



Regional Innovation Strategy in the South Transdanubian Region

2004

The Regional Innovation Strategy of South Transdanubia

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REGIONAL INNOVATION STRATEGY

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To the memory of Csaba Horváth



Csaba Horváth, the late project manager of RIS-DD program had been full-heartedly working on developing this strategy since the calling for RIS tender appeared. Unfortunately he could not see his work finished. His expertise, professional calling, versatility, his excellent ability to cooperate and his joyous personality can never be compensated.

In honour of his work let`s quote the words of one of our Irish partners: „We knew Csaba through several European co-operation projects, such as CAFÉ and RIS-NAC, and we found Csaba to exemplify all the best that the modern Hungary is bringing to the enlarged Europe. He was a wonderful fellow.”

(Brian Callanan, Shannon Development)

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I. THE ANALYSIS OF THE PRESENT SITUATION IN SOUTH TRANSDANUBIA WITH SPECIAL REGARD TO THE REGIONAL INNOVATIVE PROCESSES

1. INTRODUCTION: INNOVATION-ORIENTED REGIONAL AND ECONOMIC DEVELOPMENT AS THE DRIVING FORCE OF REGIONAL COMPETITIVENESS

In our days as much as 80 % of the increase in productivity can be attributed to some kind of innovative process in the highly developed countries (*Cooke 1995*). (Innovation plays a crucial role in increasing the competitiveness of enterprises, improving their export capacities and the quality of the services and creating jobs, i.e. in increasing affluence. In the 21st century the expansion of the knowledge-based economy is the most important global process in both the society and the economy. In this type of economy the *competitiveness of the countries and regions* is mainly determined by their ability to transform their production structure in such a way as to offer products and services containing high added value. In the past decade it was primarily the technology-intensive and innovation-oriented industries that achieved the most intensive development. Regional competitiveness depends on a wide range of factors; it is, however, possible to identify the main driving forces. The regional reports of the European Union (CEC 1999/b.) highlight innovation, research and technological development as the key factors in obtaining a competitive edge. Successful R&D activities performed within the region as well as the creation and dissemination of innovations can significantly contribute to the improvement of competitiveness in a region. The application of the results of innovative activities, especially of the R&D projects in daily practice has a direct impact on the competitive edge achieved by the enterprises in the region (*Lengyel, 2000*). (In our days innovation is an indispensable tool for businesses if they are to improve their competitiveness, considering that a competitive edge cannot be achieved without innovative developments).

In our days innovations have largely extended their target area to enhance the improvement of competitiveness not only at the level of enterprises but *at the local-regional level as well*, and contribute in this way to a kind of development that is sustainable by social, economic and environmental standards alike.

Innovation is also an important tool to be used for the creation of new and increasingly better quality jobs (which are knowledge-intensive and produce more added value), for improving the population's quality of life and eliminating inequalities in the level of regional development.

Efforts to eliminate socio-economic backwardness of the regions and to moderate regional inequalities formerly relied on the large subsidies provided by the state while recently *the improvement of the competitiveness of the regions* has shifted to the fore using targeted community and national-regional development funds. The reason why backward regions need to be supported is not simply that they are backward, but rather that they have development ideas which – if implemented – can considerably improve their competitiveness. In our interpretation of competitiveness we should start from the features of global competition, which – in turn- are closely linked to the local or regional economic base of the enterprise (*Török, 1998*). *Special policies meant to foster the innovative potential of the regions and their capacities for innovation are of key importance among the factors influencing competitiveness.*

In the member states of the European Union the development of innovation plays an increasingly important role in the improvement of regional competitiveness and resources are available both from national and community funds. *Until recent years the importance of innovation was not properly recognized in the shaping of regional policy.* At the same time, community policy related to the sectors recognized the vital role that innovation can play in the regional policy aiming to manage regional inequalities. By increasing their innovative capacities, backward regions could benefit more from the new economic opportunities offered by the information society and this could be a turning point for them.

The new directives of the European Commission on development and funding have set the goal to more closely harmonize innovation and regional policies, as well as to support innovation-oriented regional development. The objective of *innovation-oriented regional policy* is to upgrade the regional endowments on the one hand, and, on the other, to make the results of technological and innovative developments available for the regional economies by activating local resources and involving the regions in the comprehensive innovative processes. *Innovation-oriented regional policy* does not mean direct intervention, but a kind of institutional development which has the proper tools to create the right conditions and an innovative environment that facilitate the development, adoption or extensive application of innovations for the actors of the economy linking in this way the notions of *sustainable development, quality of life* and *competitiveness* to the acquisition and *dissemination of knowledge* as well as *innovation* (Rechnitzer, 2003).

Consequently, if we are to create a *knowledge-based economy and make our regions really competitive* it is imperative to disseminate innovative capacities in the widest possible range and make information, technologies and other innovative knowledge on the market directly accessible to the actors of the economy. This is the reason why *organizational and spatial decentralization (regionalization)* is a *pre-requisite for the efficient operation* of the institutions of the innovative system, as integral parts of the regional and economic development policies. How attractive a region can be from an economic point of view greatly *depends on the network-type co-operation of the various research centres, innovative small and medium-sized enterprises and the institutions engaged in the development of innovation, on the efficient operation of the extensive, decentralized system of organizations and institutions responsible for supporting innovation as well as the success of the innovation-development actions they co-ordinate* (Gál 2000).

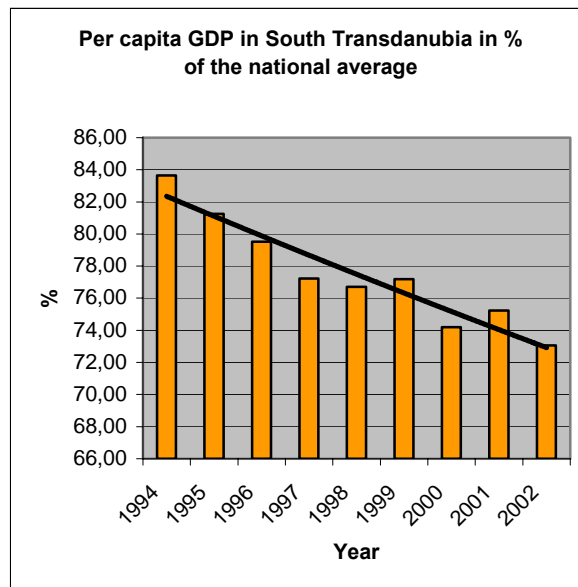
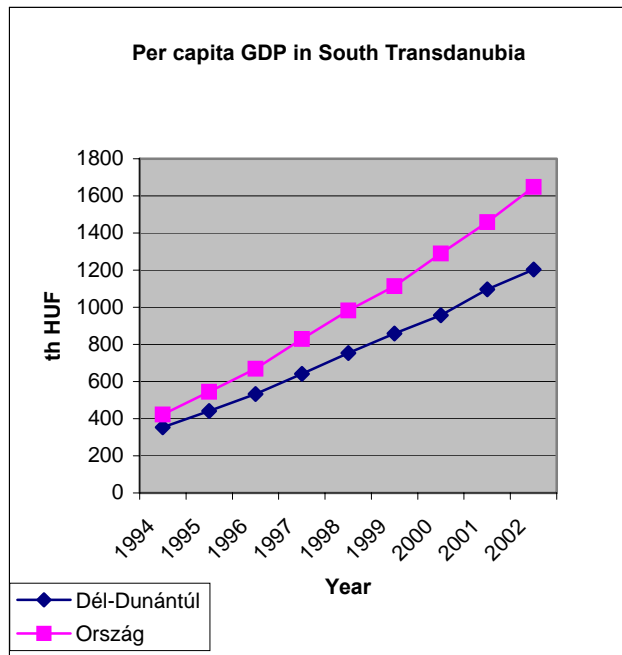
The South Transdanubian region, boasting one of the most outstanding higher educational centres and research bases in the country, built on its internal resources and the *carefully elaborated regional development programme* when it set the goal of developing an efficient *innovation support system* and up-to-date services in order to transform its industrial structure relying on the highly qualified labour and improve the competitiveness of businesses operating in the region, thereby enabling it to catch up with the more highly developed regions in Europe. The *development programme* links economic development to the strong intention of developing innovations and improving their adoption, the idea being based on the co-operation to be implemented within the network created by the university/higher education, the R&D centres and the SMEs.

The only way for the South Transdanubian region to recover from its present economic difficulties is to transform its now obsolete economic structure and give priority to the use of more modern technologies in manufacturing. The creation of an innovative product and manufacturing background and the elaboration of an innovation strategy to serve as a framework for this kind of development are key element in this process

2. THE PRESENT SITUATION AND ENDOWMENTS OF THE REGION

South Transdanubia is ranked among the less developed regions both by national and international standards. This is mainly due to the conditions that access to most of its settlements is rather difficult from either foreign or domestic economic centres, its geographical location near the national border has led to isolation throughout its history and has hindered its development. The so-called 'complex indicator' used to describe the socio-economic development of micro regions shows that 5 out of the 30 'least developed' micro regions are found in South Transdanubia, some of them lying along the Croatian border, considered as the 'external periphery' of the region. The situation of the region is basically determined by Baranya county, and within it the town of Pécs, where approximately one sixth of the region's population lives. The Hungarian spatial structure is characterized by the Budapest syndrome. When speaking about South Transdanubia, we have the same phenomenon in the relation of Pécs and the region, even though some features are different.

The historical overview of the advantages and disadvantages ranks South Transdanubia among the regions of average or even favourable situation. A brief assessment of the region's economic potentials and relative development shows that the region's capabilities as regards competition are not too modest, the poor communications facilities being the primary obstacle to further development for the time being. However, it has not been very successful in attracting external, mainly foreign working capital, which is seen to be the main reason why it has fallen behind with respect to economic performance measured in regional GDP as well as industrial output. Structurally its growth is hindered by the weakness of the processing industry and this is manifest in the regional GDP values and industrial exports as well.



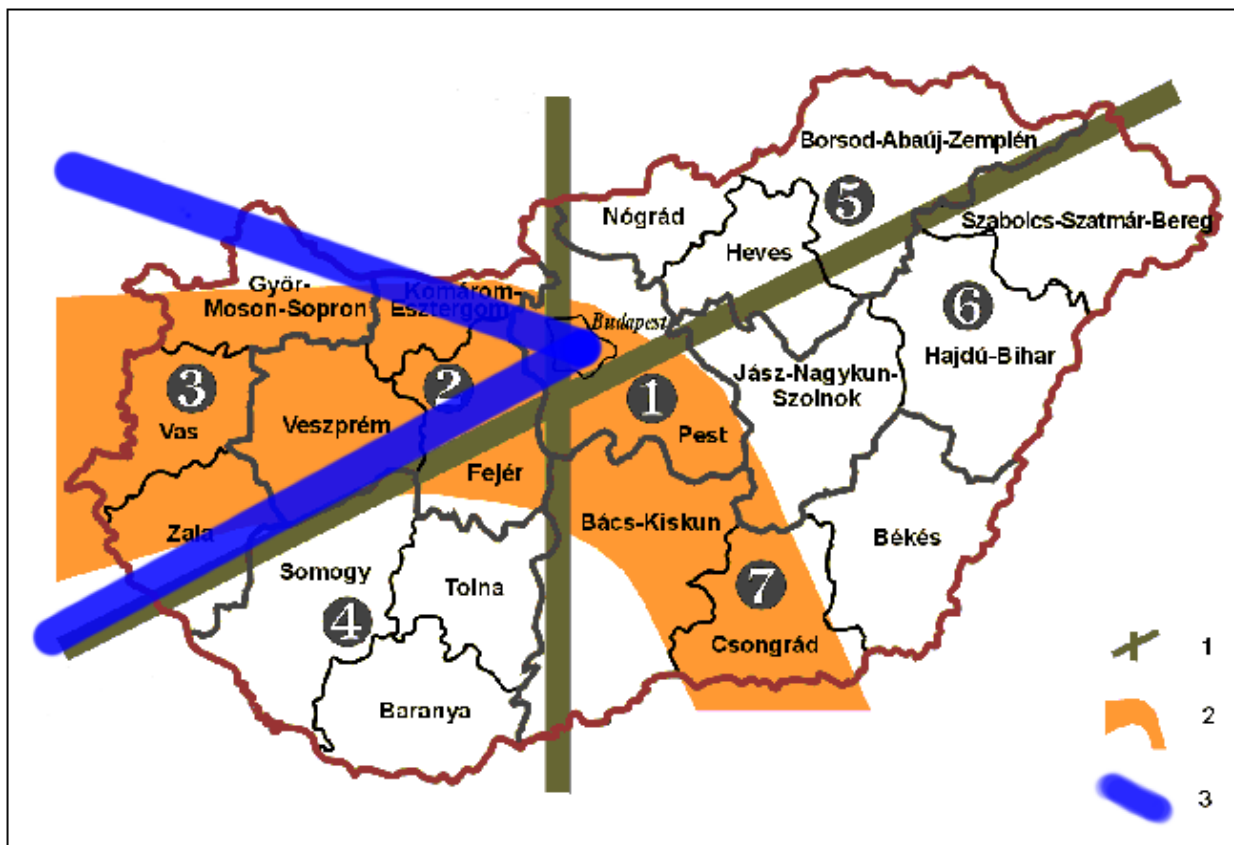
The change of regime and economic structure shattered the economy of the region, but the danger of total collapse was soon over. In a short time enterprises were forced to face the consequences of economic restructuring: the difficulties of transformation to a market economy went together with shortage of capital and underdeveloped infrastructure, while the enterprises were expected to take an increasing part in the international division of labour. In a new period of accelerated economic growth in the second half of the decade – that was quite different from the previous periods in its character and factors – South Transdanubia was not able to adapt itself to the new requirements and gradually fell behind the more dynamic regions. The setback can be attributed primarily to the structural problems of its economy: the low level of industrialization it inherited was not a proper basis for the expansion of the internal processing industries (with a view to exporting) and the same problem, aggravated by the region's weak attractiveness for capital investments due to its geographical location and poor accessibility, failed to encourage external investors.

After the economic transition the current situation is characterized by stabilization – even if at a lower level than before – and this has opened up the opportunity for economic growth along a new path; unemployment, although still rather high, has started to decrease, and per capita GDP is on the increase. The spatial structure of the economy has clarified: the coexistence of the old and new factors seems to outline new, stable trends and courses of regional development.

As to the main features of its economic space South Transdanubia is one of the most homogeneous regions in Hungary; the three counties that constitute it had a rather similar course of development, their present features and future prospects also have a lot in common and are linked to one another. Inequalities in the development of the individual counties have been reduced recently. Tolna county is particular because the only Hungarian nuclear power plant was built here, representing an economic potential that is out of proportion with the size of the county. In the case of Baranya county the presence of Pécs and its gravity zone is a key element of economic performance. The development of Somogy county has been strongly influenced by the special features of the southern coast of Lake Balaton. Since the growth of the Hungarian economy dynamically increased in the second half of the decade as shown by GDP figures and the role of qualitative growth became more important around the turn of the millennium the above described specific features have lost their importance in the assessment (and embellishment) of the actual and overall situation of the region. As a result, one particular feature is not sufficient any more to modify the average level of development

2.1. The economic performance and position of the region

Changes in the economic positions of the regions in the period of transition to the market economy are best analysed with their economic performance expressed in the GDP figures. In this respect it can be stated that regional inequalities have significantly increased in Hungary in the last one and a half decades not only between the capital and the rest of the country, but also among the regions in the countryside. Mention should also be made of a remarkable change in the trend characterizing spatial structure: statistics show that until 1998 regional differences measured in specific GDP increased mainly between the capital and the six other regions. After that date, however, the increase in inequalities primarily resulted in a differentiation of the regions outside the capital, with the indices for the West- and Central Transdanubian regions catching up with those of the capital gradually leaving behind the other four regions.



Regions (NUTS 2): 1 – Central Hungary; 2 – Central Transdanubia; 3 – West Hungary; 4– South Transdanubia; 5 – North Hungary; 6 – North Great Plain; 7 – South Great Plain.

Legend: 1 – Historical axes of development; 2 – New development areas at the time of the change of regime; 3 – The development wedge taking shape by the turn of the millennium.

Source: L. Faragó 1999, RIS 2003

Throughout its history the spatial structure of Hungary has been divided into two distinct parts (Transdanubia and Eastern Hungary) by the river Danube flowing in a north-south direction. One industrial axis developed along the river Danube (Vác, Budapest, Százhalombatta, Dunaújváros, Paks, Mohács). The socialist industrialization efforts lead to the development of a heavy industrial axis built on mining between the areas of the Dunántúli Középhegység and the Északi Középhegység (Zalaegerszeg, Ajka, Várpalota, Székesfehérvár, Oroszlány, Tatabánya, Salgótarján, Ózd, Kazincbarcika, Miskolc, Tiszaújváros). The intersection of the two axes is found near the capital. (1) In the period marked by the change of regime, the crisis of the heavy industrial centres and the start of economic restructuring rearranged the economic axes of the country, with the areas near the western borders and along the existing motorways becoming more valuable in the process. (2) At present we can observe that this zone of development is shrinking of and a well developed area is wedging in in the north-west (Budapest and its metropolitan area, Székesfehérvár and the line of lake Balaton, the axis between Győr and Vienna, including the borderline areas in the west) between the less developed areas.(3)

As to the *numerical ratio of the enterprises* South Transdanubia is second in the country with a relatively well-balanced spatial structure, but as far as the organizations are concerned, it is characterized by the dominance of the small enterprises and the low level of capital supply in the case of SMEs.

As regards the number of people employed per 1000 inhabitants the picture is more varied and differences within the region tend to increase abruptly when indices of economic performance and the presence of

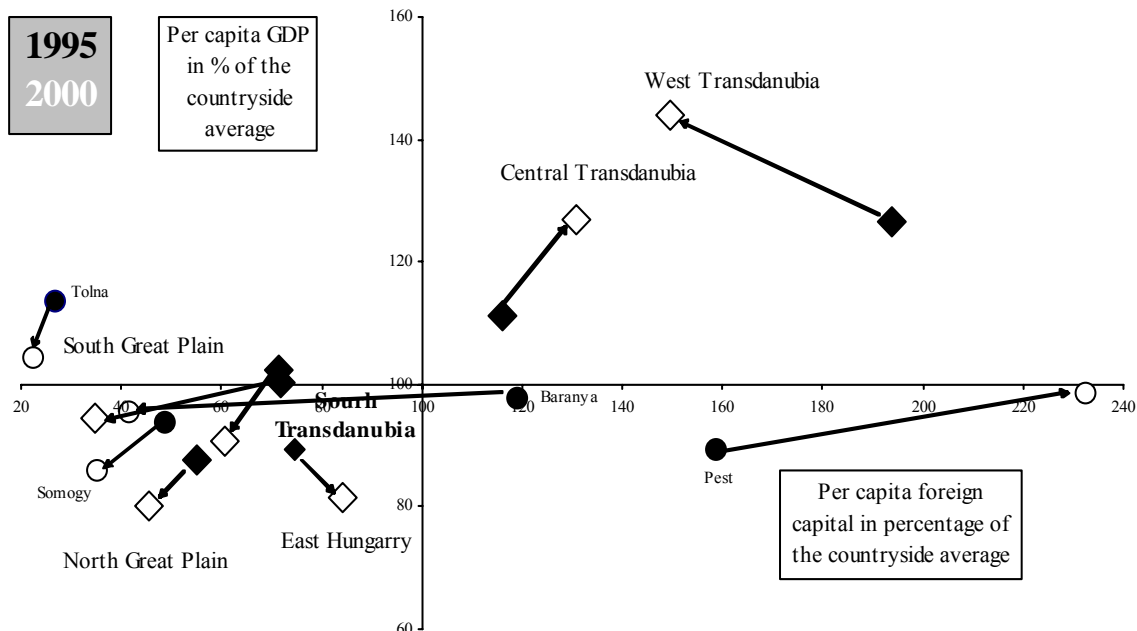
foreign capital are examined. The distribution of enterprises by number of employees shows a great dispersion and the average value is even lower than the average in the countryside. In the year 2003 not more than 8.3% of the enterprises employed over 10 persons, and 39.4% had no employees at all.

In this respect as well the regional average is primarily determined by Baranya county or the town of Pécs with 63.5 % of all the business companies in Baranya county. The economic performance of the region is well illustrated by the fact that the value of per capita GDP in 2000 was only 75.7% of the national average (and 38.6% of the EU average between 1995-97). As regards the differences in per capita GDP, South Transdanubia can be called the ‘new loser’ of the 1990s considering that this region produced the least dynamic development and was overtaken even by the similarly depressed South Great Plain. Economic growth in the area suffered a setback in the second half of the 1990s while the more dynamic regions produced higher growth rates. In terms of per capita GDP the region was somewhat above the average in 1995 but by 2000 it fell back approaching the level of the regions that have always been rated as backward. The trend of specific GDP can be described as stable, well-balanced and without short-term, hectic changes. Consequently, the regression South Transdanubia suffers from should be considered as a trend. Increasing regional inequalities in rural Hungary can be attributed also to the fact that regions like the South Great Plain and South Transdanubia in particular, which used to have their place in the centre of the development axis, definitely tend to be joining those that are falling behind. As a result, the tide has turned and at the turn of the millennium the polarization of the Hungarian spatial structure is caused not so much by the former separation of Budapest and the countryside, but the differentiation of the regions outside Budapest.

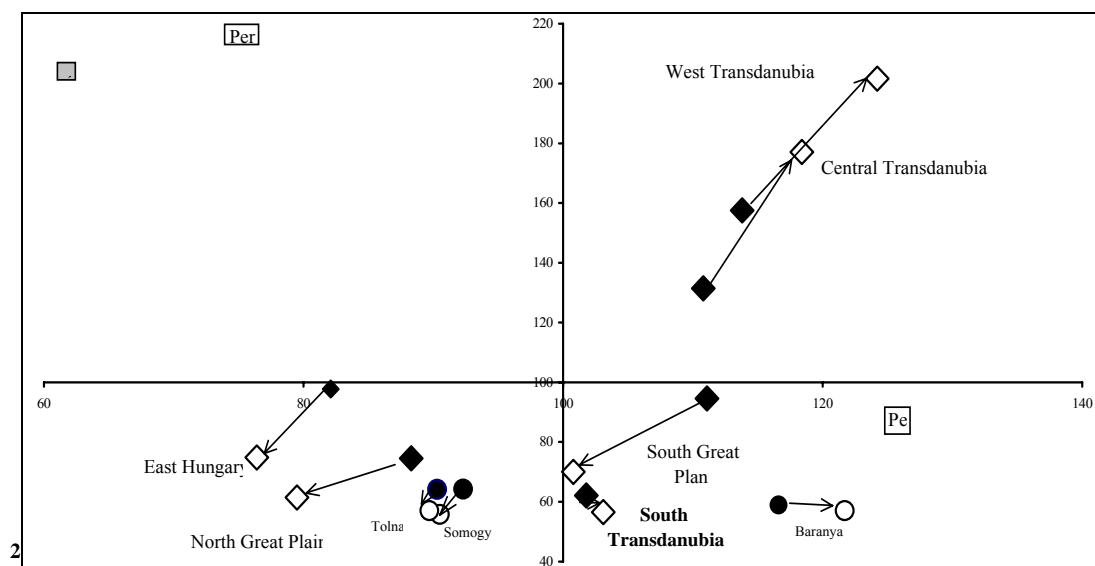
Regional differences in the main economic indices (in percentage of the national average)

Regions	Per capita GDP		Per capita net income		Per capita foreign capital investment		Number of enterprises per 1,000 inhabitants	
	1994	2002	1994	2002	1994	2002	1994	2002
South Transdanubia	84,0	73,1	89,6	93,3	35,3	21,0	112,5	90,6
Central-Hungary	145,6	163,9	120,7	117,8	241,2	227,4	136,5	140,0
Central Transdanubia	86,4	88,7	97,7	103,5	73,5	76,2	96,9	92,9
West Hungary	100,7	103,3	92,1	94,4	83,8	134,2	93,8	98,8
North Hungary	69,6	63,7	89,7	86,6	32,4	37,1	63,5	70,6
North Great Plain	73,9	64,4	87,4	90,7	20,6	33,8	68,8	75,3
South Great Plain	83,3	68,9	87,9	92,3	33,8	21,8	90,6	84,7
National average	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: ECOSTAT, HCSO, National Job Centre, Survey on income



Per capita GDP and foreign capital investment in percentage of the countryside average 1995, 2000¹
 Source: Data provided by the Ministry of the Economy and Transport (for the year 2000) 1999 and Regional Statistical Yearbook, 1997 and 1998. (Various pages). Budapest, HCSO. (Calculations made by László Hrubí).



Per capita GDP in the processing industry and financial-business services in percentage of the countryside average, 1995, 2000
 Source: Ministry of the Economy and Transport, 2002. (Figure by László Hrubí).

¹ In order to make the differences more perceptible the Central Hungarian region, constituted by the capital and Pest county is excluded because in 2000 the amount of per capita foreign capital investment in Budapest was 5.9 times higher than in the countryside, and with Pest county also taken into account this average difference was 4.6 fold (this is the reason why the average of the countryside without the capital was taken as a starting point.) As regards specific GDP the lead of the central region is smaller, only 1.9 fold. (this value is 2.46 in the case of Budapest).

² Budapest and the central region have been excluded again for reasons stated above but only because of the financial-business services. In the case of Budapest the per capita GDP in the processing industry was only 19.4% higher than the average of the countryside in 2000, and in the case of the central region this figure was merely 8,1%, as opposed to the financial-business services where GDP was 5,21 times higher in Budapest and 3,73 times higher in the region. Source: HCSO, 1995. Calculations were made by the authors.

In general three main factors are particularly important in determining regional GDP and South Transdanubia is no exception. These factors are: *the presence of foreign working capital, the enterprises' ability to export and the sectorial structure of the economy.*

- Considering its endowments the region has not been particularly successful in attracting foreign investments. As little as 1.76% of all foreign capital invested before 2001 went to the South Transdanubian region – making it by far the least successful of all the regions. (Regional Statistical Yearbook, HCSO, 2002.) The situation is made worse by the fact that the total value of foreign investments in the region has stagnated in nominal value since 1995. As regards per capita foreign capital investment, the region had the fourth place in 1994 but fell behind and by 2001 it was in the last place. The foreign companies that have settled here have the least financial muscle. As far as the sectorial distribution is concerned, most of the capital was invested in the processing industry, but telecommunications, the energy industry, commerce and the various services also managed to attract significant amounts of capital. At the same time it can also be stated that internal accumulation of capital has not been able to counter-balance the scarcity of foreign investment in any of the Hungarian regions.
- It is self-evident that the ability to export, especially in the industry, also depends on the presence of foreign capital. The level of industrial exports is rather low in the region, representing 52.9% of all industrial sales, which is well below the national level (55,1%). Concerning the share that the regions have of the national industrial exports, South Transdanubia is in the last place. The per capita value of exports was not more than 2.3m HUF in 2001, which is just a fraction of the 17 or 13 m HUF produced by Western and Central Transdanubia. As regards its ability to export industrial products – and the level of industrialization already analysed from a different point of view - the position of the South Transdanubian region is in the upper third of the group of regions which are falling behind and this is in agreement with the situation described above. The reason is self-evident: the insufficiently developed processing industry is not capable of producing for export in the long run.
- The per capita value of industrial output in South Transdanubia was 58.7% of the national average in 2001, hardly exceeding the lowest values in the country produced by the regions in the Great Plain. This region has the lowest share of processing industry in the country which is a lasting problem of its economic structure. In respect of the output of the processing industries South Transdanubia is one of the least developed regions of the country. Formerly this could be considered as a specific feature of the region, today, however it has an overall impact on the growth of the whole local economy. First of all the processing industry is the primary carrier of economic innovation therefore its absence means the lack of capacities to adopt innovations. On the other hand – as discussed above – the failure of the processing industries to grow keeps demand for the products of the third sector, especially for the financial-business services at a low level, hindering their growths as well. Opportunities for growth in the regional economy today primarily depend on the structure of the economy consequently the deformation of the sectorial structure, i.e. the weakness of the modern processing industries is another key factor in the economic backwardness of the region. This is also the reason why the 18 industrial parks in the region lag behind those operating in more highly developed regions as far as the value of investments, the rate of exploitation and sales income are concerned. Industrial parks differ in size and profile, yet they have not developed a conscious division of functions among them. In the case of South Transdanubia the relatively weak processing industry together with the lack of demand in the regional market may hold back the more dynamically developing financial-business services as well.

The ratio of agricultural and third sector enterprises is somewhat higher in South Transdanubia than the average while the industry, especially the construction industry, is poorly represented. On the whole, however, the sectorial structure does not show any particular regional specificity.

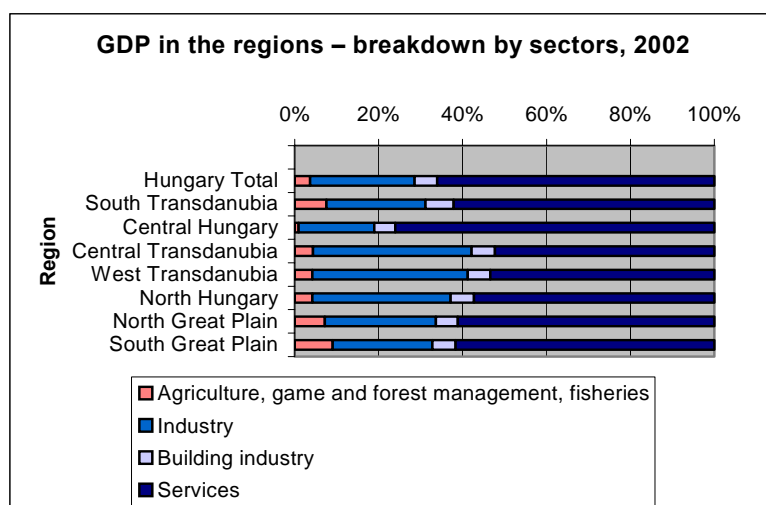
Examining the sectorial structure of the region, especially the structure of the industry with a focus on the contribution of the individual sectors to the GDP we have found that the processing industry was significantly below the national average, while the contribution of the energy industry considerably exceeds it. The values obtained for agriculture, education, health care and the catering services were above the national average and about the national average in the case of commercial and other public services. Considering the importance of agriculture in the *economic structure of the region* we can say it is similar to the Great Plain, but considering the weakness of the processing industry its situation is much worse. The poor development of the secondary sector is counter-balanced by a more intensive – but spatially rather concentrated – development of the third sector. The relative strength of the business, financial and commercial services is a promising trend even by West Transdanubian standards. It is quite natural that these services are even more strongly concentrated in towns and cities (e.g. Pécs) than the industry.

The analysis of the regional trends in the value production of the various sectors over time (1995-2000) has shown that agriculture is becoming less dominant, the processing industry is increasing its share and the energy industry is slowly losing ground while business services tend to become stronger.

The contribution of the individual sectors to the GDP in the region and in Hungary in 2002

SECTOR	SOUTH-TRANS-DANUBIA	HUN-GARY TOTAL
Agriculture, forestry, game-keeping and fishery	7,5	4,2
Industry	23,7	28,7
Building Industry	6,7	4,6
Services	62,1	3,0

Source: HCSO



The analysis of the internal structure of the sectors has revealed that the share of the chemical industry and mining within the industry decreased dramatically in the 1990s, while the manufacturing of non-metal mineral products and the other processing industries suffered only a minor setback. A positive

change was observed in the machine industry. The only nuclear power plant of the country (in Paks) produces 40% of the electricity generated in Hungary. It improves the economic indices of Tolna county to a great extent, but is not an integral part of the region's economy, its impact being restricted to the surroundings of the town. The biggest problem related to industrial development is the lack of a competitive product structure and the undercapitalization of industrial enterprises. The ratio of value added within the industry and within the building industry in particular does not differ significantly from the national average (33.2%), but the ratio of services is well below the national average (58.2%).

Conditions in South Transdanubia are particularly suited for a great variety of tourist activities. Tourism, which is extremely concentrated within the region, and health tourism play a more important part in the life of the region than on the average in other parts of the country. Somogy county has the longest average stay (5 nights) undoubtedly because of holidays taken at Lake Balaton, while the other two counties remain below the national average.

The role of *agriculture and the related food industry is important*, and in some smaller settlements these activities may mean the only way to make a living. The share of agriculture within the total value added has decreased but still exceeds the national average considerably (8.6%). In spite of a dramatic fall in the number of people employed in agriculture after the change of regime, the present ratio of agricultural employees to the total number of employees is nearly twice as much as the national average (9.2%). Vineyards are important elements of the region's agriculture, and the grapes as well as the wines made from them are sold not only locally, but are significant export items as well. 15% of Hungarian wines come from the region, and the share of high quality wines is outstanding. South Transdanubia has more forests than the other regions of the country. These forests abound in game, also high up on the list of export products.

The demographic position of the region cannot be described as favourable either, with a worsening rate of live births and an ageing population. At the level of primary schools statistics are similar to those of the national average, but as far as higher levels of education are concerned, the region is below the national average, and the rate of migration from the region is found to increase with the level of education.

