## Partnership for Sustainability: A Case Study of BAZ County

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#### **Abstract**

The purpose of the study is to present and discuss a project which can solve the environmental sustainability problems of companies involving students in their work. The project strengthen the partnership among the University of Miskolc and the companies operating in the region, enrich the knowledge of entrepreneurs, improve their environmental performance and help our students find jobs in the area. With the help of the communication targeted in the project sustainability can be integrated into the economic and enterprise policy of the region. In the study an attempt is made to create a new university-company partnership model in order to promote the practise of sustainability.

Keywords: sustainability, economic-social-environmental indicators

## **Introduction of the Region**

The economy of the North-Hungarian Region is mostly characterised by the heavy industry and mining, due to its natural endowment and historical traditions. The drastic economical and political changes generated by the changing of the Regime were accompanied here by the world-wide crises of metallurgy and heavy industry, deeply depressing the region. The effects of these processes can still be captured not only in the economic indicators of the region, being below the country's averages, but in problems of the society as well.

The disadvantageous situation started several unbeneficial effects accelerating each-other. Thus a wide-spectrum intervention is needed to handle them as well, besides economic aspects, social and cultural dimensions' improvement is also necessary. Anyway, very few effective solutions were born till now, and even the programs aiming to deal with the crisis-situation were not really able to help (Germuska, 2002).

The North-Hungarian Region is situated at the North-Eastern part of Hungary, the counties Borsod-Abaúj-Zemplén, Heves and Nógrád belong to it, and its centre is the city of Miskolc. The region is bordered by Slovakia on the North and by the Ukraine on the East.

## Economic and Social Situation

Concerning Hungary, this region is the last in the row of GDP per capita, reaching only 64 percent of the country's average in 2002 (KSH, 2004), relative to the European Union the

situation is even worse, performing only 37,2 percent of the EU's average (NORDA, 2004). Enterpriser spirit also lags behind the country's average, 58 active enterprises coming at every 1000 inhabitants in the region (while the country's average is 87) (KSH 2004). The situation is adverse on the field of research and development as well. Concerning the ratio of R&D investments to GDP, the region stands at the lowest place of the list (0,18%). In domestic relations it stands on the one before the last place concerning either R&D expenditures or labour employed in R&D. About six to ten R&D experts come at every 1000 inhabitants in the region, while this ratio is 53,3 to 1000 in the Central Hungarian Region.

The unfavourable economic prospects are mirrored in the unemployment rate of the region as well, fluctuating around ten percent (NORDA, 2004). At social level, the negative side-effects of polarisation and transmigration can be monitored besides high unemployment. Almost all demographic indicators (the level of education, standards of living, expected length of life and so on) show an inimical picture of the regions' situation. Encouraging signs emerge at tourism, and the highway's attractiveness for capital can be captured in new tendencies as well.

In the tables below, built at Tóth's (Tóth et al., 2006) study on BAZ County; we recalculated the indicator framework set up by her, in order to be able to measure the economic and social development of the region as a whole.

**Table 1** Some economic indicators selected to measure sustainable development in the North-Hungarian Region

Indicator	1994	1995	2000	2001	2002	2003	2004	2004 in the average of 1994 %
GDP per capita of the region (thousand HUF)	293	394	827	956	1050	1162	1343	458
GDP per capita of the region (thousand HUF) at 1990 prices	120,8	127,2	132,2	140,01	146,03	154,4	161	133
GDP of the region (million HUF)	379340	519435	1049456	1230899	1357298	1493089	1713269	451
GDP of region at 1990 prices (million HUF)	157011	167721	167832	180272	188775	198417	213172	135
In % of national average	68,9	72	64	66	64	64	66	95
National GDP per capita (thousand HUF)	425	544	1292	1458	1648	1817	2019	475
Total national GDP (billion HUF)	436,48	556,2	1319,59	1484,99	1674,04	1840,88	2042,95	468
Industrial output (billion HUF)			1019	1217	1189	1274	1248	122
Industrial output at 1990 prices			162,9	178,4	165,3	169,1	153,3	94,4
Construction industry (million HUF)			71748	88539	110349	123854	133924	186

