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PhD Thesis

**RELATIONSHIP OF AGRI-ENVIRONMENTAL MANAGEMENT AND
RURAL DEVELOPMENT IN ACCORDANCE WITH
THE ACCESSION TO THE EUROPEAN UNION**

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1. RESEARCH OBJECTIVES

The structural, institutional, technical and technological regulation of Hungarian agricultural – as preparation for the new tasks – has not overtaken the participation in the competition of the single market. It is very important to become the organiser of the process. Regarding Hungary's natural and social facilities it is common weal to create a long term strategy for agricultural which has been missing for years. The main objective of the research is to examine rural development and agri-environmental elements inside the agricultural system. Confirm the hypothesis that the application of multifunctional agriculture determined by the Common Agricultural Policy (CAP) – with supportive political background – could be a promotional factor of the Hungarian national economy.

The dissertation is looking for the answers of the following questions:

1. Why is it important to examine the economic, natural and social context of sustainable agriculture in Hungary?
2. What kind of role do indicators, information and information technology play in promotion and monitoring of development?
3. How can be the so called “present for nature” effect, due to general decline of national economy after the changed regime, demonstrated in agriculture?
4. What kind of role does the second pillar of the CAP play in Hungary, special regard to agri-environmental management?
5. Which are the minimum factors of rural-development, which have to be emphasised?

The exact answers for the questions are given in the summary of the dissertation.

2. STRUCTURE AND APPLIED METHODS OF THE DISSERTATION

Regarding methodology *interdisciplinary approach* is applied. As the area of the research is diversified, the *documentation and systematization of background literature* is not separated, it is inserted in the discussion of the chapters.

The covered dimension tapers along three main consecutive chapters. First the activity of the European Union (EU), afterwards the situation of Hungary is evaluated. Finally results, gained through the research along the first two chapters, special regard to Leader program, are examined in the region of Hortobágy.

The chapter considering the EU consists of four subsections that investigate the activities and strategies of the Union related to the research area. These are the agricultural policy, the environmental policy, rural development and sustainable development (SD). The sequence of the subsections is determined by chronology, how these activities gathered round in the EU's policy.

- First the Common Agricultural Policy is reviewed. The outline of the literature related to agricultural policy is considered as a basic element. Concise summary of the important stages of the CAP from the beginning till nowadays is given. As a result of the preliminary review of the CAP's literature, relationships of agriculture, in the form of *logical model*, is demonstrated.
- The second subsection deals with the environmental policy. Along the development of this policy, the idea of managing environment as part of sectoral policies was conceived. Regarding the research area this part concentrates on agri-environmental issues.
- In third step rural development is discussed. From my point of view between 2000 and 2006 rural development policy can be considered as a joint set of structural and agricultural policy. From that reason structural policy is briefly introduced in this part too.
- In the fourth subsection activities of the Union toward sustainable development is studied. In the fourth year of my research I managed to adopt the principles related to SD and I always try to look forward those answers which create harmony between those capitals into which the three pillars of SD are transformed. From these capitals the role of social and natural capital are

discussed. The results of a current *international research*, with the participation of our department, drew our attention to the function of social capital which is emphasized in the dissertation. The importance of information and indicators is also presented in this section. The reason why this topic is examined in this part is that the role of indicators with the monitoring of environmental policy, sustainable development and the open method of coordination (OMC) – which is gaining ground in the EU-25 – is strengthening. At the end of this subsection *from statistical-mathematical methods graphic figure* is applied for the illustration how indicators carry information and how the general decline of national economy after the changed regime effected agriculture from environmental aspect. Within graphic figure *polar coordinate* a geometric formation is used. The explanation of using this method is that graphic form is a proper tool for illustration of relations, makes transparency and evaluation of data easier.

In the second main chapter the three subsections deal with the situation in Hungary. The topics discussed in the EU – agricultural and environmental policy, rural and sustainable development – are discussed in Hungarian relation.

- First the main characteristic of national economy special regard to agriculture is reviewed. In the reviewer the role of foreign direct investment (FDI) and the differences between regions is emphasised.
- Secondly the effects of accession to the EU are examined. In Hungary, as well as in other countries, the reallocation mechanism of the EU's budget and the common regulation of agricultural and structural policy brought significant changes. These changes are observable mainly in the support system. With this end in view after a short description of the accession negotiations, conclusions are drawn taking regard the main methods of support for agricultural policy. From the three support method – price support, direct payment, rural development schemes – rural development schemes are analysed. First the National Development Plan for 2004-2006 is reviewed, because this Plan gives the basis for rural development plans. The four axis of the new rural development strategy of the EU for 2007-2013 give a guideline for the further analysis. In this subsection results of a *questionnaire*, concerning the emergence of the Structural Fund's principles in Hungary is represented.