Percentage of people in secondary and higher education in the region

Region	People in secondary education (%)		People in higher education (%)	
	1996	2001	1996	2001
Central Hungary	3,85	4,53	1,43	2,95
Central Transdanubia	3,30	3,94	1,21	1,20
West Hungary	3,66	4,27	1,36	1,51
South Transdanubia	3,27	3,69	1,20	1,53
North Hungary	3,57	3,96	1,36	1,06
North Great Plain	3,37	3,97	1,31	1,44
South Great Plain	3,43	4,07	1,31	1,56
All Hungary	3,55	4,14	1,33	1,82

Source: HCSO, 2001

The proportion of people with university/college degree in the South Transdanubian region

Region	People with completed higher education	
	% of people between 25-X years	% of the national value
Baranya	11,0	87,3
Somogy	9,3	73,8
Tolna	9,0	71,4
South-Transdanubia	9,9	78,6
All Hungary	12,6	100

Source: HCSO, census 2001

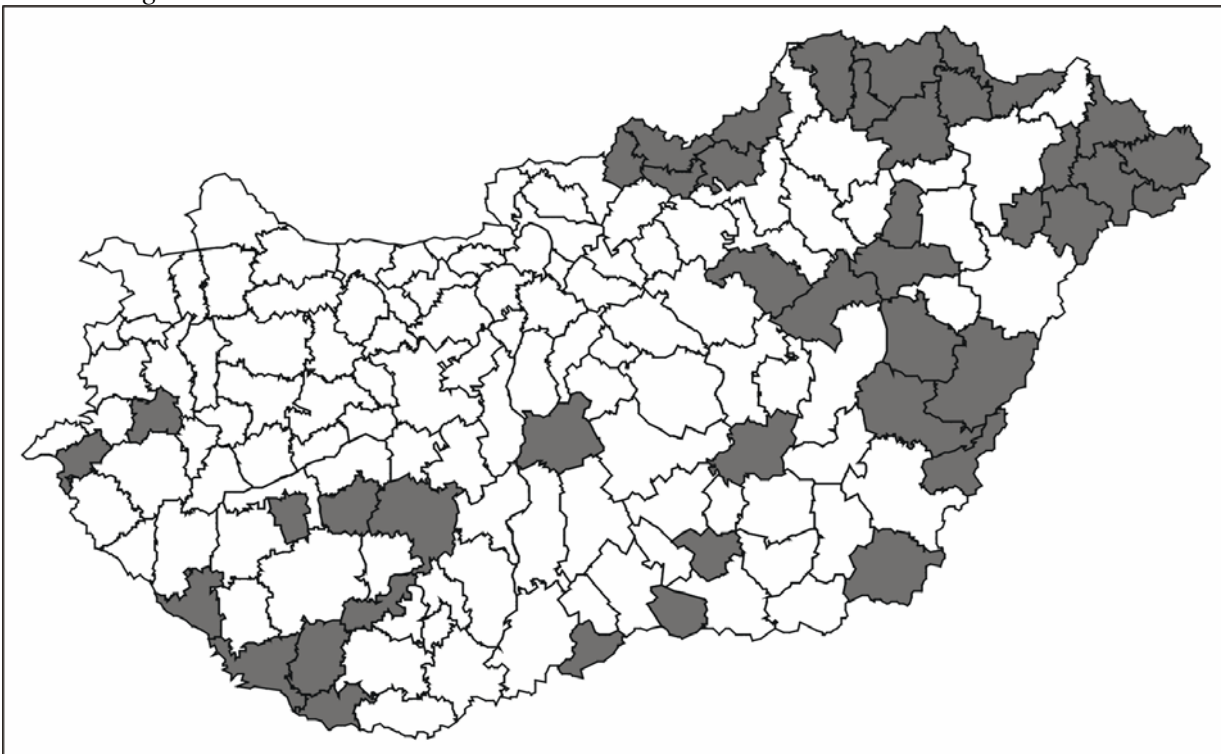
Employment level in the region is lower than the national average, and the rate of unemployment exceeds the national average. In the period 1992-1998 the number of the employed showed a dramatic fall (by approximately 30%), but the worst decrease was registered in mining (92.8!). After the transformation of the employment structure the public sector became the biggest employer, followed by the processing industry that is still in the process of redeployment. There are, however, considerable inequalities within the region: in the central areas unemployment is well below the national average, but there are depressed areas (mainly along the border) where the level of unemployment is twice as much as the national average. The unemployment rate is significantly lower for women (2.5%) but – in line with the national trends – the level of their employment is well behind that of men and their salaries/wagers are slow to approach the salaries/wages paid to men. The proportion of the Gipsy minority is higher within the region than the national average and – like in other parts of the country – Gypsies are at a disadvantage as far as employment is concerned. The number of the Gipsy population is particularly high in the tiny villages, where great poverty and isolation from the central areas makes it even more difficult for them to catch up with the majority.

MAIN INDICES OF THE LABOUR MARKET

Region	Rate of employment (%)		Rate of unemployment (%)		Rate of activity (%)	
	1994	2003	1994	2003	1997	2003
Central Hungary	57.8	55,1	7,5	4,0	54,3	57,5
Central Transdanubia	55.3	55,3	12,9	4,6	52,4	58,0
West Hungary	59.8	55,1	9,7	4,6	56,4	57,7
South-Transdanubia	52.7	47,2	13,3	7,9	49,1	51,3
North Hungary	47.8	45,0	19,7	9,7	47,0	49,8
North Great Plain	48.2	45,9	18,7	6,8	46,0	49,3
South Great plain	52.8	47,0	14,9	6,5	51,1	50,3
All Hungary:	53.9	50,6	12,8	5,9	51,2	53,8

Source: HCSO

The 42 micro regions in Hungary designated by a government decree as being at the worst disadvantage in 2003



Inequalities within the region are well indicated by the strongly polarized settlement network, characterized, on the one hand, by the lack of medium-sized towns (mainly in Baranya county) and, on the other hand, the extremely high number of small and tiny villages. 8 out of the 42 micro regions at the worst disadvantage are found in the region (there are altogether 10 of them in Transdanubia). More than half of the micro regions in South Transdanubia can be described as ‘backward’ or ‘in stagnation’.

Some of them are located along the Croatian border, the external periphery of the region, while others are found in the ‘stagnating’ areas of the inner periphery along the county borderlines. In these micro regions the level of unemployment, the loss of population through migration and the proportion of the

elderly people all exceed the national average considerably. Each of these micro regions is in depression with a lot of tiny villages –many of them cul-de-sac type - and poor road network. The quality of the **environment in the settlements** of the region has deteriorated in spite of the scattered developments in recent years, mainly due to the shortage or lack of funds available at the local level. The former sites of mining and heavy industry still bear the marks left behind by these activities. They have been abandoned and given over to destruction. These brown belts are otherwise valuable pieces of land, but the high costs of rehabilitation deter the potential investors who tend to prefer green-field investments in the vicinity of the settlements, thereby strengthening the harmful processes of sub- and de-urbanization.

The **state of the region's environment** is rather varied depending on the individual environmental components. Although there has been a decrease in air pollution and industrial water pollution since the change of regime due to a fall in industrial production and the fact that large-scale agricultural production does not pollute the waters and the soil with fertilizers and pesticides to the same extent as before, we still have to cope with the environmental harms caused by the abandoned mines, and the toxic waste produced by former manufacturing activities. As far as air pollution is concerned, the emission of sulphur dioxides and nitrogen oxides by the industries has decreased, but due to increased traffic, there is now more nitrogen-oxide in the air. The worst emitters include the coal-burning power plant of Pécs (in 2004 it will gradually switch over to natural gas and biomass, which is expected to significantly reduce the emission of toxic materials), the cement factory of Beremend, open mining and traffic. Air pollution is worst in the larger towns and along the coast of Lake Balaton.

The region's **infrastructure** also bears the marks of its settlement structure dominated by small villages. The features of this settlement structure have had a deep impact not only on the development of the infrastructure, but on the demographic situation, income relations and the whole socio-economic situation as well. It is reasonable to suppose that this is one of the key factors that can explain the backwardness of South Transdanubia. Canalization and the sewage system are far less complete than the supply of drinking water. In several micro regions only the centres or the towns have any sewage system. Although the length of gas pipes was trebled between 1991 and 1999 the proportion of households supplied with gas in South Transdanubia is the lowest in the country.

The region's situation is peripheral both within Hungary and internationally since it is not organically linked to the national or international traffic networks. The nearly complete lack of motorways further deteriorates this peripheral situation as regards **communications**. The density of the road network in the region is somewhat below the national average. Most of the main roads traversing the region lead through densely populated areas and the lack of side roads further increases traffic load on the main roads. A high number of villages have no roads running through them: about one third (200 villages) have connection only in one direction. The backwardness of the railway infrastructure is well illustrated by the fact that connections among the county seats are very poor or non-existent and there is no direct railway line to the west, in the direction of Austria. Due to the poor quality of the direct connection with the South Great Plain, people mostly travel in this direction via Budapest making a considerable detour. Trains running in the direction of the other neighbouring regions are scarce and slow. The River Danube is the most important waterway in Europe, but its Hungarian section is very poorly utilized. The technological facilities of the ports do not come up to the requirements and their railway/road connections are obsolete.

In summary we can say that in the mid 1990s the South Transdanubian region was still at a medium level of development mainly because of the temporary survival of its former development. In the second half of the decade, however, when the national economy got into a period of accelerated growth in a different environment, the region was not able to adjust itself to the new requirements and gradually fell behind the more dynamic regions. This is attributed to the problems related to the

structure of the economy: the inherited low level of industrialization could not serve as a proper basis for the expansion of the (export-oriented) processing industries, and this – together with the region's unfavourable geographical location and relatively poor accessibility – meant little attraction for external or foreign investors. Certain circumstances could temporarily hide these weaknesses, but in the new period of economic growth after the turn of the millennium they became obvious and recognized as a trend.

The recovery of the region requires the elimination of these weaknesses and the implementation of an **innovation-oriented re-industrialization** in line with the economic and market trends of the day. The conditions are either ready or can be created within a short time.

According to the present trends the economic modernization of South Transdanubia should be governed by the following principles:

- economic growth and development *relies primarily on the (self)development of enterprises induced by business and market conditions*, therefore
- interventions of regional development should be based on a *growth and export-oriented strategy building on innovations and the exploitation of internal potentials for value creation*;
- the structure of the economy is typical of the *knowledge-based economy with the technologically advanced processing industry and the financial-business services* playing a dominant role in it;
- *networks, systems and institutions* constitute the organizational background to development – even in the field of innovation.

The whole system of development is shaped by the requirements of globalisation and regionalization. Consequently, the regional strategy of economic development should focus on the following aspects of modernization:

- creation and development of economic, sectorial clusters;
- *establishment and development* of economic, institutional (e.g. industrial parks, logistic centres, industrial zones, competence centres, etc) and *innovation networks*;
- development of R&D organizations, development of innovation;
- dissemination and development of activities that can strengthen competitiveness (e.g. quality management, design, etc.), as well as the development of economic sectors and activities;
- development of the economic-business services, regional development and funding of innovations.

Taking both the above recommendations and the local conditions/potentials into consideration (the significant potential represented by the business organizations even if most of them are rather small, a metropolitan centre with highly developed cultural and intellectual potential, labour more highly qualified than the average, etc.) we can identify more than one direction for the development of the South Transdanubian region: the cultural, health and environment-technological industries, as well as the traditional 'driving forces' of the region's economy (the textile, food and machine industries) can trigger a new industrialization through the development of the organizations established around them, which could mean, at the same time, the modernization of the region's economic structure and catching up with the new market relations and trends.

In order to catch up with the more developed regions, to increase the value added content of the products manufactured here and improve its competitiveness, the region should give priority to the support of R&D activities, the application of research findings in practice as well as the strengthening of co-operation between economy and research.

3. INNOVATION CAPACITIES AND POTENTIALS IN SOUTH TRANSDANUBIA

With one of the country's traditional and important centres of higher education and scientific research, the region is in a favourable situation as far as the abilities, qualifications, culture and quality of its labour force is concerned, although the level and structure R&D activities, or the structure of higher education do not promote innovation in all respects (Gál, 2002).

On the basis of its *regional development programme* South Transdanubia has set the objective of building an efficient *innovation support system* in order to foster the development of an industrial structure employing the well-qualified labour, to improve the competitiveness of SMEs in the region as well as to facilitate the region's catching up with the more highly developed European regions. *At the level of the development programme* the whole chapter on economic development is permeated by the expressed *intention of fostering the creation and adoption of innovations* relying on a better *co-operation between higher education/ university, the research institutions and the business sector*. The structural transformation of the economy, the redeployment of the industries and the emergence of a competitive structure are pre-requisites to the strengthening of the innovation potential, the technical and technological renewal of South Transdanubia as well as the creation of the proper services for the innovation of products and manufacturing.

3.1. Innovation inherited

Various factors have influenced the development of the region depending on the specific conditions prevailing in the different historic periods. Conditions in the second half of the 19th century (the extent of capital accumulation, isolation due to poor transport facilities, the underdevelopment of the dominant industries and the lack of large factories) were as unfavourable for modernization as at the end of the 20th century. Of the industrial firms operating in the region at the time outstanding performance could be achieved only by those that became recognized for their special inventions and technological innovations both at the domestic and foreign markets. In Pécs the *Zsolnay ceramics factory* (established in 1868), the *Hamerli glove factory* (established in 1861), the *Littke champaign factory* (founded in 1859), the *Angster organ factory* (founded in 1867) and the *Höffler tannery* (founded in 1889) owe their survival and market success primarily to their excellent inventions i.e. their continuous effort for innovations. After World War II the economic development of South-Transdanubia was dominated by industrialization and not commerce. Following the typical peripheral model of reindustrialisation, the decisions leading to the restructuring of the region were made externally (centrally), and their implementation was financed from external sources. In the wake of the decentralization of the capital's industry some vertically structured and innovative large enterprises introduced modern technologies in some larger towns of the region but they were often specialised to the manufacturing of product parts with the strategic decision-making on product development and sales strategy remaining in the capital. It did not happen very frequently that the plants of a large company 'decentralized' into various counties established some business relation with one another. The internal economic cohesion of South Transdanubia was very weak (Horváth 1999).

This former course of development had such a deep impact that even after the change of regime political and local governmental decision-makers continued to seek solutions to the problems in the conventional mobilization of external resources (reducing systemic change to privatisation and the establishment of joint ventures). In the early 1990s conditions were most unfavourable for innovation in all the three counties of the region. South-Transdanubia was then in a semi-peripheral state regarding any component of the innovation potential. Its economic development was geared to socialist industrialization, mainly the development of heavy industry. The pillars of the economy were the subsidiaries of the Budapest-based large companies characterized by a hierarchic organization,

focussing on manufacturing processes requiring little expertise and the mass production of goods in the last stage of their life cycles. The large enterprises did not get truly integrated into the local economy and co-operation between the various local units was extremely poor. Even though such subsidiaries of large Budapest companies played an important part in the region's economy, they became the first victims of economic recession that followed the change of regime, many of them getting wound up, or laying off a considerable number of employees. The conditions in which the change of regime took place were most unfavourable in all the three counties. Whichever element of the innovation potential we take, the semi-peripheral state was typical not only of South Transdanubia, but of the Great Plain and North Hungary as well. Budapest continues to dominate the economy (so does North Transdanubia, producing about the double of the specific indices of the other large regions).

Hungarian regional policy should prioritise the decentralization of R&D activities and make every effort to convince the developers of fiscal, monetary, industrial and trade policies to bear in mind that although it is conceivable to manage crisis in these regions without a large – scale development of capacities for technological research, a real take-off is not possible without it.

In the years of economic transformation the innovation capacities of South Transdanubian counties were characterized by the following structural and quality features:

- lack of technological expertise and conscious efforts to get information about new technologies;
- low technological level of the products manufactured here, small number of high quality, well-designed products;
- market orientation of SMEs: they produce nearly exclusively for the domestic and East European markets;
- poor ability for co-operation in the enterprises: none of the large or medium-sized companies managed to create a strong supply network. Although the early 1990s brought a significant increase in industrial exports – mainly due to the presence of joint ventures - the rate of exports remained the lowest of all Hungarian regions
- insufficient information about the market: most of the enterprises failed to do any intensive marketing activity.

Main data of R&D organizations, 2002

Area	R&D organizations pc	R&D employees no	R&D employees ^a no	Researchers no	Expenditure ^{b)} mHUF	R&D		Share of the national or regional expenditure
						Employees: % of employees	Expenditure at% of the GDP	
Hungary	2 426	48 727	23 703	15 192	164 048	0,61	0,98	-
Within this:								
Baranya county	143	2483	793	488	4961	0,55	1,11	80,6
Somogy county	36	611	247	93	1029	0,21	0,31	14,1
Tolna county	12	44	25	26	77	0,028	0,03	0,3
Total South-Transdanubia	191	3138	1065	597	6 067	0,31	0,51	3,7

a) Number converted to full-time employment

b) Including costs of related activities (manufacturing, services) and other tasks

Source: HCSO, 2002

3.2. The innovation capacities of South Transdanubia in a national and regional comparison

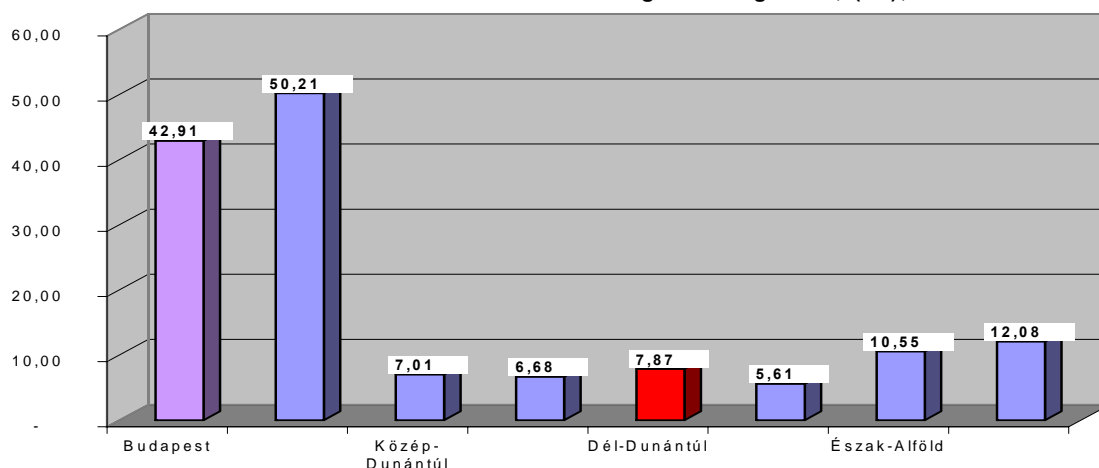
If innovation in technology and organization is considered an indispensable condition for strengthening the international competitiveness of South Transdanubia, it should be treated as a strategic item and development programmes should be elaborated for its various applications. The traditional interpretation of innovation is sufficient for the exploration of the technical - technological capacities but the elaboration of the strategy requires a considerably modified model, suitable for managing the relations between the individual components. The process of technology exchange means not only the qualitative transformation and quantitative development of the innovative elements, but also *the development of the mechanisms that foster the interaction of the various elements*. Regions that earlier had well developed technological systems were not able to multiply their innovation capacities because - instead of the linear development of innovations - their strategies focused on achieving complexity and connecting the individual innovative sub-systems. Onlookers often have the impression that South Transdanubia abounds in research capacities, but this superficial impression is not borne out by statistics. The picture we get about the level of R&D in South Transdanubia is rather disappointing not only in comparison with the EU averages, or the Central-Eastern European regions, but with the other Hungarian regions as well.

Until the mid 1990s the region had the poorest R&D capacities in Hungary (in 1995 only 3,5% of all R&D employees worked in South Transdanubia, and not more than 1,5% of all expenditure was realized here.) This setback in R&D activities can be put down to the disintegration of the large enterprises that had played a decisive role in this field, the deterioration in the financial situation of the enterprises and the university or research institutes engaged in R&D, as well as the inflexibility of the domestic R&D institutions towards the new requirements from R&D.

After the change of regime R&D activities decreased considerably in Hungary. This is well illustrated by the proportion of R&D expenditure to the GDP: in 1990 this figure was 1.6%, but by 1999 it fell to 0.6%. The same setback can be observed in the number of R&D employees as well. Their number was 59 723 in 1990 but only 45 325 in 1999 (HCSO), showing a slow increase at the turning of the millennium. The dominance of the public sector has remained or even strengthened in spite of the setback, representing at present 60% as opposed to the EU member states, where the same ratio is about 35% (*Innovation Scoreboard, 2000*).

The impact of the *favourable R&D processes initiated in the late 1990s* and driven mainly by the significant increase in R&D budgets both by the government and the enterprises (primarily multinational ones) was first experienced around the turning of the millennium. Funds available for R&D activities continued to be concentrated in the capital with about two thirds of all R&D expenditure realized in Budapest.

The distribution of R&D units among the regions, (%), 2002

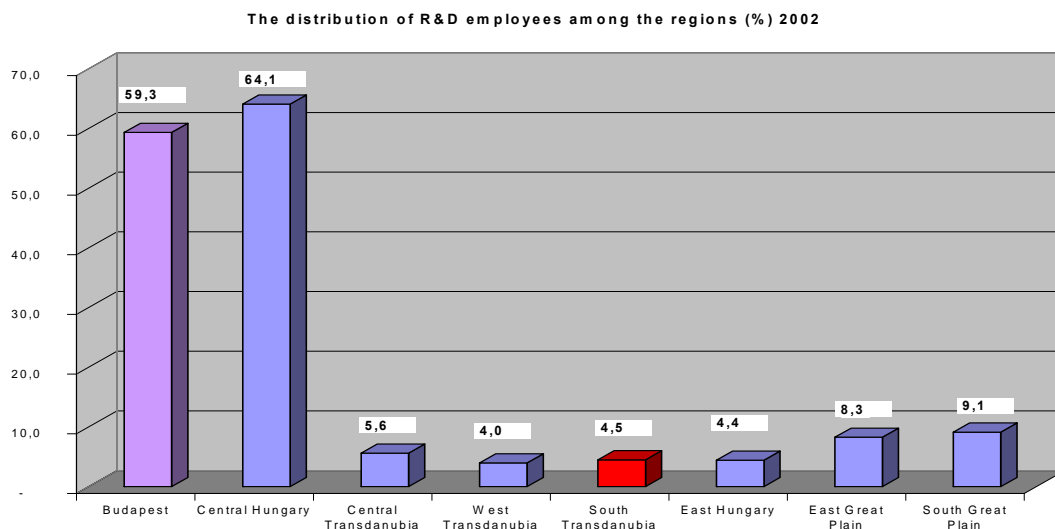


In the 1990s the innovation potential of the South Transdanubian region was extremely poor: in the late 1990s the proportion of R&D expenditure to the GDP did not come up to 0.2%, and the value of R&D input represented a mere 2.9% of all Hungarian input in this field. In 1997, 9 % of all R&D organizations were found in South Transdanubia employing less than 6% of R&D employees.

Improvement of this unfavourable situation was experienced only in respect of some indices by the turn of the millennium (2002), while most of the indices showed a relative deterioration considering that the other regions were faster to catch up. As far as the R&D units related to the university are concerned, the position of South Transdanubia remained unchanged because of the increase achieved by the regions engaged in more intensive industrialization; their 7.87% share puts Pécs right behind the counties in the Great Plain where similar large university centres are found. At the same time, the number of R&D organizations in the other two regions of Transdanubia approached the number of those in South Transdanubia – thanks to a rapid growth in the number of research units established mainly by the enterprises. In this way the relatively favourable position of South Transdanubia due to its traditional role as university centre seems to be eroding. Since the change of regime there has been no significant development in the R&D institutions either by the public or the private sectors. Inequalities in the institutional capacities within the region are well illustrated by the fact that three quarters of the existing research units are concentrated in Baranya county and primarily in Pécs (*HCSO, Regional Statistical Yearbook, 2002*).

The region employed a rather small share of all the people working in R&D, not more than 6.6% (*HCSO Regional Statistical Yearbook, 2002*). The data converted to full-time employment give a more accurate picture: they show that the share of R&D employees in 2002 was 4.5% - consequently Pécs fell back to the 5th place and this is again mainly due to an increase in the data of the two other regions in Transdanubia. South Transdanubia has been overtaken by Central Transdanubia and the regions of West Transdanubia and North Hungary are also rapidly catching up. Baranya county, with nearly 80% of all R&D employees and more than 80% of researchers in the region shares the fourth place among the counties with Győr-Sopron county. Regarding the share of R&D employees within the total number of employees (0.31%) the region enjoys a medium position with its 4th place, but regarding the number of R&D employees per 1,000 inhabitants only two regions are in a worse position.

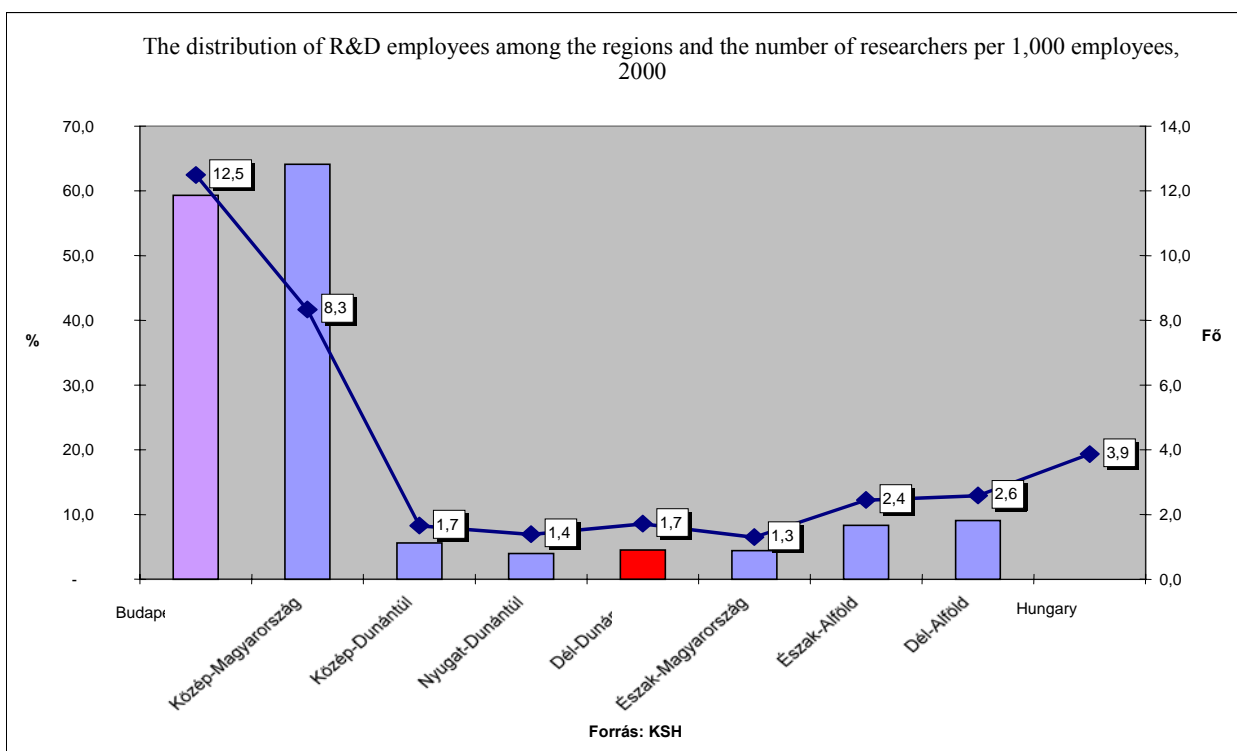
The economic recovery of the South Transdanubian region depends on its success in modernizing its obsolete economic structure and giving priority to high technology in manufacturing. This process can only take place against a background of innovations both in products and manufacturing which, in turn, requires a significant increase in R&D input.



The under-performance or competitive disadvantage of South Transdanubia is most obvious in the case of R&D expenditure. The region's share of the national R&D budget is 3.7% (2002), - only half of the share of Central Transdanubia -, which puts it in the 5th place among the regions. Baranya, absorbing 83% of all R&D expenditure within the region, is in the 6th place among the counties. Somogy absorbed 17% of the region's R&D budget, which put it in the 12th Place. The values produced by Tolna are practically negligible with respect to all R&D indices. This situation is due to the lack of university research activities, a cut back of the former agricultural research centres and the high number of plants with the parent company registered outside the county.

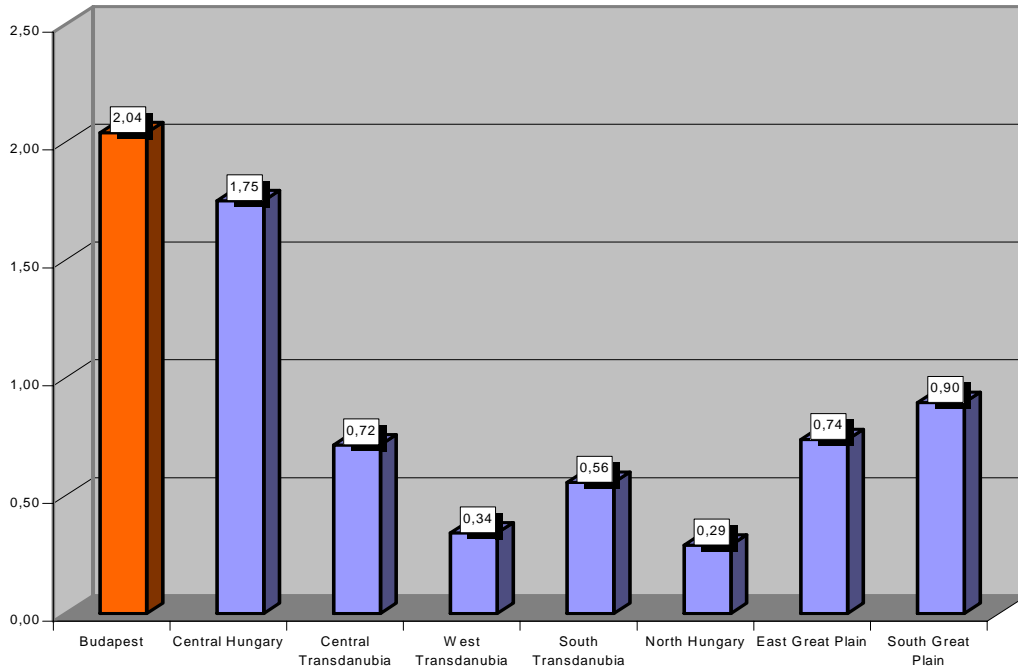
R&D expenditure in percentage of the region's GDP was as low as 0.56%, which puts the region in the 5th place in spite of the increase experienced in recent years (*this increase does not mean a real breakthrough because the value of GDP is also lower in South Transdanubia*). The poor achievement of Somogy and Tolna counties is responsible for this situation, because Baranya has achieved a tie with Veszprém in the third place, with a 1.1% GERD/GDP ratio. As to the R&D expenditure of the business sector, the region was the last of all regions with 0.2% in 1994.

Since 2000, when the government increased research funding, the universities of the region have greatly contributed to the improvement of the basic indices of innovation by obtaining a significant part of the R&D grants (NRD programmes, EU Framework 5 programme) The central R&D funds granted to the region in

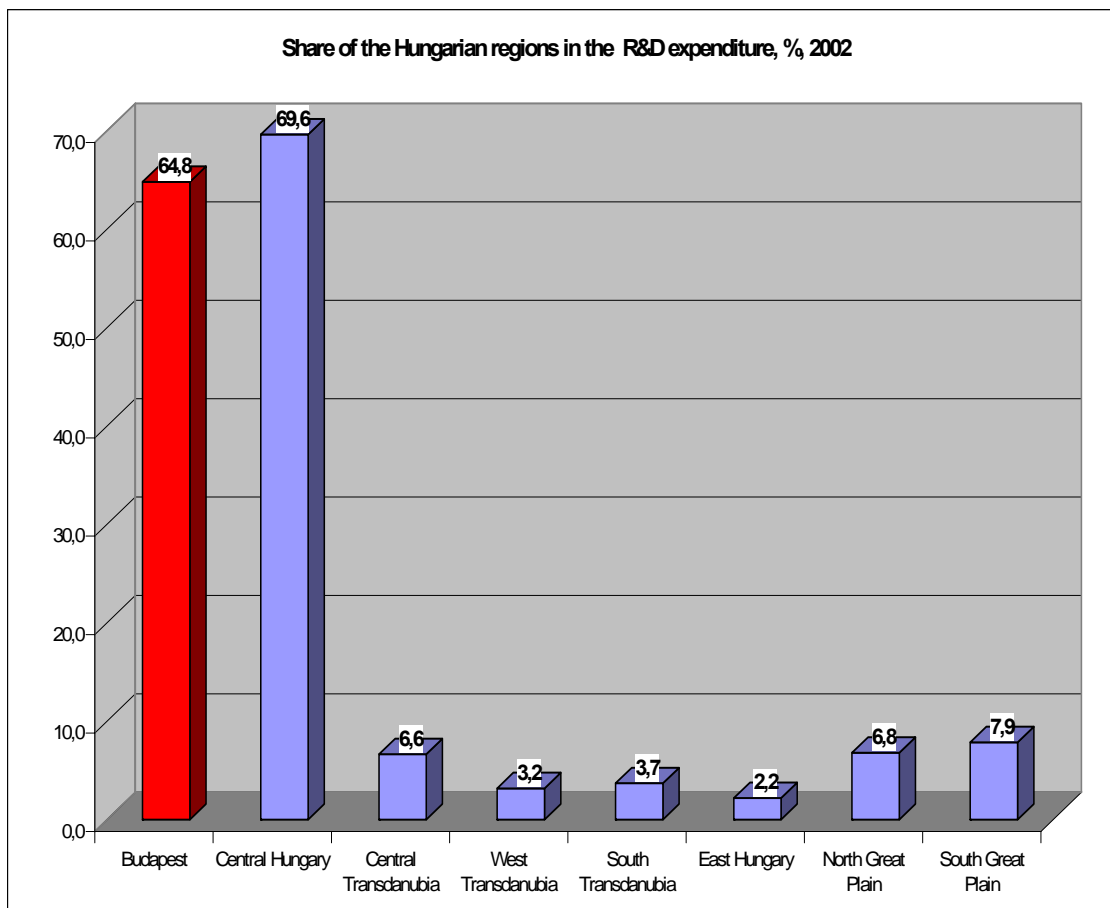


the past few years have increased the R&D input/GDP ratio to 0.5%, and in this respect South Transdanubia managed to overtake the regions with the poorest R&D capacities. As far as the actual amounts are concerned, however, great discrepancies are observed, e.g. the University of Pécs and the Regional Research Centre of the HAS were jointly granted 1 billion HUF in contrast with the 8-12 billion HUF allocated to the Universities and research institutes of Debrecen and Szeged respectively. The conclusion we can draw from this situation is it that it is not only the innovation potential of the business sector that needs strengthening, but the grant absorption capacity of the research institutes is also well behind that of the competitors in East Hungary (the latter is also attributed to the lack of the innovation-oriented disciplines, and the absence of high level programmes in the technical/technological segment of higher education).

R&D expenditure as a percentage of the regional GDP in the Hungarian regions, %, 2002



Share of the Hungarian regions in the R&D expenditure, %, 2002



Regarding the ratio of full time students at the institutes of higher education to the population of the individual regions, South Transdanubia is third with 1.6% after Central Hungary (3.1%) and the South Great Plain (1.7%) (Regional Statistical Yearbook, HCSO, 2002). Besides the two university towns of the region (Pécs and Kaposvár), Szekszárd and Paks also have institutes of higher education. Pécs is the largest centre of higher education not only within the region, but in all Transdanubia and has an impact all over the area.

Higher education plays a determinant role in the internal development of the region not only because of its important position within the R&D sector, but also as a training centre for highly qualified people capable of managing, producing and marketing technologically up-to-date and competitive services or products. The R&D capacities of South Transdanubia cannot compete with those of the South Great Plain or the North Great Plain, where the R&D capacities of the Universities of Debrecen and Szeged considerably exceed those of the Universities of Pécs and Kaposvár, especially in natural sciences and technology.³ The disciplines that future experts choose to study at the universities forecast to a certain extent the kind of human resources that innovation can rely on in the future. Table 4 shows the regional distribution of university students in disciplines that are particularly important for innovation: technical/technological studies, medicine (medical universities usually have significant R&D activities) and economics/business.

³ *Universities*

Higher education plays a determinant role in the internal development of the region not only because of its important position within the R&D sector, but also as a training centre for highly qualified people capable of managing, producing and marketing technologically up-to-date and competitive services or products.

The region's institutions of higher education have become parts of the university centres of Pécs or Kaposvár as a result of the integration process that took place recently in Hungarian higher education. The Faculty of Nuclear Energy of the Budapest University of Technology and Economics operating within the Energetic Training Institute of Paks and the consulting centres of the Gábor Dénes College of Information Technology (Budapest) in Siófok, Balatonboglár and Kaposvár also strengthen the higher education potential of the region.

The number of students in technological training, as well as the proportion of research units in technological and natural sciences is below the national average, therefore the development of this segment is crucial for the future of innovation and should be included among the strategic goals, because the present situation is unfavourable for the development potentials of the region in the processing industries, microelectronics and information technology. The University centre of Pécs, has great potentials in biotechnology, while Kaposvár is an excellent place for innovative research in agriculture.

Research Institutes

The region has some smaller centres for research in agriculture (Institute of Viticulture and Viniculture of the Ministry of Agriculture, Pécs; Institute of Fodder Production, Iregszemcse) but there are practically no institutes for research in natural sciences or technology. In this way the knowledge base of the region is determined one-sidedly by the universities which do not have a long history in these fields. It is therefore imperative for the strengthening of the innovation potential to include the establishment of a new research base for applied sciences among the priorities

The Regional Research Centre, founded by the Hungarian Academy of Sciences in 1983 as a part of a network with Pécs as its centre, is a research base for social sciences. As an academic institute engaged in complex social scientific research it has become a base for Hungarian regional research as well (not only creating, but also teaching it), operating in a form which is compatible with the European scientific system and successful in international co-operation. The research topics of the Institute include the *spatial system of innovation, its institutional-organizational relations and the development of the regional innovation strategy.*

Region	Universities	Technical Universities	Medical Universities	Business Schools
South Transdanubia	11,0	6,3	5,8	6,3
Central Transdanubia	8,0	14,3	5,6	7,7
West Transdanubia	7,8	9,1	6,5	8,8
Central Hungary	29,1	31,5	22,8	45,8
North Hungary	12,6	17,1	8,5	9,8
North Great Plain	14,5	10,1	12,2	11,3
South Great Plain	13,3	7,5	10,4	8,4
Foreigners	3,7	4,1	28,2	1,9

Source: HCSO, 1999.

The unfavourable composition of university students in the region as regards innovation is illustrated by the facts that the number of students from South Transdanubia is well below the regions' average, and the proportion of students at technical universities is by far the smallest of the 7 regions.

The university sector is the largest potential creator of knowledge and value in South Transdanubia, but its relations with the business sector are weak in many respects. It is important to identify potential links between the two sectors and also to create the institutional conditions for the relations. A successful co-operation between the business and university sectors can guarantee the development of an environment capable of appreciating innovation.

Supporting R&D activities and the application of scientific findings in practice, strengthening the co-operation between research and business are of crucial importance if we are to assist the region's catching up, to increase value added content of the manufactured goods and improve competitiveness of the region.

3.3. Innovation potentials of enterprises in South Transdanubia

After the change of regime the number of business organizations increased abruptly in Hungary. Although the number of active enterprises in South Transdanubia is somewhat below the national average, it is well above the EU average. If we look at the share of business associations and one-man businesses separately we find that this lag is caused by the relatively small number of business associations while the number of one-man businesses per 1000 inhabitants is higher than the national average.

The analysis of the number of employees shows that the distribution of the companies by size does not significantly differ from the national average: companies with 10 employees are constitute the majority (50%), and the number of companies employing more than 300 persons is extremely low (0.3%) (HCSO, 2002).

Most of the business associations operate in the form of either limited partnerships or limited liabilities companies. At the national this is the other way round. The majority of the business associations – similarly to the national trend – operate in the real estate, business services or commerce sectors. The role of SMEs should be stronger in the processing industry, but the extensive supplier relationships that could serve as a basis for it have failed to develop.

About one third of the SMEs have the expertise and experience required, but nearly 70% have failed to acquire all the professional or business skills they need. On the whole we have found the lack or low level of business skills to be quite general. The number of ‘quasi-or mock-entrepreneurs’ (those who hide their employment behind a business) is rather high; they are people who have no chances at the labour market, live in depressed areas, have little qualification or no capital, etc. – they are driven by the need to survive (and their employers seek to avoid labour charges). Both their business and professional skills are below basic level. Very few entrepreneurs have a business plan. They act on instinct, with little consideration to the macro environment. The shortage of capital forces them to raise credits meant to cover the development costs of the business, but many of them take loans at higher interest rates, or fail to pay their rates and taxes (or social insurance) or simply take loans in order to survive.

Entrepreneurial attitudes are not conform to either the market or the EU. The use of information technology is not general and communication is difficult at all levels. This is one reason why SMEs fail to obtain grants and are unable to assert their interests. Manners, morality and readiness to co-operation also need improvement; Unethical behaviour is experienced quite frequently.

Hungary’s accession to the European Union generates new problems. Because of their contradictory and insufficient adaptation to the economic environment the majority of SMEs either fail or manage to survive only at the cost of a serious sacrifice (e.g. they have no quality management, are not familiar with the EU procedures, regulations and bureaucracy, cannot meet the standards, do not speak foreign languages, work with obsolete infrastructure, have limited business skills, etc.).

The last decade has brought some improvement in certain respects. The data-base of the Pécs-Baranya Chamber of Commerce and Industry now contains more than 400 innovation-oriented enterprises or ones which are engaged in innovation, and many of them, over 200 regularly submit project proposals to the Hungarian Development Fund and other programmes. The technological level of the products has also improved considerably and the changes have increased the knowledge of these enterprises about the market and business life, enhanced their readiness to co-operate, strengthened their relations with the suppliers and induced more and more SMEs to engage in R&D activities, although the share of the business sector in the R&D expenditure of the region is still one of the lowest in the country.

Tables 2 and 3 show the share of South Transdanubia in the business associations and ‘innovative enterprises’, on the basis of a statistical collection of data.

The share of South Transdanubia in the total of Hungarian business associations and innovative enterprises, 1999*

Region	Share in the total of business associations %	Share in the innovative enterprises, %**
South Transdanubia	7,8	5,1
Central Transdanubia	7,8	8,7
West Transdanubia	7,3	7,9
Central Hungary	51,3	54,6
North Hungary	6,9	5,1
North Great Plain	8,9	7,9
South Great Plain	10,0	10,7

* Note: it is not certain that the 'innovative enterprises' chosen from the data-base on the basis of their activities listed there are really the most innovative ones in the region. Enterprises operating in any sector can be innovative, but the University of Pécs, the largest university in the region is not considered to be a strongly innovative institution of higher education. Furthermore, it is not certain either that the data-base contains all the data on the activities of all the enterprises and organizations.

** : Universities and colleges; innovation; research; research institutes; patents; inventions

Source: MATÁV Golden Pages, CD ROM

In four of the seven regions the share of innovative enterprises exceeds the share of all the enterprises and only three (including South Transdanubia, unfortunately) have it the other way round. It is South Transdanubia that has the widest gap between the share of all enterprises and that of innovative ones.

The number and ratio of the (supposedly) innovative organizations in the Hungarian regions

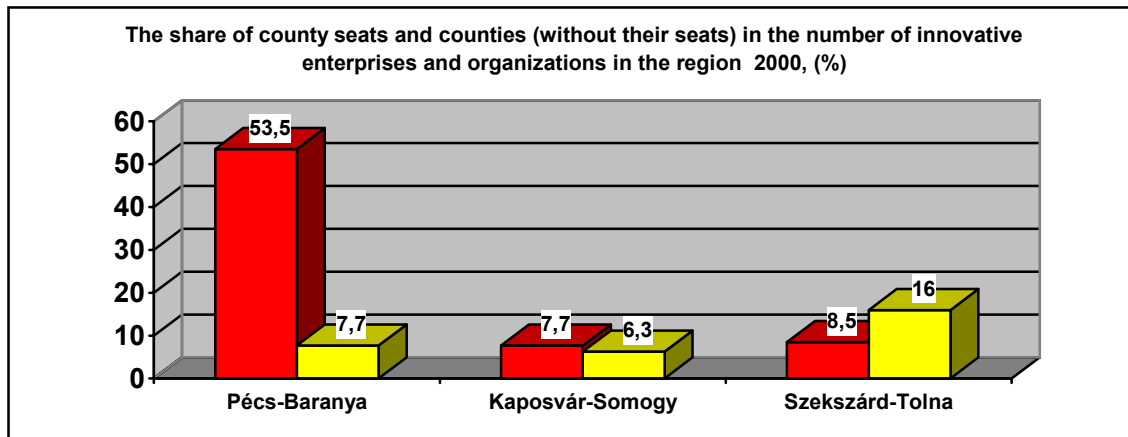
Region	Universities and Colleges *		Innovation		Research Institutes		Patents		Inventions		Total	
	No.	ratio %	No.	ratio %	No.	ratio %	No.	ratio %	No.	ratio %	No.	ratio %
South Transdanubia	8	5,9	1	0,8	9	14,5	–	–	–	–	18	5,1
Central Transdanubia	15	11,0	12	9,0	3	4,8	1	4,6	–	–	31	8,7
West Transdanubia	14	10,3	11	8,2	3	4,8	–	–	–	–	28	7,9
Central Hungary	54	39,8	85	63,9	35	56,5	18	81,7	2	100	194	54,6
North Hungary	7	5,1	7	5,3	3	4,8	1	4,6	–	–	18	5,1
North Great Plain	17	12,5	5	3,8	4	6,5	2	9,1	–	–	28	7,9
South Great Plain	21	15,4	12	9,0	5	8,1	–	–	–	–	38	10,7
Hungary	136	100	133	100	62	100	22	100	2	100	355	100

Source: MATÁV Golden Pages, CD ROM

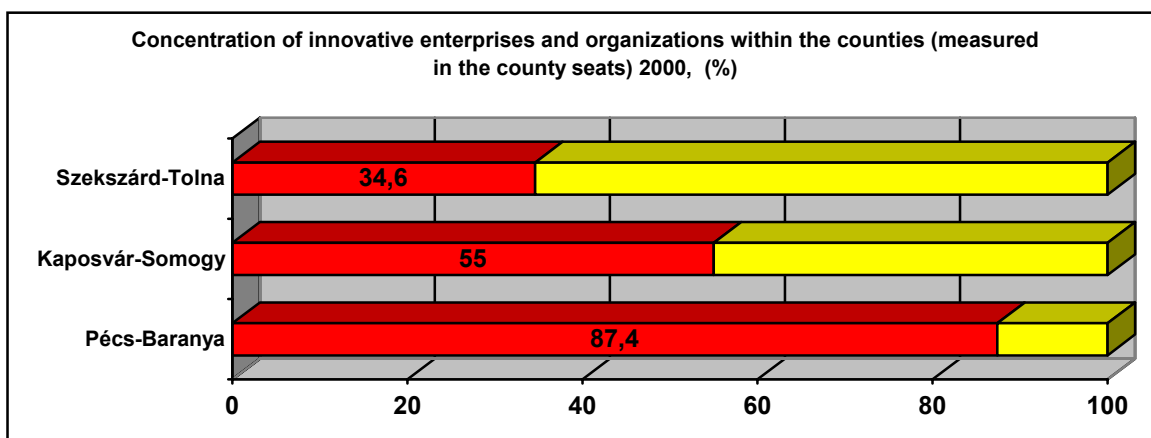
* Source: HCSO Regional Statistical Yearbook, 1999.

According to the data-base, South Transdanubia has not more than 18 enterprises with a strong profile of innovative activities (innovation or research) and this figure makes the region the last of all regions in a tie with North Hungary, lagging far behind the others. If the universities and colleges are excluded from this list, the remaining 10 organizations put South Transdanubia in the last place within the country.

3.4. Enterprises and organizations with innovative profile in South Transdanubia (The 'new-type' sectors of RIS)



In 2000 the Pécs Chamber of Commerce and Industry in co-operation with the RRC compiled the data-base of the innovative enterprises and organizations in the region, selected by statistical criteria, i.e. only enterprises under 7310 TEAOR (Standard Industry Code): research and development in technology and natural sciences, and 7320 TEAOR: research and development in humanities and social sciences were included. The grant winning enterprises of MFA 96'-99' (Technical Development Fund) registered in the data-base of the county chambers as well as enterprises rated by experts as innovative were also added. The data-base also contains the university departments, research institutions and non-profit companies engaged in research and development. Besides the strongly innovation-oriented SMEs, the professional organizations and new institutions of innovation were also examined (innovation centres, industrial parks), together with the firms providing innovation-related services and counselling.

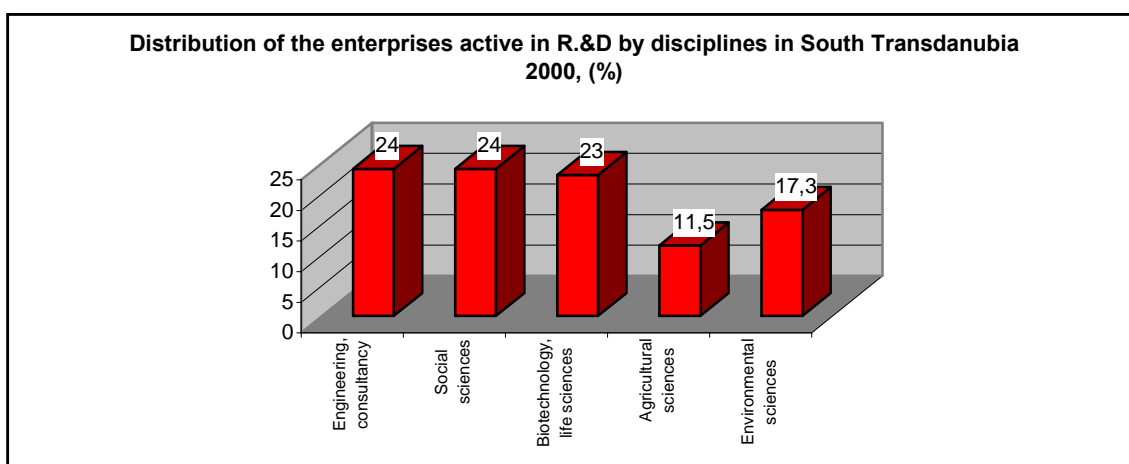


With its 411 items the innovation segment is the largest of the three parts of the data-base. This size is justified by the fact that this segment contains also the *business associations and one-man businesses with innovative activities which represent 79% of innovative organizations*, while the remaining 21% is composed of the non-profit organizations and those financed from the central budget.

The findings of the survey show the strong spatial concentration of innovative enterprises and organizations: *nearly half of them (48%) are concentrated in Baranya county, and most of these (88%) are found in Pécs. Pécs, the potential centre of regional innovation, stands out of the county seats in the region with its 42% share of the innovative enterprises and organizations*, followed by Zalaegerszeg (8.6%), Szekszárd (7%) and quite surprisingly Kaposvár, the other university centre with only 6.4%. This outstanding *role of Pécs as an innovation centre* is clearly indicated by the fact that *53.5% of the enterprises and organizations included in the data-base (i.e. 220 out of 411) are concentrated in the town*. Pécs also has the highest number of public and non-profit organizations which are engaged in innovative activities as well. At the county level the total share of Baranya (including Pécs) is 61.2%, followed by Tolna (24.5% of which Szekszárd has 8.5%) while Somogy is only third with its 14% share (including Kaposvár with 7.7 %). This is a clear proof of the county's disadvantaged situation and a feedback on the forecasts about its conservation.

30% of the enterprises involved in the survey were classified as industrial, while the majority (70%) of the innovative organizations went into the third sector together with the innovation services and the R&D organizations. Within the industrial segment mainly the *machine, food and the energy industries* were represented, i.e. those for which the RIS develops a sector specific package of measures. About half of the organizations in the service sector were found to be R&D enterprises and research units. Within the hard R&D sector organizations working in biotechnology and health sciences had the biggest share (23%). The other disciplines with measurable representations were *environmental (17.3%) and agricultural sciences (11.5%)*.

In the case of the *health, environmental, food industries and agriculture* the former intensive R&D activities were used as a basis for selecting the members of the sectorial work groups and the implementation of the RIS measures will also rely on them. When elaborating the RIS we took into account the research potentials in biotechnology (health care), environment and agriculture, which are considered a strength of the region and which are represented by the research workshops and innovative small enterprises in the region.



In the category of other services *educational and cultural service providers* were found to be present in addition to the relatively high number of specialized *health-care services*. The former can serve as a good basis for the priorities of the cultural industry.

3.5. *The innovation potentials of SMEs in South Transdanubia*

The large size of global companies is an advantage in competition, but the majority of firms belong to the SME category producing nearly half of the GDP and playing a determinant role as employers. Consequently, the highly developed economies have made the development and strengthening of competitiveness based on innovation potential a central element of their national, regional and micro-regional support policies. The connection between the domestic capacities of the Hungarian SMEs and multinational companies is far below the level that would be possible or desirable. 99% of all Hungarian firms are micro-, small- or medium-sized producing predominantly for the local market. The majority of these businesses produces low income or profit, suffers from shortage of capital and has little receptivity to innovation. Within the Hungarian business sector great discrepancies can be observed between innovation capacities and performance of the large companies and SMEs, the latter representing a share of 10-12% in R&D expenditure. At the same time, approximately 80% of all R&D expenditures is realized by foreign multinational companies operating in Hungary.

In the EU countries and Hungary as well, several surveys have been conducted to measure the proportion of innovative companies and the share of innovation-related expenditure to the total of corporate expenditure. A survey made by the Economic Research Co. in 1998 found only 22% of the sample (66 000 enterprises) to be innovative, while in Slovenia the proportion of innovative SMEs was 32%. The export oriented behaviour of innovative businesses requires a continuous strengthening of competitiveness, which leads to a better performance in this group. A close correlation can be observed between efforts to maximize income and to be innovative therefore the performance of these businesses in the field of innovation is primarily defined by their R&D activity.

In South Transdanubia a survey was conducted in 2000 to gather information about the innovative performance of SMEs and to measure the *innovation potentials of SMEs in the region*. The target group of the survey was deliberately selected in such a way as to represent the SMEs operating in the 'traditional' industries of the region and in Hungarian ownership. The main goal of the survey was to point out the great role that *innovative developments and innovative activities can play in strengthening the market position and competitiveness of SMEs in the traditional industries* that are of key importance in the economy of the region and the level of employment.

The conclusions drawn from the analysis of the *answers given to the questionnaire by about 260 companies* can be summarized as follows:

- In the broad sense of the term, about half of the SMEs have recently implemented some kind of innovation in their products or technologies;
- A similar rate of innovative activity can be observed in the SMEs, i.e. *innovation is not limited to larger companies*;
- It was found that *of all the industries* involved in the survey and *playing a dominant role in the economic structure of South Transdanubia* because of their performance and the number of people employed, *mainly the machine, textile, leatherwear and food industries have an above-average propensity for innovation*. Consequently, these industries represent the potential target areas of our regional innovation strategy;
- As regards the core activities of industrial enterprises, *the manufacturing of semi-finished and finished goods* was found to be characterized by the strongest innovative activity;
- *Supplying and contract production* also involve a relatively strong propensity for innovation; i.e. these economic relations are not inconsistent with the conditions of an innovation-oriented course of development;
- The *foreign capital* which is present in the ownership structure of SMEs has a positive effect on innovation related activities;

- A strong correlation can be established between the *external market or export orientation* of the enterprises and their propensity for innovation. Therefore innovative developments can significantly improve the currently rather poor export capacity of the regional economy;
- The enterprises' propensity for innovations is positively influenced by *human factors*. The qualifications and foreign language skills of the employees are very important for the competitiveness of SMEs. The quality-oriented operation of SMEs and their innovative activities are also interrelated;
- *The ratio of R&D expenditure gives a true picture of the region's backwardness*: the weight of R&D activities is far below the similar data of the more developed regions. This finding highlights the need to develop schemes directly supporting R&D activities as well as the related institutions.

The surveys conducted in South Transdanubia point to the conclusion that *the region – both in the public and the private sectors – has the critical mass that can take an active part in the development of innovation*, and that can serve as a basis for the innovation strategy once the points of interest have been identified.

The findings of the surveys also *point out the key target area to be developed*, but a better balanced, network-type spatial structure and improved cohesion in the region should also be important components of the innovation strategy. The surveys provided useful information to be considered when the sectorial targets of the innovation strategy are identified. The key role that certain sectors play as revealed by former studies was confirmed by the surveys as well.

4. THE SECTORIAL GROUNDING OF THE RIS PROGRAMME

After the analysis of the two data-bases the RIS Management Group recommended the following sectors to be involved in the study: *the cultural industry, the health industry, the environmental industry, the food industry and agricultural innovation, the machine industry, metal working, electronics, the textile and the leatherwear industries*.

After due consideration of the region's economic structure and the findings of the former analyses the above sectors were chosen for the following reasons:

- The are of key importance in the region's economy, belong to the *category of the traditional industries* but are not necessarily innovative in the classical meaning of the word (they are the so-called carrier industries, like the food, textile and machine industries) but their innovative renewal promises a successful course of development;
- They have a large growth potential, they *are relatively new, not traditional industries with products meant to improve the population's quality of life*. At present they do not play an important role in the region's economy, but their presence is justified by the international trends as well (e.g. biotechnology, the environmental and cultural industries).

This sectorial approach is justified primarily by the recognition that the business sector is far from being uniform. The reason why it is important to have a sector-specific differentiation of SMEs is that the development of the different types of enterprise requires different kinds of intervention. In this way it becomes possible to adjust the development trends defined in the strategy to the specific needs of the individual sectors/industries, and to launch more focused and efficient development programmes. Sectorial specialization also meets the need that successful regional economies should specialize. Every region spends considerable resources on their efforts to achieve such a high concentration of expertise in certain industries that the others are not able to.

4.1. Traditional sectors:

4.1.1. The food industry and innovation in agriculture

Healthy foodstuffs and the safety of food are becoming increasingly important in Europe setting the main trend in the innovative development of the food industry. Some regions see great market opportunities in the use of healthy, pure raw materials and the emphasis of their 'healthy image'. There are approximately 300 firms in *South Transdanubia* operating in the food industry, 60% of them SMEs. Most of the products supplied by agriculture and forestry are processed within the region since the capacities required are available here. The processing of meat and milk constitute the main branches of the food industry, but the baking industry also has considerable capacity. Brewing, the production of fruit juices and sugar are also significant. Viniculture is outstanding in respect of both the quality and quantity of the wines made here; champagne is manufactured in Pécs and Balatonboglár. The food industry has an important role in employment: after the machine and textile industries this is the third largest industrial employer (with about 15% of all people working in the industry), even though the number of its employees has gradually decreased since 1998. The food industry is also an important element in the economic structure of the region: its share started to decrease in the mid-1990s, but seems to be stabilizing nowadays (the decrease was also due to an increase in the output of the other industries, mainly the machine industry) and in 2001 more than 20% of the region's industrial output came from the food industry.

Agriculture is important in the region partly because of its geographical and climatic conditions and partly because of the centuries' long traditions of agricultural production, especially *viticulture* and *wine-making*. Wines made here are sold not only at the domestic market, abroad as well. Five of the 22 Hungarian wine districts are found in the region. In South Transdanubia the area of vineyards has dramatically decreased in recent years, by about 26%, representing 13% of all domestic vineyards, and the region's share in the production of grapes and wines is proportionate with it: 13-15% on the average.

4.1.2. The textile and leatherwear industries

The textile, clothing and leatherwear industries play a very important role in employment even in the European Union. The majority of enterprises in this sector are SMEs and therefore special attention is paid to the maintenance of their competitiveness. Let us examine now some of the trends that may have a deep impact on these industries⁴: Similarly to Hungary, the industry of the EU is also exposed to competition on the part of countries with low wage levels. In spite of the great differences in labour costs between countries in the Far East and Europe, the EU is still capable of keeping its competitiveness thanks to its higher productivity and a competitive edge resulting from innovation, quality, creativity or fashion.

Statistical data show that the textile and leather industries are of a particular importance for employment in South Transdanubia since nearly one quarter of all employees work in them. This ratio is the second highest in comparison with the other regions in Hungary. At the same time, the economic recession experienced in 2001 and the shrinking of the export markets had an unfavourable effect on the region's textile and leather industries, because they are strongly export-oriented, therefore rather sensitive to changes in foreign markets (in 2001 the share of exports was 74.5% of the total output in the textile, clothing and leatherwear industries in South Transdanubia. Source: HCSO).

⁴ European Commission, Enterprise DG, Textile and Clothing sector
(<http://europa.eu.int/comm/enterprise/textile/index.htm>)

The industries were badly shaken by the close-down or transformation of several factories (Salamander in Bonyhád, Roy and Levy in Nágocs, Italystraps in Csurgó, the Leatherwear Factory in Simontornya) leaving a lot of people without jobs. Experts forecast the total elimination of contract production from the Hungarian light industry within 10-15 years! The innovative transformation of the forms of employment and the extensive use of industrial design following the fashion trends can help the industries prepare for this new situation.

4.1.3. *The machine industry, metal working, electronics*

The members of the European Union have built huge capacities in the machine industry – as a result of continuous and expensive R&D activities. They are extremely successful in keeping their positions at international markets holding their own against the main competitors in the USA and Japan in most fields of the industry. In 2000 more than one third, i.e. 36.2% of all value added (1,453.1 b EUR) produced by the processing industry of the Union came from the three branches of the machine industry. Another impressive fact is that one third of the 28,253 million people working in the processing industry were employed by the machine industry. The Innovation Survey made in the EU found that about 53% of all enterprises in the processing industry are ‘innovative’. The ratio of innovative enterprises was found to be the highest in three industries: the *machine/equipment industry*, the manufacturing of electrical equipment and the chemical industry.

The machine industry of *South Transdanubia* is one of the most dynamically developing industries in the region, which is in line with the national trends. This is well illustrated by some figures: the share of its output in the total industrial output of the region increased from 10% in 1995 to nearly 50% in 2000. In spite of the dramatic setback in the years that followed its share is still over 40%. The industry also plays an important role in employment with more than 20% of the labour force working in it (2001). The ‘surviving’ firms or the new ones established on the ruins of the old enterprises have practically ceased to manufacture finished products (this was the case of most small enterprises) and turned to less complex activities (manufacturing components, or machining/finishing). Their survival at the market depends on the stable, reliable quality of their products and delivery on schedule while their profitability is determined by the productivity of the workers and the technology. The main risk they have to face is that productivity (depending on the efficiency of the technology and the organization) may not increase at the same rate as labour costs. By our days this trend has become a real threat. At present the industry is capable of meeting the high quality requirements of export markets considering the nearly 90% of its products was exported in 2000. Most of the enterprises do contract production which creates relatively little value added, so there is hardly any room for economizing. Very few enterprises have developed products of their own, and therefore they cannot be price setters, only price followers. The product structure of the industry is characterized by products manufactured on a large-scale and at a high level of automation, which make the prices competitive with companies in the Far East. Competition in prices is similarly stiff with the neighbouring countries as well, forcing the enterprises to dramatically reduce their costs. Under this pressure wages are kept relatively low therefore young people do not find this industry very appealing. One objective of RIS is to enhance the development of a new industrial culture in the machine industry that can produce higher value added.

4.2. 'New', innovative industries

4.2.1. The environmental industry

The deteriorating condition of our environment, increased awareness of the consumers, while the stricter regulations in environmental protection and the exhaustion of the fossil energy resources have all contributed to the emergence of a new and growing market offering products and services related to the protection of the environment both to consumers and the economy.

In the past 15 years the number of manufacturers and service providers in the industry has increased rapidly and today their total annual income is estimated to be as high as 150 billion HUF. This amount shows a spectacular increase of about 20% per year and the continuous growth of the market can be expected over the next 10-15 years. However, the availability of the EU grants, the main driving force of this development, will strongly depend on the capital supply and expertise of the applicants, it is therefore imperative to develop some kind of co-operation or network among the mainly small and medium-sized enterprises operating in this field.

Except for some industrialized areas in South Transdanubia, the environment in the region has been saved from serious ecological degradation by late industrialization or the lack of industries. The quality of the environment – with the exception of the Komló-Pécs-Beremend industrial zone – is much better here than in other regions of the country. This encourages the new initiatives of the private sector in economic development, the successful implementation of restructuring and the revitalization of the region. Nevertheless South Transdanubia is not free from environmental conflicts either, and several of these cannot be solved with the local resources only. The solution of the outstanding environmental problems requires external resources, and national funds are needed even for the management of conflicts (e.g. the management and decontamination of the toxic waste produced and dumped in the region).

4.2.2. The cultural industry

The notion of the cultural industry is quite new and has several branches in contrast with the more traditional industries. It includes all the culture-related services, often meant to meet community demand (e.g. services related to general education, schooling, leisure and sport activities or entertainment), as well as the creative industries producing intellectual works (graphics, industrial design, fashion design, etc.).

Since it is *not a traditional industry*, very little is known about its economic characteristics and the statistical data available on the service providing enterprises are scarce. All this makes it rather difficult for us to assess the current situation or identify trends of strategic development. The main challenge that enterprises in the cultural industry have to face is its volatility. This ever changing industry is represented by micro enterprises (with fewer than 5 employees) whose operation does not follow the conventional patterns of business development: sudden expansion may be followed by unexpected shrinkage. The emergence of start-up companies is absolutely unpredictable and their success greatly depends on the staff's qualifications, creativity, and the dominant community or social environment. Successful cluster development in the cultural industry presupposes the existence of the required number of enterprises (critical mass) while the creation of a favourable economic environment requires the presence of highly qualified free-lance individuals, small but stable enterprises, SMEs and larger firms which can subcontract assignments to actors of the local economy. These circumstances make it imperative for the region to develop the right conditions for efficient culture and crisis management. The RIS can provide valuable practical assistance to actors working in this industry mainly in the field of cultural management and creative industries.

4.2.3. *The health industry*

In comparison with the other, traditional sectors, the *health industry* has a rather wide spectrum, including a wide range of manufacturing and service activities related to health-care. The RIS programme can certainly not undertake the complex development of the health-care system and the related services, e.g. the transformation of the organizational of financing structure. The innovation strategy *focuses mainly on the regional development of the industrial background for the health-related services*. *Biotechnology and bioinformatics* are the key areas of high-tech R&D in the region. These disciplines are of horizontal importance, playing an important role in the comprehensive development ideas of the not only the health industry, but the food and environmental industries as well. The institutional background this kind of development can rely on is guaranteed by the two universities in the region as well as the SMEs established in the last decade and engaged in biotechnology. The region can also build on the strength that high-tech health industry based on biotechnological research is already present in the region, and the companies working in this field have important export capacities as well.

The enterprises currently operating in biotechnology cover the following special fields:

- development, manufacturing and distribution of reagents and diagnostic materials;
- development, manufacturing and distribution of diagnostic processes – both for human and animal biology (partly in the R&D stage);
- development of therapeutic processes

II. THE STRATEGIC SYSTEM OF RIS IN SOUTH TRANSDANUBIA

1. THE SWOT ANALYSIS OF INNOVATION IN THE SOUTH TRANSDANUBIAN REGION

STRENGTHS	WEAKNESSES
- Large town (Pécs) with innovative traditions as well as strong educational and research background	- Low level of economic activity - Insufficient capital supply of SMEs - High proportion of 'forced or quasi' enterprises - Poor ability to export - Small number of foreign investments - Small number of large companies, absence of innovative medium-sized enterprises - Weak relations between the business sector and knowledge bases - Lack of bridge institutions - Underdeveloped logistical systems - Underdeveloped computerized networks - Obsolete technologies in use by the enterprises
- Presence of a scientific basis capable of producing competitive research findings	- Absence of large academic research institutes - Limited R&D budget, low proportion of R&D financed by enterprises
- Well developed institutional system of higher education	- The training programmes offered by secondary and higher education do not meet market demand
- Flexible system of savings co-operatives capable of financing innovative development projects	- Lack of customized financing schemes to support innovation
- The institutional basis of regional innovation development is already in place	- Unsatisfactory flow of information among enterprises and institutions, absence of network-type co-operation among the enterprises - Underdeveloped business services, lack of professional service providers in innovation transfer
- Good agro-ecologic potentials - High level of viticulture and oenology - Wide spectrum in the food industry	- The ability of the agricultural sector to produce value added is limited
- Full manufacturing spectrum in the leather industry of the region	- Lack of own products and development, manufacturing limited to supply activities in the textile, clothing, leatherwear and machine industries
- Presence of enterprises working in the special fields of environmental industry, employing highly qualified staff	- Lack of co-operation between enterprises in the environmental industry and the local universities
- Research base of national importance in life sciences at the two universities of the region (Univ. of Pécs – human biology and Univ. of Kaposvár – animal sciences) - Abundance of thermal and medicinal waters	- Low rate of marketable research findings in life sciences
- Rich cultural and historical heritage	- Lack of co-ordination and market-oriented product development in the cultural industry

OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> - Strengthening of the cross border and international relations in the field of innovation development - After accession the interest of foreign investors in the region is renewed 	<ul style="list-style-type: none"> - The academic sector remains under-financed over the long run - The financing system of the university does not allow a wide scope of research activities
<ul style="list-style-type: none"> - Increase in the funds available for innovation development after accession, more active involvement in the EU programmes - Increase in the national funds available for R&D 	<ul style="list-style-type: none"> - Migration of well trained labour (brain drain)
	<ul style="list-style-type: none"> - Lack of co-ordination among the regional organizations interested in innovation
	<ul style="list-style-type: none"> - Further concentration of commercial chains makes enterprises in the food industry even more defenceless - SMEs in the food industry are unable to obey the ever stricter food safety regulations
	<ul style="list-style-type: none"> - Suppliers' market ceases to exist for the textile, leatherwear and clothing industries.
<ul style="list-style-type: none"> - After accession the market of environmental industry becomes more lively now that the EU regulations take force 	
<ul style="list-style-type: none"> - The strengthening of consumers' health awareness increases demand for the products of the health industry and the special food industrial services - After accession solvent European demand grows for wellness tourism and various health services 	

- Co-operation of economic and institutional actors
- Adaptive and flexible services in the background
- Sector groups improving the population's quality of life
- Competitive operation of the key industries

The SWOT analysis of innovation in the region reviews the strengths and weaknesses of the external circumstances and regional endowments which determine innovation, with respect to the objectives and priorities of RIS. It also explores the threats that may arise in the short or longer run, together with the opportunities that can be exploited. In agreement with the RIS objectives, the SWOT analysis reviewed the factors grouped around the following horizontal objectives:

- Co-operation between the economic and institutional actors
- Adaptive and flexible supplies in the background

Factors grouped around the sectorial objectives:

- Industries improving the population's quality of life
- The competitive operation of the key (traditional) industries

1.1. Strengths

Presence of a scientific basis capable of producing competitive research findings

The region has a good higher educational background as well as an innovative research staff (2 universities) representing a great potential for R&D. With respect to the development of innovation it is the biotechnological potential of Pécs and the agro-innovation research in Kaposvár that are of key importance. In addition to the relatively intensive research activity in agriculture conducted at the University of Kaposvár and other research institutes, mention should be made of research in medical diagnostics, the development of clinical methods, energy efficiency tests (renewable energy sources) and laser technology at the University of Pécs. The research base founded for informatics, biological and environment technology is also gaining importance. The Faculty of Medicine has research projects related to the organs of locomotion, quality of life, drug development, immune diagnostics and other immunological topics. Small enterprises closely connected with the various institutes of the Faculty have achieved significant results in the business applications of research findings in the field of biotechnology. In applied medical and biotechnological research the spin off companies founded by researchers are of key importance with their activities focused on the practical application and marketing of intellectual products of molecular biology and immunology (Pannonia Research Park, Histopathology, Westeam Biotech Biotechnological Ltd.). At the University of Pécs the main areas of research include environmental technology, laser spectroscopy, optics and the chemistry of pesticides. Research at the University of Kaposvár is concerned primarily with natural sciences, like agricultural technology, automation, analytical chemistry, and food chemistry. The most important projects are found in animal cytology and genetics, the development of environmentally friendly technologies for animal husbandry, and the manufacture of animal products of extraordinary quality. Some basic research projects have produced findings of international importance in radiology, analytics and physiology of digestion.

Well developed institutional system of higher education

The colleges and universities found in the region have recently been integrated in either the University of Kaposvár or the University of Pécs. As to the proportion of university students to the population of the individual regions, South Transdanubia is the third (2.5%) behind Central Hungary (3.8%) and the South Great Plain (2.6%) (Regional Statistical Yearbook, HCSO, 2000). The university sector is the largest knowledge and value creating potential in South Transdanubia. Besides the two university centres of Kaposvár and Pécs, institutes of higher education are found in Paks and Szekszárd as well. The total number of students is 27,000 in Pécs and 8,000 in Kaposvár (2003). In higher education Pécs is the largest centre not only within the region, but all over Transdanubia, with a deep impact on its intellectual life. It is also the most popular university centre in the Hungarian countryside considering the number of students applying for admission. Kaposvár and its institutes of higher education also play an important role in the intellectual and scientific life of South Transdanubia.

Flexible system of savings co-operatives capable of financing innovative development projects

Concerning the financing of innovation it can be established that the commercial banks are the most expensive, and, at the same time, the whole banking sector is highly centralized in Budapest. This is the reason why it is not really ready to develop financing schemes adjusted to the local conditions of the SMEs requiring credits and loans. On the other hand, *savings co-operatives – even in our days – are not only rationally behaving financial institutions, but are exposed to various non-economic local-provincial factors that also influence their business.* The savings co-operatives have strengthened only

in recent years in the SME segment, and within their network it is first of all the urban branches that show increased activity due to the concentration of small enterprises mainly in towns. The financially strongest savings co-operatives of Hungary are found in the region, more precisely in Baranya County. In the rating of regions by the balance sheet total of the savings co-operatives, South Transdanubia is second with its 20% share. Among the TOP 10 we find not only the Szigetvári Savings Co-operative, the financially strongest in Hungary⁵, but three other co-operatives operating within the region as well (the Mohácsi, Völgységi and Dunaföldvári co-operatives).

The institutional basis of regional innovation development is already in place

The development of innovation has appeared among the activities of not only the larger companies, but also of an increasing number of marketing and consulting firms engaged in rural development. The number of organizations supporting or managing innovation has also increased in recent years, together with the number of industrial parks, incubator houses, and the first innovation centres have been established as well. The wide range of organizations and institutions already operating in the field of innovation proves that the *critical mass required for the region to actively join in the development of innovation is already in place in South Transdanubia - both in the public and private sectors* - and will serve as an excellent basis for the regional innovation strategy after the identification of the points of interest. *The new institutions and enterprises show a strong spatial concentration (in Pécs and Kaposvár)* within the region.

Good agro-ecologic potentials; Wide spectrum in the food industry High level of viticulture and oenology

The role of agriculture and the related food industry is very important in the region because in the smaller municipalities this is practically the only source of income for the population. The share of agriculture in the total value added has decreased, but is still significantly higher than the national average (8.6%). Viticulture is the most important branch of agriculture; serving as a basis for oenology: the wines produced here are important export products as well. 15% of all the wine made in Hungary comes from the region, with a very high proportion of quality wines. The area of forests in South Transdanubia is larger than the national average. The forests also abound in game - another important export item. The food industry is a similarly important element of the region's production structure and its trend, which has been on the decrease since the mid 1990s, seems to be stabilizing in our days (the decreasing trend could also be attributed to the increase in the output of the other industries, mainly the machine industry). In 2001 more than 20% of the region's output was produced by the food industry. The main branches of the food industry are meat and milk processing, but the baking industry has important capacities as well. Mention should also be made of the breweries, the production of fruit juices and sugar.

Full manufacturing spectrum in the leather industry of the region

On the basis of statistical data the textile and leatherwear industries are of outstanding importance in South Transdanubia, considering that about one quarter of all industrial workers is employed by these two industries. This figure is the second highest among the Hungarian regions. The importance of these industries comes not only from the high ratio of exports (75%), but also from the full vertical

⁵ The amount of its balance sheet total was 25.4 bHUF in 2002, which represents about 45% of the 58.4 bHUF, the balance sheet total of the integration calculated for the South Transdanubian region. It has 14 branches; it keeps accounts for 19,000 individuals and 7,000 enterprises and provides banking services for 61,000 clients with deposit accounts and 11,000 clients with credit accounts.

range of manufacturing with long traditions in the manufacturing of basic materials, semi finished goods and finished products as well.

Presence of enterprises working in the special fields of environmental industry, employing highly qualified staff

The deteriorating condition of the environment, the increasing environmental awareness of the consumers, the stricter and stricter environmental regulations and the exhaustion of the fossil energy resources have all contributed to the emergence of a new, but continuously growing market of environment related products and services both for the consumers and the economy. The total annual income realized by the rapidly increasing number of manufacturers and service providers in the environmental industry has risen sharply over the last 15 years. It is reasonable to expect a continuous expansion of the market over the next 10 - 15 years in the region as well. More and more enterprises are engaged not only in consulting, but in recultivation, waste management and recycling. There is also growing interest in renewable resources.

Abundance of thermal and medicinal waters

South Transdanubia has excellent conditions for the development of the tourist trade, with special regard to health tourism. The number of tourists seeking thermal and medicinal waters and the related services increases every year, making the region a popular destination.

Rich cultural and historical heritage

The region and its larger towns have a long history of several thousand years. Pécs, the largest town in the region has been put on UNESCO's list of the 'World Heritage'. The historical monuments, castles, fortresses, museums, ethnographic collections and religious memorial sites are all parts of the European cultural heritage. The unique cultural features of the region can greatly contribute to its new image as a multicultural region.

1.2. Weaknesses

Weaknesses arising from the economic situation of the region:

- Low level of economic activity
- Insufficient capital supply of SMEs
- High proportion of 'forced or quasi' enterprises
- Poor ability to export
- Small number of foreign investments
- Small number of large companies
- Absence of innovative medium-sized enterprises
- Weak relations between the business sector and knowledge bases
- Lack of bridge institutions
- Underdeveloped logistical systems
- Underdeveloped computerized networks
- Obsolete technologies in use by the enterprises
- Absence of large academic research institutes
- Limited R&D budget, low proportion of R&D financed by enterprises

South Transdanubia can be rated as one of the less developed regions in Hungary both by national and international standards. The assessment of the region's economic potential and relative level of development on the basis of the above components will lead to the conclusion that the region has had only modest success in attracting external, mainly foreign working capital, which is the main reason why it fell behind the others in terms of economic performance expressed in the region's GDP and industrial output. The key issue related to structural growth is the weakness of the processing industry, manifest in the region's GDP and the industry's ability to export. Economic activity has decreased in the region over the past decade, which in good agreement with the national trends. In 2001 the activity ratio of the region was 50.5% that is 2.8% below the national average. At the turn of the millennium, the start of a new period of growth, the region was unable to adjust itself to the new requirements and gradually fell behind the more dynamic regions. This situation was caused primarily by the problems of the economic structure: the inherited low level of industrialization was not a sufficient basis for the (export driven) expansion of the internal processing industry and the same problem – worsened by the unfavourable geographical location and poor accessibility of the region kept away external/foreign investors as well. The enterprise structure is also in a disequilibrium: the number of large companies (employing over 300 people) that could act as a driving force is relatively small (0.3%), consequently there is a disproportionate dominance of small enterprises suffering from shortage of capital and unable to develop. The majority of the small enterprises use obsolete technologies and the technical level of their products is low with a minimum share of high quality and properly designed products. Enterprises show little ability to co-operate and none of the large or medium-sized companies in South Transdanubia managed to develop a strong supplier network.

Absence of large academic research institutes, limited R&D budget, low proportion of R&D financed by enterprises

The region's share of the national R&D expenditure was 3.7% in 2002 (only half as much as the share of Central Transdanubia) and this made it 5th among the regions. As regards R&D expenditure financed by the business sector the region was last with its 0.2% in 1994, and this situation has not changed ever since. The region hasn't any important research institutes working in natural sciences, technical or life sciences. The establishment and development of the University of Kaposvár in the last decade has been the only event of institutional development, while the R&D base with respect to research institutes has not grown at all, being represented only by the Regional Research Centre of the Hungarian Academy of Sciences, acting in the social sciences. Initiating the establishment of a HAS research centre for applied research in life sciences and biotechnology, adjusted to the economic potentials of the region and promoting its technologically intensive development is a priority that would greatly strengthen the region's knowledge potential.

The training programmes offered by secondary and higher education do not meet market demand

The existing training system is incapable of responding with the speed required to changes in the demand of the labour market, mainly because of the prevailing financing and decision-making mechanisms. The figures describing employment and vocational training have transformed fundamentally in the past decade. The demographic changes have made it increasingly difficult for the vocational training schools to ensure the supply of well trained workers at the level currently required by the economy. Shortage of labour has developed in some trades/professions. In the European training system the share of practical training spent with business organizations is at least twice as much as in Hungary. The harmonization of the training system with the needs of the labour market and economic development should be an indispensable priority of vocational training. The training

programmes of higher education have also failed to adapt themselves to the practical needs. The programmes are too general and the system of sandwich training is unknown. The enterprises are hardly ever satisfied with the use value of the knowledge that young graduates have. Technical sciences are rather under-represented within the otherwise wide range of training programmes in the region, especially in the fields required as a basis for modernization and technological change (e.g. microelectronics, information technology, automation, etc.). The orientation of higher education currently operating in the region is not suitable for efficiently promoting the shift in industrial technology. Relations between the industry and the university are weak and of an ad hoc character. The universities have no strategy for innovation and the local institutions-organizations supporting innovation are not properly represented at the universities.

Lack of customized financing schemes to support innovation

In the 1990s it was extremely complicated to raise medium- or long-term bank loans for years, and banks required collaterals well above the value of the credit or loan. In the case of SMEs the smaller the enterprise, the more expensive the banking services are. What can also prevent SMEs from raising credits is the lack of legal guarantees that banks also tend to overvalue. In order to eliminate this difficulty, two guarantee institutions were created after the change of regime, financed partly by the government and partly by the banks, but their share is still rather low in spite of their increasing role. SMEs in need of credit would require a significantly larger volume of guarantee insurance. Supporting innovative developments involves even more risks that can only be handled with special schemes. Venture capital is practically absent from the region, and the requirement of high limit for capital investment is also an unfavourable condition for SMEs, whose development projects are usually of a smaller scale.

Unsatisfactory flow of information among enterprises and institutions, absence of network-type co-operation among the enterprises, underdeveloped business services, lack of professional service providers in innovation transfer

Only a small number of enterprises in South Transdanubia – mainly those in foreign ownership – take part in innovation. In spite of the technological and management methods, the efforts for innovation or communication with institutions of innovation or one another are far from being general. The ability of enterprises to co-operate is rather weak and none of the large or medium-sized companies have managed to develop a strong supplier network in South Transdanubia. The forms of the division of labour or co-operation among the companies have not been developed yet; the individual, often parallel and usually inefficient actions are dominant and the flow of information is incidental. All these factors together constitute a huge obstacle to regional co-operation in the field of innovation development. The weakness of the related services and the failure to realize practical applications of R&D findings only make the situation worse. In this respect it is the region's responsibility to strengthen co-operation among the actors of innovation transfer and guarantee the flow of information and ensure the efficient use of resources.

The ability of the agricultural sector to produce value added is limited

Shrinking markets and deteriorating profitability within the sector have both contributed to a setback in agricultural production. 32.4% of all arable land in Transdanubia is cultivated by small holdings, characterized by the small size of farms: 63.4% of the holdings have less than 0.5 hectare to cultivate, and the aggregate area of these farms amounts to a mere 5.2% of all arable land. These small holdings

have little income generating capacity because their size does not justify the procurement of the machinery required. The share of agriculture within the total added value has decreased, but still exceeds the national average (8.6%).

Lack of own products and development, manufacturing limited to supply activities in the textile, clothing, leatherwear and machine industries

Most of the enterprises in the textile, leatherwear and machine industries are engaged in contract production, i.e. they manufacture for the large Western companies. Wage work is the dominant activity, therefore the value added they can achieve is relatively little, consequently these enterprises find it hard to economize. Very few of the enterprises are capable of entering the market with products or developments of their own; this is the reason why their products are not innovative and their market position is not price setter, but price follower. Product structure in these industries is characterized by the large-scale manufacturing of products with highly automated technology, since the enterprises have to face stiff price competition by their counterparts in the Far East. The main risk factor in their case is that productivity (depending primarily on the technology and organization efficiency) cannot always be increased in proportion with the growing costs of labour. Experts believe that it is realistic to expect contract production to come to an end within 10-15 years in Hungary in the above industries.

Lack of co-operation between enterprises in the environmental industry and the local universities

The biggest problem of small enterprises and consulting firms in the environmental industry is the lack of co-operation among the SMEs working in this special field, as well as the weakness or eventuality of relations between the business sector and the universities. A partnership would be of particular importance in this field considering that the capacities, competences and information required by the volume of EU grants can only be ensured in co-operation and on the basis of the latest research findings at the universities.

Low rate of marketable research findings in life sciences

The level of research in life sciences is outstanding by national standards as well. Further development is not possible without the development of an institutional system for the marketing of the research findings and an increase in the currently very small number of marketable R&D results. It is imperative to strengthen the practice orientation of basic research and the continuous monitoring of market and client demand.

Lack of co-ordination and market-oriented product development in the cultural industry

Several studies (even in the case of Pécs) have established the lack of inter-institutional co-ordination, and the frequency of parallel initiatives due to the lack of co-operation among the high number of actors in this field. Cultural products and services require special management and marketing techniques, some of which can be co-ordinated at the regional level. This presupposes the availability of the adequate knowledge and the development of a well-co-ordinated co-operation among the cultural managers and programme managers. Unfortunately, the number of marketable cultural products is still low, and what there is, has uneven quality. The potentials of the region need to be transformed into products, and better co-ordination of the cultural events. There are examples – mainly in larger towns – that can serve as models, but a regional level co-operation, the development of regional programme packages could greatly enhance marketability.

1.3. Opportunities

Strengthening of the cross border and international relations in the field of innovation development

The various community level and innovation related programmes of the EU require the development of international partnerships and the implementation of interregional co-operation already in the elaboration of the programmes. Within the cross-border co-operations the EU lays special emphasis on co-operation in innovation and scientific research giving the region opportunities to join the innovation zones or axes created by several neighbouring regions.

The interest of foreign investors in the region is renewed after accession

New actors have entered the Hungarian market of financial services right after the accession. It is not unreasonable to suppose that new actors will also enter the market of venture capital, which is of key importance in the financing of innovations. A renewed interest can also be expected on the part of enterprises in the neighbouring (former) EU countries in Hungarian investments and this would strengthen not only competition, but co-operations in the field of innovations as well.

Increase in the funds available for innovation development after accession, more active involvement in the EU programmes and increase in the national funds available for R&D

Besides increased public expenditure on R&D in recent years, additional funds can be expected from various EU programmes to finance innovative development. Hungary was a full member in the programmes fostering innovation (Framework Programme 6) well before its accession, but the fruits of traineeship can only be harvested in the near future, resulting in a significant rise in the amount of resources available.

The market of the environmental industry becomes livelier now that the EU regulations take force after accession

With the EU regulations taking force, demand for the services of the environmental industry is expected to grow. The capacities available at the university and the SMEs operating in this special field have good opportunities to develop the measurement systems and monitoring processes necessary to create and protect a healthy environment.

The strengthening of consumers' health awareness increases demand for the products of the health industry and the special food industrial services

The issues of healthy foodstuffs and food safety have recently come to the focus of interest in Europe. Some experts believe that the European Act on Foodstuffs, which is in preparation right now, will act as the main factor in innovation over the next 10-15 years. The food industry is, of course, very closely related to the health industry, because the manufacturing of healthy foodstuffs is important for good health. The main contact points include the manufacturing of safe foods, the development of monitoring systems linked to food safety, and similar services. With regard to the question of food safety and the increase in demand for healthy foodstuffs, more and more efforts are concentrated on the related research and services.

After accession solvent European demand grows for health tourism and various health services

The region has excellent conditions for the development of health tourism, the related wellness services as well as the infrastructure. The elaboration of a marketing strategy for the increased demand and the target groups should go hand in hand with the introduction of new health and therapeutical services.

1.4. Threats

The academic sector remains under-financed over the long run and the financing system of the university does not allow a wide scope of research activities

In Hungary today 60% of all R&D expenditure is financed from public funds. This high share of the public sector makes it impossible for universities or research institutes to take over the financing of the R&D activities. These expenditures are among the first to be curtailed whenever the government takes stringency measures. This uncertainty in financing can jeopardize the large and expensive research projects planned for several years. *In our days the role and function of universities is in transformation.* The key issue is the introduction of a research university profile in addition to the training profile, relying not only on government resources, but also on an increasing share of assignments coming from the market. *Universities which adjust themselves to the market conditions are forced to introduce research in applied sciences* because the intellectual potential and knowledge marketed in this way can significantly increase the revenue generated by the universities. The curtailing of government subsidies plays an important role in this new commitment of the universities and motivates them to join in the various contractual R&D co-operations. This new situation leaves the universities no alternative but to make efforts to generate more income in the form of research contracts or establishing spin-offs. At present, however, *the gap between the universities and the R&D sector is rather wide.* SMEs rarely turn to the universities for technological information or initiating co-operation.

Migration of well trained labour (brain drain)

Unemployment among people with university/college degree has been on the increase in recent years partly due to the fact that the training programmes offered by higher education are not market oriented. On the other hand, the number of jobs available has been far from meeting this demand for years. As a result, wage levels in the region are 18-20% lower, than the national average and the average salaries do not come up to the national average in any of the industries. Besides the threat of unemployment, professional people find the idea of moving to other regions or even abroad appealing because of the higher salaries and the better prospects of making a career.

Lack of co-ordination among the regional organizations interested in innovation

There is no consensus among the institutions of the region about the strategy to follow in innovation and organization development. The forms of co-operation and division of labour among the actors have not been elaborated yet, there are a lot of isolated or parallel and inefficient actions, the flow of information is incidental and this situation hinders regional co-operation in innovation development. Focusing on short-term development, the institutions compete with one another for the resources available for innovation purposes and it is not infrequent that they provide innovation related services without having the adequate competences, thus creating parallelisms and dissipating the supply of the institutional system.

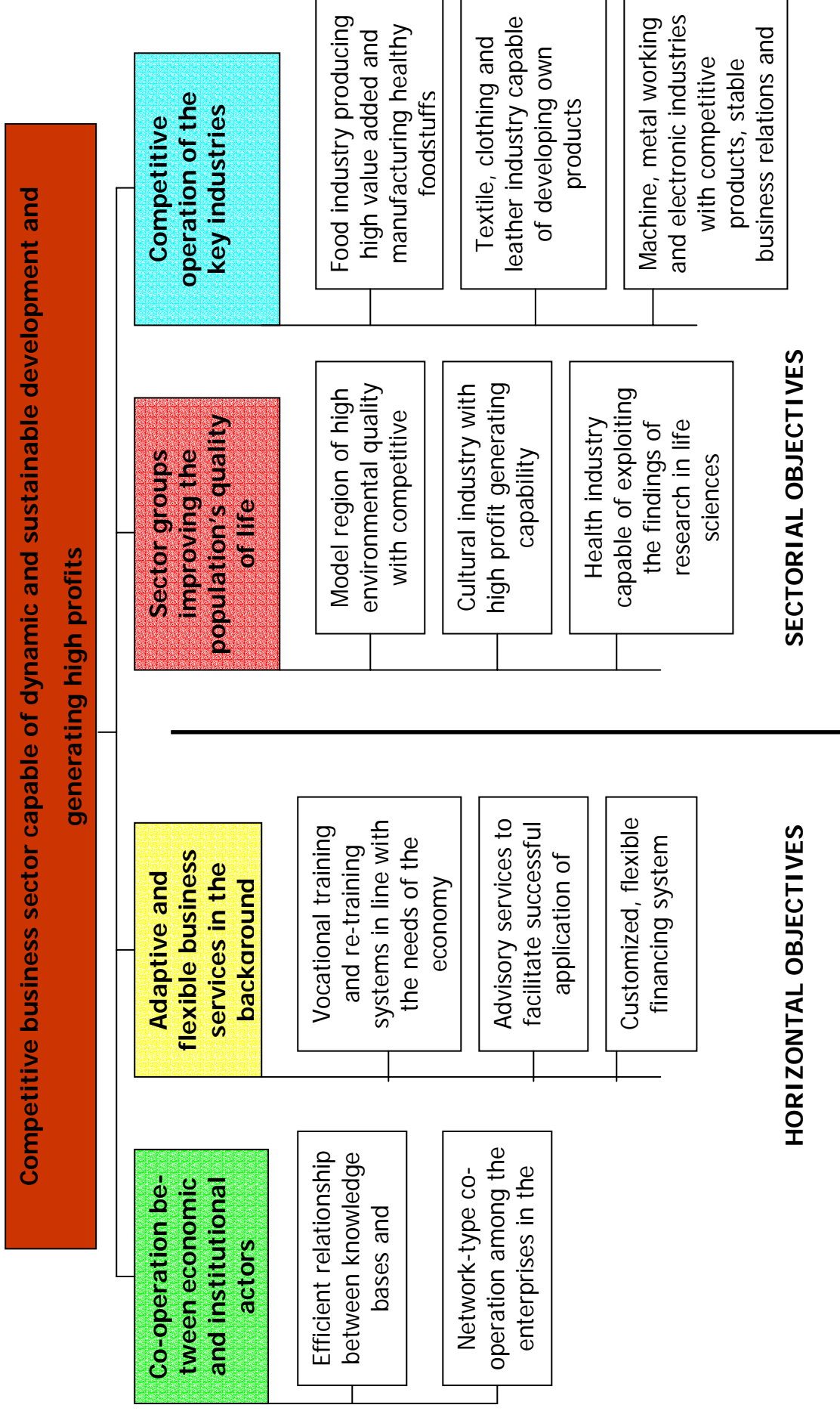
Further concentration of commercial chains makes enterprises in the food industry even more defenceless; SMEs in the food industry are unable to obey the ever stricter food safety regulations

At the market of the food trade we witness an unprecedented concentration of the multinational companies. Many SMEs in the food industry are not able to meet the requirements (concerning price and volume) set by the large multinational chains. In preparation for this danger SMEs should strengthen their co-operation (create alternative distribution channels). SMEs which are not able to meet the ever stricter regulations of food safety requiring a monitoring system for the whole manufacturing process will have to face a similar challenge. The only way they can cope with this situation is by acquiring and applying the proper expertise and procuring the relevant high technology.

The recovery of the South Transdanubian Region from this depressed economy depends on its ability to transform its obsolete economic structure and give priority to high technology in production, making efforts at the same time to create the proper background for innovation in products and manufacturing, as well as to elaborate an innovation strategy which can serve as a framework for such a development.

With a view of catching up with the other regions, increasing the value added content of its products, and improving its competitiveness it is imperative for the region to support R&D activities, strengthen the co-operation between research and the business sector and strive for the practical application of the research findings.

2. THE SYSTEM OF RIS OBJECTIVES IN SOUTH TRANSDANUBIA



1. Overall objectives

Efficient co-operation between the economic and institutional actors interested in innovation

The innovation-oriented operation of enterprises in the region requires the development of closer and more efficient forms of co-operation and their co-ordination. Enterprises should be encouraged to establish network-type co-operation both at the market and in various professional fields and they should be guaranteed the flow of information and knowledge, which is indispensable for innovation. In order to efficiently exploit the knowledge potentials found in the region it is imperative to establish concentrated knowledge centres, which can make a connection between the universities and research centres in the region on the one hand, and the enterprises, on the other. The enterprises in the region need support in having easy and flexible access to the services that are provided by the regional knowledge bases and meet the market requirements.

Adaptive and flexible services in support of the innovation process

The exploitation of the innovation potentials of the economy in South-Transdanubia is not possible without the development of the appropriate business services and their efficient operation. In accordance with the principle of knowledge-based economy it is imperative to support the operation of the advisory and training systems which are necessary for the extensive dissemination of up-to-date expertise and technical knowledge. Innovation cannot be successfully applied without flexible economic and financial services being available for the enterprises in the region.

Economic sector groups capable of generating high profits and improving the population's quality of life

In order to create and maintain a high quality living environment and the population's good quality of life it is indispensable to provide special support to the service industries which foster the sustainable, environment-conscious and competitive operation of the other industries on the one hand, and, on the other, ensure an attractive cultural environment and healthy living conditions for the population of the region.

The competitive, market-oriented operation of the key industries in the region

The competitive operation of the traditional industries, which are of key importance in the economy of South-Transdanubia and its employment level can only be maintained if the enterprises are made capable of flexibly reacting to changes in the market. Support should be given to the manufacturing of innovative products which represent high value added and meet the consumers' needs as well as to the development of the efficient forms of manufacturing and distribution as required by the actual market situation.

2. Horizontal objectives

Concentrated knowledge bases and research potential, efficient and interactive flow of information between the actors of the various sectors and the knowledge bases

It is a worldwide trend that every region seeks to attain the highest possible concentration of expert knowledge that is not possible in the other regions. This knowledge concentration should go together with the development of the formal and informal channels between the knowledge bases and the well organized economic networks so that the unimpeded flow of this knowledge could be guaranteed in order to enhance innovation on the one hand, thereby improving the competitiveness of the economy

and, on the other hand, to make the work of the knowledge creating sector more flexible and practice-oriented.

Development of network-type co-operations among the enterprises in the fields of manufacturing, procurement, and sales based primarily on the use of information technology

Regional division of labour and the strengthening of co-operation can greatly contribute to the network-type development of the economic organizations in South-Transdanubia. The actors of the economy have so far operated in isolation, without communicating with one another. The way this situation should be changed is by initiating dialogues among the actors and establishing the channels or forums, which can guarantee the flow of information and contribute to the development of confidence, which is indispensable for good co-operation. In most areas the application of information technologies can be a cost-efficient instrument of developing co-operation among the enterprises and connecting them to the knowledge centres.

Development and operation of the vocational training, retraining and flexible training systems that meet the needs of the industrial sectors.

High quality and productivity cannot be achieved without well-trained labour continuously retrained in order to meet the newest requirements. The vocational/professional training system has not kept pace with the recent technological developments therefore students are often transferred obsolete, useless knowledge or skills. This is the reason why the vocational training system should be transformed in such a way as to become capable of transferring up-to-date knowledge and guarantee high quality of training. This is only possible if practical training (apprenticeship/traineeship) can also be ensured depending on the employers' needs.

Development of an advisory system to foster the successful application of innovations.

The enterprises in the region can be successful at the market only if they are supported by an easily available, efficient system of specialized consultants as well as a business advisory system. It is particularly the small and medium-sized enterprises that need support for high quality production and competitive operation. The instruments to be used for this purpose include the development of (innovation) management, marketing and company management skills on the one hand, and, on the other, the development of sector-specific consulting, business advisory systems in order to make the information on changing regulations, new technologies, specialized marketing and the related services available to the widest range of the enterprises.

In addition to all these it is also necessary to develop business advising with focus on exploring the ways and opportunities of successful industrial co-operations, collecting background information about the market and elaborating strategies for development and conflict management, especially in the case of declining industries that can only survive on contract production at present.

Customized system to finance the innovation related activities

Lack of capital is one of the main problems that hinder the development of small and medium-sized enterprises in the South Transdanubian region. The implementation of innovative developments is therefore particularly difficult, because it requires a significant capital investment in most of the cases, while return on this investment is rather uncertain as compared to the core activities of the enterprises. Consequently it is necessary to provide customized schemes for financing innovative development projects of enterprises in the region.

3. Sectorial objectives

A model region of high environmental quality with a competitive environmental industry providing innovative services and products

The environmental regulations which take effect after our accession to the EU will present several new challenges for the economic actors in the region. Although the grants available from the EU can contribute to the emergence of solvent demand in this field, there is a danger that these resources will be obtained by environmental enterprises outside the region. In order to offset these trends, to obtain a market share and strengthen their market positions the small and medium-sized enterprises in the region should be given strong support in organizing networks and connect these networks with the interdisciplinary research bases. Environmental services are still absent from the region but their establishment can be encouraged indirectly with support given to the development environment-conscious producing systems.

Cultural industry with high profit generating capability

The profit generating capability of the cultural industry can be increased by transforming the cultural endowments of the region into high quality products because cultural attractions tend to play a more and more decisive role in the choice of tourist destinations. It is therefore important to have well coordinated, adequately managed cultural programme packages with a uniform image in the region to which other kinds of high quality, complex services can be linked.

On the other hand, the development of creative industries producing intellectual goods will make the services producing high value added and increasing business competitiveness available for enterprises in the other industries of the region both in the field of manufacturing and marketing activities. Up-to-date information and digital technologies need to be supported so that the actors of the economy should have the special information they require at their disposal.

Health industry capable of the multilateral economic utilization of the findings of research in life sciences

The coordinated exploitation of the research potential available in the region in the field of life sciences should contribute not only to the development of the health services that meet consumer demand but the development of the related manufacturing enterprises as well. The development of the services based on findings of the life sciences will also contribute to the development of a health-supporting environment and the reduction of the harmful effects of consumer goods. The development of a life-style industry meeting the demands of health-conscious consumers can also increase the profit generating ability of this sector. The development of a regional research base capable of producing marketable findings, together with the development of the services that can help to channel these findings into the industry should support the 'high-tech' health industry based on the findings of life sciences and biotechnological research.

Food industry producing high value added and manufacturing healthy foodstuffs

Besides the large food processing companies that operate in the region, the small and medium-sized food companies should also be given the opportunity to take their share of the domestic and international markets and be able to meet the strict quality and safety requirements that come into force after Hungary's accession to the EU. This requires a well established technical advisory system providing information on state-of-the-art manufacturing processes, technologies and management to the manufacturers and entrepreneurs. These enterprises need assistance in developing co-operations

and vertical integrations that would enable the efficiently working food industry to put the agricultural sector of the region on a new course of development towards a knowledge- and labour- intensive model.

Oenology capable of preserving the traditional values of wine culture, making high quality products and having a stable market share

Viticulture and oenology have long traditions in the region but need to be made more competitive in the face of the new challenges in the European Union and at the world market. This will require the integration of the small vineyards to make the use of high technology possible in production, processing and sales and to enable the small plantations to survive. It is also necessary to establish and disseminate regional level systems for origin protection in order to increase the share of quality wines with high added value and enhance the reputation of the region as an excellent wine district. There is also a need to create a system of wine marketing for the region's community, with a view of strengthening its market positions and finding or enlarging the proper distribution channels. It is equally important to preserve the traditional culture and values of the wine districts and to strengthen the local channels of distribution by developing the wine routes in the region and integrating them into a regional system. The ultimate goal is to develop a complex regional package of wine tourism with complementary elements, which is competitive both at the domestic and foreign markets, generates additional income for the population of the wine districts and prevents migration.

Textile, clothing and leatherwear industry capable of developing own products

The majority of the enterprises in the textile and leather industries produce for Western companies on a contractual basis. Experts believe that contract production will cease in the Hungarian light industry within 10-15 years. As a temporary solution it seems reasonable to manufacture small scale products to perform very short-term orders that oriental countries are not yet able to do for the time being. In the long run, however, only the manufacturing and marketing of own products can be the right solution. This requires expertise, market information, technology and marketing skills. Preparation should be started as soon as possible by the establishment of an organization capable of playing a coordinating role for the enterprises within the sector and manage the transfer of market and technological information as well as provide the training required.

Machine, metal working and electronic industries with competitive products, stable international business relations and market opportunities

Of all the machine industrial enterprises in the region only those have hope to survive which can secure their position in one of the company networks competing at the market of the region and prove capable of taking part in strategic alliances. Therefore it is imperative to prepare these enterprises for building such networks and participate in them as reliable partners, able to flexibly react to customer demands. This is not possible without stable, reliable quality and delivery on schedule, which requires highly qualified personnel, excellent product management and high technological level.

III. PRIORITIES AND MEASURES IN THE RIS OF SOUTH TRANSDANUBIA

PRIORITY 1: TECHNOCLOGICAL DEVELOPMENT REQUIRED FOR THE COMPETITIVE OPERATION OF ENTERPRISES IN THE REGION

Justification

As a result of economic restructuring following the change of regime, the region lost its leading industries (mining, building industry, etc.) and, at the same time, important foreign investors also avoided it because of its peripheral location and the nearness of the war in Yugoslavia. Strong Western firms appeared only in the energy sector when the surviving enterprises came to be privatized, and the number of green field investments by large companies was very small. Small enterprises founded with the minimum capital required emerged on the ruins of the former large enterprises but they were unable to involve fresh additional capital, consequently the renewal of the technologies was out of the question. This is the reason why the development of industry in South Transdanubia is strongly hindered by the shortage of capital.

A typical feature of the economic structure is the small number of large companies and the dominance of the micro- and small-sized enterprises. The presence of strong and large foreign companies is scarce as compared to the other parts of Transdanubia. Most of the local enterprises owned by foreigners are subsidiaries, acting as suppliers of and adjusted to the production systems of the parent companies.

The supplying capacities and relations of the SMEs are poor, and the obsolescence of the technology as compared to the European standards is dominant even if it is relatively new within the company, because taking over second hand equipment from Western or sometimes even Eastern companies has been the main trend of development in the last decade. The level of inter-company co-operation is rather low; the enterprises fail to exploit the benefits of joint actions or co-operation.

Being a separate entity does not automatically mean being independent, since a large number of companies do not manufacture products of their own, but work as suppliers. Contract productions is the most typical activity and - in the case of foreign ownership – supplying the parent company. In many cases the relatively low labour costs made it possible for the enterprises to remain present at the market but this advantage is gradually losing importance and, on the other hand, we shall soon have to face competition at the EU market by other East European countries which became members of the Union at the same time as Hungary. Labour costs in the industry are on the increase, exceeding today the wages typical of the Check Republic and Poland, with only Slovenian labour being more expensive than ours. This situation, together with the obsolete technology leads to poor productivity, which is the main sign of declining competitiveness. The lack of own products, the relatively expensive labour (not so much because of the wage level, but the labour charges), the insufficient technological standards make our enterprises vulnerable and defenceless at the market.

Most of the SMEs use IT tools, primarily in book-keeping, wage-accounting and taxation and also supports several other technical or registering activities with computers. However, the use of IT is lagging behind in the fields of integrated company managements systems, technological-financial controlling preparing quality decisions, complex systems of quality management, the creation and operation of data-bases supporting the work of enterprise groups or their communities as well a the market, i.e. e-commerce. Similarly to the discrepancy between the opportunities offered by IT and its

actual use, a backlog is found in the application of management methods: the lack of external and internal information makes it impossible to explore inner reserves, to modify operations with a view of achieving higher or optimal productivity, a better utilization of resources and cost management, to recognize changes in market demand and the emergence of competitive technologies in time.

Aims and objectives

The overall objective of the measure is to assist the region's SMEs in becoming more competitive by increasing their productivity and therefore being able to produce at competitive prices, to make the quality of their products meet the European standards and to achieve a reputation as flexible and reliable suppliers.

The immediate objectives of the measure are the following:

- to help the enterprises implement technological developments which allow the development and manufacturing of own products (instead of acting as suppliers or doing contract production);
- as a result of technological development, capacities and market shares will increase offering long-term opportunities for sales;
- both the development projects and the products manufactured will be environmentally friendly, contributing to sustainable development;
- the level of management and IT application will be improved in order to increase productivity and strengthen marketability.

Description

The measure includes two activity groups:

- improvement of the technical-technological standards and
- improvement of management and IT applications.

Component 1: Encouraging the improvement of the technical-technological standards

The improvement of the technical-technological standards is implemented within the context of manufacturing and its environment as well as new approaches to the utilization of resources. This component is meant to draw the attention of enterprises to the application opportunities (e.g. submit project proposals) and to familiarize them with governmental and regional preferences.

With respect to individual **products** the stage of manufacture and an increase in the knowledge incorporated in the product can improve the chances of SMEs to achieve a breakthrough. This would imply product development or a new product structure in order to meet market demand in a new way (with new products) or create new demand. Enterprises can engage in R& activities on their own or in co-operation; R&D has been neglected in the past 15 years or so, but it should take its place again among the future-oriented activities of the enterprises, with the product in their focus.

Competitiveness can be improved only step by step: the introduction of new work phases (partial assembly, final assembly, finishing, production of complex outputs) are considered as important steps taken towards the manufacturing of own products and achieving independence.

The use of high quality or special materials can also be a successful method of product development, leading to better quality and more favourably priced products requiring, at the same time, more advanced technology, greater accuracy of manufacturing as well as discipline, i.e. it brings the culture

of manufacturing to a higher level. In other cases product specialization or the adjustment of product policy to smaller, more specialized niches at the market can be the way to success.

The activities that enterprises are encouraged to perform as a part of this component include the **development of a product policy** reflecting the above described principles, **R&D activities, implementation of the related management/manufacturing tasks**. Stronger incentives are recommended for the larger market or R&D projects implemented by the enterprises jointly or in co-operation.

In the case of **manufacturing technologies** priority is given to the application of complex manufacturing systems including several work phases. Similarly important is the introduction of equipment capable of manufacturing on the large scale and with great accuracy or flexibly adjustable to perform various tasks. Their use would eliminate bottlenecks and lead to a better exploitation of labour and workshop capacities. An additional benefit would be the creation of new jobs and the production of higher value added.

An outstanding task in the field of technology is the development of machine tool manufacturing which implies a multifunctional use of the equipment, and great efficiency in order to enhance flexible manufacturing. This could become an independent market activity as well, in the case of a manufacturing relationship using similar equipment. The most important element in all these activities is the application of **computer aided control and process control systems**, which – as factors of the technology – can greatly contribute to the decrease in labour input, the better utilization of capacities and the reduction of errors.

With regard to technology in the narrower sense of the term, stronger incentives are recommended for the development of enterprises engaged in the manufacturing of equipment for the development of machine-tools (because they supply a wider range of enterprises), those that are prepared to implement joint projects in order to achieve the highest possible technological level as well as the developers or applicers of computerized control/process control systems. The planning-preparatory activities should be granted financial support and favourable interest schemes are needed for the investment projects.

Productivity leading to increased competitiveness strongly depends on the development of a **logistic system** (including warehousing, transportation, material handling and preparation) which influences productivity as an organic part of the technological system, and allows the optimal exploitation of the expensive machinery and industrial space. The capability of **tools**, equipment, measurement instruments and laboratories used in **quality management** to guarantee the quality required on the output side or to fully use the quality potentials of the other technological components is an important pre-condition of technological efficiency.

Manufacturing technology is only successful if it works without interruption – therefore the operative system and equipment of the **maintenance and service facilities** should also be up to the quality of the manufacturing technology. Without the skills and expertise required for training in the use of the newly procured equipment, their installation, regular maintenance and repair the complex technological system cannot be complete.

The planning and system management tasks related to the development of the logistic, quality management and maintenance systems should be granted non-reimbursable support while for the implementation interest-subsidized credit is recommended. Enterprises willing to perform the above tasks in co-operation and to create joint capacities for the implementation should be offered greater incentives.

The planners and executives of the development projects to be implemented by the enterprises are the enterprises themselves. They get encouragement or information on the training, development, financial support and methodological opportunities open to them from the Regional Innovation Office and other centres of innovation, technology and technology transfer, in addition to the market and technical impulses received in the course of their normal daily operation. The RIO finds it useful to establish **professional clubs** which could not only facilitate the contacts and co-operation of the various enterprise groups, but could also co-operate with the Chambers of Industry and Trade, in order to use the membership fees and grants obtained from the regional innovation fund for the transfer to the participants of the information that may contribute to making the enterprises more innovation-oriented.

Component 2: Development of a management IT system

Management activities cannot be independent of the information system that is the basic tool of management. Considering that the speed at which this sector develops is faster than in all the others and the rapid amortization of the technology, it is imperative for managers to devote special attention to IT.

The development of management-support systems is of key importance among the management techniques, because they allow the considerable improvement of management, and should, therefore, be considered a part of the technology in the broad sense of the term. If we are to increase the efficiency of management we should consider human resources used in the enterprise management system as a unified resource which cannot be done without **applying integrated company management, quality management and management support systems**.

The system will contain all the economic, technical, HR and marketing information in a single structure, allowing the management to realize a harmonic co-operation of the component systems at the same quality level. The professional clubs established by the Regional Innovation Office can provide information on the above systems and present their advantages.

The introduction of the software systems and the performance of the related organization tasks should be encouraged with non-reimbursable support.

As far as future development is concerned, the existence of a **data-base** supporting R&D activities is a determinant element of the management information system, but it can be developed by individual enterprises as well for their specific R&D activities. A more general data-base containing a wider range of special fields, the data of all innovative enterprises, research centres, outstanding R&D personalities, facilities and findings in the region should be developed regionally, in an innovation centre within the region. This could be the Regional Innovation Office, or another innovation centre chosen after an application process. The operation of the data-base could be financed from the membership paid by the members but its creation should be financed from the regional innovation fund.

The **electronic market** or e-commerce, which is rapidly increasing its share in the world trade, has not really found its way into the practice of the domestic enterprises. Participating in e- business means meeting demand accessible only in this way, increasing familiarity with the company, and obtaining information on the market. This is the reason why companies should be encouraged to appear jointly, as a virtual large company on the Internet. Besides the national grants, the information/training opportunities offered by the institutional system of innovation will also be of assistance.

Beneficiaries

The target group of this measure comes primarily from the food, machine, environmental, cultural, biological and health industries and includes the SMEs and NGOs that either represent enterprises working in these industries or perform R&D, management or informatics related functions to serve their mutual interests.

Financing sources

Grants to finance the majority of measures can be obtained from the EU or the government by submitting project proposals. The relevant programmes are the following:

GVOP 1.1.1. – Support of technological modernization

GVOP 1.1.3. – Increasing the number of supplier integrators and strengthening them

GVOP 2.1.2. – Support to up-to-date management systems and techniques for SMEs

GVOP 4.1.1. – Electronic business systems within the enterprise

GVOP 4.1.2. – Development of e-relations between business partners

OM – Joining in the EU development Framework Programmes (EUB)

The Research and Technology Innovation Fund can be an important source of financing.

In order to overcome the shortage of capital the Hungarian Development Bank should promote the capital supply programme. Financial support (subsidy) could be the most important but not only form of assistance. At the regional level a medium-term strategic co-operation including owner-subsidiary/enterprise – regional representation-bank-chamber (medium-term agreement made for individual cases) could be of a great importance and result in raising of capital and preventing capital from leaving the region by offering mutually predictable behaviour and mutual guarantees.

PRIORITY 2: DEVELOPMENT OF A FLEXIBLE AND UP-TO-DATE VOCATIONAL TRAINING AND CONTINUING EDUCATION SYSTEM WHICH MEETS THE MARKET NEEDS

The shortcomings of the vocational training and continuing education systems in South Transdanubia

Innovation-oriented economy cannot develop without the required human resources, i.e. the supply of properly trained employees for the companies. The industries that are present in the region are generally characterized by the lack of properly trained employees, and consider vocational training far from satisfactory regarding both its quality and content.

The shortcomings of the vocational training system observed at the national level are found in South Transdanubia as well: the quality of training at both the secondary and the university levels is unsatisfactory and neither level provides the necessary practical experience to their students. Newly graduated people rarely have the expertise or skills required by their employers. Strengthening the practical side of training and increasing the share of practical work (traineeship) at the potential employers both in secondary and higher education are of key importance in the acquisition of the knowledge required, and can, at the same time, strengthen the relationship between the training institutes, universities and the business sector.

The regional supply of training programmes cannot meet the demands of the labour market: the vocational training system does not follow the changes in the economy therefore it is not able to provide trained labour for the industries requiring innovative, up-to-date and/or new knowledge and skills. The problem is that the instructors are not properly prepared for such challenges and the infrastructure that would allow the presentation of modern technologies is also non-existent. On the other hand, there are trades and professions that do not appeal the required number of people, even though there is market demand for them. The reason may be the low prestige associated with certain trades/professions but this situation could be improved with well-planned vocational guiding or the use of proper marketing tools at the labour market. In some professions only a small number of people is required, their training, however, cannot be solved because training schools usually have a minimum number of trainees for a programme to start. Territorial or regional co-ordination could improve this situation and would also make the supply of schools with modern equipment more cost efficient.

There is a wide gap between demand and supply, which can be put down to the inefficient communication of enterprise demand as well. The institutions in charge of transferring information on market demand (job centres, chambers of commerce and industry) have contacts with only a part of the business sector, and are not in the position to define the demand of all the enterprises. The enterprises should also be more active in expressing their needs – and this is particularly true for the micro and small enterprises which are not members of the Chamber of Commerce and Industry. Without the relevant information on actual demand in their hands these institutions cannot make forecasts therefore an adequate forecasting or follow-up system is badly needed.

Secondary level vocational training all over the country is strongly fragmented, while in the highly developed countries the dominant trend is to have only a few large training institutes with a high number of students. This concentrated management of vocational training can guarantee cost-efficient operation, keep the tools and equipment up-to-date – especially in the case of trades requiring high technology and a lot of materials – and also facilitates the continuous training labour in the small trades. Even if the legislative background is guaranteed, the establishment of such concentrated regional training centres would require strong regional partnership.

Development objectives of the regional vocational training system

1. The development of a regionally co-ordinated system of vocational and training and continuing education capable of signalling market demand in a complex way, forecasting changes at the labour market in the long run, and managing the regional training capacities.
2. Develop a market oriented supply of programmes both in vocational training and continuing education, providing up-to-date knowledge and skills in the key industries of the region (the machine, electronic, textile, leatherwear, clothing, food, environmental, health and cultural industries)

2.1. Regional co-ordination in the vocational system and continuing education

If we are to develop an efficient training system, capable of more flexibly responding to the market demand, it is imperative to manage capacities in a co-ordinated way and encourage the co-operation of the actors of the training system, the institutions, the business sector, the enterprises and the professional body that represents them. A proper professional and informational forum should be created for the above listed actors when the regional system of vocational training is developed, to facilitate strategic decision-making on the structural and management problems that can be handled more efficiently at the regional level and to ensure the implementation of these decisions in a co-ordinated way with adequate co-operation and under regular regional/professional control. Since the secondary training schools are maintained by the municipal and county governments and the professional organizations of vocational training operate at the county level, the only alternative for the regional system is to rely on the capacities of the existing institutions and develop a strategic partnership among the individual actors. It is also important to strengthen the representation of employers, especially of the currently under-represented SMEs within the system, because at present information on market demand is not efficiently channelled into the training system. The above tasks can be performed by a regional co-ordinating body and a steering organization, also functioning as a forum of co-operation, securing the regional co-ordination of the activities and the representation of the development needs both at the regional and national levels.

Steps recommended for the development of regional co-ordination

Setup of a Regional Council of Vocational Training and Continuing Education

The Regional Council of Vocational Training and Continuing Education will operate as a reconciliation and strategy developing forum, its members coming from the county institutions with interest in vocational training (job centres, chambers, representatives of the various sectors), the training schools and their maintaining bodies, the Pécs Regional HR Development and Training Centre, the employers and the representatives of SMEs in particular. If similar organizations are set up at county level, the Regional Council of Vocational Training can take its members from these organizations.

The operation of the Council is governed by the principle of partnership and its functions include the following:

- To organize regional level co-operations (agreements) in matters of vocational training: to launch special training programmes – especially in trades requiring a limited number of trained people, to prepare regional level agreements, to co-ordinate the capacities of schools, and to establish integrated centres of vocational training;
- To elaborate the strategy and to monitor: to co-ordinate the concepts of the counties, to draw up regional strategies and action plans, as well as to evaluate their implementation at the programme level;

- To identify the fields where training meets market demand: to identify the fields where training can meet demand arising in the region's economy after the extensive survey of market demand
- To co-ordinate regionally training in trades for which interest is rather low or in trades that do not require a large number of trained workers in order to concentrate training programmes in one training centre.

Establishment and Operation of a Regional Centre for Vocational Training and Continuing Education

This Centre will fill a gap by exploring in a complex way the requirements of enterprises in the region, with special regard to the so far under-represented SMEs from the vocational training system (including the integration of the existing county-level data-bases).) It will collect all the data in a joint data-base and make them accessible to the various actors of the training system both at the secondary and the higher levels, as well as in continuing education.

Special attention should be paid to making the training programmes offered by the institutions of higher education more market oriented because in the present system these institutions have even less information about the kind of training required by the market than the secondary schools. At the same time, the availability of highly qualified labour is of key importance for an innovation-oriented economy.

With the help of the data-base it maintains, the Centre supplies information to the Council on the actual demand of the labour market, co-ordinates the implementation of the strategic decisions or actions initiated by the Training Council and generates projects in line with the adopted regional concept with special regard to the co-operation between the employers (enterprises) and the training institutions.

The Centre maintains an enquiry and consulting system to provide vocational guidance for use by both the training institutions and the participants of the training programmes. In the case of the less popular or smaller trades it supports the implementation of programmes meant to provide orientation or enhance the prestige of these trades.

Setup of a Regional database of Vocational Training in the region

Successful regional co-ordination depends on the proper information basis. The database integrates and complements the existing databases (primarily those made by the chambers and job centres). It contains the statistical data concerning vocational training provided by schools, higher education and continuing education programmes, together with information on other training programmes in the region, data on the labour market and trend analyses. The database also has an Internet link for use by the organizations interested in vocational training, schools and their maintainers as well as participants of the training programmes. The database is operated by the Regional Centre for Vocational Training and Continuing Education, responsible for the uninterrupted flow of information among the various actors of the system.

2.2. Assistance to market and practice oriented vocational training and continuing education providing up-to-date knowledge and skills

Enlargement of the training programme supply and its modernization in line with the sectorial demand and innovative development

Modernization of the content of training and improvement of its quality

It is fully justified to elaborate and introduce the content and material of the new training programmes in agreement with the needs of the regional economy giving priority to the industries with great innovative potentials. The Regional Innovation Strategy identifies the industries which make it possible to assess the demand and decide whether it can be met by secondary institutions or higher education. In the future the Regional Centre for Vocational Training and Continuing Education will make surveys in order to continuously identify and communicate the needs.

It is also indispensable to regularly update the existing training programmes and teaching materials as well as to employ adequately trained teachers or instructors in line with the sectorial requirements. Launching new training programmes that incorporate the modern technologies and compiling up-to-date teaching material cannot be implemented without the involvement of the enterprises that use these technologies and the professional bodies. It is particularly important for the development projects elaborated at the regional level to rely on the competence of the chambers regarding the trades referred to them in the national register.

Concentrated development of the technological infrastructure and methodology of the training institutions

Co-ordinated and concentrated support to the development of infrastructure in a smaller number of but considerably better equipped integrated centres for vocational training is an important tool in the modernization of practical training and upgrading its quality. Besides employing external instructors with the professional skills that are otherwise not available, the training centres should also have regular in-service training programmes for their own instructors if they are to incorporate the state-of-the-art technology into their programmes.

Introduction of up-to-date, practice-oriented and flexible forms of training that meet employers' needs

Increasing the weight and improving the quality of practical training

The acquisition of modern vocational skills is unconceivable without an increase in the importance and efficiency of practical training. This, however, requires the support of training in workshops and the proper management of traineeship/apprenticeship both at the secondary and the higher levels. Modern practical skills cannot be transferred on a regular basis without a rapprochement of the enterprises and the training centres, therefore every form of co-operation (e.g. practical and in-service trainings, etc.) between the business sector and the training schools should be supported.

It is also important to support the implementation of training and retraining programmes within the RIS industries that complement the basic training with a practical component, i.e. experiences gained in a business environment.

In order to offset the theory-orientation of training in higher education, especially at the universities support should be given to professional traineeship programmes and joint training programmes to

strengthen the relationship between the business sector and the university students. Programmes based on the co-operation between enterprises and university departments, providing practical experiences to the students and services fostering their operation to the SMEs should be given priority within the training programmes related to RIS industries (the creative, food, environmental, and machine industries and electronics)

Promoting in-service-training of SME employees

Several enterprises have expressed their intention to provide the required training programmes for their own employees. This becomes necessary when only a few employees need the training therefore schools would not provide it. On the other hand, training centres may not have the high-tech equipment that the employee will have to operate. In cases when enterprises undertake to organize in-service training programmes for their own employees they should be supported in enlarging their training facilities and make implementation more flexible.

In the case of SMEs implementing technological innovation support should be given to the further (in-service) training of employees by the enterprise itself, or in other training centres, including study tours to foreign partners and hands-on-training.

Employers could deduct the costs of training programmes provided to their own employees from their contribution to vocational training, but the SMEs are not very active in using this source. The chambers, institutes of continuing education and other professional bodies should familiarize SMEs with this possibility, convincing them about the importance of training their own employees and informing them of the resources available for this purpose.

Beneficiaries

The Regional Council of Vocational Training and Continuing Education, or the Centre could be set up as partners to the regional institutions interested vocational training (including representatives of the job centres chambers, maintainers of schools, training institution, the Pécs Human Resource Development and Training Centre, the University of Pécs, the University of Kaposvár, organizations providing pedagogical services, professional bodies, employee organizations, NGOs).

In the case of measures aiming at introducing region-specific supply of training programmes and flexible forms of training, the target groups should include the training centres, universities, professional bodies and chambers that implement development programmes in co-operation with the SMEs, especially in the following industries: the machine, textile, leatherwear and clothing, food, environmental, cultural and health industries, as well as electronics.

Financing sources

At present the funding for the modernization of the content and methodology of vocational training and its concentrated development can be obtained from the HEFOP 3.2.2. and 4.1.1. funds: Establishment of Regional Integrated Centres for Vocational Training. Each region is entitled to submit proposals for the establishment of not more than 2 centres (at the cost of 2.8 billion HUF), or – in other words – the HEFOP funds for the modernization of vocational training are concentrated in two fields of specialization (the machine industry and commerce) therefore the establishment of the training centres for the other RIS industries will require the further regional funds.

Measure ROP 3.4 supports the development of region-specific training programmes and the exploration of labour market demand, referring the latter to the competence of the county chambers of trade and industry. The documentation has not been published yet, so the amount of the funds

available is not known. The development of the regional vocational training system will require further regional resources anyway because the current capacity of the county chambers of trade and industry is not sufficient for the implementation of this regional programme and the development of a regional partnership. The fund available for the development of region-specific training programmes is relatively small (1.2 billion HUF) and is limited to the support of teaching material development, excluding the development of infrastructure, consequently the new training programmes cannot be launched without additional regional resources.

Some training programmes listed in the National Register (OKJ) are referred to the competence of the chambers of trade and industry; in such cases the chambers are also responsible for their modernization. When the central resources available for this task come to be known it can be decided whether further funding is necessary. In the case of trades connected with RIS industries but outside the competence of the chambers further regional resources will become necessary.

Funds for the development of training programmes in higher education can be obtained from HEFOP 3.3., while practical training and the launch of practice-oriented training programmes is financed by ROP 3.3. When the list of the successful proposals and the amount of grants come to be known, decision can be made on the use of further regional resources.

SMEs can finance practical training and in-service training of their own employees partly from their vocational training contribution. However, further funds are needed to finance the development of practical training schemes related to higher education, and the propagation of the possibility to finance training from the vocational training contribution in the case of RIS industries.

PRIORITY 3: SUPPORTED REGIONAL FINANCING SCHEMES FOR THE INNOVATIVE SMES IN SOUTH TRANSDANUBIA

The current situation of innovation in Hungary and South Transdanubia

Innovation has played a determinant role in the development of the economy for quite a long time already. Innovative developments enhance the productivity of the enterprises and have, therefore, a key part in improving business competitiveness, which is a main factor in economic growth. One main obstacle to achieving and maintaining competitiveness is that shortage of capital prevents Hungarian SMEs from acquiring capital-intensive state-of-the-art technologies or from engaging in innovative activities.

The EU has found various solutions to remedy such a situation. Specific SMEs actions are launched within the Framework 6 Programme of Research and Technological Development open to project proposals on a continuous basis, with the EU associate countries also welcome to participate in co-operation with the EU members.

In the late 1980s and early 1990s there was paradigm change in the interpretation of innovation. The so far dominant role of the large companies was weakened, while the dynamic small and medium-sized enterprises and their network-type co-operations were reevaluated. In this new system the notion of innovation and its role within the economy were given a new interpretation. The place of the former, linear and production-centred model was taken by a multi-pole, distribution-oriented innovative model. This new model focuses on innovations that meet consumer needs, and strives to decentralize the innovative processes. The notion of innovation is extended over the whole innovation chain with a strong emphasis on the equal role of all the poles within the chain (basic research, applied research, product development, technological development, business services, sales and marketing) and the importance of their network type relations. It breaks with the hierarchic character of the innovative process and attaches a great importance to the intensive role that SMEs play in innovation. Finally, the role of the innovation transfer organizations is also reevaluated due to the nature of the new model and the decentralized character of innovative activities also comes to the fore. In the new model increasing the share of regional innovative developments is considered an important factor in the success of innovative activities.

With the emergence of global enterprise networks the life of smaller companies has also changed considerably. The size and activity scale of global firms is continuously on the increase, while the SMEs constitute the majority of all businesses, producing nearly the half of the GDP, and they are also important as employers. Consequently, the national, regional, and micro-regional support policies give priority to the creation and strengthening of competitiveness based on innovation capabilities in highly developed economies.

There are two key factors among the features of the new innovation model that deserve special attention:

- strengthening innovative activities has become a basic element of successful regional development strategies;
- the role of SMEs is of increasing importance within the innovative processes.

Innovation activities suffered a serious setback in Hungary after the change of regime. Its extent is well illustrated by the changes in the ratio of R&D expenditure to the GDP: in the second half of the 1980s it was around 3.0%, falling to 1.6% in 1990 and to 0.6% by 1999. In the highly developed EU member states this ratio is around 2-2.5%. A similar trend can be observed in the number of people employed in R&D activities. The EU also has a significantly higher proportion of innovation financed by the business sector. In Hungary most of the funds are not spent on research directly enhancing innovation to the present day.

At present South Transdanubia has an extremely poor innovation potential: the ratio of R&D expenditure to the GDP is less than 0.2%, and R&D expenditure represents 2.9% of the national figure.

Relations between the domestic SME sector and the domestic capacities of the multinational companies are well below the level that would be possible and desirable. 99% of all Hungarian enterprises fall in the micro, small, or medium-sized category and produce mainly for the local market. Most of these firms have little income and profit generating ability, suffer from the shortage of capital and show little sensitivity to innovation. Promoting the acquisition of knowledge and innovative skills required for the competitiveness of enterprises enjoys priority among the goals of Hungarian economic policy. The institutional system with its many actors is already in place (MVA, various chambers, incubator houses, industrial parks, etc.) their operation is, however, not sufficiently service-oriented. Co-ordination among the institutions is non-existent or negligible.

Currently available sources of financing

Borrowed funds

The duality prevailing in the credit schemes is a serious problem. The smaller the enterprise, the more expensive the bank credits are and those enterprises that need them find it more difficult to obtain them than others. At the same time banks compete fiercely for serving the large and/or foreign companies. In the case of small enterprise another obstacle to credit is the requirement of a legal guarantee that banks tend to overvalue. To overcome this difficulty two guarantee institutions were created after the change of regime, financed partly by the government, and partly by the banks, but their share is still very small compared to their increasing activities, because Hungarian SMEs would need a higher volume of guarantee-insurance. In the 1990s medium- or long-term credits were really hard to obtain, banks used a complicated procedure and required disproportionate collateral. At present the demand for borrowed funds is partly met by Hitelgarancia Rt (Credit Guarantee Plc), the Agricultural Enterprise Guarantee Foundation and 7 regional guarantee-cooperatives, which have already helped several enterprises to borrow funds in return for a fee. The co-operatives focus mainly on micro-enterprises, offering guarantee for credits of maximum 5 m HUF, they are, however, not very well known by their potential clientele.

The Hungarian Act CXII /1996 on Credit Institutions considerably tightened conditions for borrowing by SMEs in order to make banking activities more secure. The bankruptcy cases, the need for bank consolidation after the change of regime all called for this tightening, partly in the interest of the depositors, and more importantly in order to restore the reputation of banks. This tightening made the situation of SMEs in need of credits even more difficult. The prudent operation of the banks also required the preparation of strict bylaws focusing mainly on the active banking transactions.

The innovative SMEs in Hungary would greatly benefit from a support scheme providing own resources or guarantee (counter-insurance) similarly to Hitelgarancia Rt. In the framework of such a

scheme the Regional Innovation Agency or its financial basis, the Regional Innovation Fund could provide financial support (i.e. the required own resources, interest subsidies and guarantees) to innovative SMEs on the basis of an acid test performed by their own banks and fully accepting its result.

It is not necessary to elaborate an interest subsidizing scheme for all transactions, because the credits available from the technology development programmes of the MFB Rt. (Hungarian Development Bank Ltd) for example, are automatically granted with interest subsidy provided by the state. This programme provides support to the following objectives:

- Technological developments for a more economic use of energy resources;
- Developments project improving better exploitation of capacities;
- Technological developments in IT and communication;
- Development projects increasing value added and efficiency of production
- Direct and indirect (e.g. packaging technology) development of the production infrastructure;
- Technological development meant to eliminate environmental damages
- Development projects to increase the stage of manufacture in products;
- Developments meant to enhance meeting the EU regulations in environmental protection and labour safety and security;
- Strengthening of supplier relations by modernizing manufacturing technology, establishment of networks;
- Development projects meant to create new jobs.

The credit scheme is not supposed to finance agricultural activities. The funding of development projects meant to increase the competitiveness of agriculture takes place outside this programme, in the framework of a separate scheme. The fact that the core activity of an enterprise is agricultural production does not make it ineligible, but the credit obtained cannot be used to finance investments directly in the agricultural activity. Credits are granted exclusively to finance activities in the industry or food industry.

State subsidies

Quite a few problems related to the financing of medium-term SME developments have remained at least partly unsolved. This is particularly true for the financing of individual projects which has not found its way into the daily practice of banks yet. The technological development of small enterprises is prevented from the start by the current situation of project financing in Hungary. In the case of investment projects the required own share is very high (at least 25%), particularly for start-up businesses. Although the Operative Programme for Economic Competitiveness published within the framework of the National Development Plan can directly finance R&D activities, the conditions for obtaining this support are rather strict.