Construction industry at 1990 prices			1214	1247	1534	1645,9	1666,3	145,2
Number of retail outlets	19122	20382	17447	17714	18037	18237	18300	95
Number of passenger cars	223244	225324	231502	242873	260211	279930	351039	128,6
Investment (million HUF)	57940	63147	216438	197818	290404	314102	351039	605,8
Investment at 1990 prices	24041	20435	34613	28992	40389	41741	43715	181,8
Number of companies with foreign interests	763	790	800	844	803	798	721	94,5
R+D (million HUF) at 1990 prices			327	327	446	491	524	160
Ratio of the 2004/1994 data, average								130,8

Source: KSH, Statistical Yearbooks

Foreign exchange rate in the end of 2004: USD/HUF =180,29; EUR/HUF=245,93

The majority of measures show favourable trends, both GDP and GDP per capita rose, but if we analyse the changes on the base of country averages we can see that the gap between the national and regional level grew. Industrial production stagnates, but we are witnessing a promising movement in construction, investment and R&D.

Social indicators also show a small improvement. The beneficial changes in economic circumstances and the decrease in unemployment were not accompanied by any improvement in the heath conditions. A shift can be observed in the field of education, and professional training, these were included in one indicator in the index, which is the number of students involved in full-time higher education.

Table 2 Trends in Social Indicators of the North-Hungarian Region, 1993-2004

Social indicators	1994	1995	2000	2001	2002	2003	2004	Index 2004/ 1994**	Change
Unemployme nt (%)	17,8	14,8	10,1	8,5	8,8	9,7	9,7	54,4	+45,6
Registered unemployed	119226	90644	83871	75076	78898	79925	85799	71,9	+28,1
Deaths from malignant tumours	4247	4188	4355	4211	4170	4270	4286	101	-1
Cardiovascula r disorders	9535	9529	9101	9313	9233	9142	9162	96	+4
Hospital beds	12054	10580	9652	9388	9546	9546	9515	78,9	-21,1
Housing	494371	497069	504031	497736	499270	501173	503094	101,7	+1,7
Full-time in higher education		4159	12240	12721	10972	13850	14278	343	+243
Aggregate index						142,9	42,9		

<sup>\*</sup>estimated

Source: KSH, Statistical Yearbooks

<sup>\*\*</sup>considering both the positive and the negative direction of changes

#### Environmental circumstances

Industrial production's decline was beneficial to the general state of the environment, the quality-improvement of the air, natural waters and soil happened mainly due to that.

The perfection of piped gas networks also contributed to the improvement of air-quality. The other reason for the beneficial tendencies of the last years can be found in the modernisation and reconstruction of the polluters and the accomplishment of environmental investments.

The water-quality of surface waters also improved, thanks to the changes in the structure of the economy; still, in the case of under-surface waters the picture is less favourable. The shortage of water is accompanied by a high level of hardness of the water, nitrate-pollution and other contaminations. The largest part of noise- and vibration contamination accrues from transportation, still pollution limits are exceeded several times.

The pollution caused by drainage means the largest danger for the water-basis. The sewers built-up does not reach the level of the drinking water supply networks, thus part of the cesswater pollutes the water-basis.

The overall size of territories standing under environmental protection (national parks, landscape-protection areas and nature reserves) is 190.105 acres, which is the highest of all Hungarian regions, and is expected to increase even more, thanks to Hungary's accession to the NATURA network in 2000.<sup>1</sup>

The protection of the environment is a key factor in the defence of the region's main heritage, the variability of the flora and the landscape.

Changes in the region's state of environment are introduced in the following table. There is a favourable trend in the environmental index as well. In the case of some indicators, like energy consumption and sewage improvement is caused on the one hand by more efficient usage and stagnation in industrial production.

Table 3 Analysis of environmental indicators in the North-Hungarian Region

	1994	1995	2000	2001	2002	2003	2004	2004/ 1994 (%)
Electricity consumption /household, kWh	176,8	181,2	163,9	159,3	159,6	168,0	175,4	99,2
Consumption of mains gas/household, m3	124,2	131,6	110,4	110,6	118,4	130,0	121,8	98,1
Number of households connected to mains water supply	332853	348690	434969	435633	436110	440039	443987	133,3
Number of households connected to sewage system	165258	167576	193537	207141	222617	248621	272062	164
Water supplied, 1000 m3	39064	37109	33446	32985	33737	33630	33202	84,9
Length of public sewerage per km of water conduit network (m)			287	350	435	518	518	194
Index								139

Source: KSH, Statistical Yearbooks

<sup>1</sup> Natura 2000 network consists of fields appointed in two directives of the European Union, dealing with environment-protection – the directive **79/409/EEC** on the Conservation of Wild Birds for marking special reservations for the protection of birds, codified in 1979, and the Habitats Directive, codified in 1992 (**43/92/EEC**) aiming to mark special nature-reserve territories. The statutory order 275/2004. (X. 8.) comprises of the rules of marking the nature-reserves, apportioned to the European Community.

# The Challenge Faced by the Region

The region's accelerated development requires more active economic activities, thus causing newer problems to the environment. That is why the companies' and population's knowledge of the sustainable behaviour patterns and their commitment for the protection of the environment (also at society level) is of utmost importance. To accomplish a holistic attitude is needed; the only chance to achieve any results is the parallel improvement of general welfare.

In regions where the economic performance is weak, like in North Hungary, the making of living is the very first aspect; the general profitability of companies pursuing activities there lags behind the country's average. A kind of hierarchy can be discovered here as well – associating to Maslow's pyramid of hierarchy – companies will overstep everyday administration and making profit and consider social and environmental responsibility only after founding a certain level of existential security. Most enterprises see only the additional costs and the weakening of their positions in competition in environment-conscious behaviour.

In spite of all this, there are some signs giving reasons for optimism. However mainly due to outer pressure (for example to the ever stricter environmental regulations because of the accession to the European union, or to the sharper competition), still, more and more firms possess ISO 14001 environment management systems and meet the standards, the region is second in the countdown of ISO-certified companies rates (KÖVET-Inem Hungária, 2005).

The region's small- and medium sized enterprises are basically imitators from the aspect of environmental questions. Any movement from this point requires a certain level of acquaintance of, and commitment for environmental aspects not only on the owner's (management's) side, but on the employees' side as well.

Even if all these requirements are met at the companies, most of them do not have the additional capacity needed to pursue activities on this field, in addition to their liabilities to follow the obligatory regulations, because of their relatively small size (Bianchi et al. 1998). Due to all these factors the institutions of the region (chambers, trade unions, NGO-s) are to play a major role: on the one hand, implicitly, by forming the companies' environmental attitudes; while on the other hand explicitly, by assistance to trainings and concrete projects.

The solution should not only be sought for at micro-level, as the handling of neither environmental, nor social problems can allowed to be decided by the companies. Outer obligation seems to work better, but this should not only be accomplished by codifying new regulations, a kind of social pressure can lead to the same results in some cases. However, the unfavourable economic situation of the region affects the population as well, the social problems and lower quality of living standards influences consumption behaviour too. The encouragement of changes is not only the decision-makers' responsibility, but well-defined, communicated and actuate (compellable) principles can mean a solution.

Besides, a major role can be apportioned to the work of the civil sphere and to education generally. Civil societies' role in Hungary have not reached the level of other European countries' so far, considering their much shorter past, but their role gains more and more importance in influencing local actors' opinions and judgements. Today, we can assume that not only the region, but in the whole of Hungary major steps are to be taken in this field. Environmental training evolved, mostly due to programs initiated by the state, but connecting economic, social and environmental problems and their joint handling is only revealing at higher education<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> A shift from this can be driven by the aspiration of the UN to pronounce the period 2005-2014 to be the "decade of education for the sustainable development" (United Nations Resolution on Decade of Education for Sustainable Development A/RES/57/254)

## **Exposition of the Project**

Complex questions usually require multiple solutions, in which education, research centres, non-profit sphere and a well-performing system of institutions can all play their roles. Actors must be connected through effective communication. This was the principle based on which the project "students for the regions, regions for the students" co-financed by European Social Fund and the Hungarian government1s budget was organised.

The acquisition of the Structural Fund's resources is possible through the National Development Plan (NFT) accepted by the European Commission and the Hungarian government made up by five operative programs, one of which is the Regional Development Operative Program (ROP).

The main purpose of the Regional Development Operative Program (ROP) is to help the balanced development of the regions, to eliminate the social and economic disparities on regional – capital-rural areas, inter-regional – level. The program focuses on such development actions that fit the regions' specialities, are founded by the different geographical, economic and cultural endowments of the regions, serve local interest, and can be accomplished with the participation of local actors. Considering its subjects it is built on the National Development Plan, in which the National Regional Development Conception's long-run objectives and the development strategies worked out by the distinct regions also have an emphasized role.

The prevailing of the accentuated regional development, as a comprehensive objective is served by specific aims:

- The sustainable utilisation of natural values and cultural inheritance for tourism's purposes.
- Formation of attractive environment in the settlements and the improvement of economic potential in the towns.
- Creation of a local society able to renew itself.

The program is built on four main areas, so called priorities: strengthening the potential for tourism in the regions, improvement of the regional infrastructure and the environment at the settlements, the development of human resource's regional dimension and experts' assistance. (ROP, 2003).

The program has got four means of strengthening the human resource's regional dimension. These are the building of local administrations' and civil societies' capacities, supporting the local initiatives of creating employment, the strengthening of cooperation among higher education institutions and the involvement of local economic actors and local communities. Moreover, the support of region-specific professional trainings belongs here as well.

The project we introduce focuses on the last mentioned objective, the cooperation among higher education institutions and local actors (ROP 3.3).

Students for the Regions, Regions for the Students

The objective of the project is to build an intensive cooperation among the University, the companies of the region and the non-profit associations pursuing activities here. In order to achieve this goal the concept of a series of courses was created, which tries to accomplish intensive communication by involving the students. Attending these courses is optional, an additional work taken by the students who decide top participate.

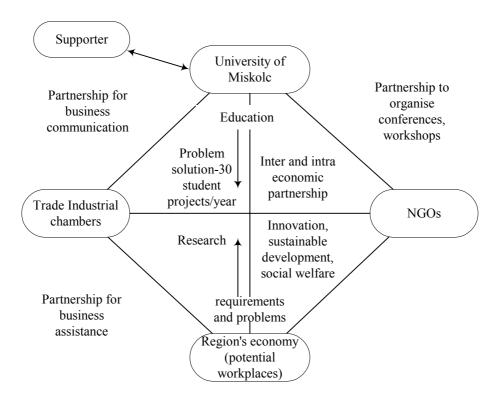


Figure 1 Partnership model for sustainable development

The students participating in the work of our series of courses gain insight to the practice of the rural development, economic development and environmental economics, can take part actively in solving the companies problems. They can accumulate networking capital due to the common work with business sector and university mentors, consultants and lecturers. Students can make good use of their relations after graduation.

Processing of subjects happens within groups of students, made up of students from the faculties of economics, engineering, law and arts. Their work is amended by the employees and heads of profit-oriented and non-profit associations of the business-life.

Undergraduate and Ph.D. students can be admitted to the courses, and if their efforts are fruitful, they get remuneration for their work.

Our researches are diversified, focusing on working out programs related to the region's economic growth, revealing the sustainability factors of growth, and the absorption efficiency of the region.

According to this work started on three fields:

- Sustainability workshop: Utilisation of environmental resources and insurance of their sustainability
- Workshop of economic development: Development of innovative economy ensuring integration into global economy and increase of competitiveness of the region
- Work shop of rural development: Recovery of the backward rural areas and new ways of their development

Four programs were launched on each of the three fields of research; students started working on one of these. Topics are multitudinous; students can get involved in the themes they are most interested in.

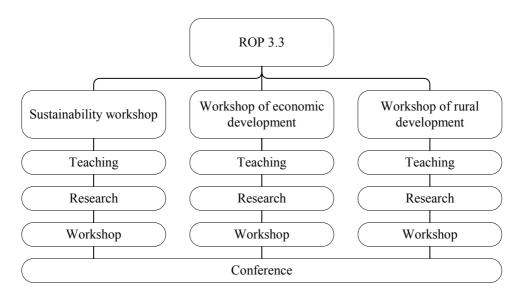


Figure 2 Structure of the project

Researches are co-ordinated by chief researchers assisted by one or two moderators. Programs of researches are supervised by mentors. Their task is to arrange administrative matters, promotion of information flow co-ordination of the day-to-day operations, which is why mainly university lecturers and researchers act as mentors. A student is assigned a task and is supervised by one or two experts from a company or a non-profit organisation. Students work on a theme in a research place, which can be a company or an institute. Besides regional companies students can liaise with Chamber of Trade and Industry (BOKIK), County Court, Bay Zoltan Applied Research Foundation, Miskolc Directorate of Central Statistical Office, Association of Small Settlements (Edeleny, Szikszo, Torna Videk), Szinva Project Office for Regional Development, Local Governments, Hungarian Public Evaluation and Examination Centre at North Hungarian Regional Directorate, Cserhat Urban Union.



Kocziszky, 2006

Figure 3 Regional dispersions of the partners

Each research project is founded by a separate education program, consisting of two parts. All students involved in the research can participate in the module for development of competencies. This module includes the development of one's personality, management of

conflicts, techniques of presentation, communication and research-methodology. The other filed of the education program is research-specific, each research project has its own module, aiming to deepen the knowledge of those participating in the research in those subjects and theoretical framework without which the problems can not or hardly can be defined. At this stage of the training company leaders and researchers were also invited to participate.

Table 4 Education Program of the Project

Sustainability workshop	Economic development workshop	Rural development workshop						
Training for the development of personality  Methodology of research								
<ul> <li>Sustainability, sustainable development, principles of environmental sustainability – theoretical background</li> <li>Intelligent regions – local and regional environmental sustainability</li> <li>Main characteristics and accomplishment of sustainable production systems</li> <li>Environmental design and sustainability</li> <li>Sustainable resource management</li> <li>Sustainable consumption and households (according to SusHouse project)</li> <li>The Cardiff process and integration of sustainability.</li> <li>Common responsibility for environmental sustainability (engineering, economic and ethic approach toward handling the problems).</li> <li>Approaches towards the education of sustainability.</li> <li>Sustainability as the method of solving problems in the future.</li> </ul>	<ul> <li>Theoretical foundation.</li> <li>Time-horizons and databasis of regional economic development plans, access to data-basis practice of their usage.</li> <li>Methodology of assembling Regional economic development plans.</li> <li>Work-up of domestic casestudies (objectives, system of institutions, methodology).</li> <li>Summarizing, evaluating workshop.</li> </ul>	<ul> <li>Defining rural areas, situation of rural areas.</li> <li>Problems of small settlements.</li> <li>Social economy.</li> <li>Village tourism.</li> <li>Rural society.</li> <li>Sustainable development.</li> <li>Environment-conscious agriculture.</li> <li>Gypsies at rural areas.</li> <li>Traditions of rural researches.</li> <li>Methodology of rural researches.</li> <li>Rural policies.</li> <li>Innovations in rural development.</li> <li>Assemblage and evaluation of rural development strategies.</li> <li>Planning and management of rural development projects.</li> </ul>						

## What does the Program Give to Participants?

The research project's honour is that it embraces the students, experts and university teachers in a distinct program. Efficient salvations can be born, solutions that are a common fruit of experts' and researchers 'practical knowledge and a kind of innovativeness of the students. Students play a unique role in showing neutral attitudes towards analysing and evaluating projects.

#### Students

The project enables our students to use their theoretical knowledge in practice, to try themselves in handling real situations, and in solving real problems

They can participate in a company's or other associations projects or can make their own proposals, which can be encouraged and honoured by a research institute, if they are worth it. We guarantee them the conditions of doing all this without facing any, or little risks.

The knowledge they obtained can be published either as a paper at our university's Students' Scientific Conference, from where the bests are taken for national competitions, or as their thesis (diploma work). Our colleagues at the university and the seminar leaders form the participating companies help them in their work. We also help them by giving them fellowships.

What kind of obligations do the students participating in our project have to fulfil? They are required to publish their works continuously. In order to ensure this they have to report about their progress four times a year during our workshops.

## Companies and institutions

We hope the companies participating in our program are also able to take advantage of our common work. On the one hand by founding the framework for efficient communication among enterprises, development agencies and other institutions (chambers and self-governments), helping the management of the companies to obtain relevant pieces of information; while on the other hand they can be up-to-date concerning actual regulations and programs, financial- and development opportunities and so on.

Besides the things described above the program can contribute to giving greater publicity to the problems of the region's companies. This is of utmost importance mainly in the case of small and medium sized enterprises, as their economic strength is not sufficient to enable them to promote their interests. Moreover, they can involve the student pursuing his or her activity at them in their work; involve them in working out concrete projects, thus achieving results without overloading their own resources and human capacity, which is another great advantage for the smaller enterprises and associations.

#### Region

The tasks and problems, to which the companies and institutions are able to pay less attention as they lack capacity to get involved in them, can get greater emphasis.

The work-relationship made up with the student can overgrow its framework, contributing to their employment after the project had ended, and generally to making the student not leave the region.

## **Results and Proceeding**

We involved thirty students in the project, who pursue their studies at several different faculties and research different subjects.

The students can publish their results at such forums, where the representatives of regional institutions and business life also participate, stimulating their performance. Our experience so far shows that the institutions and companies participating in our project are able to and willing to give sufficient help to our students, letting them uses their data basis and the infrastructure. This helps the participants to evolve good work-relations, founding their future employment in some cases as well, still, we have not got much experience on this filed as the first students taking part in our project have just graduated this June. Some of them will continue their work in the doctoral school of our faculty.

We think, one of the most important result of this project advanced the communication among the actors of business life in the region, we expect this to cause significant synergic effects, and we do hope that the relations evolving among the institutions and companies will not stop at the level of this project, or will not seize after finishing it, but will flourish. We are sure the university will play an important role in doing so.

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Table 5 Detailed research program of the project

ROP							
Sustainability workshop:	Workshop of economic development	Workshop of rural development					
Analysis of legal, political, economic, financial and technological tools developed for conservation of natural resources and quality of the environment.	Establishment of innovative clusters and opportunities of their organisation	Identification of roma's position and role in regional development					
Analysis of regional waste management     Restricted utilisation of fertile land used for viniculture and	A supplier's cluster     Establishment of innovative clusters and opportunities of their organisation	<ul> <li>Conflict management in local ethnical communities</li> <li>Methods of children education</li> </ul>					
<ul> <li>ensurance of their sustainability in the North Hungarian wine-district</li> <li>Litigation of the North-Hungarian Regional Court in environmental, nature conservation and other ecological issues</li> </ul>	Analysis of absorption capacities of small settlements and designing models.	and family planning in roma communities in Arlo village  Subsistence strategy – survival strategy or the product of modern times					
Analysis of the ways of increasing environmental efficiency from the scientific, economic and social aspects (sector approach)	Analysis of absorption capacities of small settlements and designing their models/Valleys of Open Woodland Action Group	Creation, promotion and adaptation of innovation of rural development based on local knowledge					
Analysis of Egervin Borgazgasag plc, wine production company with the view to cleaner environment  Analysis of Egorvin Borgazgasag	Analysis of absorption capacities of small settlements and designing their models in Edeleny, a small town	<ul> <li>Recovery of the backward rural areas and new ways of their development</li> <li>Correlation between school</li> </ul>					
• Analysis of Egervin Borgazgasag plc, wine production company with the view to minimalisation of waste	Socio-economic efficiency analysis of using EU funds	results of children and social and economic development of the area					
Exploration of local and regional interdependence, identification of basic principles of environmental sustainability (sustainable households and consumption)	Shipment in Hungary and in North Hungary     Socio-economic efficiency	Exploration of recovery possibilities in small villages					
Environmental awareness in company management     Introduction of Energy law and appearance of environmental problems in the EU and Hungary	<ul><li>analysis of using EU funds</li><li>Conducting cost-profit analysis of ROP projects</li></ul>	<ul> <li>Investigation of recovery possibilities in small villages</li> <li>Interest representation strategy of the people living in the area</li> </ul>					
Role of science in sustainable development – construction of sustainable strategy	Elaboration of complex measuring methods applied to monitoring regional economy.	• Recovery opportunities of small villages					
<ul> <li>Introduction of Energy law and appearance of environmental problems in the EU and Hungary</li> <li>Sustainability development in the view of UN and EU regulations with special emphasis on local implementation of Montreal Agreement</li> <li>Collection of dry and other batteries in BAZ county</li> </ul>	<ul> <li>Economic analysis of EU preaccession basis in the North Hungarian region</li> <li>Impact of monetary policy of the Magyar Nemzeti Bank (Hungarian National Bank) on the region</li> <li>Analysis of economic competitiveness in BAZ county</li> </ul>	Funding and exerted effects of operation of social economy and non     Funding of social economy and non-profit sectors					