- The third subsection contains my own calculations, results and evaluations in connection with the National Agri-environmental Protection Program (NAPP), which ran for two years between 2002 and 2003. The Ministry of Agriculture and Rural Development gave free run of the whole anonym database, more than 5000 applications, for the two years Program. This is an enclosed database as the NAPP was locked up and its measures are carried on in the National Rural Development Program. Comparative evaluation was used to examine the results of the NAPP in different NUTS levels. The available data were analysed from different aspects and different territorial levels (NUTS I, NUTS II, NUTS III, NUTS IV) with the help of statistical and mathematical-statistical methods. For the processing of the data Excel and SPSS programs were used why the spatial statistical analysis was done by Arc View 3.2. Program. The relations between the NAPP's processed data and the selected factors from the available dataset of the Hungarian Statistical Office on NUTS IV level were examined by correlation evaluation. For the correlation evaluation Excel and SPSS Programs were used.

The last chapter covers the area of the Hortobágy region. Several research studies have been already conducted, examining the region from historical, cultural, geological, natural, economical aspects. The novelty of my approach is that the problems of the region are searched from the social capital side. I try to summarize those thoughts – taking regard the prospects in the European Union and Hungary –, which can shift the region, which is ranked as underdeveloped at the moment, towards the direction of sustainable development. This chapter contains the Hungarian respects of Leader Program – which will be the fourth axis of the rural development policy between 2007-2013 in the EU – because in my opinion, the actuation of the Leader Program in the region could be a step for the solution of the problems. I tried to underline the theoretical inductions by empirical analysis, as I attempted to contribute to the introduction of the Leader program in the region.

3. MAIN OUTCOMES AND INFERENCES OF THE DISSERTATION

The presentation of the results and the main inferences follows the sequence of the chapters.

3.1. The role of agriculture according to the changes of the EU policies

The changes along the development of the CAP can be observed on global level too. The role of agriculture has been transvalued. Today agricultural activity means not only the production of agricultural and industrial commodities, multifunctionality of agriculture includes also the production of non commodities (Figure 1.)

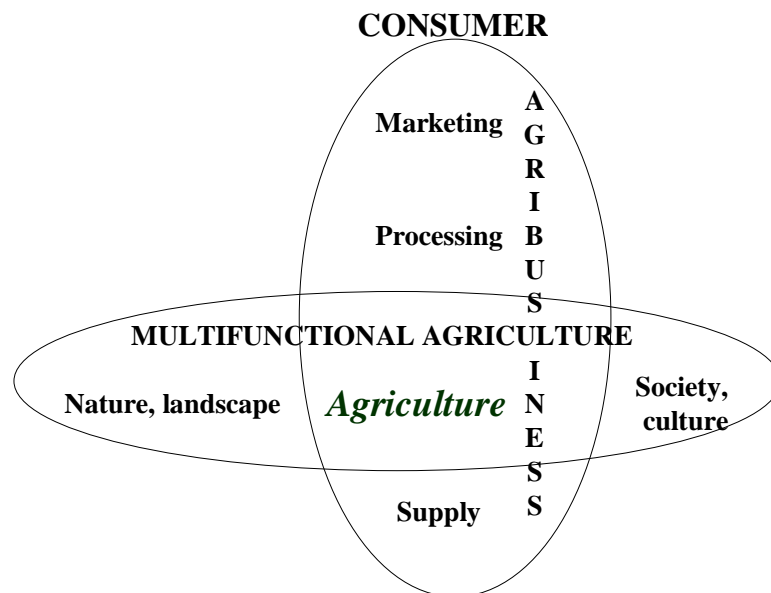


Figure 1. Linkages of agriculture (own illustration)

Agriculture plays an important role in preserving the landscape, the nature, the environment and in saving the material and cultural heritage of rural society. **The more developed a country is**, the less is the ratio of agricultural production from agribusiness. On the other hand **the importance of multifunctionality increases**. Beside quality products consumers have new demand, which is sustainable rural development. In consumer society the statement that the consumers determine the future of producers is true also for agriculture. So it is very to inform the consumer – who is at the end of the product chain – on a proper way, how the products serve those new aims which he/she prefers in connection with multifunctional agriculture. The better the consumers are informed the better the influence they can have on supply.

3.2. Characteristics of agri-environmental measures

The environmental strategy of the Union in connection with agriculture means direct agri-environment measures, which – especially in rural areas – go beyond good farming practice. These measures constitute integrated part of rural development programs. Agri-environmental measures can be considered as the common group of environmental, agricultural and rural policy (Figure 2.), so expenditures on agri-environment have a notable multiply effect.

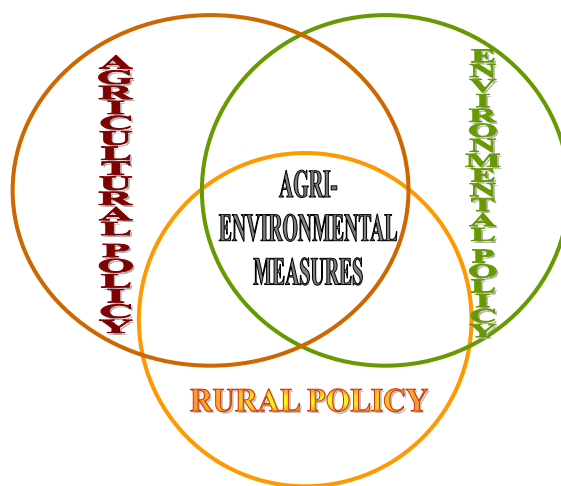


Figure 2. Interface between agri-environmental measures and EU policies
(own illustration)

European Commission defines seven basic principles for agri-environmental measures, which are the following: 1. Optional, 2. Site-specificity, 3. Long lead-in time (monitoring, evaluation), 4. Payment levels have to be set sufficiently high (attract farmers but avoiding over compensation), 5. Good Farming Practice compulsory, 6. Adequate institutional issues (scientific basis, professional advice), 7. “Green Box” status by WTO. I think the eighth principle could be that it does not require self contribution but co-finance is needed. Agri-environmental measures are diverse, but each measure has at least one of two broad objectives:

- reducing environmental risks associated with modern farming, and
- preserving nature and cultivated landscapes. Selected measure depends on the site-specificity.

With agri-environment payments the EU encourages compensation for the positive externalities of agriculture. In the course of my research I have often found that farmers

working on large scale farms interpret these measures as obstructive factors which guide in the direction of extensive farming. While according to the statement of the Commission that agri-environment measures are diverse, site-specific so they should be considered as possibilities.

3.3. Rural-development policy 2007-2013

In June 2005 the European Council, having regard to the proposal of the European Commission in July 2004 with certain adjustments, has adopted the 1698/2005/EC regulation on support for rural development by the European Agricultural Fund for Rural Development (EAFRD). The regulation gives new basis for the EU's rural-development policy. The main elements of changes are, the establishment of a single rural development fund, the EAFRD, which is accompanied by the unification of financing. In the future one rural development programme have to be prepared instead of the present state, when two different programmes have been made, with different financing systems. The amount of rural development payments will increase with a certain level inside the budget of the CAP, but still in 2013 it will give only one quarter of CAP expenditures.

The new regulation builds rural development policy on four axes, which are the following:

- Axis 1: Improving the competitiveness of the agricultural and forestry sector
- Axis 2: Improving the environment and the countryside
- Axis 3: The quality of life in rural areas and diversification of rural economy
- Axis 4: Leader

Leader becomes a key element of rural development programming and implementation. The regulation determines how many percent at least of the EAFRD total contribution to the programme shall be reserved for different axis (Table 1.). It can be observed that in the adopted regulation memberstates interest gained place over common interest, like in the 2003 CAP reform. In the final version latitude of memberstates along different axis has grown. Another change – which can be interesting in the respect of the research – is, that Leader axis has weakened compared to the proposal of the Commission.

Table 1. Framework of the implementation of rural development financing for the period 2007 to 2013

REFORM MECHANISM	ORIGINAL PROPOSAL	FINAL DEAL (JUNE 2005)
Competitiveness Axis 1	min. 15%	min. 10%
Land management Axis 2	min. 25%	min. 25%
Diversification Axis 3	min. 15%	min. 10%
Leader Axis 4	min. 7%	EU-15 min. 5% EU-10 min. 2,5%
Leader reserve Axis 4	3%	abolished
Latitude for states*	35%	EU-15 50% EU-10 52,5%

Source: EUROPEAN COMMISSION (2004:37): Proposal for a Council Regulation on support to Rural Development by the European Agricultural Fund for Rural Development. Commission staff working document. http://europa.eu.int/comm/agriculture/rur/publi/propimpact/text_en.pdf; Council of the European Union (2005:7): Press Release 2669th Council meeting Agriculture and Fisheries http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/agricult/85525.pdf; * own complement

3.4. Sustainability as horizontal principle

Sustainability is a horizontal principle in the EU, which means, it has to be considered in agriculture as well. Environmental, social and economical pillars have to be analysed jointly. Relationships of agriculture contain the elements of the three pillars, and a parallel between the axis in the new rural development regulation and the three pillars can be drawn too. In general the three pillars are transformed into five factors which are (Figure 3.): the natural, human, social, physical and financial.

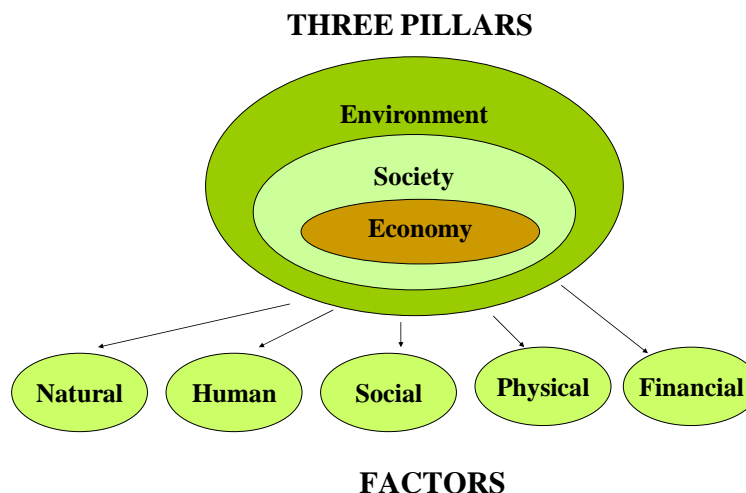


Figure 3. One possible illustration of sustainable development

Source: OLSSON et al. (2004:5): Indicators for Sustainable Development. European Regional Network on Sustainable Development. Paper for discussion *own complement factors for the detailed investigation of the three pillars

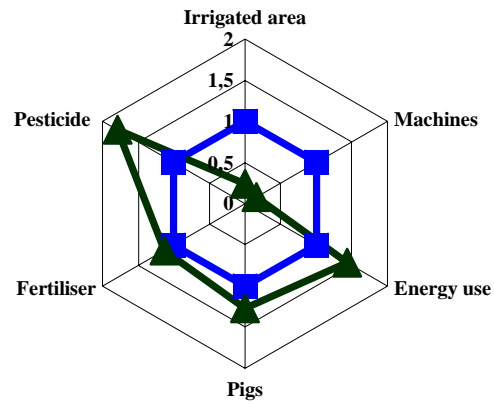
I think that in Hungary in addition to natural factors, the enhancement of human and social factors are particularly important. Although Hungary is a country with open economy, to ensure sustainable development the adequate evaluation of natural, human and social capital, as part of national wealth, and their proper management is crucial.

3.5. The monitoring of sustainability, role of indicators

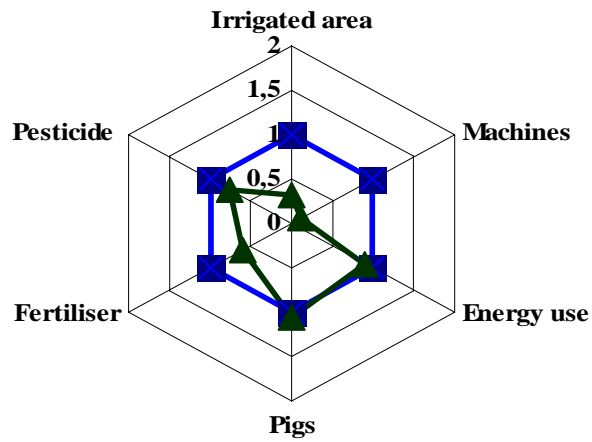
The EU's experiment on selecting indicators goes back in the past. Indicators on EU level can be classified in three groups: indicators related to environmental policy, sectoral policy and sustainable development.

The role of different groups changed in connection with the transformation of European policy. Indicators for environmental, sectoral and sustainable development policy have been developed after each other but in close relation. Indicators in the Union developed for agricultural sector primarily monitors the environmental pillar. Agri-environmental indicators are placed in the DPSIR (driving forces – pressure – state – impact – response) model. In my research I examined input indicators, which form part of the driving forces group in side the DPSIR model. In this way I could illustrate the Hungarian agricultural input use in the relation of EU-15, considering a system which is accepted on EU level. Illustrate the changes I used polar coordinates, which made the transparency between statistical data and the monitoring of the process between 1980 and 2000 easier. Figures (Figure 4.) show that in the past decades agriculture pressure to the environment was lower in Hungary than in the EU-15 as a result of the lower intensity, less concentrated farming and lower input use harmful for the environment.

(a) 1980



(b) 1990



(c) 2000

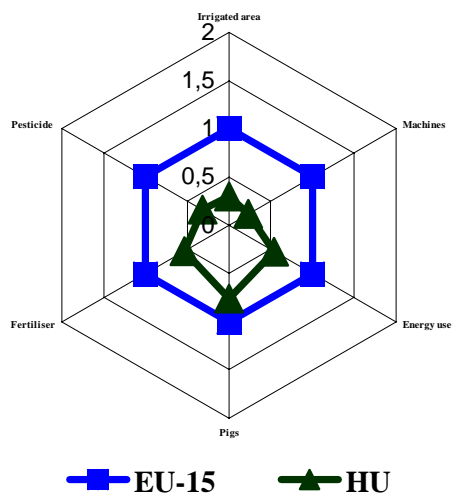


Figure 4. Hungary's farm inputs on hectare basis compared to the EU-15 average in (a) 1980, (b) 1990, and (c) 2000 (own illustration)

3.6. Hungarian agriculture inside the European Union

Price and payment system means the strictest regulations of Common Agricultural Policy, hence this part of the dissertation fundamentally deals with EU's agricultural payment system in Hungary. Agricultural payments have three main groups. As a result of the accession negotiations, distribution of payments among these groups alter between the EU15 and the EU10. While in the case of the EU15 the ratio of market, direct and rural development payments, financed from the European Agricultural Guidance and Guarantee Fund, is approximately 20%:70%:10% respectively, for Hungary in the year of 2005 it was 12%:53%:35%. The reason for this is that the single market, one of the basic principles of Common Agriculture Policy, has injured in the course of the negotiations and the new memberstates will reach the EU15 direct payments level presumably only in 2013. In the study from agricultural payments rural development payment is analysed deeply. The measures of Special Accession Programme for Agriculture and Rural Development (SAPARD), Agricultural and Rural Development Operative Programme (ARDOP) and Hungarian National Rural Development Plan (NRDP) are set along the axis of the new rural developmen regulation. I made the statement that in Hungary according to the present rural development payments measures related to the first axis play the leading role. In the future, taking account the developments, the enhancement of the third pillar is important.

3.7. Principles of the National Development Plan

As ARDOP is one of the programmes of the National Development Plan, I examined the emergence of the Structural Fund's principles in Hungary. I made a survey between managers of small regions, who play important role in the preparation of programmes and projects on NUTS IV level. One of the questions of the survey was: "Categorize the principles of the Structural Funds on a scale between 1 and 5 along the tendering operations! (1: remarkable problems, 5: well operating)"

The results show (Table 2.) that managers have valued the emergence of these principles in Hungary mean, so there are steps forward in strengthening them. Fulfillment of additionality turned to be the most difficult principle. Some results of the survey need further investigations, for example how can it be that additionality had the best result in the North Great Plain which is one of the most backward regions of Hungary. One answer can be the high intensity level of tendering operation in the

region. Although the average of the answers got about the same value in the regions I draw attention to the partnership in West Transdanubia (WT) and the results for Central Hungary (CH). The average mark for partnership in the WT is the highest between the regions. This better result can be observed in the case of an other question related to Leader principles in connection with establishing local action groups. Looking for the causalities, for example participation of WT region in the pilot Leader programme as one of the possible answers also needs further examinations.

Table 2. Small region managers' evaluation about the emergence of Structural Fund's principles on NUTS II level in Hungary

Region	Number of replies	Number of NUTS IV region's managers	Partnership	Concentration	Additionality	Programming	Average
West Transdanubia	21	22	3,48	3,19	2,76	3,33	3,19
Central-Transdanubia *	2*	26	2,00*	2,50*	2,50*	3,50*	2,63*
South-Transdanubia	19	24	3,32	3,00	2,84	3,11	3,07
Central Hungary	8	16	3,13	2,75	2,63	2,63	2,79
North-Hungary	30	28	3,00	3,21	2,62	3,45	3,07
North Great Plain	20	27	3,05	3,14	3,14	3,48	3,20
South Great Plain	14	25	3,14	3,00	2,57	3,21	2,98
National average	114**	168**	3,16	3,09	2,77	3,29	3,08

Source: own calculation * can not be evaluated

** national total

CH (most developed region) had lower values as the national average for each principles. Between causalities the role of social capital arises. I think that in this region self-interest against common weal is prevailing. Outcomes of the survey can serve the basis for further research and confirm the importance of examination of social capital in that.

3.8. National Agri-environmental Protection Programme and agri-environment management as the most important element of National Rural Development Plan

The National Agri-environmental Protection Programme (NAPP) provided EUR 10 and 18 million in 2002 and 2003 respectively for farmers taking part in NAPP. In 2003

the Programme covered the 4% of the total agricultural area of Hungary. I examined the applications of the NAPP on NUTS I, II, III and IV level. I defined the data for NUTS IV level as the response indicator of agricultural DPSIR model (Figure 5.). Different analyses were carried out to examine the environmental and natural relations of the NAPP. Spatial statistical analysis was used to examine the NAPP's territory ratio under different land-use zones. The digitalized version of Ángyán's land use statistic map was overlapped with an other database, which contained the location of all settlements that applied for the NAPP. The results of the spatial overlapping showed, that 49.1% of the settlements' area was covered by extensive, 42.1% intensive and 8.8% by naturally protected area. 9% of the protection zone's agricultural area, 5% of the extensive zone's agricultural area and 3% of the intensive zone's agricultural area take part in the NAPP. This means that agri-environmental measures in Hungary have grounds in all type of land-use systems but it is more important on protected and extensive areas. The estimation on NUTS III level underlined this statement as the correlation between the counties areas involved in NAPP and counties areas under natural protection was strong (correlation coefficient $r=0,75$).

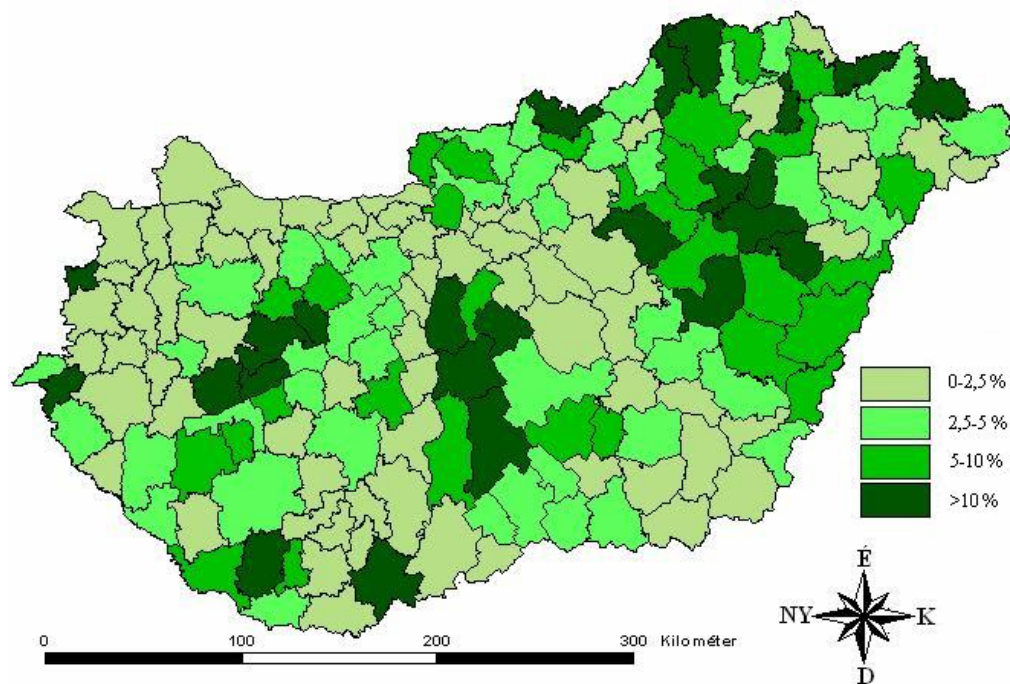


Figure 5. Utilised agricultural areas involved in NAPP on NUTS IV level in 2003
(P. Takács, J. Kovács Katona own calculation)

These statements support the guideline of the Union that rural development measures have to be build on different axis, as different measures strengthen certain pillars of

sustainable development. For example agri-environmental measures play important role in connection with the environmental pillar.

Taking regard that in National Rural Development Plan, areas under agri-environmental protection increased to over one million hectares – which meant EUR 176 million payment in 2005 – and the experiences in connection with SAPARD and ARDOP it can be expected that for the period of 2007-2013 the first and the second axis of the new rural development regulation will get those payments which are not fixed along axis (52,5% of the total amount).

3.9. Role of Leader programme in strengthening social capital

Outcomes of my dissertation have drawn my attention that social pillar of sustainable development is not taken into consideration in national rural developments plans. The reason why I think this is a great problem is that social capital – understanding as relation of trust, respect for norms and associatedness – has lost strength as a consequence of the social-economical progress after the change of regime in Hungary. Trust which is the basis of social relations and social cohesion has weakened. Findings of international analyses suggest that actors of rural areas and their inside and outside networks are essential for sustainable rural development. That is why the expected 10% and 2.5% total payment allocation for axis 3 and 4 respectively have to be increased between 2007-2013.

Following the principles of Leader programme – the area-based approach, the bottom-up approach, the local partnership, innovation, multi-sectoral integration, inter-territorial co-operation networking and decentralised management and financing – we can find more principles which is in connection with social capital. More publications highlight the role of this measure in strengthening social capital. Effect of Leader on social capital is demonstrated in an Austrian publication (Figure 6.), where Leader programme and classical rural development programmes are examined.

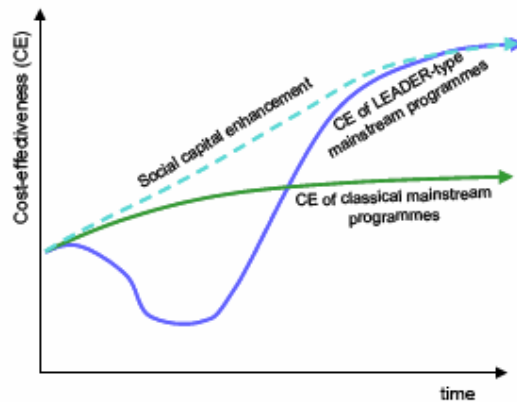


Figure 6 – Slingshot pattern of cost-effectiveness in Leader-type mainstream programmes

Source: ÖIR (2004:57) Methods for and Success of Mainstreaming Leader Innovations and Approach into Rural Development Programmes Final Report by ÖIR-Managementdienste GmbH <http://europa.eu.int/comm/agriculture/eval/reports/leader/full.pdf>

Outcomes of the ÖIR research demonstrate that at the beginning Leader-type programmes need higher expenditure and is cost-effective in the long run. From social capital aspect it has a positive effect at the beginning already which is getting stronger against time.

3.10. Leader in Hungary and its possibility in the Hortobágy region

Considering the above mentioned, in my opinion, Leader programme – which has started as Common Initiative in the Union – can be one answer for solving the problem related to social capital in Hungary. The EUR 8.8 million per year, which is available for the programme on a year basis between 2004-2006, has to be increased and Hungary should also consider the 5% of total payment allocation as it is for the EU15 after 2006. This is important also from that reason, that Hungarian LAGS will get the first payments only in 2006.

The Hortobágy National Park (HNP) has been inscribed on the World Heritage List by UNESCO and is an invaluable unique territory of Europe where farming serves nature protection. Regulations on nature protection have achieved there function partly because farmers have met only with the restrictions of regulations and has not been compensated for extra costs arising from these rules. Programmes prepared apropos of accession for this region on different levels (NUTS II, III and IV) and also the one by HNP harmonise with each other. The proper monitoring of these programmes with the use of those indicators which are accepted by the Union and suit for this territory is very important.

Knowledge I have gained confirmed my hypothesis, that against a strong natural pillar it is necessary to strengthen the social and economical pillars to achieve sustainable development in Hortobágy region.

I think **enhancement of social capital** is the most important, without that, economical development can not be achieved in this region. During the first phase of the LEADER measures, in July 2005, 186 Local Action Groups (LAGs) were established in Hungary, which includes 2332 settlements (75% of Hungary's settlements) where the 34% of the population lives. Two NUTS IV regions from Hortobágy region applied for Leader payments under the name "Hortobágy és mellyéke" and was invited among 108 LAGs in the second phase. A process to select about 40 Local Action Groups will start in early 2006. Following the process of Leader application, the outcomes show, that Leader itself is only one step forward and it will not solve all the problems, as social capital has a complex feature. It would be important to inspire these 186 LAGs already established to go on with cooperation as there are other calls for regions and they could be more effective with collaboration.

4. NEW AND NOVEL RESULTS OF THE DISSERTATION

1. In my dissertation I endeavoured to the integral examination of the reseach area and to take account the Union's horizontal principle, sustainable development. In Hungary similarly to developed countries the share of agriculture in GDP has declined, even so preparation of the sector's long term strategy is crucial as the role of agriculture hangs over the results represented in the GDP. **I considered the logical model (Figure 1. in the dissertation Figure 2.), which demonstrate the linkages of agriculture after my approach as a novel result.** I highlighted that environmental and social functions of agriculture are revalued in developed countries, and consumers at the end of the food chain are the ones who govern the whole process. That is why information gains a very important role, and gives signals to the actors of the economy and the society.
2. The future and sustainable development of Hungary depends on the ability how we make the best of the national resources. Agricultural areas gives the determinative part of Hungarian natural capital. An other important fact is, taking regard the changes of the EU policies, that *agricultural activity is as vital for a sustainable countryside as a living countryside for agriculture*. Unfortunately Hungary has notable problems both in agriculture and rural economy. *New approach have to be followed in the preparation of the national agricultural strategy*, considering the revaluation of agriculture's environmental and social functions. Although agricultural policy in the Union is determined on common level – actualities show in the direction that renationalisation is also predictable – without national conception we can not be competitive on agricultural market and can not strengthen our rural economy. The illustration of agri-environmental indicators for “*driving forces*” can serve a basis for the development of this strategy, which is not a new statement as there are more published documents dealing with the “present for nature” effect of economic decline in Hungary. However **the approach of this topic can be considered as novel, as it places the changes inside the Union's agri-environmental indicator database, and also the illustration (Figure 4. in the dissertation Figure 14.) which makes transparency inside the database and makes monitoring easier.**

3. The analysis of *National Agri-environmental Protection Programme* is also a part of my work on agri-environmental indicators, as areas under agri-environmental measure is one of the “*response*” indicators of IRENA system. **New result of my dissertation is the estimation of this indicator on NUTS IV level.** It is important to note that arising from the diverse nature and main aim of agri-environmental measures – lower the risk of intensive farming, preserve nature and landscape – *it has to be considered as possibility and not limitation.* **Novel result of the dissertation is the spatial statistical analysis to examine NAPP’s territory ratio under different land-use zones.** Result shows that taking regard the main aim of the measure, subsidised territories present higher ratio in extensive and protected zones. Examine the NAPP’s territory on NUTS III level underlined this statement as the correlation between areas involved in NAPP and counties areas under natural protection was strong.
4. Agri-environmental measures can be considered as the common group of environmental, agricultural and rural policy, so **the multiply effect of expenditures on agri-environment have to be taken into account.** With supports the environmental externalities will be internalised. Analysis of NAPP underline the Union’s guideline that in the future supports for rural development have to be distributed along different axes. Agri-environmental measures alone can not solve the problem of rural areas, why this measure primarily strengthens the environmental pillar, why social and economical pillars need other supports.
5. It is important to consider the guidelines of the Union for 2007-2013 in connection with the four axis for rural development payments. **Novel result of my dissertation is the evaluation of present rural payments according to the four axis.** Outcomes of my work can serve as a source of the National Rural Development Plan for the period of 2007-2013. Experiences gained from SAPARD, ARDOP and NRDP, despite indications, show the dominance of axis for competitiveness – within the axis investments dominate – which is understandable as it is well known that Hungarian agriculture has been struggling from lack of capital for years. Experiences along my research enhanced that if we do not follow the right balance between the four axis, of course in view of the Hungarian facilities, we can not achieve a proper functioning, sustainable rural economy. It is very important how

national latitudes – which is approximately 52.5% – along the four axes will be placed.

6. Result of my survey in connection with the emergence of Structural Fund's principles, information gained through an European R+D project, EUROLAN and my work at international and national studies have called my attention to the **importance of sustaining social capital**. Available data and my own experience confirm that this factor, which has come to the front in the 1990's and plays constitutes important part of rural economy, shows deficit in Hungary. Timing of results is very difficult as the nature of social capital is that it can be destroyed quickly but build-up of it takes a long time. *Experiences along Leader show that this programme can be one of the instruments for solving this problem.* **The examination of Hortobágy region from this aspect is a novel element in my work.** Following the first steps of the region in connection with Leader application, the outcomes show, that Leader itself is only one step forward and it will not solve all the problems, as social capital has a complex feature, but every possibility have to be taken to achieve development. It is to be regretted that the rural development regulation for the period between 2007-2013 obligates only for a 2.5% Leader axis allocation of total payment for countries accessing to the Union in 2004. I think the Hungarian Rural Development Plan should allocate a higher ratio for Leader in this period.

Finishing my dissertation does not mean the end of my research. Outcomes I have gained through my work, new questions arising from the results and new relationships on national and international level give a good basis for further examinations and projects.

5. PRACTICAL APPLICABILITY OF THE RESULTS

In my dissertation, taking regard Hungary's facilities, I emphasized the importance of agriculture relation with environmental and social factors. The reason why I found this essential, and outcomes of my research underlined it, is, that preparation of a long term agricultural strategy – weighing agriculture from a new aspect which is multifunctional agriculture – could promote the development of the national economy. Results of the dissertation can be used along planning, education and research.

- Dissertation could serve as a source of the National Rural Development Plan for the period 2007-2013. I have drawn the attention that nations have big latitude in allocation the rural development payments between the four axis, and considering sustainable development it is not all the same how we take this opportunity. Outcomes in connection with indicators can be used here.
- After the experience I have gained, I think that the importance of ethics related to the environment and the economy is vital in the education system. Figures and tables of the dissertation can be used in the demonstration of the given topics.
- Outcomes I have gained through my work, new questions arising from the results and new relationships on national and international level give a good basis for the first steps in connection with EU projects both in the field of agri-environmental indicators and social capital related to Leader programme.

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