Schemes for government capital investment

The Capital Investment Programme for SMEs was launched by the MFB Rt. last year, with preference for investment projects that can accelerate the elimination of structural or regional inequalities and help the regions or municipalities with catching up. The MFB sells its share to a third party only if the business partner does not intend to buy it, or the buyer shows an active interest in the enterprise concerned. When the time-frame of the investment expires, it may occasionally become possible to convert the capital borrowed into credit or bond. Priority is given to investment projects which increase value added and efficiency of production, protect the environment or create new jobs.

The Regional Development Holding Plc. (RDH Plc) and its subsidiaries are capable of providing resources, functioning as minor financial investor, fixing in advance, the terms and price of its withdrawal.

The shareholders of the business venture called 'Kisvállalkozás-fejlesztő Pénzügyi Rt.' (Company established with an equity of 3.5 billion HUF to finance the development of small enterprises), i.e. the Ministry of Economy and Transport, The Budapest Bank, the OTP (National Savings) Bank, the Hungarian Development Bank, the Pb Rt, HG Rt – have so far lent out 1 billion HUF (of which 300m HUF this year), only a fraction of its business plan for this year. The scheme offered here is similar to that of RFH Rt and MFB Rt. with the only difference that they invest only in profit oriented enterprises with legal entity as financial investors, for a period of at most five years, with the terms of withdrawal fixed in advance. The lower and upper limits of the investment are 10 -100m HUF respectively.

Venture capital

The cumulated value of domestic venture capital investments amounted to 772 m dollars in 2003. The 33 venture capitalist firms active in this field cannot easily find Hungarian investment targets for their mobile capital. Investments are made mainly in the large companies, where the amounts invested are rather high. Data from 2003 show that the average minimum amount invested by a venture capitalist in Hungary is 3.5 m dollars (about 720 m HUF) as opposed to the amount of venture capital required by the SMEs in South Transdanubia which rarely exceeds 100 m HUF even in the case of medium-sized companies. The above data make it clear that the large Hungarian capital bases cannot be considered as a realistic source of financing for SMEs in the region.

New trends in domestic innovation financing

After more than a decade of decline, Act XC/2003 on the Research and Technological Innovation Fund created a new financial basis for innovative activities in Hungary. The Fund brought a new era in the state subsidies given to research and development or innovation. The central resources meant to support research and development will increase by 20-40% in the years to come in contrast with the amounts known for the year 2002 and the central subsidies to the innovative activities of enterprises generated and controlled by the market will be multiplied. The law provides that enterprises should pay a contribution for which they can expect a compensation (as opposed to taxes) manifest in the development of the R&D infrastructure of institutions, generally available services or grants allocated by way of applications.

The Fund unites the amounts provided by the national budget and those coming from external sources, which - according to the Act on Public Finances - is only possible in the form of a separate state fund. This regulation will first take effect in the national budget of 2006. Till then transitory regulations will govern.

Section 8 of the Act gives a detailed list of titles allowing the use of the resources united in the Fund. The following titles are of particular importance:

- a) Domestic co-financing of the measures concerning R&D and innovation within the framework of the National Development Plan;
- b) Participation in venture capitalist investments in knowledge and technology intensive SMEs;

- c) Tasks arising from international scientific and technological co-operation;
- d) Writing of studies, analyses or developing conceptions in technical, economic or social sciences as a basis for political decisions on scientific research and technological innovation;
- e) Organization of conferences, special exhibitions, publication of materials directly related to innovative activities, contribution to prizes meant to encourage innovation;
- f) 25 % of the Fund's annual budget should be spent on objectives of regional innovation. The Regional Development Councils develop proposals for the allocation of this amount with due regard to the titles listed here and the president of the National Office of Research and Technology submits the proposals to the Research and Technological Innovation Council.

The most efficient utilization and transparency of the grants allocated from the Fund is guaranteed by the way they are placed: open applications. Grants allocated without application – including those allocated according to other regulations or international agreements – cannot amount to more than 5% of the annual forecast.

The minister of education has the power of disposing of the Fund, but he can delegate this right. The regulations also include the tasks and responsibilities of the president of the National Office of Research and Technology (hereinafter 'Office') to whom the power of disposal of the Fund has been delegated. The detailed description of the tasks is given in the enacting clause. The Office elaborates the annual plan for the use of the amount targeted for regional innovation in co-operation with the Regional Development Councils. Proposals for the utilization of the grants for regional purposes are submitted by the Regional Development Councils which have a regional innovation strategy.

The following types of support can be granted from the Fund:

- non-reimbursable support (definite contribution of capital);
- reimbursable support (it should be paid back fully or partly, i.e. temporary contribution of capital);
- assumption of interest on bank loans

The enacting clause of the Act (Annex to the Government decree No.133/2004 gives a detailed description of all the rules and regulations related to the allocation grants in all fields.

Objectives of the regional innovation financing system

1. To facilitate the conditions under which innovative domestic SMEs can take loans at the regional level;
2. To improve the capital supply of innovative domestic SMEs in the region;
3. To increase the importance and share of SMEs interested in innovation within the region.

The proposed structure of the regional innovation financing system

Component 1: Elaboration of innovation-oriented credit schemes

An appraisal system should be developed which is in agreement with the provisions of the effective Act CXII/1996 on Credit Institutions and based on the bank's effective regulation for appraisals, but can also take into consideration the specific character of innovation financing. The bank's appraisal and decision is accepted by the Regional Innovation Fund without countercheck or additional procedure.

As a future model it is conceivable to have a *single appraisal - credit allocating system* which is independent of the financing bank and focuses exclusively on the funding needs of innovative SMEs. This would, however, require the establishment of a *joint appraisal and financing body for innovative SMEs* by the financial institutions in South Transdanubia (credit institutions, RFH, Rt., etc.).

The first step in this direction could be the setup of an *ad-hoc working committee*. Later on it will become necessary to establish an organization with legal entity and owned jointly by the financing banks and savings co-operatives which will decide upon the principles to follow and elaborate the procedures of financing, similarly to the Credit Guarantee Rt. In both cases the Office of R&D and Application of Scientific Findings will be involved in the activities and co-operations. Potential co-operating partners include the large banks (OTP, MKB, ERSTE, Raiffeisen and MFB), the savings co-operatives (Szigetvár, Siklós and Mohács) RFH Rt, (DDRF Rt), HG Rt. and PBKIK.

All those involved in the financing will have to operate according to a uniform decision-making process, the basic rule of which are described in section 14 of the enacting clause.

The potential services offered within the scheme are the following:

- Own share support: available for limited liability companies, companies limited by shares and non profit companies (legal entities) that have worked in the industries listed below for at least three years and whose equity is higher than their subscribed capital, up to 50% of the own share required by the financing bank. It is a temporary supply of capital to be paid back but provided free of charge. The scheme is open for development credits running 3-10 years.
- Interest subsidy: available for limited liability companies, companies limited by shares and non profit companies (legal entities) that have worked in the industries listed below for at least three years and whose equity is higher than their subscribed capital, up to 50% of the interest charged by the financing bank. This amount is not to be paid back. The scheme is open for development credits running 3-10 years.
- Guarantee support: SMEs applying for a loan often have to face the difficulty of producing a legal guarantee required by the banks. They can turn either to the Rural Credit Guarantee Foundation or the Credit guarantee Co. for help with this problem. Both organizations require their clients to produce counter-insurance. The guarantee support scheme can provide up to 50% of the cover required. This offer is valid only for development credits running 3-10 years.

In accordance with the regulations the intensity of support depends on whether the activity to be financed belongs to basic research, applied research or experimental development.

Component 1: Creation of a Regional Venture Capital Fund (RKTA) in South Transdanubia

The Fund would operate in the South Transdanubian region, to contribute to the financing of SMEs registered and working in the region. In this way RKTA will become a very important tool for regional policy in South Transdanubia.

The organizations adding up the *equity of RKTA* are the following:

- South Transdanubian Regional Development Council;
- Regional Development Co. of the Regional Development Holding Plc;
- Private investors, including: domestic subsidiaries of the foreign multinational companies interested in the development of Hungarian supplier systems, or the venture capital funds operating in Hungary.

The *size of investments* made by RKTA should be defined as ranging from 50-150 m HUF. The reason why a minimum level should be set is that in the case of the lower amounts high transaction costs would make return on investment an unrealistic expectation. The upper limit could be higher, but the recommended amount is always defined according to the financing need typical of SMEs.

Similarly to West European trends, RKTA will have to give priority to the acquisition of a minority (i.e. less than 50%) stake in the SME applying for a loan. This would enable the Fund to invest the capital available in the highest possible number of undertakings and thereby provide increased support to the SMEs in the region. It does not mean to say that special cases the Fund should not acquire a major stake in a business, e.g. in the case of turnaround type investments, when the recovery of the enterprise in question requires an above the average injection of capital.

Risk sharing is of great importance for the prudent operation of the Fund, which is achieved through the regular monitoring of the portfolio. The manager of the Fund should take care to distribute the investments in the Fund's portfolio evenly among the various sectors and development stages of enterprises (seeding investment, initial capital, financing of development projects, MBO, MBI, turnaround dealings, etc) as well as with respect to the size of the investments. Another way of reducing risks is to have the Fund manager represented in the management or supervisory board of the portfolio enterprise, which enables him to perform the continuous monitoring of the undertaking.

Considering the unfeasibility of getting listed at the Stock Exchange, the lack of professional investors in the region as well as the shortage of capital characterising the owners of SMEs in South Transdanubia, an unexpected withdrawal of capital could easily get the enterprises stuck. This is why it is important to incorporate the proper exit guarantees in the financing agreement but only to the extent that does not endanger the benefits of SMEs from the investment. Well before the decisions on investment are made, it is imperative to analyse in detail the possibility of disinvestment and set the conditions for exit. This is even more important for the successful operation of RKTA than for the other venture capital funds currently present in Hungary and is interrelated with the regional development orientation of the Fund.

The *target groups for RKTA investments* are the South Transdanubian SMEs with great potentials for development in the future but representing a significant risk for the investors.

Beneficiaries

Component 1:

Profit and non-profit oriented SMEs of legal entity, operating in South Transdanubia which have a clear legal status and have been profitable over the past two years (equity > subscriber capital), and with a government share under 25%.

An important condition is to have one of the activities listed below as their core activity representing at least 50% of their annual net sales income both in 2002 and 2003: building materials, machine, metal working, wood processing, food, textile, leatherwear and synthetic materials industries, electronics and biotechnology. The other conditions are defined in sections 10-12 of the government decree 133/2004 (10-12. §).

Component 2:

The Regional Venture Capital Fund of South Transdanubia to be established in the near future is the direct beneficiary.

PRIORITY 4: IMPROVEMENT OF THE MARKET POSITION, EXPERTISE OF INDUSTRIAL ENTERPRISES AND OF THE QUALITY OF MANUFACTURED FOOD PRODUCTS

Measure 4.1: Establishment and Operation of a Food Science Competence Centre

Justification

Today, albeit for a rather diverse reason, nearly all the inhabitants of the Earth are affected by food-related health problems. In the highly developed societies partly over-nourishment, partly the wrong proportion of food intake have led to the spread of chronic, non-infectious diseases. According to statistical data, in Hungary 50 % of deaths can be traced back to cardiovascular, and 30 % to cancerous diseases, in the development of which nutrition plays the role of the most significant risk factor. Therefore, by changing our undesirable dietary habits, as well as by consuming foods that meet the requirements of human nourishment, it is to be hoped that an increasing proportion of the population will live to see the highest possible age as determined by their genes.

As the quality of foods of animal origin (such as meat) is perhaps chiefly influenced by the quality of the animals' fodder intake, an important field of research in food science is represented by the improvement of meat quality by means of livestock feeding, which can make it meet the requirements of human nourishment to a greater extent.

An examination of meat quality from a nutrition- physiological point of view will show that the physiology of human nourishment gives preference to fat-free meats, at the same time the meats for sale should be also free of toxins, hormone preparations and other additives that are harmful to the human organism. As shown by experience, feeding—just like environmental factors—may influence meat quality. According to findings, there are feeding methods with the help of which the protein and fat content of meat may be modified, their widespread use, however, is still a task of the distant future. Accordingly, consulting services will play an important role also in this field.

Besides the basic food materials of animal origin the quality of basic materials of vegetable origin is another important issue. What we have in mind are the various chemical remains (insecticides, other chemical pollutants, pollution by heavy metals etc.) as well as toxins produced by fungi on the arable land or in the warehouse which greatly damage food quality. This fact also confirms that we must deal with the issue of food quality—in the case of foods of vegetable origin—already on the arable land.

In the past years both in Western Europe and on the North-American continent the so-called functional foods have started to play an increasing role in human nourishment. Functional preparations are foodstuffs that are designed to preserve and protect health, that is, in addition to the customary nutrients, they contain components that are physiologically active and besides preserving the normal health condition, are suitable for the prevention of diseases. We must be aware of the fact that any food may be transformed into a functional one by the elimination of the component that has an adverse effect (e.g., allergenic protein) and by enrichment with beneficial components. Although measures of importance have been taken in this field in Hungary, still a lot has to be done to make up for the time lost.

In addition to the problems originating in our lifestyle and eating habits the so-called food-allergy deserves attention, which is, in fact, the exaggerated defence mechanism response of the organism to some food, meal, or certain components of these. Another issue belonging to the same topic is the so-called food intolerance (food incompatibility) when the chronic symptoms elicited by the food are not

of immunological nature. As a consequence of such over-sensitivity those affected need special foodstuffs in addition to the alternative nutrition possibilities. Society has a great responsibility in ensuring access for these people to adequate foods, so that their life quality will be improved thereby.

Besides food quality another factor to be taken into account is food safety, an extremely important element of life quality. Logically, man—as the last member of the food chain—is directly affected by food quality and safety. Food quality embraces a group of multifunctional issues, therefore it is necessary to integrate and control the tasks to be done along the whole vertical of the food chain (from soil to consumer) and focus on all its factors. Talking about the production of safe foodstuffs of high quality we also have to be aware of the close relationship between food manufacturing and environmental loading. Recently this complex approach (the production of excellent foodstuffs and protection of the environment, that is, the philosophy of human- and environment-friendly food production) has appeared in the research and development (R&D) programmes and the consulting (extension) services of Canada and America as well as in those of Western European countries.

A significant ecological problem of today is the loading of the environment by agriculture, and inclusively, by animal husbandry. The two most critical elements are nitrogen and phosphorus, consequently, reduction of the emission of these two elements is desirable in the sector of animal husbandry. From among the domestic cash animals it is the pig and poultry species that generate the highest nitrogenous and phosphorous loading, which can be traced back chiefly to their digestive traits, the supply of raw protein, amino-acid and phosphorus, as well as to the non-adequate rearing technology. Relevant Hungarian statistical data show that from the pig- and poultry sector 76, 000 tons of nitrogen and 14, 000 tons of phosphorus have got into the environment. These data are evidence of the close relationship between the manufacturing of animal produce and environmental loading. Furthermore, they also call attention to the serious challenge that the country embarking on introducing modern food production by means of intensive animal husbandry and plant cultivation is to face. The so-called “from feed to food to environment chain” programmes in the EU member-countries—and by inclusion, in Hungary—have the important future task of placing adequate emphasis on this kind of complex approach not only in the research and development but also in consulting and innovation activities.

Examples from abroad (from the Netherlands, Denmark, the U.S., Canada etc.) provide ample evidence that the complex task of the manufacturing of excellent and safe food products may be managed most efficiently from a regional competence centre. Therefore a region where there are several functioning centres of this kind, the general introduction and adoption of this complex philosophy in the manufacturing of safe food products stands a better chance. In addition to the establishment and running of competence centres it is of utmost importance to control each phase of the manufacturing process in the food industry, so that the quality of the product met the relevant international prescriptions at each point of the product route. Therefore the significance of quality control and monitoring services will greatly increase. The practical implementation of the philosophy “from feed to food to environment chain” will be possible only if the vertical integration among the participants of the product manufacturing chain is strengthened. One important prerequisite of this, among others, consists in the practical introduction of adequate quality management systems and the availability of the necessary information.

In the establishment of competence centres the regional universities and colleges may have an important role, since the pooled competence and networking of these institutions may serve as a base upon which the competence centre may be built. In recognition of this, in May 2004 the University of Kaposvár and the University of Pécs entered into a cooperation agreement on the joint cultivation of nutrition science and the innovation activity to be done in this field.

Aims and objectives

Overall objective: to support the foundation and the activities of regional enterprises in the food industry that are capable of manufacturing high quality and healthy products in a sustainable way.

Immediate objectives:

- the creation of a concentrated competence site relying on university competence potential in the sector of food industry
- building the relationship between the SMEs in the food industry and in the consulting, research sphere, ensuring efficient consulting services

Description

The competence centre of food science may be established by building on the capacity of the researchers and experts of the universities of Pécs and Kaposvár, as well as on that of the regional research sites of food science. The task of the centre will be, on the one hand, the organisation and harmonisation of food safety research in the various research bases of the region (universities, research institutes etc.) and the adaptation of their findings as well as of foreign results in the economic sphere.

On the other hand, it will have the duty of serving the enterprises and producers in the food industry: of ensuring services that assist the enterprises in the sustainable manufacturing and selling of safe, high quality, innovative products and in meeting the EU regulations and market requirements.

Component 1: The establishment of a competence centre of food science, creating the conditions required for its operation:

- Providing for the necessary infrastructure, acquisition of tools of informatics and other accessories
- The acquisition of equipment of informatics in connection with quality control, and monitoring systems for the building of informatics systems related to food production, food safety and food marketing
- The creation of databases, a webpage, the operation of an information network (information base of R&D relationships, regulations, and tenders). Organisation and managing of training and courses
- The development of a consulting network and staff of experts, extension of the network of enterprises and organisations that provide innovation services in the food industry (quality management services, assistance for the practical introduction of quality management systems, the creation and general use of environment-friendly primary materials and food production systems, the extension of environment-friendly production systems, EU regulation)

Component 2: Support of the operation of the competence centre

- Support of the initiation of research cooperation, of the use of technology transfer services with the collaboration of university research centres and SMEs with the purpose of the manufacturing of original, innovative products in the food industry
- Support of making use of the services needed for the production and market introduction of innovative products (planning of R&D and consulting, designing of products, elaboration of marketing strategies, market services)
- Support of participation in training and courses

Beneficiaries

It would be expedient to announce the tender above all for institutions (and economic participants) as enlisted below:

Component 1:

- Consortiums of universities, colleges, research institutes, and enterprises providing innovation services

Component 2:

- Various agricultural and industrial firms (SMEs) of the region that manufacture basic materials for the food industry or foodstuffs
- Various non-profit enterprises that wish to participate in innovation and consulting in the field of food production in one way or another

Financing sources

AVOP, GVOP, and NVT sources

Measure 4.2: Creation of alternative channels of marketing

Justification

The food industry sector in Hungary is characterised by the high number of SMEs. Under globalisation the key to the competitiveness of small and medium enterprises set against multinational companies should be sought in the joining of forces. The SMEs can decrease their competitive disadvantage by forming cooperative alliances, since on account of their size they are often unable to organise the individual activities required for successful performance in the market. Cooperation will enable the SMEs to unite their comparative advantages and overcome the relative disadvantage of the individual firms. This equally applies to the vertical- and horizontal-type integrations.

In accordance with the market expectations, large-scale purchasers and supermarket chains require smooth delivery and permanent quality. The supplier can meet the increased expectations only through integration and cooperation. In the adaptation to the requirements of the market an important role is played by the marketing organisations, processing and servicing cooperatives. The establishment of the latter contributes to the better position of the enterprises in the processing industry by entering the market in larger volume and uniformly, their competitiveness is improved thereby.

The joining of the internal market of EU is an opportunity for each enterprise, the successful use of which requires familiarity with the current market situation and preparation for the prospective changes. A possible means of meeting the new market challenges is to maintain and widen the existing market connections by means of electronic trade.

Although the basic info-communicative infrastructure and hardware resources are already available, what is more, the majority of the representatives of the SME sector have access to the internet, the employment of technologies is still negligible.

Insofar as an enterprise wants to join the e-trade network, the steps to be taken are as follows:

- It has to familiarise itself with the possibilities and the abilities of the modern technology, the functioning and successful solutions, models.
- The role of electronic trade in the strategy of the enterprise has to be thought about.
- The market, the buying habits of the customers, the possible steps of the competitors as well as the endowments, technical and human resources of the enterprise have to be subjected to an analysis.
- The electronic business model has to be planned, the risks to be calculated, and finally a decision has to be taken with regard to the selection of products to be sold via electronic channels.
- Finally a website of commercial purpose that meets all requirements has to be created.

Aims and objectives

Overall objective: strengthening the market position of SMEs, lessening of their vulnerability and exposure to commercial chains.

Immediate objectives of measure:

- to assist the organisation and development of the regionally concentrated cooperation of enterprises, or the ones concentrated by sectors or profession which are directed at improving the marketing conditions of specific product groups in the interest of making use of the advantages implied by the joining of forces of SMEs. A further objective is to help the operation of a joint marketing information service for the organisation of selling.
- To create the conditions and possibilities of selling via internet as an alternative mode of marketing possibility.

Description

Component 1: Support of selling via internet

- Appropriate, special training programmes: Through extensive training familiarising the small and medium enterprises with the essential appliances and methods used in electronic trade, with the hidden advantages and business opportunities as well as with the possibilities of connecting to e-trade
- Consulting related to electronic trading: The enterprises have to get access to the necessary pieces of information in a way that their expenses are returned within a reasonable span of time. They have to be assisted so that the internet strategy of the enterprise is adjusted to the business processes underway, and the e-trading strategy is formed according the individual needs of the enterprise:
 - o forming of strategy,
 - o planning of business model,
 - o analysis of market position and competition,
 - o consulting on marketing,
 - o consulting on product development,
 - o preparation of business feasibility study.

Support of investments in the logistical background: At least the partial ensuring of the material background, the acquisition of the indispensable tools of computerisation (hardware, software) with regard to the creation of a website, as well as finding a solution to stockpiling and transportation:

- o hardware (computers, server machines, devices of connection to the network),
- o software,
- o investments in the preparation of a website,
- o information technology,
- o investments connected to warehousing,
- o investments connected to transportation.

The creation of a joint portal for several enterprises whose activities complement each other, or the support of their being connected to an already existing portal as the expenses of a small enterprise have to be returned soon since they do not have significant reserves as a rule. Wanting to do everything on its own will compel the enterprise to realise that it will be much too expensive. In such a case the possibility of joining forces with others may be come up, or connecting to already existing systems, the joint portal of enterprises providing supplementary products and services.

Component 2: Organisation of inter-SME cooperation

- organisation of the development of cooperations/networks formed by the SMEs, assistance by consulting in this respect. In providing consulting services a significant role might be played by the competence centre in the food industry. Following the successful establishment of the network consulting services will be also provided for the members to prepare applications aiming at joint investments that are supported by the above measure. Creation and organisation of networks consisting of new small and medium enterprises;
 - Preparation of large-scale investments to be implemented by the members of the network, handing in of application, consulting;
 - Continuous control of the operation of the cooperating enterprises;

- Investment by the cooperating enterprises with objectives in common: the enterprises cooperating with each other will get financial support to implement their large-scale investments aimed at objectives in common. Within the framework of the development of cooperation, the creation and extension of the organisational system of the network, making cooperation closer between the entrepreneurs, the elaboration and representation of a joint network image, the creation of a database may get support. The competence centre of food industry will assist them by providing consulting and other services.
- The development of existing networks (service assisting cooperation and information flow, support of consulting activity);
- Elaboration and representation of joint image (logo, marketing) of the cooperating partners,
- Development of hardware, software and database with a view to the improvement of efficient cooperation.

Beneficiaries:

Component 1:

- One-man businesses
- Incorporated and non-incorporated small and medium enterprises
- Chambers of commerce and agriculture

Component 2:

- One-man businesses,
- Incorporated and non-incorporated economic companies
- Integrations of the above
- Competence centre of food industry
- Chambers of commerce and agriculture

Financing sources

GVOP-2004-4.1.1. From the measure within the electronic business systems within the enterprise “the development of the e-economy, the stimulation of e-trade” the enterprises conducting activities related to agriculture are, while the ones dealing with food industry are not excluded. In 2004 the financial source available on the national level for this measure is the rather scanty sum of HUF 1, 200 million.

AVOP “Development of the processing and marketing of agricultural products”

Within the measure “Adaptation to various channels of selling” investments related to logistics may be supported, that is, for the development of trade via the internet the assignment of a markedly regional source is necessary, since the overall nationally available sum for 2004 is HUF 3, 529 million, for all (the rather comprehensive) measures.

- In the case of agricultural producers the NVT measure “Support for the establishment of groups of producers” satisfactorily deals with the development of producers’ cooperatives, therefore, no regional intervention is needed there.
- GVOP 2.3 Development of cooperation in the sector of entrepreneurs
- From 2004 to 2006 (EU and domestic altogether) at the country-wide level EURO 239 million is available, which is enough for supporting of 60-65 applications during the three years. The assignment of regional sources is justified.

Measure 4.3: Creation a local trademarks, regional marketing

Justification

Both globalisation and regionalisation can be discovered among the recent tendencies of the agricultural market. Aspirations towards regionalisation that is the development of the economically, culturally and politically constrained independence of the regional units is a natural counterbalancing response to globalisation whose extent is considered to be exaggerated. There is a boost of trademarks and certificates of origin, the reason being the marked regional differences in consumption, which have been preserved in the face of the strong assimilating tendencies. In the case of agricultural products the national or regional origin is an important principle of marketing.

The regional market of food industry enjoys the consumer's preference in spite of the increasing globalisation. The demanding consumer requires the transparency and safety of his purchase in addition to the excellent quality. The response to this buying expectation is the representation of the foods according to origin. On the basis of international experience, the future we may face is the linking of quality and origin that is the regional quality trademark.

South Transdanubia is not one of the largest food-producing regions, and the added value from the processing industry appears elsewhere. In spite of this, the foodstuffs produced in the region represent outstanding quality. Unfortunately, it is not separated in a visible and tangible way which food products have been manufactured in the region, thus no linkage is formed, the consumer does not insist on buying particular products, since he does not regard the place of manufacturing as an aspect to be taken into account. There is no culture of food consumption, and in the market competition we are unable to make use of the advantages originating in regional production.

The region of South Transdanubia can boast of 5 historical wine-countries, 5 international viticultural and wine-producing towns, and five towns with quality wines. In addition, five 'Wine-Growers of the Year' are among their inhabitants. With regard to the volume of production, the number of people making a living from wine-producing, the natural endowments of the region and the international and domestic achievements justify the separate discussion of the marketing and marketing strategy of the wine industry.

The interest in wine and the demand for it are on the increase. The competition in the wine market is vigorous. Wine is a special product: its consumption is related to gastronomy, to the local customs, culture and traditions. Concerning either its production or its consumption there is a close relationship with the productive-servicing activities, e.g., with tourism. Wine is a complex marketing notion, being quite special as a product, since it has a peculiar value of providing pleasure, creating an emotional attachment to place and region, at the same time it is a complex of services and events related to concrete activity.

On the domestic and international markets there is evidence of the strengthening of competition. The regional wines have to measure themselves not only against the products of the 'New World', such as Chile, the Argentine, Australia etc., but also against those of the traditional wine-producing countries. One can be successful on the wine-market only with marketing-oriented behaviour, by means of creating a deliberate marketing strategy, which implies the appearance of range of products, the marketing conditions and methods in coherent principles of communication.

A regional strategy of wine-marketing may be implemented by means of the coordination of entrepreneurial and community marketing, both of which are built upon one another.

Aims and objectives

- To distinguish the regional foods within the market supply of products, highlight both outstanding foods and their regional origin, protect the food manufacturers, influence the consumer decisions through providing adequate information.
- To disseminate the general culture of food consumption, urge the food producers to raise quality and strengthen the regional image.
- To assist the marketing efforts in the wine-producing sector of the region, and thereby to improve the market position of the sector; familiarisation with and popularisation of the regional wines, betterment of the profitability of the enterprises dealing with wine.
- On the whole, gaining the title “the region of quality,” making the producers, consumers and distributors aware of its significance.

Description

Component I – The establishment of the Regional Marketing Centre (RMK)

The Regional Marketing Centre would function in the form of a non-profit company.

Two offices have to be established within the regional marketing centre. One dealing with the

marketing of foodstuffs, the other with that of the wine sector. The tasks of the centre include making up a list of the regional enterprises in the food industry and the wine-industry (creating a database), recording of the products, education in marketing, organisation of the education in the consumption culture of foods and wines, uniform presentation of the region, the elaboration, communication and promotion of its image, consulting service in this field. A task of outstanding importance would be keeping in touch with the professional organisations, the media and the commercial organisations.

The Regional Food Office (RÉI) will have the task of developing the regional system of trademarks, of arranging evaluation by the jury, controlling, planning and arranging the communication of the registered trademarks.

The Regional Wine Office (RBI) will have the task of elaborating the wine marketing strategy of the region in cooperation with the wine-growing enterprises and professional organisations, elaborating of short- and medium-term marketing programmes, the coordination of implementation, the elaboration, coordination and practical assistance of their communication.

The necessary resources for the operation of the Regional Marketing Centre are as follows: a four-roomed combined office with 4 co-workers. The top manager of the office is in charge of the functioning, administration of the two offices, the ensuring of the conditions and the professional work. The offices—The Food Office and The Wine Office—have a manager each, who do the operative work on their own level, elaborate the tasks to be done, being responsible for the relationships, the organisation and practical implementation of the programmes and 1 clerk/secretary who ensures permanent availability on the spot and deals with personnel and financial tasks. It would be possible to rent such offices (2 of them) from the Local Government, or from the Chambers. Accessories needed are computers, office furnishings, telephone, fax machine, photocopier, one vehicle which is suitable for the transportation of several people and the installation.

Component I – development of the regional system of trademarks

The Operational and Organisational Rules and Regulations of the Regional Food Trademark of South Transdanubia has to be compiled, which may be based on the Statutes of the Outstanding Hungarian Quality Trademark elaborated by FVM AMC non-profit company – it is public and assessable. The

form of the trademark has to be designed –taking into consideration the already existing regional logos. After it has been widely accepted, the procedure of having it officially registered has to be initiated. The necessary financial sources for the planning, implementation, presentation and registration have to be ensured. A tender on winning the trademark has to be announced, from the prize of which evaluation by the jury and control may be solved.

Component 2 – Strengthening the market position of food products having a regional trademark

It is necessary to design and prepare an image of the permanent installation that serves the presentation of food products with a trademark, its advantage lying in the fact that it has to be made only once, its appearance in the same form everywhere and at any time contributes to the formation of connection between association and a favourable image. The publication of materials presenting and popularising the same elements of the image have to be prepared concerning the products that have registered trademarks.

Component 3 – Creation of Regional Wine Trademark

The trademark guarantees that the wine has been made from grapes grown in the region and suggests a guaranteed quality. Such a trademark has to be elaborated and introduced which fulfils several functions: those of indicating origin, quality, and prestige, difference and of advertising. The placing of the elaborated product indicator under legal protection should proceed according to the prescriptions of Act XI/1997. The amount paid by the producers for the use of the Trademark would cover the manufacturing expenses and the fees of the evaluation committee. To this effect the creation and acceptance of a system protecting origin is needed, the Regional Wine Trademark has to be created and applied building upon the origin protecting systems in operation. Basically a trademark highlighting the habitat and the wine producer is necessary. Fantasy names and wine trademark foregrounding the distributor should be avoided.

Component 4 – Popularisation of the wines, agrarian and food products of the region

The producers and distributors have to be informed about the creation of the trademark, in that order. The information and persuasion of the producers and distributors by means of the conferences, the practical demonstration of the significance of already functioning trademarks seems to be the most efficient.

In Hungary and abroad a uniform appearance at the displays of the A and B type is of outstanding importance. Concerning the consumers, the support and organisation of supermarket actions connected with tasting in the regional commercial chains is needed for making them familiar with the trademarks. The presentation and popularisation of the regional trademarks (food, wine) should have priority and subsidization.

The training of wine consumers, the planning and practical organisation of ‘The Academy of Consumers’, in the regional media the creation of pages of wine and gastronomy is of great importance and needs support.

The creation of a marketing strategy in agreement with the professional organisations and owners, the organisation, coordination and assistance of marketing programmes. Preparation of publications using elements of the created image with a view to the popularization of the foodstuffs and wine products. Strengthening of the association ‘the region of quality’.

Beneficiaries

Component 1 – Operation of the Marketing Centre

The Regional Marketing Centre

Potential owners: the local governments of the three counties, the two universities (of Pécs and Kaposvár), the RIB, The Councils of the Wine-Country, The Pannon Wine Region Association, The Wine Route Unions of the region, the county chambers of industry, commerce and agriculture, FVM Research Institute of Viticulture and Wine-Growing.

Component 2 – Development of the System of Regional Trademarks

Beneficiary: The Regional Marketing centre, within it the Regional Food Office

Component 3 – Strengthening of the market position of the food products with regional trademarks

Beneficiary: The Regional Marketing centre, within it the Regional Food Office

Component 4 – Creation of the Regional Wine Trademark

Beneficiary: The Regional Marketing Office, within this The Regional Wine Office

Component 5 – Popularisation of the agrarian food products and wines of the region

Beneficiaries: The producers of regional agrarian food products and wines through The Regional Marketing Centre.

Financing sources

6/2004. (I.22) Governmental Regulation on the general terms of application for agrarian subsidies from the common EU sources and the related complementary subsidies distributed from the national budget, as well as the agrarian subsidies given within national scope of authority.

Possibilities of application for AVOP

Attachment 1: subsidies financed exclusively from the national budget- support of communal agrarian marketing, support of the establishment of food safety and quality management systems.

Decree on support Chapter 3.4 §144

Support of the protection of geographical product indicators (indication of origin and geographical marking) as well as of the certification of a traditionally peculiar trait.

The tenders of FVM AMC non-profit company may ensure coverage for the implementation of marketing programmes.

Regional subsidizing is required to ensure the Operational Conditions during the first 3 years at least. Support for the operation costs of the National Civilian Basic Programme - Social Organisations may be considered.

The maintenance of The Marketing Centre may be ensured by the payments for the services provided.

Measure 4.4: Support of the development and manufacturing of modern products in the food industry

Justification

Supporting bio-production, that is of the manufacturing and certification of bio-products

The variegated region of South Transdanubia may play an outstanding role in the further development of ecological farming in Hungary, in the field of the widening of territories, the development of vertical relationships and technological developments. At present ecological farming is conducted on 9600 hectares in the region. The intensive growth of croplands is proportionate to the national average therefore it can be presumed that by 2006 farming which complies with the European system of terms will be conducted on 90, 000 hectares. The diverse and, on the whole, advantageous ecological endowments of the region anticipate the competitiveness of ecological farming becoming optimised by building upon smaller economic units with a mixed sector.

The majority of croplands (62.4 %) is related to the tillage of arable lands, but it is worthwhile to mention the cultivation of vineyards-orchards and pastures as well. Concerning the arable lands the proportion of cereals is dominant (49.2 %), while that of the protein (2.3 %) and industrial plants (29.3%) is smaller. At the same time it has to be emphasized that the range of plants cultivated is wide, including, for example: vegetable cultures on arable land and medicinal herbs. At present the significance of animal husbandry falls short of plant cultivation, as a result of the devaluation of the production value of commodity stocks in plant cultivation on the markets of Western Europe, however, its role will increase in all likelihood. In the region advance can be expected especially in the pig-breeding industry on account of the operation of qualified meat-packaging capacities and of the predominance of productive stock-farms and cereals.

At volume value the processing of commodity stocks is characterised by a low level, which corresponds to the national average, at the same time the presence of successful SMEs producing for the Hungarian market in several sectors of the food industry (milling and baking industry: 6, meat industry: 1, refrigerating industry: 2) should be mentioned. The successful initiatives serve partly as guidance for the vertical developments at the regional level.

Supporting the development of health-protecting foods, and other preparations (therapeutical products)

The impact of foodstuffs on our health is an issue of primary importance for all of us. There is a growing body of evidence that adequate nutrition may assist the prevention of numerous chronic diseases. From among the foodstuffs, on the one hand, *the functional (health-protecting) foods* containing enriched, concentrated and added food components (probiotics and prebiotics, vitamins, trace elements, mineral materials, antioxidants and dietary fibres), and, on the other hand, the foods containing healthy components in themselves (vegetables and fruits, fish, honey, dairy products, medicinal herbs, vegetable oils, mushrooms) provide this kind of protection most efficiently. The functional foods, or the so-called “foods with a definite utility” are processed foods that in addition to their nutritive nature also provide assistance to certain bodily functions: they strengthen the defence mechanism of the human organism and contribute to the prevention of diseases.

There is a change underway in our dietary habits mainly under the influence of our anxiety about various diseases and epidemics and of the rise in health-consciousness, at the same time the fact that we want to eat quickly and comfortably also has to be reckoned with.

On the markets of the European Union there is a growing demand for healthy and highly nutritive foods. The spreading of this trend can be observed in Hungary, too, and probably it will emerge even more vigorously in the future.

Recognising and taking advantage of these development trends we have to develop the range of products that meet the requirements for modern, healthy foods. The necessary research base can be

found both in Pécs and Kaposvár. In our region an advantageous agro-ecological potential is disposable for the cultivation of products healthy by themselves.

Supporting the development of region-related traditional foods that meet the modern requirements

Every nation has the duty of preserving its own culture and traditions. The globalising tendencies taking place all over the world leave a diminishing space for the traditional values especially in the food industry. In response to this, the consumer demand for traditionally manufactured characteristically regional products has increased in the late 1890s in the countries of Western Europe. In Hungary decrees regulating the use of geographical product indicators (Governmental Regulation 87/1998)) as well as the certification of traditional and peculiar traits (FM decree 1/1998) were enacted in 1998. Up to the present, however, gaps have remained between the legal background and practice. On the one hand, the processing capacities which might make the modern manufacturing of these products possible are missing in the food industry the channels of marketing which might be suitable for the local marketing of products that can be manufactured in a relatively small volume are imperfect. This explains why the role of the special Hungarian products characteristic of a given region – upon reaching the tables - is negligible for the time being. In the case of traditional foodstuffs, marketing related to the place of origin has to be handled with extreme care, basing the production of these on remote, perhaps foreign markets is reasonable only in exceptional cases. On the one hand, this is a kind of limitation, on the other hand, these foodstuffs may enjoy the consumers' preference in their own region as compared to the so-called "mass foods."

The economical manufacturing of limited small volumes is conceivable only on the level of small and medium enterprises, which implies that the production of the stock commodities takes place in similar economic units. The ownership background of economic units with such size is generally linked to the place of production, consequently the re-investment of the profit is ensured. The development of region-related traditional foods is impeded by the technological deficiencies of the processing plants that are capable of economical production, as well as the anomalies of licensing and the inadequate organisation of marketing. .

Aims and objectives

Overall: the manufacturing of healthy foodstuffs that ensure a better quality of life for the consumers in the region, improvement of the situation of people making a living in agriculture concerning their income and job opportunities, with special attention paid to underdeveloped regions.

Immediate objectives of the measure:

- establishment of a food-producing base capable of manufacturing foods with a high added value
- increase of the number of innovative, marketable products in the food industry with a high degree of processing, and developing their system of marketing (bio-products, health-protecting foods, region-specific traditional foodstuffs)

Description

Component 1: Product development, promotion of innovation and the relationships between R&D institutions and practice

Support of the establishment of co-operations aimed at the manufacturing and developing modern products. In this case, participants of the cooperation are the producer(s), the corresponding institute of a university, and the processing plant which is to process the manufactured product.

- Chemical analyses as well as experiential data unequivocally prove the health-protecting effects of various primary materials in the food industry (vegetables, fruits, fish, honey, dairy and meat products, medicinal herbs, vegetable oils and mushrooms). The support is directed at

the processing of primary materials whose health-protecting and therapeutical effect has been proven, at the further development of a familiar foodstuff from one or several products enlisted above, and the elaboration of new food products and product lines.

- Support of the elaboration of new and modern food-manufacturing technologies
- Support of investments in switch-over from existing technologies
- Development and further development of the utilization of health-protecting functional food additives which may contribute to keeping the balance of the human organism:
 - Development of new, health-protecting additives
 - Promotion of the utilization of existing health-protecting food components in the manufacture of various new and modern foodstuffs
 - Elaboration of the application alternatives of synergic dietary supplements, which promote each other's effect

The improvement of the appearance, non-perishability and permanent quality of the end-product is already linked to qualified products. In this respect the following may be supported:

- Technological investments,
- Consulting service related to the development.

Component 1: Assisting the joining of food products to the quality certification system

To gain the trust of the consumer and ensure extraordinary quality it is necessary to supply the local products with indicators of origin and to enable their joining of the quality certification system of region-specific, traditional foods and eco-foods

- Initiation of existing and functioning processing capacities in the manufacturing of ecological products, support of changes and the developments necessitated by the switch-over
- Support for the certification fees of the products (fees of technical consulting and certification)
- Supplying traditional products with geographical indicator or protection of origin
- Support required for obtaining the traditional and peculiar trait.

Component 2: Development of region-specific traditional food products, the increasing of production

The objective is to promote investments that are destined to develop further the existing region-specific food products as well as to develop new products from the traditional primary materials, focusing on the food safety and quality management prescriptions in the long run. It is crucial to promote investments in developments aimed at increasing the manufacturing of traditional foodstuffs in the region of South Transdanubia and promote its competitiveness on the market.

The objectives include:

- investments assisting the production and processing of local, special primary materials in the food industry,
- investments in promoting the processing of primary materials of the food industry which are grown wild
- raising the level of quality and the processing degree of special local foodstuffs
- compilation of new product descriptions on the basis old-time long-forgotten recipes
- development of the manufacturing technology of traditional, region-specific food products
- costs incurred by the licensing procedures related to the development of the new product and utilization of consulting services.
- development and introduction of quality management systems

Beneficiaries:*Component 1:*

- Small and medium enterprises with legal entity
- Research institutes and universities
- Organisations safeguarding workers' interests and chambers
- Organisations marketing the product, supply cooperatives, groups of producers
- Primary producers, integrations of one-man businesses
- One-man businesses, primary producers, family enterprises

Component 2:

- One-man businesses, primary producers, family enterprises
- Small and medium enterprises with or without legal entity
- Organisations marketing the product, supply cooperatives, groups of producers
- Organisations safeguarding workers' interests and chambers

Component 3:

- Primary producers and one-man businesses
- Small and medium enterprises with or without legal entity
- Organisations marketing the product, supply cooperatives, groups of producers
- Integrations established by the above.

Financing sources

AVOP III.2. Under „Development of the processing and marketing of agricultural products” the available source from 2004-2006 is HUF 15.098 million.

As far as we handle the development of bio-production as a strategic objective of outstanding importance in the region, it is absolutely necessary to ensure regional financial sources, since the horizontal forms of subsidizing are not markedly specified for bio-production and the development of traditional capacities in the food industry is, by itself, capable of exhausting the nationally available source.

GVOP 3. Priority: Research and development, innovation

3.1 Measure: Support of application-oriented cooperative research and technology-developmental activities

From 2004 to 2006 (EU and national altogether) HUF 16. 04 billion

The sum of the subsidies provided by the various programmes is high on the national level, but taking into consideration the high proportion of applications the odds are against the regional applicants. This justifies the help of regional sources.

Measure 4.5: support of the marketing of modern (novel) food products (eco-foods, health-protecting and traditional foodstuffs)

Justification

Today the processes of the world economy are dictated by two forces. The first force is the continuous technological change which seems to confirm the necessity of R&D activities and product development. The second force is the exponential growth of the world trade and international competition which demonstrates the achievements of research and development and sells them the all over the world. The nations that find the optimal size in their markets or the ones who are able to influence the markets of other nations. It is the linking of these two parameters that determines the economic competitiveness of a country or a region. The intellectual capital of the South Transdanubian region serves as a good basis for the development of agriculture and food industry. Its geographical position, climate, features of the ground, arable lands, settlement structure make it suitable for becoming the determining food science centre of Hungary. The already existing research institutes of food science (e.g., MTKI, Pécs) have established the prestige of the region both at home and abroad and may be complemented - as it is proper - with a Food Science Competence Centre to be established as a further development.

The situation at present, however, is not too promising: the centre of research and marketing is chiefly linked to the Budapest, our capital, which is unable to provide reliable possibilities for the agricultural producers or to the SMEs, either in the production, or the marketing of the goods. Still, there is evidence that the eco, traditional and functional foodstuffs regarded as niche products have good market chances on the EU markets in the future. Under the impact of the changes in consumers' habits and lifestyle, the demand for healthy and health-protecting products has increased in Hungary, too. The utilization of alternative sources of energy is in harmony with the consumers' expectations, that its extent is negligible today may be accounted for by the scarcity of knowledge and undeveloped marketing network, in a way similar to the niche products of the food industry.

Aims and objectives

Overall objective: to supply the consumer with healthy and tasty foodstuffs that are rich in nutritive value, while he protects the environment at the same time.

Immediate objective: To enhance the marketing possibilities of novel food products

Description

Component 1: Marketing activity in support of the market success of modern (novel) products:

Continuous development of the marketing tools and channels of eco, health-protecting and region-specific food products. The general problem consists in the imperfection of the relationship between the individual and joint marketing activities. Therefore both the joint marketing activities and the integration of the jointly and individually performed ones have to be supported in the selling of modern (novel) products where the members of the consortium - manufacturer of the product and commercial unit - are interested in the distribution of the product.

- Joint marketing actions in the former markets of the region, with special attention paid to the possibilities of direct marketing
- Organisation of marketing promotion activities, practical arrangement of actions: displays, establishing places of marketing, acquisition of equipment

- Contribution to the expenses of appearance on international and domestic exhibitions and fairs
- Application of the techniques of marketing communication (packaging, PR, image development)

Component 2: Raising the standard of the packaging of products.

The objective of the measure is to eliminate the competitive disadvantage originating in the inadequate packaging of certain eco, health-protecting and region-specific food products, which is characteristic of the market of conventional products. Accordingly, the following may get support:

- Consulting service in the field of technology and marketing communication techniques with the purpose of assisting the development of new, high-standard packaging
- Industrial-electronic – controlling and regulating technological – developments in packaging technology

Beneficiaries:

Component 1:

- Small and medium enterprises with legal entity
- Organisation marketing the product, supply cooperatives, groups of producers
- Primary producers and one-man businesses
- Organisations safeguarding workers' interests, chambers
- Integrations formed by the above.

Component 2:

- Small and medium enterprises of legal entity
- Organisations marketing the product, supply cooperatives, groups of producers
- Primary producers and one-man businesses
- Integrations formed by the above.

Financing sources

AVOP III.2. Measure: "Development of the processing and marketing of agricultural products" In 2004 3.529 million HUF was available nation-wide.

GVOP 3. Priority: Research and development, innovation

3.1 Measure: Support of application-oriented cooperative research and technology-developmental activities from 2004 to 2006. (EU and national altogether) HUF 16.04 billion HUF

The sum of subsidies provided by GVOP is high on the national level, the sources of AVOP, however, are rather scanty. This justifies the need for regional sources.

Measure 4.6: Support of the growing and processing of industrial and energy plants

Justification

The renewable energy sources are being foregrounded to replace the continuously decreasing and less and less available fossil energy-bearers that are powerful pollutants at the same time. In the utilization of the biomass aimed at generating energy, in the traditional agrarian sectors mainly the agricultural and silvicultural by-products and the energy forests and energy plants can be reckoned with. From the perspective of the food economy our natural endowments make - and on the long term, even force – us to take advantage of the possibilities hidden in the utilization of the biomass in energetics to an increasing degree. Its utilization at present is negligible, in the majority of procedures limited to a few industrial reference units. In judging the economy it is expedient to make a three-directional comparison of competitiveness, that is, to compare the utilization of the biomass in energetics with other possibilities of its utilization and other energy-bearers. Furthermore, the effective system of subsidizing has to be elaborated on the basis of the very significant macroeconomic advantages. The positive balance of the procedures as well as increasingly favourable economic environment indicate that the future belongs to the renewable energy-bearers.

The rise in living standards – anywhere in the world – is unthinkable without the utilization of energy. In the past years the domestic demand for energy was about 1040 PJ, 60 % of which has been imported from abroad. The domestic fossil energy sources are getting scanty and their mining is more and more expensive, therefore from an energetic perspective we will become increasingly vulnerable as compared to the exporting countries. At the same time our natural endowments in plant cultivation are uniquely fortunate in Europe. But the overproduction of the agricultural products that matter most to us – because of the decline of domestic demand and the relatively disadvantageous positions of our export products – provides only limited possibilities for the utilization of the capacities of our food production. A tangible solution is the generation of energy from biomass.

In both the European Union and Hungary the lands withdrawn from production for the food industry just like the letting of fields rest fallow can be utilized for this purpose. Consequently, it is possible to continue the cultivation of the fields released in this way, by ensuring job opportunities unemployment decreases, at the same time the manufacturing of environment friendly energy bearers takes place, and at last but not least, the financial sources spent formerly on energy bearers remain in the region serving its further progress. As a consequence of Hungary's joining The Treaty of Rio in 1992, within the framework of which a decision was made to reduce the reduction of CO₂ level, the renewable energy sources, especially the cultivation of plant for an energetic purpose will have a great significance.

The most important features of energy plants as energy-bearers are as follows:

- the storage of the renewable energy is solved in the plant itself by a biochemical process due to solar radiation,
- energetic utilization is possible without the growth of the CO₂ concentration of the atmosphere, and as compared to the fossile energy-bearers significant reduction in the emission of noxious materials may be observed in the case of their use (CO, SO₂, C_xH_x etc..)
- the fields getting free as a result of the overproduction of foodstuffs offer the possibility of rational utilization and create alternative job opportunities in the agriculture, increasing the ability of the countryside to keep its population.

Because of the different economic traits biomasses can be divided into three groups, these being: the by-products, the one-year old energy plants and the energetic plantations with an age of several years. By means of diverse procedures from these materials thermal energy, electricity, or propellants may be produced. In Hungary the most promising ones seem to be direct firing (gasification), bio-briquette (firing pellet), bio-gas, bio-diesel and bio-ethanol.

Aims and objectives

Overall objectives: to preserve the lessening fossil energy-bearing supply, reduce the emission of noxious materials (CO₂), complying with the requirements of global climate protection.

Immediate objective: to take advantage of the alternative energy sources in the macro-economy, in environmental protection, rural development, energy policy and in enterprises.

Description

*Component 1: Utilization of agricultural lands by means of growing energy plants, the development of the technological and investment possibilities of firms processing on the **premises***

Among the environmental protection measures of the European Union and Hungary the limitation of the cultivation of plants for the purpose of food consumption has an outstanding role. As an alternative to the use of arable lands the cultivation and utilization of energy plants is being gradually foregrounded. Therefore, the measure is aimed at:

- increasing the sowing area of industrial plants,
- covering the income situation of the agricultural producers,
- purchasing local biomass heating equipment (providing thermal energy), and the investments of firms producing bio-diesel, bio-ethanol and bio-gas.

Component 2: Promotion of the use of energy from the processing of industrial plants

The main obstacles standing in the way of the utilization of so-called energy plants are the scarcity of knowledge about these plants and the difficulty of getting them. This lack should be replaced as soon as possible, which is justified by the decreasing supply of fossils and the world market situation. In the region The Centre for Renewable Energy and Environment may play an outstanding role. This organisation may efficiently promote the cooperation of the various participants. In the course of the activity the following may occur:

- establishing bio-gas and bio-diesel “stations” in the neighbourhood of the main agricultural regions
- ensuring compensation subsidies for the agricultural users of propellants
- support of the application of marketing–communication equipment in the marketing of alternative energy sources
- support of the building out of an energy marketing network in South Transdanubia.

Beneficiaries

- Primary producers and one-man businesses,
- Small and medium enterprises of legal entity
- Cooperatives selling, purchasing, and producing products, groups of producers
- Research institutes, universities
- Organisations safeguarding workers’ interests, chambers
- Integrations formed by the above.

Financing sources

AVOP: Widening the possibilities of money-making in the countryside

III.3.1.1.: Diversification of the agricultural activities (1307)

The measure has its share from the AVOP to the extent of the necessity of markedly regional level intervention and assignment of sources.

PRIORITY 5: IMPROVING THE MARKET POSITION AND COMPETITIVENESS OF ENTERPRISES IN VITICULTURE, OENOLOGY AND WINE TOURISM

Measure 5.1: Development of integrations in production, procurement and distribution in the oenology and viticulture of the region

Justification:

Mainly small family holdings are currently engaged in viticulture, the sale of grapes, wine making and the sale of wines in the region. These micro-holdings (with vineyards of 0.5-5 hectares) and small holdings (with vineyards of 5-20 hectares) have been left on their own, and can rely only on their own resources in their efforts to keep their market positions - with diminishing success.

Only the relatively strong, medium-sized holdings (with vineyards of 20-100 hectares) are able to operate profitably or without losses, but even these are losing ground to the rich foreign business associations.

The legal regulations have become stricter and stricter (e.g. the introduction of the HACCP system, or the introduction of compulsory labour risk appraisal). The fact that wine is listed among the excise goods further increases the responsibilities of the producers. Over 1,000 litres per year it is compulsory to operate a simplified or tax warehouse. From 2005 or 2006 the employment of an excise clerk will also become compulsory. The small holdings with one or two employees find it increasingly difficult to observe all these regulations. Ever stricter hygienic regulations can be kept at a significant cost, adding to the difficulties of the micro and small vineyards.

Viniculture in the region is characterized by the obsolete structure of varieties, underdeveloped transport infrastructure and uneven technology in processing. The conditions are not suitable for the introduction of technologies allowing the production of competitive products. The lack of own resources forces the small holdings to abstain from submitting project proposals and this is also the reason why banks reject their credit applications as well.

It is more difficult to sell small quantities of wine produced by small vineyards than large quantities. The multinational chain stores and restaurants are not interested in buying below a certain quantity. Small quantities can only be sold locally, mainly by the producers, or in wine-shops.

Aims and objectives

To develop producing and distributing capacities in the region that are competitive both at the domestic and international markets through the creation of integrations in viticulture and viniculture.

- To realize the strongest possible co-operation in production and market operations both vertically and horizontally, involving all the related activities (growing and selling grapes, wine making and distribution);
- To modernize the technologies used in the region and make the quality management and work safety systems available to all those concerned;
- Co-operation of producers: encourage the small holdings to join forces, especially in the use of machinery as well as offer special services and consulting;
- Co-operation at the market, joint distribution

Description:

The development of the five wine districts requires different interventions due to differences in their geographical location, climatic conditions, social background, history and level of technological development. Of course, any of the integrations outlined here would bring positive changes in all five districts, for example a vertical integration of producers is beneficial and can be recommended anywhere, since it mainly requires determination and good managements not capital - but the specific features should also be taken into consideration.

Component 1: Encouraging the creation of a winery co-operative for the joint processing of grapes

The hygienic regulations of the EU require the use of inoxidizable steel equipment in the processing of grapes: tank, fermenting tub, press, cooled fermenting tub for reductive fermentation of grapes, modern filters and a closed bottling line – their procurement will require a considerable financial support.

Holdings also need support to employ properly qualified labour (wine-makers, marketing specialists, excise clerk), as well as to buy various software applications (in labour safety, food hygiene, excise, etc.) that the competent authorities have checked and certified, and that allow the retrieval of data by different criteria (e.g. HACCP, invoicing, cellar-book register, etc.)

During the implementation of the measure special attention should be paid to competitiveness: it should be determined what is the smallest area cultivated by a winery co-operative that makes is eligible for support. (E.g. certain investments are not profitable under 50 ha).

This measure is justified in wine districts or in parts of wine districts where both the landscape and the vineyards are fragmented, i.e. the holdings are small and only a few of them have modern technology, running water and canalization. Most of the wine-makers lack the proper qualification and the wines they make are not competitive at the domestic or international markets. These difficulties are typical of the Pécs and Tolna wine districts, lying in the vicinity of more famous, historical wine regions. It may be reasonable, however, to apply this measure in the wine district of Balatonboglár as well, and in some parts of the Villány and Szekszárd wine districts.

Component 2: Encouraging integration for joint distribution

Support should be granted to the operating costs of integrations established for joint distribution by at least 10-15 producers with a total area of at least 50 hectares; these costs cover the employment of qualified labour (marketing manager and excise clerk) and the purchase of software applications required (invoicing, inventory, client register, VPOP records).

The above described measure is particularly justified in the wine districts where - among others – several modern grape processing plants have been established recently due to the concentrated growing of grapes in large vineyards and the traditions of several decades; the wine makers are well trained and have achieved important results both by national and international standards. In these districts – e.g. the wine districts of Villány and Szekszárd – the larger producers have managed to accumulate the capital for the establishment of a processing plant that meets the requirements of the day, therefore the structure that emerged is different from the winery co-operatives. However, if they are to penetrate the international markets they need considerable larger volumes than the wines made in the individual cellars. The solution to this problem is found in the wine-makers' integration created to foster joint distribution. The wine districts of Balatonboglár, Pécs and Tolna are eligible for support in this measure, because they have the vineyards and wineries that meet the above criteria.

Component 3: Supporting integrations created for the joint management of by-products and the establishment of a distillery

Supporting the construction of a modern, hygienic by-product collecting and storing unit with a cooling system, which meets the regulations of the ÁNTSZ (National Public Health and Medical Officer) and Animal Health and Food Safety Office in every wine district, together with other local stores.

In accordance with the EU regulation on the management and distillation of by-products in viticulture and the domestic regulations, it is necessary to support the establishment of a regional distillery with a capacity defined by analysts with regard to the amount of grapes annually processed in the region

Component 4: measures promoting the creation of integrations in viticulture

- Supporting the establishment of a model co-operative for processing and distribution at regional level that can demonstrate the advantages of co-operatives and the whole processing line with respect to both the technical and the business processes to all those who are interested, that integrates a sufficient number of producers and makes competitive, high quality wines. This model co-operative would also possess the whole range of state-of-the-art processing equipment in accordance with the EU and domestic hygienic regulations (inoxidizable steel tanks, fermenter, press, as well as all the equipment needed for reductive fermentation, both traditional and barrique barrels, gantry space, modern filters and a closed bottling line) storage capacity, and office equipment for the administration (e.g. software applications for labour safety, food hygiene, invoicing, inventory, client register, VPOP register, etc.), and employs properly trained staff (wine maker, marketing expert, excise clerk). The co-operative should be able to receive visitor groups (reception, conference room), in order to present the various processes and the administrative system.
- Supporting the organization of forums, lectures and workshops presenting and promoting the efficient operation of winery co-operatives in every wine-district, with special emphasis on the necessity of integration, its advantages for competitiveness and offering solutions to the difficulties or problems inherent in the creation of co-operatives.
- Supporting the publication of PR material (brochures, videos, article series in periodicals or local papers) on the successful and competitive winery co-operatives both in Hungary and the EU, using specific examples to demonstrate the advantages, results, difficulties and problems related to co-operatives;
- Supporting the organization of study tours for producers open to integration, to visit and study successful wine-making co-operatives in Hungary and the EU member states;
- Supporting the complementation of the teaching materials used by the training institutions of viticulture to include both theoretical and practical training in the various forms and opportunities of integration.

Beneficiaries:

The SMEs operating viticulture and oenology in the 5 wine districts of the region, and the already operating integrations.

Component 4:

If the model co-operative can be established, the beneficiaries will include the grape growing and wine making SMEs operating in the 5 wine districts of the region as well as the already existing integrations.

Beneficiaries of the other activities within this component include the various organizations of wine-making and wine tourism, associations, training institutions, the Research Institute for Viniculture and Oenology, Ministry of Agriculture (Pécs)

Financing sources

BÉSZ associations supporting operation of producer groups

National support: decree of the Ministry of Agriculture, 25/2004 FVM

(Support granted to co-operatives supporting the procurement and distribution of certain products, providing services and to other agricultural organizations, Support to the recognized producer groups);

- National Plan for Rural Development (NVT, supporting the creation and operation of producer groups)

Support to investment projects

- AVOP (Support to investment projects in agriculture, support to the processing and distribution of agricultural products)

Support to marketing activities

- National support decree of the Ministry of Agriculture, 25/2004 (sub-title: supporting community agro-marketing)

Although integrations working in the grape-wine sector seem to have several opportunities to apply for grants, a better look at the conditions makes it clear that quite a few obstacles have to be overcome before integrations can be established and start operation. This sector suffers from a crisis of over-production all over the European Union therefore its income generating capacity is not very good while the regulations defining forms of integration, or grant applications set rather severe terms and conditions. For a producer group to be recognized, its members are expected to produce a total of 300 m HUF sales income in the current year, but the share of price income from natural person members should not be less than 30% of the total sales income.

Although the regulations for the establishment of BÉSZ associations are not that strict, they are also expected to realize sales income of 300 m HUF per year. The integrations already operating or about to be founded in the region can be viable and generate perceivable changes in the region if the regional support system does not expect them to fulfil unrealistic conditions.

Measure 5.2: Development of agro-informatics systems promoting the dissemination of environment sensitive methods in vine growing in the wine districts of South Transdanubia

Justification

The success of agricultural activities greatly depends on the thorough knowledge producers have of the specific features of their production sites, especially in horticulture and plant growing. The volume-centred agricultural production which focuses on yields only and works with high inputs of pesticides, chemical fertilizers and machinery cannot achieve that. The environmental and energy crisis, the widening of the gap between the prices of agricultural and industrial products, deteriorating efficiency, stiffer competition, ever stricter regulations in plant protection and food safety, the requirements of sustainable development, the issue of environment-sensitive areas (ESA) all present new challenges to the producers obliging them to find new solutions.

We live now in the age of the information society, which permeates all aspects of our life. This information society has appeared in agriculture in a specific form, the so-called precision agricultural production. Essentially it means maximum regard to the natural-environmental conditions and their exploitation in the course of farming or production technology. The production site is not treated as a homogeneous unit any more.

The main reasons for the spatial differentiation of the production site are found in factors like the micro-climate, the soil, the features of the ground and production technology. The production site is considered of outstanding importance and both production and technology are adjusted to it.

The micro-climate has a fundamental influence on the success plant growing (especially on grape, pear, apple and sour cherry plantations), the efficiency and effectiveness of plant protection.

The role of plant protection is of key importance in vineyard technology. In the case of grapes the main problems are caused by diseases like powdery mildew, peronospora and grey mildew. The infection and damage caused by all three pathogens depends basically on the climatic features of the site in question (temperature, precipitation and humidity). The biology of the above pathogens is well known and the threat they represent is easily forecast if the actual meteorological data are available.

The availability of pesticides and machine pool in itself is not sufficient for successful (i.e. environmentally friendly, effective and cost-efficient) plant protection. Timing, the performance of the intervention at a time when pathogens are sensitive to it, the thorough and continuous monitoring of the micro-climate are also of vital importance. If the time of spraying is not chosen properly (it is late) certain infections (grey mildew and bunch peronospora) can cause an irreparable damage of 20 or even 40%! Unnecessary, pre-planned sprayings mean a load for the environment, a danger for the workers and make production less profitable. The information gained and used with the proper software application can serve as a basis for the development of a quality management system in the winery the processes the grapes grown on the given site.

Aims and objectives

- Changing attitudes: shift to an environmentally aware plant (vine) protection (dissemination of the IPM technology and ecological farming);
- Production of healthy grapes without chemical residues in all the vineyards of the region that produce for the market;
- Decrease in the use of chemicals in the vineyards to protect the environment (soil, waters and air) (and make the profitability increasing impact of this change manifest in the lower costs of production)

Description

The agro-informatics system envisaged here (for meteorological measurements and forecasts for plant protection) would include data of 38 measuring stations, a central data collecting unit and a computer. The stations would be located in the wine districts of Szekszárd (12), Tolna (10), Dél-Balaton (8), Pécs (6) and Villány (2). They should be capable of measuring air temperature, humidity, precipitation, and leaf wetness without human intervention (in a fully automated way) and in every hour round the clock. One station in every wine district should have the additional capacity to measure the direction and velocity of the wind, sunshine and humidity of the soil, and be equipped with a spore trap. This spore trap is supposed to detect both the pollens causing health problem in humans (e.g. peanut, ambrosia, alder, etc.) and the fungus spores leading to problems in the health of plants.

The system will have a modular structure, so that any of the stations can be enlarged with additional measuring instrument according to the specific features of the area or plantation in question (e.g. piranometer and electric insect trap)

The system is also expected have frost alarm and watering control functions as well. The modular system to be installed should contain up-to-date technical solutions:

- the measuring stations should forward their data in SMS by a GSM mobile communications system to the central data-collecting unit;
- access to data should be possible on a coded Internet site;
- the stations should function without external energy source, because – being environmentally friendly - they will use solar energy. Every station will also have a battery to maintain its operation during the night, charged during the day.

The system should allow the query of data in summary form (the most important data during the past 24 hours: maximum and minimum temperatures, the amount of precipitation, humidity) as well as in a derived form (e.g. intensity of precipitation). The data should be presentable in both tabular and graphic forms. Another expectation is the possibility of summarizing data by larger periods (pentads, decades, months) as well.

The meteorological data measured on the sites will be recorded and processed by a central computer.

Local experts will be involved in the evaluation of the data, the elaboration and implementation of customized recommendations for protection. Small-scale producers can have the data transferred to them by the existing system of vine-growing communities.

Beneficiaries

Project owners: vine-growing communities and their non-profit companies (Szekszárd, Siklós). According to the current regulation preference is given to the non-profit companies of communities as project owners (because the vine-growing communities are not allowed to perform classical business activities but are allowed to establish non-profit companies for this purpose).

The members of the communities, i.e. the registered vine-growers will constitute the group of beneficiaries. They will obtain the data measured by the system after evaluation, processing and turned into recommendations for plant protection.

Financing sources

In the years 2001 and 2002 the Ministry of Agriculture issued a call for project proposals financed from the VFC fund. Between September 2002 and April 30, 2004 non-reimbursable support could be obtained for the development of systems like the one described above within the rural infrastructure component of the SAPARD programme. Both programmes supported investment projects of relatively low budgets (the upper limit being 5 or 6 m HUF respectively). Since May 1, 2004 the SAPARD programme has not been open to new applications.

The component called the development of rural infrastructure of the Operative Programme for Agricultural and Rural Development, which has replaced the SAPARD programme, does not support agro-informatics developments of this kind. In principle, part 2.1.1. of the Operative Programme of Economic Competitiveness (GVOP) supports projects of this kind if agricultural production is not the core activity of the applicant and/or his income from agricultural activity does not exceed the 50% share. In practice this means that the introduction of the system described here cannot be financed from the GVOP programme.

Measure 5.3: Elaboration, dissemination and operation of an origin protection system at regional level in the wine districts of South Transdanubia

Justification

The fact that in August 2000 wine was listed among the excise goods has caused several problems in Hungary. Excise goods are those that guarantee secure and high tax income for the state (e.g. tobacco, petrol and alcohol.). However, this system is suitable not only for generating state revenue, but for the protection of product origin as well. The extremely complicated domestic regulation, however, shows a strong preference to the income side and it is less suited for the true protection of the vine-growers' market position.

The effective Hungarian Act on Vine Growing and Wine Making⁶ still contains provisions on the basic technological processes of vine growing and wine making, regulates related administrative issues and even quality protection as well, but is not deeply concerned with issues of market regulation. The new law does not go into details about the protection of origin either, but its enacting clause contains provisions concerning it⁷.

The Act on Vine-Growing Communities⁸ taking effect on January 1, 2004 took a step forward by defining vine-growing communities unambiguously as a public body established in order to protect origin and quality (Section 3 paragraph (1)), and defines important new tasks and competences related to the protection of origin, source/genesis and quality both for the council of the vine-growing community (section 46) and the national council (section 47). The Amendment of the Act on Vine-Growing Communities in 2000 made it possible to found grass-root and voluntarily organized vine-growing districts as well. The continuous increase in the competences of the vine-growing communities contributes to the system's becoming an internationally respected institution self-governance safeguarding its interests (it is also vital to have the required financial backing as well).

Our accession to the European Union requires a significant and immediate development of source- and origin protection considering that the EU has significant overproduction of ordinary wines (table and district wines) and the vine-growing countries of the EU have to compete with increasing market shares of countries like the USA, Argentina, Australia and Chile and the restructuring of wine drinking habits.

Hungary is a founding member of the International Office of Oenology and Viniculture, incorporating 98% of the world's vineyards. The resolution of its 1958 conference, which is still in effect and known as the Lisbon Agreement was signed by 16 countries including Hungary and focussed on the origin and quality protection of wines.

The latest domestic regulations on the protection of origin (Eger and Szekszárd) represent local (wine district) interests and are not concerned with national or regional delineation, therefore the results they can lead to are also limited. At present the number of wine districts is 22 in Hungary, which is rather high (considering their individual sizes) and it is believed that the emergence of natural regions should be supported by all means.

⁶ Act XVIII/2004

⁷ FVM decree 97/2004.

⁸ Act CII/ 1994

Most of the wine-making plants in the South Transdanubian region produce on a small scale and operate in an autarkic way often without logistical support or up-to-date processing technology, suffering from the shortage of working capital, unfavourable varietal structure, etc. This situation requires several strategic and operative measures.

The wine market itself has to cope with various international (global) problems day by day, such as:

- the consumption of wine (and other alcoholic drinks) is decreasing all over the world;
- wines compete for the consumers at a saturated market;
- trends in wine consumption are changing (quality wines replace table wines, red wines are more popular than white wines, and wines of the New World are more fashionable than European ones)
- of course, the differences in the reputation of the individual wine districts, their level of the processing and familiarity with the products the market also plays a part.

Aims and objectives

- To increase the proportion of wines with high added value
- To improve the market positions and profitability of domestic wines

Description

Component 1: Elaboration of the regulations for regional origin protection

Such regulations could be of great support to the micro regions (or more precisely to the vine growing districts within the wine districts), e.g. they can help family vineyards keep their market position or preserve their identity. At the same time their extension to the whole region can be of service to larger companies and all the wine-makers in the region. Participation in the qualification and the whole system is voluntary in the first stage. Vine growers or wine makers who do not want to join in can choose to abide 'exclusively' the national regulations, and refuse those related to origin protection.

The regulations to be drawn up should include the following:

- Delineation of geographical origin (e.g. taking the French regulation as a model);
- Definition of principles and guidelines for the vine growing technology (preferred, allowed and forbidden methods, procedures, varieties);
- Definition of the technology to be used in grape processing and wine treatment;
- Regulation for the rating of wines (organoleptic qualification, parameters of content, re-qualification, downgrading);
- Definition of packaging/make-up, introduction to the market;
- Product description;
- Control system, legal consequences;
- Elaboration of a classification system similar to the one drafted for the Villány wine district and its extension over the three other wine districts, with due regard to the specific local conditions. The goal is to have at least 15% of the district's wines in the top, 'premium' category and at least half of them in the 'classic' category which replaces the traditional quality wine category. The former proportion of 'table and local wines' should be abandoned. If it is not possible to make the 'classic' category dominant, efforts should be focused on the production and marketing of 'standard' wines, which is a higher category than that of the 'local wine' approaching the level of quality wines as defined in the law (at least with the same restrictions on the production and sugar content) and more suitable to strengthen the image of the region.
- Definition of the basic principles for the regional marketing strategy and actions

The draft of the origin protection system developed for the Villány wine district could be used as a model for the elaboration of this regulation.

Component 2: Setup of a Regional Wine-Qualifying Committee

- A room completely suited for the qualification of wines is needed (at present no building in the region meets all the relevant regulations). Installation of the infrastructure related to the room and the activity. The room should be air-conditioned, protected from direct sunshine, and equipped with smell filter and noise isolation allowing the separate placement of at least 80 experts at the same time. It should have easy access both in summer and winter. Another room is required for computerized data processing. The other rooms (lavatory, kitchen and office) should be built according to the effective building regulations. The building should have all modern conveniences, and a computerized system with Internet connection.
- Human resource development: training and continuous re-training of experts for the Wine Qualifying Committee. The basic training planned for the first year will produce about 250 certified wine qualifiers. After that basic training will be given to 8-10 new persons every year (certified wine qualifier).

Beneficiaries

Component 1: the nature of the problem requires that there should be only one project owner; therefore the Pannon Wine District Association could be a perfect beneficiary in principle. The problem is that the Association has no legal authorization of any kind in this field and the South Balaton wine district is not member of the Association. The formerly mentioned Act CXXI/1997 refers the issue of the certificate of origin exclusively to the competence of the vine-growing community (i.e. its leader). Consequently the tasks outlined above should also be delegated to the existing community system. The shortage of experts and the complexity of the tasks make a certain degree of centralization indispensable therefore the system should be managed at the level of wine districts.

Component 2: The Research Institute of Viticulture and Oenology in Pécs maintained by FVM could be the beneficiary if the owner agrees. If this is not feasible, the Regional Committee could be organized on the basis of wine districts.

The indirect beneficiaries will include the registered agricultural vine-growers (members of the vine-growing communities) because they can certainly benefit from the qualifications obtained.

Financing sources

Annex 1 of the government decree 6/2004 lists all the agricultural subsidies that should be financed exclusively from the national budget in accordance with the EU regulations on agricultural subsidies. They include among others: support to community agro-marketing, the development of food safety and quality management systems, as well as consulting.

Annex 2 of the decree lists the titles included in the Operative Programme of Agricultural and Rural Development (AVOP) chapter of the National Development Plan, among others the development of processing and distributing agricultural products. However, AVOP supports primarily investments in production.

The currently effective FVM decree 25/2004 contains neither direct nor indirect titles related to the support of origin protection of grapes and wines.

The complexity, timeliness and weight of the tasks within the region makes regional support indispensable.

Measure 5.4: Development of a wine-route network in South Transdanubia

Justification

Following the example of some West European regions, five wine routes have been created in South Transdanubia as more elevated forms of wine tourism and to foster rural development. Their purpose is to promote the production of good quality wines, to develop wine tourism and rural tourism, to protect the ecological image of the vineyards, to increase demand and market for good quality local wines, to conserve the artistic and cultural values, monuments and pieces of folk architecture, to articulate and safeguard the interests related to the above. These goals cannot be achieved without the co-ordination of communal, infrastructural, nature and environment protecting programmes, and joint action in promoting business activities. It is imperative to harmonize initiatives by local governments, business organizations, NGOs and the population. It is indispensable to explore potential resources to finance the developments and programmes, with special regard to the government funds and other opportunities for grant applications.

The wine route associations make considerable efforts to develop, promote and market their tourism related products and services, like rural tourism or wine tourism based on the good quality of local products. Their level of development and the observed differences depend not only on the commitment and competitiveness of the local economic actors but the on the professional skills of wine route managers, their efficiency in co-ordinating resources, their success in drawing and purposefully using the funds available.

Great differences can be observed in the membership and composition of the wine routes established in 1999 and 2000, the members being mainly local governments, SMEs in oenology and the tourist trade, private persons and vine-growing communities.

With the exception of the Villány-Siklós wine route, the managing organizations of wine routes in South Transdanubia have no working organizations or separate offices, but depend on other professional bodies allowing them the use of their office facilities. In their case full time employees are replaced by devoted volunteers with no qualifications in this special field and no experience in programming. It has been found that even if there are employees, the management may lack certain professional skills. In the course of their daily work they focus on the tasks derived from the complex goals set forth in their deed of foundations, with special emphasis on community marketing and promotion.

Most of the wine routes have not written a coherent development strategy for the medium term. There are no regulations to govern their development, which is characterized by a desperate hunt for the various opportunities they might grab. Their sources of income include primarily the modest membership (30-67%) and the grants obtained for particular targets from various funds. The lack of own resources often prevents them from applying for subsidies that could seriously contribute to their development.

Co-operation and the flow of information within the network created by the five wine routes in South Transdanubia is far from smooth, which can be put down to the dependence of organizations. Joint actions are not possible without committed, full-time employees, because volunteers have only limited time and energy after working hours.

The number of participants in the wine route programme is growing – even if slowly – every year. On the other hand, those who can provide high quality services related to the wine route are rather small

in number and scattered all over the area, considering the potentials and the size of the wine districts. The only exception is Villány with nearly 60% of the members of the Villány-Siklós wine route. There are considerable differences in the commitment of the members to the wine route organization as well. This is manifest mainly in their propensity to pay membership fee. The members' attitude also depends on the ethnic composition of the local population, their activity and creativity as entrepreneurs, the example set by the leading undertakings as well as the traditional family values they inherited. (As to the internal flow of information among the wine routes there is also room for improvement.)

It can be taken for granted that the development of the wine routes in South Transdanubia will take the wine route programme closer to the implementation of its economic and social objectives.

Aims and objectives

The objective of this measure is to assist the five wine routes to successfully meet the basic criteria (accessibility, noticeability, contractual relations, good facilities for receiving the guests, organic unity of wines and gastronomy, transfer of information, guaranteed quality) and thereby create a unique regional product for the tourist trade which can have a positive impact on both the producers and service providers regarding not only supply but the demand side as well.

The creation of a successfully operating network with close links among the members requires highly qualified and efficient management, offices equipped with the entire infrastructure required and a two-way active flow of information among the wine route members.

The unique regional product for tourism can be developed after the assessment of the supply of other products for the tourist trade by developing and integrating them, ensuring the proper background for them (image, information, quality management, advertising, training, etc) and presenting them as parts of the uniform image of the wine route.

Besides encouraging the maintenance of good relations, it is important to rely on the understanding, enthusiasm and positive attitude of the local population in order to improve their living conditions and develop the culture of wine.

Description

Component 1: Efficient management for the wine routes

- Internal exchange of experiences to understand the what mechanisms govern the operation of the wine routes and to compare their development at least twice a year, in the form of workshops and study tours;
- Widening the experiences of management, development of partnerships, organization of study tours to visit the European wine routes which can serve as models for us in order to change attitudes and renew the development of the network;
- Employment of well trained managers with good professional skills (1-2 persons);
- Setup of wine route offices and a central office for the network, capable of managing the activities and serving as a basis for efficient work. Provision of the office facilities and supplies needed for the rural development activities (office space, furniture, computers, telephone, fax machine, Xerox machine, etc.). The local offices would mainly focus on the economic and physical operation of the wine route associations, and perform the tasks defined in the bylaws. The central office will co-ordinate the individual wine routes in the region, harmonize the development programmes and identify the sources of financing.

- Organization of wine route management training courses for managers of the South Transdanubian wine routes to develop their programming, managing and professional skills. This programme would offer training for about 12 persons actively involved in the management of the local and the central offices. From time to time it may become justified to provide additional training to these people.
- Elaboration of local and regional strategies for wine route development and action plans, involving the undertakings, service providers, local governments NGOs and the population

Component 2: Development of wine route products

- The elaboration of the local and regional wine route marketing strategies after the assessment of the potential clientele, in order to identify the target markets, the ways and means allowing to enter them as well as the uniform image
- The practical application of the marketing tools defined in the strategy, the promotion of their use (publications, appearance at various events, etc.)
- The instalment of the complete tourist information system with the creation of the accessible information points (info-terminal, live info-point) and the further development of the road signs for the wine route
- The development of a uniform Wine Route Charter, a classified set of qualification criteria for South Transdanubia, with due regard to the AREV recommendations in order to encourage the development of high quality services; the design and production of the related trade marks. Application of a common qualifying system to guarantee the quality of supply along the wine route. Training and setup of qualifying committees (5-8 persons each) involving local experts (of tourism, consumer protection, wine making, gastronomy, architecture, etc) along certain wine routes.
- Organization of training programmes to deepen the knowledge that entrepreneurs of the wine route have of the market and management (e.g. conditions of good quality services, the relevant EU and Hungarian regulations, marketing techniques, business skills) to promote the development of products and services which represent higher value added.
- High quality training for wine butlers in the wine districts providing a certificate recognized by the profession, in co-operation with the Wine Academy, the training institutions in higher education

Component 3: PR - (external-internal) relations

- Organization of workshops, forums, meetings and conferences related to the wine routes, in order to strengthen co-operation of the wine routes, local entrepreneurs, the public sector, politicians, other professional bodies and authorities, or to start new co-operations.
- Increased presence in the press. Development of a close co-operation with both the regional and the national press. Entertaining representatives of the press at various events, publication of new and interviews. Use of all opportunities offered by radio programmes, national dailies magazines, professional journals and primarily the public television.
- Organization of study trips for media correspondents, guide-book writers, diplomats and staff of embassies, tour operators and other professional partners.

Beneficiaries

The beneficiaries of the measure are also the owners of the projects including the wine route associations constituting the network of wine routes in South Transdanubia, their members and the consortium based on their partnership.

Financing sources

- SAPARD
- Embassy of the Kingdom of the Netherlands – MATRA-KAP
- MEH – Support to the co-operation of NGOs
- PHARE ACCESS 2002 – Micro project
- AVOP – 3.1.
- National NGO Basic Programme – Support to the operating costs of NGOs
- LEADER Plus programme – implementation of rural development programmes

PRIORITY 6: ACQUISITION OF SKILLS/ABILITIES REQUIRED FOR THE DEVELOPMENT OF OWN PRODUCTS IN THE TEXTILE, CLOTHING, LEATHEWEAR, MACHINE INDUSTRIES, METAL WORKING AND ELECTRONICS

Measure 6.1: Establishment and operation of a Regional Service Centre for the Clothing industry in South Transdanubia

Justification

In a historical perspective the textile industry and tannery together with the related trades became the basis for the *fashion industry* after the industrial revolution. In spite of the widespread mechanization, chemical processing and automation these industries, especially clothing and leatherwear have remained quite labour-intensive. The traditional textile, clothing and shoe manufacturers have seen the price of labour increase together with rising living standards, and had no alternative but find cheaper production capacities, primarily in East Europe, South America and South-East Asia. At the same time, their attention and capital focused on product development and sales (marketing) and in this way have managed to keep or even strengthen their dominance at the world market.

The clothing industry of Hungary⁹ played an outstanding part at the time of the planned economy, not only because it produced most of the goods that were exported to the Soviet Union in return for the raw materials and energy resources imported from there but also because it produced also a significant part of the revenue in convertible currencies that was vital for the national economy. The relations leading to contract production were first established in the 1980s mainly in the textile and leatherwear industries on the basis of cheap Hungarian (and other East European) labour and the hunger for convertible currency prevailing in the economy. The brand owner could develop manufacturing capacities in a geographically favourable location¹⁰ and the sudden increase in unemployment made the otherwise well-qualified labour relatively even cheaper. The pioneers of privatization, the new owners often had no working capital or did not want to risk their money in manufacturing. In this way the global and domestic economic processes inevitably led to the dramatic decline of the textile industry and tannery – the two industries that were capital-intensive, depended on imports and had to face severe environmental fines. At the same time, most Hungarian companies in the clothing and leatherwear industries turned to *contract production*.

The textile industry and tannery of South Transdanubia¹¹ has long traditions, on the one hand, and, on the other, employed a large part of the local population. When the plants were privatized, the newly established business relations¹² favoured contract production in these industries as well.

⁹ The term *clothing industry* in this context is meant to include all the textile (spinning, weaving and textile making), ready-made clothes (underwear and outerwear), knitwear, tannery, fur processing and leather processing (shoe, fancy leather goods, leather clothing, fur coats and sports wear) industries. Essentially the same is meant by the *textile and leather/wear industries* or the ‘textile industry and tannery’ as used in the headline.

¹⁰ Earlier most of the industrial products were manufactured in Europe or North America, with most of the leading clothing and leatherwear manufacturers operating on these continents that have always been also the largest consumers. Easter Europe is the most favourable place for outsourcing labour intensive manufacturing since it is near both the traditional industrial centres and the largest markets.

¹¹ The century-old Pécs Tannery, the Tannery of Simontornya, the world famous Glove Factory of Pécs (at a time perhaps the largest glove factory in the world) the Botond Shoe factory (of a very special profile) and the Shoe Factory of Szigetvár and the factory of fancy leather goods of Szekszárd are/were all operating in the region.

¹² E.g. production was performed for ROY & LEVY in Mágocs, ITALYSTRAPS in Csurgó, SALAMANDER in Bonyhád, SAMSONITE in Szekszárd, SEMLER and for some time CHURCH in Pécs.

However, the negative wage war forced the decision-makers of leading brands that had so far been very active in the South Transdanubian region to move on to Romania, the Southern Slave areas, the former members of the Soviet Union (mainly the Ukraine and Central Asia) as well as the Far East (primarily China and Vietnam) i.e. to the east and south.

The special Hungarian conditions: the relatively small population and surface of the country, the strong concentration of both the economy and public administration in the capital led to the situation that the *background institutions of the industry* settled mainly in Budapest. Except for some vocational training school and technical secondary school practically no other organization is found in South Transdanubia. In the meantime technological and economic development has led to further division of labour involving more and more organizations, institutions or service providers in the chain of modern industry that are not concerned with the processing or transformation of materials, but increasing the marketability of the products (e.g. product development, quality control, marketing). In our days the larger part of value added is produced by intellectual work, consequently competitiveness cannot be achieved without the background services that can efficiently support manufacturing.

Aims and objectives

The overall and long-term objective is to improve productivity (an important factor in competitiveness) and achieve a better and more even exploitation of the existing (and future) capacities. As a result, the industry can maintain its employment potential and contribute to the economic prosperity of the region.

The immediate (direct) goal of the plan is to keep the existing manufacturing capacities alive or even help them regain their competitiveness (manifest at the global level as well). The task is to create a technical infrastructure that can efficiently serve the clothing industry of the South Transdanubian region.

Description

Component 1: Preparation for market-oriented co-operation and restructuring

When the operative plan was drawn up we had to take into consideration the strong dependence of the Hungarian textile and leatherwear companies, especially those operating in South Transdanubia on contract production and the ensuing lack of information about the (world) market. It would therefore be useful to introduce the programme with a retraining stage (as the first step in the implementation of the package) focusing on the following:

- Increasing participants' awareness of the need for *active and innovative marketing* and for the services of specialised consulting firms, with due regard to the nature and number of companies involved (either the whole clothing industry, or the separate branches), using interactive methods;
- Helping the participants to understand the importance of *niche marketing*, presenting ways of obtaining and utilizing *fashion information*, the process of *collection building* and pointing out the opportunities for market-driven *product development*;
- Presenting lectures and *case studies (situational exercises)* to develop creative thinking of the representatives of small industrial enterprises, facilitating adjustment to market conditions;
- Exploring opportunities inherent in the *calls for project proposals* and possible *ways of accessing financial resources*;
- Pointing out the gist of *innovation* to company decision-makers and its indispensability in the fashion industry, throwing light on the advantages arising from the *co-operation of SMEs* – with special regard to opportunities in the field of material procurement, marketing and sales (e.g. export) offered by the creation of consortia.

Both the form and content of such a training programme should reflect the goal that is to be achieved, i.e. should extensively build on interactivity and the active involvement¹³ of participants. Classes should be held at weekends, taking not more than 2 of 3 whole (work)days per month, in the form of seminars and practical work (workshops, case studies and/or jointly developed projects), in a modular structure. The topics should cover the following areas: the process and means of innovation, the way fashion works and its information base, marketing (market research and market segmentation, niche marketing, the building of a collection, the creation of a base for spare parts and accessories, competitive pricing, brand development, exploitation of exhibitions and trade fairs, packaging technology, distribution channels, the place and role of advertisements), product development (creation of models, the use of modern CAD techniques, optimization of fabric composition, value analysis, quality assessment), full range of quality management, the writing of business plans, specialization and co-operation in manufacturing and distribution, utilization of institutional and consultant resources, project proposals (sources of information, interpretation of the call for proposals, and the terms of application, writing project proposals and financial plans). The time allowed for the individual modules should be spent on case studies, situational exercises, implementation of group projects (perhaps doing 'homeworks') and discussions. The lecturers and instructors will come from the consulting centre that will be set up in the meantime and also from the secondary schools and institutes of higher education in Hungary and South Transdanubia - but experts¹⁴ with extensive practical and international experiences working in the textile or leatherwear industry will also be invited. The organizations¹⁵ working in the special fields concerned can play an important part in the selection of topics, the development of the teaching materials and the training process itself.

Component 1: Establishment and operation of a Regional Service Centre for the Clothing and Leatherwear Industries.

Establishing a regional service providing organization engaged in the classification of fashion information /trends,¹⁶ their customization so that they should meet the needs of the specific enterprises, collection building, drawing up product documentation and the technical preparation of manufacturing. In the long term its operation should be financed by the enterprises that use its services, paying for the information provided (e.g. on fashion and market trends) in the form of either subscription or membership, or partly as fee for a specific service provided (product design and/or development). The organization that is to be set up will operate as a *non-profit company*, owned jointly by the actors at the market, in this special case the enterprises in the textile and leatherwear

¹³ Attention should also be paid to the development of personal activity, skills in making initiatives and taking risks in the course of the practical training. It could be useful to include specific exercises developing skills like self-knowledge and group cohesion).

¹⁴ Most of them work today as consultants in the supply sector which is closely connected with the industry, or sometimes as independent experts or have retired.

¹⁵ E.g. HUNGARIAN FASHION INSTITUTE CO., INNOVATEX CO, TECHNOLOGICAL DEVELOPMENT AND TESTING INSTITUTE FOR THE TEXTILE INDUSTRY, TEXIMEI QUALITY AND SYSTEMS DEVELOPMENT CO., SCIENTIFIC AND TECHNOLOGICAL ASSOCIATION FOR THE TEXTILE INDUSTRY (TMTE), BIMEO TESTING AND R&D CO., KERMI CO., TECHNORG – TECHNOLOGICAL DEVELOPMENT CO.

¹⁶ Authentic, reliable and applicable information on fashion can be obtained from the specialized foreign institutions in the form of fashion magazines, catalogues, trends and samples (today mainly in electronic form, e.g. on the Internet) which can be subscribed to or bought on special occasions (e.g. trade fairs). Information on fashion is usually concerned with the dominant colours, patterns, fabrics, lines and shapes (e.g. cut, shape of last or heels) forecast for the next period (season) as well as the various accessories. When this information is processed, these data (mainly graphics and pictures) are classified, adjusted to the product structure of the users and distributed.

industries of South Transdanubia, together with the training/higher education institutions¹⁷. The centre would have the following functions:

- Collecting and classifying information on the market and fashion, disseminating it in line with the manufacturing profile of the region, creation of a regional data-base in this special field;
- Providing services related to product design and development (designing collections, constructing samples and series,¹⁸ designing tools and perhaps manufacturing samples);
- Providing consulting services in the fields of marketing, product development, writing business plans and creating Internet portals, brand development, quality management, assessment of efficiency and competitiveness (benchmarking), organization of various professional and business co-operations, intellectual property, development of human resources (training programmes) and writing project proposals;
- Organizing events for the exchange of experiences and training programmes, implementing courses (of key importance) and practical work to develop skills¹⁹. Thanks to this function the centre can actively control the implementation of Component 1 and can even participate efficiently in its practical realization.

The service providing centre will require proper infrastructure, i.e. office space, up-to-date computer aided designing systems (CAD) for clothes, shoes and fancy leather goods, information and telecommunication technology for the operation of the data-bases and the electronic publishing activity. Should the centre be required to take over certain training tasks from the national training system²⁰, it will also need suitable workshops for the practical (skill developing) component of the training. It is very important to find and employ a stable staff of well qualified people (marketing expert, CAD operator, product designer and business co-ordinator) and to make a register of experts either working in similar institutions or independently.

Interdisciplinary approaches and the use of services provided by specialized organizations should be encouraged in each component²¹.

Beneficiaries

All those who actively contribute to the implementation of the main objective of this measure, i.e. the strengthening of the employment potential of the clothing industry in South Transdanubia will become *direct beneficiaries*. Consequently, the following organizations can be considered eligible for support:

- The regional technical service providing organization that is to be established,
- Employees (sometimes potential entrepreneurs) who take part in the training programmes voluntarily in order to learn and develop their skills
- Vocational training institutions which take an active part in the manufacturing co-operations within the textile, clothing industries and tanneries.

¹⁷ E.-g. The Faculties of Arts and Business at the University of Pécs, the Department of industrial design at the Pollack Mihály Technical College, and the Rejtő Sándor College of Light Industry at the Budapest University of Technology and Economics.

¹⁸ This term refers to the standard designs prepared for large-scale production in the clothing and shoe industries.

¹⁹ Training programmes, seminars, workshops, etc.

²⁰ As a result of the changes that have taken place or are still going on in vocational training and secondary schools, training is hardly or not available in some trades (often due to the allegedly small number of applicants). The manufacturing process need primarily semi-skilled workers: no training is available for them. Technical middle managers a selected form those who have some qualification (e.g. chemist, mechanical engineer, or businessman) but there are no programmes for further in-service-training specializing in the textile, clothing, shoe, or fancy leather goods technologies.

²¹ The textile and particularly the leather industries are characterised by loyalty to traditions: the enterprises insist on performing every technological, business or supporting activity within their doors. One of the criteria in the allocation of the grants is, however, the extent to which enterprises use the services of external, specialized organizations (e.g. for marketing, information technology or tool making).

Financing sources

The costs of investments required for the development of the infrastructure of the regional service centre and its initial operation can be financed from a grant obtained with a successful application. Since neither the *Operative programme for Economic Competitiveness (GVOP)* nor the *Operative programme for Regional Development* can offer grants for the development of such an organization, regional funds should be raised specifically for this purpose. Similarly, a new (regional) fund is required for financing training programmes in both components.

Section 2.1.1. of the GVOP-2004, entitled: 'Development of technical-technological background for SMEs' can finance the modernization of manufacturing. The grants allocated for the procurement of machinery can cover 50% of the costs of new machinery up to 25 m HUF or 30% of the costs of used machinery, up to 15 m HUF. Section 2.3.1. of GOVP 2004 entitled 'Supporting co-operations among SMEs' deserves particular attention, because it allocates grants for the establishment of inter-enterprise networks, covering 50% of the management, consulting and certain material costs. This ratio is 80% in the case of non-profit organizations, with the upper limit of 4 m HUF

Measure 6.2: Development of own product assortment for the enterprises in the textile and leatherwear industries

Justification

In a historical perspective the textile industry, tannery and the related processing industries became the basis for the fashion industry – especially after the reign of Louis XIV, and the industrial revolution. The dictators of fashion (Italy and France) as well as the countries rich in raw materials (England, Argentina, Spain and the USA) were the first centres of large-scale textile and leather manufacturing and processing. Thanks to its technological development and particularly active role in commerce helped Germany take a leading role in these industries in the 20th century. In spite of the unquestionable trends of mechanisation, use of chemicals and automation, the textile, leatherwear and clothing industries have remained relatively labour-intensive. Higher living standards in the developed industrial countries lead to an increase in labour costs and labour charges, which in turn increased manufacturing costs. In the conditions of fierce competition the leading manufacturers and distributors developed their own brands and introduced them at the market, making serious efforts to promote and protect them. Fashion has become more and more important and today quality and both physical and aesthetic adequacy is linked to *brands*. The traditional textile, clothing and shoe manufacturers were forced to find cheaper production capacities primarily in East Europe, South America and South-East Asia. At the same time, their attention and capital focused on product development and sales (marketing), which made it possible for them to maintain and even strengthen their dominant role at the world market.

The clothing industry of Hungary²² played an outstanding part at the time of the planned economy, not only because it produced most of the goods that were exported to the Soviet Union in return for the raw materials and energy resources imported from there but also because it produced also a significant part of the revenue in convertible currencies that was vital for the national economy. The ‘reconstruction of the light industry’ in the 1970s focused mainly on the ‘vertical structure’ of the printing, textile industries and tanneries. The relations leading to contract production were first established in the 1980s mainly in the textile and leatherwear industries on the basis of cheap Hungarian (and other East European) labour and the hunger for convertible currency prevailing in the economy. The privatization process at the turn of the millennium resulted in a quick replacement of owners in the processing industries because - due to the relatively low value of fixed assets - and thanks to the good relations formerly developed with the foreign (mainly West European and North American) partners and personal contacts - contract production was a mutually beneficial undertaking. The brand owner could develop manufacturing capacities in a geographically favourable location²³ and the sudden increase in unemployment made the otherwise well-qualified labour relatively even cheaper. The pioneers of privatization, the new owners often had no working capital or did not want to risk their money in manufacturing. In this way the global and domestic economic processes inevitably led to the dramatic decline of the textile industry and tannery – the two industries that were capital-intensive, depended on imports and had to face severe environmental fines. At the same time, most Hungarian companies in the clothing and leatherwear industries turned to *contract production*.

²² The term *clothing industry* in this context is meant to include all the textile (spinning, weaving and textile making), ready-made clothes (underwear and outerwear), knitwear, tannery, fur processing and leather processing (shoe, fancy leather goods, leather clothing, fur coats and sports wear) industries. Essentially the same is meant by the *textile and leather/wear industries* or the ‘textile industry and tannery’ as used in the headline.

²³ Earlier most of the industrial products were manufactured in Europe or North America, with most of the leading clothing and leatherwear manufacturers operating on these continents that have always been also the largest consumers. Eastern Europe is the most favourable place for outsourcing labour intensive manufacturing since it is near both the traditional industrial centres and the largest markets.

The textile industry and tannery of South Transdanubia²⁴ has long traditions, on the one hand, and, on the other, employed a large part of the local population. When the plants were privatized, the newly established business relations²⁵ favoured contract production in these industries as well.

However, the negative wage war forced the decision-makers of leading brands that had so far been very active in the South Transdanubian region to move on to Romania, the Southern Slave areas, the former members of the Soviet Union (mainly the Ukraine and Central Asia) as well as the Far East (primarily China and Vietnam) i.e. to the east and south.

Aims and objectives

The overall and long-term objective is to improve productivity (an important factor in competitiveness) and achieve a better and more even exploitation of the existing (and future) capacities. As a result, the industry can maintain its employment potential and contribute to the economic prosperity of the region.

The *direct (immediate) goals* of the operative plan include developing own and marketable product assortments for the SMEs operating (capable of operating) in the region, endowing them with competitive technological systems and business strategy and encouraging them to increase competitiveness and product development not only within the clothing industry but in the SMEs which act as their suppliers as well. More specifically:

- To develop and introduce to the market a special *product assortment* of their own which is meant to meet the needs of particular consumer segments²⁶ while the legal protection of the intellectual property embodied in them should be realized by the creation of own brands.;
- To involve the SMEs operating in the region²⁷ in various, mutually beneficial *co-operations* in the fields of procurement, manufacturing and distribution, in such a way that the participating enterprises get specialized in given products (e.g. parts or components, products for women or children) or technologies (e.g. construction of models, or manufacturing of welted shoes)

Description

In order to survive the enterprises within the clothing industry need direct (professional) support as well, because they are unable to perform the required transformation by themselves with their organization and staff adapted to the former contract production or because of their size. This part of the measure package has a direct impact on enterprise activity and its result will be manifest in business administration as well. This component should focus attention and resources to the areas and tasks described below.

Each component should encourage interdisciplinary approach and the use of services provided by specialized organizations²⁸.

²⁴ The century-old Pécs Tannery, the Tannery of Simontornya, the world famous Glove Factory of Pécs (at a time perhaps the largest glove factory in the world) the Botond Shoe factory (of a very special profile) and the Shoe Factory of Szigetvár and the factory of fancy leather goods of Szekszárd are/were all operating in the region.

²⁵ E.g. production was performed for ROY & LEVY in Mágocs, ITALYSTRAPS in Csurgó, SALAMANDER in Bonyhád, SAMSONITE in Szekszárd, SEMLER and for some time CHURCH in Pécs.

²⁶ Niche marketing.

²⁷ All the plants still operating in the clothing industry of South Transdanubia are owned by SMEs established with private capital.

²⁸ The textile and particularly the leather industries are characterised by loyalty to traditions: the enterprises insist on performing every technological, business or supporting activity within their doors. One of the criteria in the allocation of the grants is, however, the extent to which enterprises use the services of external, specialized organizations (e.g. for marketing, information technology or tool making).

Component 1: Supporting the use of marketing type services

Supporting the use of external assistance, e.g. in market research, brand development, participation in trade fairs, establishment of sales consortia, introduction of products of firms to new markets, promotion and advertisement). The application of information technology to this special field (e.g. to construct home pages and/or portals and regularly update them, or to be present at the e-market) should be encouraged as a priority within this component. Besides the service providing centre that is to be set up, enterprises can get assistance from the various consulting and business service providing firms and experts of marketing techniques working in the region; the use of such services and well managed participation in specialized trade fairs (i.e. accompanied by the use of active marketing tools) should be supported and encouraged.

Component 2: Supporting the writing of business plans, development of strategies to enter the market and brand development activities

Supporting the legal protection of brands, introduction and promotion of trade-marks and development of a *new product structure* (collection). Obtaining the related quality certificates, development of prototypes with the proper professional assistance (e.g. experts of orthopedy, and/or health care specialists in the case of clothing for children, leisure, working, or protective clothes; the involvement of quality control laboratories to obtain permit to use eco-labels, or the development of special product lines). