for 12 institutions) originates from TeIR settlements database (TeIR, 2011).

Then, within the scope of urban functions, the spatial investigation of the expert emissions of the University of Szeged, Faculty of Agriculture (hereinafter referred to as SZTE MFK; currently called SZTE Faculty of Agriculture) as part of the network of knowledge communication, was carried out. A part of the data used the research (names and addresses of graduates from 2001-2005) derived from the database of the Single Education System of the University of Szeged (ETR, 2006). Another part of the data was compiled with students directly involved in the research (in person or by telephone) and also indirectly (information provided by others). To make the databases ready for the investigations the data were encoded by sections and by micro-regions. The encoding of the micro-regions was completed by the micro-regional codes, which were

designed according to the statistical micro-region system regulated by the decree in force in the time of the research (second half of 2006). 244/2003. (XII. 18.). The Gazetteer of the Hungarian Republic also provided help for the work. The MS Excel spreadsheet programme and the SPSS 11.0 statistical software package were used for the examinations and for the evaluation of the results.

## **2.6. The investigation of other resources**

Among the other resources, on the one hand, a group of grants as external sources of financial resources was investigated, which can be acquired by the settlements and the micro-region by the organizations and individuals engaged in activities there. On the other hand, the civil (non-profit) organizations were also investigated. Accordingly, when investigating the other resources of Hódmezővásárhely micro-region, first the territorial allocation of the grants of the first National Development Plan (NFT I) operational programmes in the 2004-2006 period won by the micro-region actors was examined and through this the resource-absorption ability of the micro region and its settlements. Within this framework the micro-regional characteristics of the allocation of the development resources were explored by the calculation of the distributions from different aspects. The analysis was carried out on the level of the micro-region and its settlements as well as the territorial actors involved in the development. Out of the operational programmes all development programmes of the NDP I were taken into consideration: Agricultural and Rural Development OP (AVOP), the Economic Competitiveness OP (GVOP), Human Resources Development OP (HEFOP), Environment and Infrastructure OP (KIOP), and Regional Development OP (ROP). The data of the 2004-2006 years used in the research were selected from the TeIR database of VÁTI NFT I. proposal register (TeIR, 2007).

The next step was to deal with the analysis of the non-profit sector in the micro-region. In addition to presenting the structural and functional characteristics of the sector organizations I endeavoured to explore the processes, which took place during the development of the sector between 1994 and 2006. The basic unit of the study is Hódmezővásárhely micro-region, but the analysis was extended to larger territorial units, which include the micro-region. In doing so, data, indicators and trends were compared to the parameters characteristics of the non-profit sector of the territorial units (Csongrád County, Southern Great Plain Region, and Hungary) including the micro-

region. The study is based on the non-profit statistical database (for the years studied) of the Csongrád County Directorate of the Central Statistical Office (KSH non-profit statistical database 1994, 1997, 2000, 2003, 2006). The SPSS 14.0 statistical program was used for processing the data.

## **2.7. The critical points and new possibilities of the utilisation of rural resources in the Hódmezővásárhely micro-region**

Within the topic of the critical points of the rural resources and the new opportunities of their utilization I focused on two key areas, which had great effect on the success of the implementation of the LEADER-programme at the local level, making use of local resources. When preparing the part to examine the obstacles hindering the development of the areas covered by the LAGs (1) and then the part investigating the roles and responsibilities of LAGs as internal development factors (2) I relied on the results of a survey conducted in March 2010, together with my colleague, Rita Szekeresné Köteles. The questionnaires were designed for the LAGs, which were established within the LEADER axe framework in Hungary. Out of the possible 96 questionnaires we received back 90, which meant that 94% of the local action groups took part in the survey.

In order to identify the factors hindering most the development of LEADER-areas, LAGs work organization leaders we asked to rank the factors they consider the obstacles of development out of the 16 choices sent for them, where 1 is the main obstacle of the development of the area. In the survey those tasks and duties were gathered which support the LAGs to become a real organisational force in their areas. The action groups were asked to assess their tasks, according to their importance, on a scale of 1-9, where 1 indicated the most important task. In this context, the impact mechanism and determinations of the LAGs operation were outlined and summarized.

### **3. MAIN FINDINGS OF THE RESEARCH AND EVALUATION OF HYPOTHESES**

1.) The hierarchy-based investigation of human resources showed that the dominance of the centre settlement determines the socio-economic processes of the micro region, which appears in a number of results of my research. More than 90% of the populations of the micro-region live in urban areas, in this aspect the micro region can be considered urbanized. Based on population density, however, it is still a rural micro-region. There is also considerable population living in outlying areas and on farms, which is more than twice the rate of the 3% national average. The demographic data suggest that the population retaining ability of the micro-region is inadequate. This proves that the population has been decreasing for decades, which is primarily due to the natural population decline. Between 1990 and 2009 the population decreased nearly 5 000 people, i.e. approximately by 8%. In addition to the declining residential population, the ageing of the population of the micro-region is also of primary importance, posing a threat on the renewal, reproduction and maintenance of local society. The aging index illustrates well the unfavorable changes in population age structure, which increased from 101% to 164.3% between 1990 and 2009. This trend also reflects upon the age structure.

2.) In relation with the employment and the accessibility of work anomalies can be shown in the local labor market(s). The employment rate in micro-regional average is 52%. This indicator is 53% in the centre settlement, while in the other town of the micro-region, in Mindszent, the rate (45.3%) is below the level of the villages. Besides the low employment rate in Mindszent, the proportion of employees living and working locally (54.2%) is also comparable with that of the villages. Nevertheless, the rate of in-commuting workers out of the locally employed is extremely low (7.2%). This means that it is not only local people that can not find jobs in the town, but also only a small number of people from other towns can find jobs in the settlement. The examination by gender of commuters working in other settlements had interesting results. The data show that men are much more mobile than women, since the proportion of men out of those working in other settlements is 60-70%. Consequently, the availability of work for women is limited because it is unlikely that so much more women would work locally, than the number of men going to work to another settlement.

**3.)** The analysis of the per capita income and of the distribution of taxpayer population according to different income-categories showed a rather large disproportion. When examining the distribution of the taxpayer population by income-categories based on 2009 data, the very high rate of those with an income less than 300 thousand HUF was conspicuous. Out of the taxpayers of the micro-region an average of 11.4% belongs to this income category. Outstanding data were found in case of Székkutas, where almost 12.4% of the taxpayers had an income had less than 300 thousand HUF. The high percentage of those belonging to this income group is astonishing, since the annual 300 thousand HUF or lower incomes are well below the poverty line, i.e. below the income necessary to purchase the minimum recognized requirements. This does not only deprive them a possibility of choice, it makes the availability of satisfying the minimum needs doubtful. Accordingly, more than 20% of the taxpayers had an income enough for the minimum subsistence or less than that in Hódmezővásárhely micro-region in 2009. Further imbalance is that about 30% of taxpayers had an income of the minimum wage or below that. The most characteristic income category in case of all settlements was between the annual 1 million-1.5 million HUF. This category includes 25.2% of the taxpayers in the micro-region. The annual income limit of 1.5 million HUF is considered as a dividing line, since I think that this is the income, over which the factors of meeting needs will be available indeed and the possibility of choice will be given as well. This is relevant to slightly more than a third of the population in the micro-region.

**4.)** Base on the investigation of the soil factors it was concluded that the soil conditions of the micro region are favourable – with the exception of soil water properties – hence the soil cover of the micro-region provides better-than-average conditions for agricultural land use. This is supported by the expression of soil fertility in gold crown value<sup>1</sup> and in soil-value number. The average gold crown value of the dominating land use category (arable land) in the micro-region is 29.7 AK/ha, the national average is 20.9 AK/ha, and while the rate of over 50% soil fertility in the micro-region is 78.4%, this figure nationally is only 32.5%. However, the preservation, maintenance, and (especially water management) to improve soil properties can be set as basic objective for business organizations and the institutions of the micro-region as well.

**5.)** I determined the total biomass supply of the micro region, which totals of about 1.2 million tons. Out of this the renewable (regenerable, reproducible) amount of biomass is

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<sup>1</sup> Golden-Crown is the official measure used for expressing the different qualities of agricultural land and land use categories in Hungary. The system derives from the old Austrian-Hungarian Monarchy's land registration.

about 800,000 tons/year, and the biomass quantity to be actually proposed for energy purposes (the total amount of plant by-products, annual increment, reed, organic manure and non-agricultural, tertiary biomass) is 472,583 tons.

6.) The land use survey of the micro-region was carried out by the available databases and GIS application. In doing so, I evaluated the main features (landscape ecological matrix, patches and corridors, and ecological network) of the landscape structure of the micro-region, the land use of protected natural areas, and also the land use changes were analyzed in terms of land use categories and land cover. Based on the above, proposals for sustainable land use with regard to the conditions of the area, landscape structure and function, and the environmental were determined. Among these, the following may be mentioned. The conservation and development of farmsteads which perform cultivation that is better adapted to the mosaic landscape structure. Considering favourable effects on land use, among other factors, of the organic farming it can be recommended to increase their role in terms of land use. Implementing such agricultural land use which the most suitable to the agro-ecological endowments, and also the least harm the natural environment. The micro-region is lack of forest and wooden areas, so it is absolutely necessary for afforestation, especially in the low fertility and environmentally sensitive areas, but tree planting along waysides, canals banks and the edge of the parcels is also suggested. First of all, in connection with the artificial land use (settlements, infrastructure, etc.), I consider it important to adapt establishing real estate to the landscape. In any case, it is necessary and reasonable to protect and improve natural and semi-natural areas, in which environmentally conscious thinking and the adoption of natural values and interests have an important role.

7.) Based on the investigations of the position and roles of the protected nature areas the protected areas are a kind of prestige to the communities, as well as the micro-region. However, co-operation between local governments and the management of protected natural areas (national park directorates) are tight; the relationships are basically formal and in most cases are based on the legal background. Furthermore, it can also be stated that the impact of the protected areas on regional processes is negligible on micro-region level, but it is not significant at the level of municipalities either. All these suggest that the protected areas alone, without properly-designed, goal-oriented co-operation taking into account the interests of the parties, can not generate development. In order to utilize the potential of the protected areas to benefit communities, a change of attitudes, conscious activity and convergence is needed on both sides. The most

important areas for future cooperation: tourism, and its preferred type, ecotourism, educational activity and recreation services, and nature conservation management can be mentioned.

**8.)** During the functional analysis of the settlement the presence of the institutions with central and local responsibility and the occurrence frequency of the selected institutions were considered. In the study, the presence of 64 micro-regional institutions was taken into account. The institutions were grouped by the tasks they perform, and in this way seven institutional groups were formed. Based on the result of the examination it can be stated that Hódmezővásárhely supply all the examined settlement function, while the other town of the micro-region, Mindszent only has less than a half of the examined institutions. Because of their low hierarchy-level and scarce institutional facilities, the villages of the micro-region – Mártély and Székkutas – use the services in the towns, characteristically in Hódmezővásárhely. It can be said that on micro-regional level the functions of the examined institution were available for all the inhabitants since Hódmezővásárhely as the centre settlement of the micro-region, provides this for its own population and also for those in the surroundings.

**9.)** On investigating the micro-regional impact of SZTE MFK on human resources the regional, county and micro-regional level educational catchment area was determined and the involvement of the micro-region was localized. In doing so it was observed that the educational catchment area of the Faculty concentrated characteristically on five micro-regions (within that particularly on Hódmezővásárhely and Szeged micro-regions equally), as well as on Csongrád County and the South Great Plain region. Accordingly, 11.2-11.2%- of the students came from the above mentioned two micro-regions, 35.7% from Csongrád County and 57.7% from the South Great Plain. The research manifested the effect of providing experts of the MFK on the human resources of Hódmezővásárhely micro-region. It was found that more than four-fifth of the graduates from the micro-region stayed there, the two-third of whom were employed in the agribusiness and also in other, non-agricultural fields.

**10.)** The investigation of the grants realised through the operative programmes of the first National Development Plan (NFT I.) found that the main part (91.3%) of the grants won by, and allocated for the actors of the micro-region – different by support systems – was realised in Hódmezővásárhely. The resource-allocation ratio is much higher than the share of the central settlement both from the territory and the population of the micro-region highlighting the micro-regional dominance of Vásárhely, and also the

resource-absorption ability well exceeding that of the other settlements. This reduces the chances of catching up of the other small settlements in the area. On examining the per capita values the lack of grant-attracting capability of Mindszent and Székkutas was outstanding against the other two settlements.

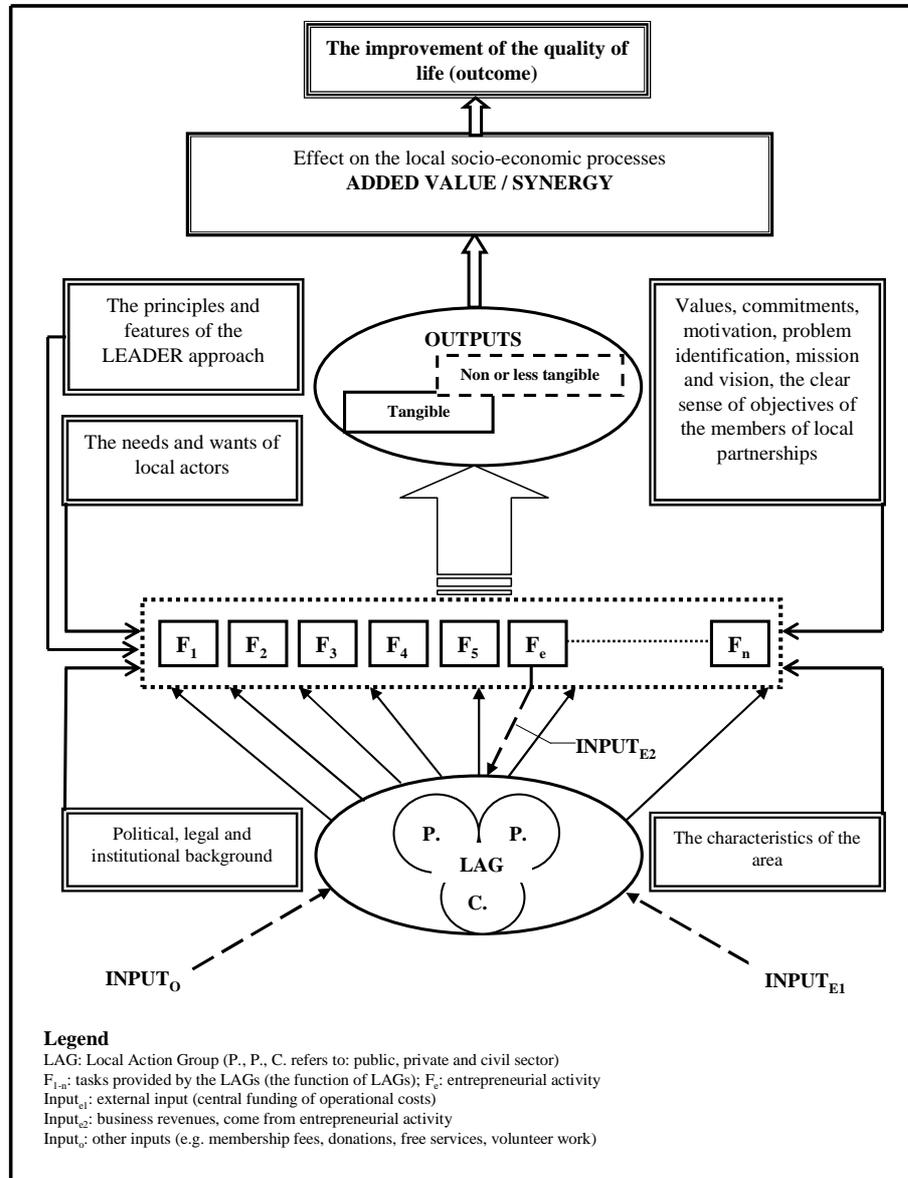
**11.)** The development process of the non-profit sector of the micro-region as well as the structural and operational features was analysed. In doing so the data, indexes and tendencies were compared to the parameters of the non-profit sector of the territorial units (Csongrád County, South Great Plain Region, and Hungary) including the micro-region. Considering the above the following features can be highlighted. From 1990 to 2006 proportionately the greatest number of organisations (92% of the organisations) was established in Hódmezővásárhely micro-region, which indicates an increased demand for self-organisation and also expresses the above-the-average activity of the local society. When examining the structural characteristics of the civil organisations of the micro-region eight activity-fields can be specified, around which 88% of the organisations were bound in 2006 (the greatest proportion out of the regions). These are: culture, sports, recreation and hobby, education, health care, social care, settlement development as well as trade and economics. According to the 2006 data the sector had 13 500 members in the micro-region. That means the number of the members decreased by 6%, approximately by 900 people compared to 1994, while in other territorial units a positive change took place. From county level between 1994 and 2006 the number of the members in non-profit organisations grew by 6%, 60%, and 32%. When examining the number of the volunteers of the sector it was observed that from 1997 to 2003 the number of volunteers considerably decreased, approximately by four fifths, while their number increased between 2003 and 2006, which is rejoicing, but it is still the one-third of the values in 1997. On county, regional and national level the number of those doing volunteer work was the highest in 2000, which fell down approximately to its one third or one fourth by 2003, then similarly to the micro-region it increased again between 2003 and 2006, but still it amounts only up to the half of the values in 1997. 7% of the non-profit organisations had full time employees in Hódmezővásárhely micro-region in 2006. This value was 11% in the county and 11% in the region as well, while nationally it was 12%. The employing role of the non-profit organisations is well illustrated by the fact that the rate of the full-time employees at these organisations out of the total of the employees is between 1.2-1.9%, which is different by territorial units. Unfortunately the non-profit organisations being employers is least characteristic in the

Hódmezővásárhely micro-region. On examining the revenues for one organisation it can be observed that the organisations in the micro-region had half the sum of the national average in 2006, but their average revenue was also less than that of the South Great Plain Region and the Csongrád County averages by approximately 1.2-3.3 million HUF, in proportion of their specific revenues by 17-45%. That of course does not promise a positive outlook, especially when considering the fact there was a negative balance of the revenues and expenditures in the micro-region both in 2000 and in 2003.

**12.)** Within the framework of the nationwide survey of LAGs the factors hindering the development of the LEADER areas most and the order of importance of the tasks to be performed by LAGs were surveyed and determined. In doing so, I compared the national average values with the value judgment of the micro-regional LEADER management, which showed that there were two factors in the former case, and four factors in the latter, where I found coincidence. The survey shows that according to the managers' assessment of the LAGs, the development of their areas hindered mainly by lack of capital and the lack of grant funds, and only less by the shortcomings of soft factors relation with the principles and philosophy of the LEADER program. The survey points out that action groups deem it to be their most important task to finance proposals and to grant support. In my opinion, performance of this task is obviously necessary but far from sufficient to fulfil their catalyst role expected in local developments. In my opinion, the role of action groups in the implementation of Local Rural Development Strategies cannot be restricted only to the distribution of the development funds coordinated by them. Actually, efficient strategy implementation requires an increase in the agility and cooperation of local players, necessitating the completion of a variety of tasks.

**13.)** The impact mechanism and determinations of the LAGs operation were described in a scheme (Fig. 4). The central players in the model are the LAGs, the pro-active operation of which contributes to social change help the implementation of the objectives of economy, resulting in a more efficient and effective development work. To achieve this, however, this first thing to do is to "build" a society and operating social structures should be established involving people and organizations in the development process, communities, collaborations, partnerships should be established and strengthened, and the community must be made to be able to shaping and managing their future. Then, it is expected that the local development work effectively and efficiently to serve the needs of the local people and the improvement of their quality of

life. In this process, there is the enduring role of local governments, civil organizations, businesses and the cooperation based on their effective relationship systems, one institutionalized form of which is the LAGs within the LEADER programme.



Source: Own construction

**Figure 4: The impact mechanism and determinations of the operation of LAGs**

## **The evaluation of the hypotheses**

Hereinafter the hypotheses will be evaluated with regard to the achieved results.

1.) Several result of the resources underpin that the development path of Hódmezővásárhely is inseparable of the micro-region, since because of its considerable importance it determines the micro region. Considering the qualitative and quantitative parameters of resources the dominance of Hódmezővásárhely prevails in micro-regional summary. All this appears in the examined parameters of the human resources, the land use, its position within the settlement network of Hódmezővásárhely and the resource absorption ability considerably exceeding that of the other settlements. This is the reason why the economic, cultural and service centre of the micro-region emerges like an island from the local area and it determines the average parameters from all point of views. The actors of the micro-regional economy and the resources are not independent of each other because of the diverse relationships between them. Thus the position of the central settlement, due to its dominance, and the social-economic processes taking place there basically determine the situation and the development possibilities of the whole micro-region. According to the results of the research the first hypothesis can be considered as proved.

2.) Human resources themselves have a hierarchy; their sustenance presumes the existence of various levels of resources. At the same time significant differences can be detected between the parameters of human resources of certain villages and towns according to their position in the settlement-hierarchy, especially so in the second and third level of human resources. Basic differences can be shown between towns and villages, on the one hand, and between the central settlement and the other settlement considering labour (employment, economic activity and inactivity), settlement (their service roles) and the demands and expectations in connection with life style. In the meantime characteristics different from the above can also emerge (see for example in case of Mindszent the results of employment and the accessibility of work). The dominance of Vásárhely prevails again, particularly in the field of employment, accessibility of work, qualifications, and settlement functions. The results seem to prove my second hypothesis as well.

3.) The suitability of the micro-region for agricultural production is basically determined by the fact that Hódmezővásárhely micro-region has natural-geographical endowments well above the average considering agricultural and forestry activities. Based on the examination of soils with regard to their fertility-determinative parameters it was found that the soil endowments of the micro-region – except for water management parameters –, were favourable. This fact is justified by two measures to express soil fertility in golden-crown value and in soil-value number. Accordingly, the main determinative of the micro-regional land use is agricultural land use, the rate of which was 84% on micro-regional level. Beside the extended agricultural areas the nature protection areas represent a much less rate of the land use (8.5%). Based on the investigation of the role of protected natural areas it was found that their utilisation as a resource is far behind the potentials they have. In this way these areas melting the natural and landscape resources mostly can be considered as a utilisable possibility, a kind of potential in the economy of the micro-region. The possibilities for their utilisation, in connection with the functions of the protected areas, beyond the preservation of the natural and landscape values, can be spread to the social and economic spheres as well through educational functions, relaxation and recreation as well as research services, touristic organisational tasks and establishing the local structures for agriculture. Accordingly, my third hypothesis can also be regarded as proved.

4.) With regard to the favourable agro-ecological endowments of the micro-region and the high rate of agricultural land use, the agricultural production is able to produce a considerable amount of biomass. Based on the determination of the biomass potential for energetic purposes the micro-region has a significant biomass supply of approximately 1.2 million tons (60% of the biomass is produced in agriculture, within that 35% in plant production), out of which the renewable (regenerable, reproducible) biomass amount is approximately 800 000 tons a year. The enforcement of the aspects of sustainable forestry as well as the many methods of the utilisation of the annually produced and created limits the possibilities of its usage as an energy source. Therefore about 40% of the biomass supply of the micro-region, 60% of the renewable biomass amount that is approximately 472 583 tons can be effectively recommended for energetic purposes. According to the results of the research my fourth hypothesis can be accepted as proved.

5.) Non-profit organisations themselves are resources for rural economy through their activity and influence. They have an interest in the improvement of local socio-economic and ecological processes, and in connection with them in the operation and sustainable usage of the local resources. Based on the analysis of the development processes of the non-profit sector as well as of their structural and operational parameters it was found that the number of non-profit organisations increased considerably after the change of political-economic regime, which indicates the increased demand for self-organisation and also expresses the activity of the local society. In the meantime a non-profit sector was organised along with a colourful activity structure related to social demands. Eight activity fields can be denoted where 88% of the examined institutions were connected to: culture, sports, recreation and hobby, education, health care, social care, settlement development as well as representation of professional and economic interests. Unfortunately the majority of the citizens do not take part in the work of the non-profit organisation. Approximately only the one-fourth of the population of the micro-region is the member of a non-profit organisation. A much lower number, only about 1% of the inhabitants of the micro-region took part in the operation of a non-profit organisation as a volunteer or as an employee. Another drawback is the permanent financial problems hindering the activity of the non-profit organisations making their operation fragile, vulnerable, and their effectiveness questionable. The latter unambiguously restrict the possibilities for their operation to utilise the resources. Similarly to the civil sector, the LAGs also have or could have an important role in the development of the local society, to increase social capital and to produce the added value expected from local action groups. It turned out from my examinations that the action group operating in the micro-region considers the finance of proposals and the allocation of grant support as its main task. It is necessary, however in my view, by far not enough to fulfil its expected role, as a catalyst in local development and become a real development factor in the area. Based on the results of the research the expectations of my fifth hypothesis were realised only partially. It can be deduced from the fact that the number and the activities of the non-profit organisation increased, however their operation conditions did not improve at all. The action group fulfils the simple task of distributor of grants and the above mentioned do not have a priority among their activities. All these would question the non-profit organisations and the LAGs being able to fulfil the task expected from them

To sum up it can be concluded that there are considerable potentials of the utilisation of the rural resources of the micro-region; at the same time it is quite clear that they are not only factors of the economy of the micro-region but also fields to be developed in many respects. The successful, effective and sustainable utilisation of the resources is indispensable for the enhancement of the adaptability of the micro-region in the process to cure the existing problems and to react on the new challenges.

#### 4. THE NEW FINDINGS OF THE RESEARCH

I request the following results of my scientific research to be accepted as new and novel:

1. **It is the first time** the rural resources of Hódmezővásárhely micro-region have been **assessed, classified and evaluated**, and the connections between them as well as their new and novel correlations have been **explored**.
2. I pointed out that the weaknesses of the human resources of the micro-region **appear in the decreasing population, the deteriorating age structure, the low legal incomes and the threatening spread of poverty**. In all settlements of the micro-region employment is low and economic inactivity is high, which reflects back on local economy and decreases its performance. There are significant differences between Hódmezővásárhely and the other three settlements in favour of the former one, considering accessibility of work and the different level qualification of the population. At the same time **the higher qualification values and the availability of the institutions of the town to satisfy the important needs of those living in the micro-region mean the strength of human resources**.
3. According to the position in the settlement-hierarchy of the villages and towns of the micro-region significant differences can be observed in the parameters of the human resources, especially in case of the second and third level of human resources. **The average parameters of the micro-region can give a real image of the situation only when analysed together with the parameters by settlement and it cannot be ignored when developing a strategy**.
4. Based on the investigation of the major soil factors determining the fertility of the soils **it was found that due to the favourable soil endowments of the micro-region it provides better than average conditions for agricultural land use**. In connection with the utilisation of this natural resource the significant biomass potential of the micro-region was identified as an advantage. According to my relevant **calculations the total biomass supply of the micro-region** is approximately 1.2 million tons, out of which the **renewable (regenerable,**

**reproducible) biomass amount** is approximately 800 000 tons a year, and **the amount of biomass effectively suitable for energetic purposes** is 472 583 tons.

5. In connection with the resource utilisation aspect survey of the landscape, considering the endowments of the region, the structure and the functions of the landscape as well as sustainability, **I made suggestions for land use.** Furthermore **I found that the protected natural areas** as specific land use space categories could mean a kind of prestige, ‘added opportunity’ for the settlements concerned and for the micro-region as well. **Despite this fact, their utilisation as a resource is much lower than their potentials would allow, and this is the reason why the effect of protected areas is negligible in the micro-region today.** Consequently these territories melting the natural and landscape resources mostly can be considered as a utilisable possibility, a kind of potential in the economy of the micro-region.
6. Based on several results of the resource investigation **it was justified that the economy of the micro-region and its internal resources are inseparable from Hódmezővásárhely.** Considering the qualitative and quantitative parameters of resources the dominance of Hódmezővásárhely prevails in micro-regional summary. **All this appears in the examined parameters of the human resources, the land use, its position within the settlement-network and the resource absorption ability considerably exceeding that of the other settlements.** This is the reason why the economic, cultural and service centre of the micro region emerges like an island from the local area and it **determines the average parameters from all point of views.**
7. The LEADER Local Action Groups have an important part in the process of rural development based on local resources. **The impact mechanism of the LAGs operation and their determining factors were synthesised and presented** as a pattern for improvement. This can also be a part of a monitoring and evaluation system, which can give directions for the action groups and facilitates a more precise measurement of their performance and traceability.

## 5. PRACTICAL IMPLICATIONS OF THE RESULTS

The results of the dissertation can be utilised in practice in several fields (planning, education and research). The results in the field of planning give directions to the decision-makers of the micro-region through synthesising the knowledge on micro-regional economy, exploring new knowledge and relationships and classifying local rural resources, also base the efficiency of development work. Several results appeared in the following documents:

- The relationships of bio- and renewable energy production and utilisation in Hódmezővásárhely region (2007; made by: Caesar Ltd., ordered by: Local Government of Hódmezővásárhely Municipal Town) – research used: the biomass-potential examination of the micro-region;
- Local Government of Hódmezővásárhely Municipal Town Integrated Town Development Strategy (original, 2008; revised, 2009; made by: Hitesy-Bartucz-Hollai Euroconsulting Ltd.) – research used: settlement functions examinations;
- Local Rural Development Strategy (original, 2008; revised, 2011; made by: The For the Future of Vásárhely Countryside Association Local LEADER Action Group) – research used: human resource examinations, landscape examination, the examination of the local action groups and the implementation of the LEADER-programme.

The domestic knowledge concerning rural economy and rural resources is not too ample. My research was designed to contribute to the extension of the knowledge on the issue. The exploration and synthesis of numerous Hungarian and foreign literature sources and also the achieved research results can be used in undergraduate and post-graduate education as well.

In addition to the above mentioned, the results of the research provide usable knowledge and information for the further investigation of the topic and the analysis of the connected fields.

## 6. PUBLICATIONS

### **A DI Működési Szabályzata értelmében figyelembe vehető publikációk**

#### **Nemzetközi publikáció:**

**Kis, K.** (2006): The LEADER programme as a special possibility of developing social capital in rural areas. „Modern Agriculture: today and tomorrow” International Symposium. University of Agricultural Sciences and Veterinary Medicine of the Banat, Faculty of Agriculture, 18-19 May, 2006, Timisoara, Romania. Scientific Papers, vol. 38. pp. 489-494.

#### **Az MTA Agrárközgazdasági Bizottság irányelvei szerinti legalább “D” kategóriás hazai tudományos periodikában vagy kiadványban megjelent tudományos cikk:**

##### **“B” kategóriás idegen nyelvű, hazai kiadású folyóiratok:**

**Kis, K.** – Szekeresné Köteles, R. (2011): Opportunities and obstacles of area-based partnerships in rural Hungary – Main features of the operations of LEADER Local Action Groups based on a nationwide survey. Abstract (Applied Studies in Agribusiness and Commerce). Volume 5, Numbers 3-4. pp. 109-117.

##### **“B” kategóriás magyar folyóiratok**

**Kis K.** – Szekeresné Köteles R. (2010): A Helyi Akciócsoportok szerepe a versenyképes és fenntartható vidékfejlesztés megvalósításában. Tér és Társadalom, 24. évf. 3. szám. pp. 119-135.

**Kis K.** – Szekeresné Köteles R. (2011): A helyi akciócsoportok működése egy országos felmérés tükrében. Gazdálkodás, 55. évf. 1. szám. pp. 19-27.

##### **“C” kategóriás magyar folyóiratok**

**Kis K.** (2006): A társadalmi tőke, mint a társadalmi és gazdasági folyamatokat befolyásoló erőforrás. Agrártudományi Közlemények 20. Különszám. pp. 69-73.

**Kis K.** (2008): A Hódmezővásárhelyi kistérség humán erőforrásainak hierarchia-rendszerű vizsgálata. Agrártudományi Közlemények. 29. szám. pp. 91-110.

**Kis K.** – Szekeresné Köteles R. (2008): A negyedik generációs LEADER-tervezés tapasztalatai a Hódmezővásárhelyi kistérségben. A Falu, 23. évf., 3. szám. pp. 17-29.

**Kis K.** (2009): A tájhasználat változása a Hódmezővásárhelyi kistérségben a földhasználat és felszínborítás változásának tükrében. Jelenkori Társadalmi és Gazdasági Folyamatok, 4. évfolyam, 1. szám. pp. 42-49.

**Kis K.** – Szekeresné Köteles R. (2009): A LEADER-megközelítés helye és szerepe a vidékfejlesztési politika megvalósításában. Jelenkori Társadalmi és Gazdasági Folyamatok, 4. évfolyam, 2. szám. pp. 55-60.

**Kis K.** (2009): Tájhasználat a Hódmezővásárhelyi kistérség védett természeti területein. Agrártudományi Közlemények. 33. szám. pp. 1-15.

**Kis K.** – Kocsis-Nagy Zs. (2010) Civil aktivitás és társadalmi részvétel. A Hódmezővásárhelyi kistérség nonprofit szektorának vizsgálata megyei, regionális és országos kitekintéssel. Területi statisztika, 13. (50.) évf. 5. szám. pp. 530-550.

**Kis K.** (2011): A LEADER-térségek fejlődését akadályozó tényezők értékelése és a Helyi Akciócsoportok szerepe a helyi fejlődésben. Közép-Európai közlemények, 4. évf. 1. szám. pp. 190-203.

**Kis K.** (2011): A vidék és a vidéki térségek meghatározásának európai vonatkozásai (történeti áttekintés az Európai Bizottság új város-vidék tipológiája apropóján). Jelenkori társadalmi és gazdasági folyamatok. 6. évf. 1-2. sz. pp. 105-112.

### **További publikációk jegyzéke**

#### **Intézeti kiadvány magyar nyelven**

**Kis K.** (2006): Vidékfejlesztés és a vidékgazdaság. SZTE MFK Dél-alföldi Regionális Szaktanácsadási Központ, Hódmezővásárhely. 72 p.

**Kis K.** (2008): Vidék, vidékgazdaság, vidékfejlesztés. Delfin Computer Informatikai Zrt., Hódmezővásárhely, 76 p.

#### **Magyar nyelvű tudományos folyóirat idegen nyelvű összefoglalóval**

**Kis K.** (2006): Az SZTE MFK hatása a Hódmezővásárhelyi kistérség humán erőforrásaira az ezredforduló után. Agrár- és Vidékfejlesztési Szemle, 1. évfolyam, 1. szám. pp. 81-87.

**Kis K.** (2007): A biomassza energetikai hasznosításának helye és szerepe a vidékgazdaságban. Agrár- és Vidékfejlesztési Szemle, 2. évfolyam, 1. szám. pp. 55-61.

**Kis K.** – Szekeresné Köteles R. (2009): A Helyi Akciócsoportok, mint belső fejlesztési tényezők szerepe és feladatai a vidékfejlesztési politika megvalósításának rendszerében. Agrár- és Vidékfejlesztési Szemle, 4. évfolyam, 2. szám. pp. 181-187.

**Kis K.** – Szekeresné Köteles R. (2010): A fenntartható földhasználat jelene és lehetőségei a Hódmezővásárhelyi kistérségben. Tájökológiai lapok, 8. évfolyam, 3. szám. 421-436.

#### **Magyar nyelvű folyóirat idegen nyelvű összefoglaló nélkül**

**Kis K.** (2006): A társadalmi tőke mint a társadalomban fellelhető nem anyagi erőforrás. Parola, 17. évfolyam, 1. szám. pp. 2-4.

**Kis K.** (2006): Partnerség és társadalmi tőke a vidékfejlesztésben. Parola, 17. évfolyam, 2-3. szám. pp. 28-30.

**Kis K.** (2006): Partnerség és társadalmi tőke a vidékfejlesztésben. Civil Fórum, 7. évfolyam, 4. szám. pp. 18-21. (Újraközlés)

#### **Külföldön idegen nyelven teljes terjedelemben megjelent előadás**

**Kis, K.**– Bodnár, K. (2004): Rural development planning in micro-regions. Simpozium Stiintific „Management si Dezvoltare Rurala”. Universitatea de Ştiinţe Agricole şi Medicină Veterinară a Banatului, Facultatea de Management Agricol, 20-21 Mai, 2004, Timişoara, România. Lucrări Ştiinţifice, Seria I., Vol. 6. pp. 77-82.

**Kis, K.** (2007): The examination of biomass potential for energy purposes in the Hódmezővásárhely micro-region. „Management of Durable Rural Development International Scientific Symposium. University of Agricultural Sciences and Veterinary Medicine of the Banat, Faculty of Farm Management, 24-25 May, 2007, Timisoara, Romania. Lucrări Ştiinţifice, Seria I., Vol. 9. pp. 251-258.

#### **Magyarországon idegen nyelven teljes terjedelemben megjelent előadás**

**Kis K.** (2008): The examination of settlement functions in the Hódmezővásárhely micro-region according to the institutional provision. A „Multifunkcionális mezőgazdaság” nemzetközi tudományos konferencia, Szegedi Tudományegyetem, Mezőgazdasági Kar, Hódmezővásárhely, 2008. április 24. CD-kiadvány. 6 p.

#### **Magyar nyelven megjelent előadás idegen nyelvű összefoglalóval**

**Kis K.** (2005): A Hódmezővásárhelyi kistérség humán erőforrásainak helyzete a fejlesztési tervekben. „Verseny élesben”. Európa-napi Konferencia. Nyugat-Magyarországi Egyetem MÉK, Mosonmagyaróvár, 2005. május 5-6. CD-kiadvány. 6 p.

**Kis K.** (2007): A védett természeti területek helye és szerepe a Hódmezővásárhelyi kistérségben. AVA 3 — „Agrárgazdaság, Vidékfejlesztés és Agrárinformatika” Nemzetközi Konferencia. Debreceni Egyetem AVK, Debrecen, 2007. március 20-21., CD-kiadvány. 12 p.

**Kis K.** (2007): Az első Nemzeti Fejlesztési Terv támogatásainak vizsgálata a Hódmezővásárhelyi kistérségben. Erdei Ferenc IV. Tudományos Konferencia. Kecskeméti Főiskola, Kecskemét, 2007. augusztus 27-28. pp. 733-736.

**Kis K.** (2007): A Hódmezővásárhelyi kistérség versenyképességének vizsgálata 1992-2005 közötti időszakban. IV. Európai Kihívások Nemzetközi Tudományos Konferencia. Szegedi Tudományegyetem Mérnöki Kar, Szeged, 2007. október 12. pp. 489-494.

**Kis K.** (2008): Részvétel és partnerség a Hódmezővásárhelyi kistérség LEADER-programjának stratégiai tervezési folyamatában. ICoSTAF2008 – Tudomány és Technika az Agrár- és Élelmiszergazdaságban Nemzetközi Konferencia. Szegedi Tudományegyetem Mérnöki Kar, Szeged, 2008. november 5-6. CD-kiadvány. 8 p.

#### **Poszter idegen nyelven**

**Kis, K.** (2008): Employment and income in the Hódmezővásárhely micro-region. A „Multifunkcionális mezőgazdaság” Nemzetközi Tudományos Konferencia, Szegedi Tudományegyetem, Mezőgazdasági Kar, Hódmezővásárhely, 2008. április 24. CD-kiadvány. 5 p.

#### **Poszter magyar nyelven**

**Kis K.** (2009): LEADER-tervezés a Hódmezővásárhelyi kistérségben (2007-2013). „Mezőgazdaság és Vidék a Változó Világban” VIII. Wellmann Oszkár Nemzetközi Tudományos Konferencia. Szegedi Tudományegyetem Mezőgazdasági Kar, Hódmezővásárhely, 2009. április 23. CD-kiadvány. 7 p.

#### **Pályamunkák**

**Kis K.** (2007): A humán erőforrások hierarchia-rendszerű vizsgálata a Hódmezővásárhelyi kistérségben. MTA Szegedi Területi Bizottság, Föld- és Környezettudományi Szakbizottság, Szeged. (III. helyezés)

**Kis K.** (2009): A tájhasználat vizsgálata a Hódmezővásárhelyi kistérségben. MTA Szegedi Területi Bizottság, Föld- és Környezettudományi Szakbizottság, Szeged. (Oklevél)

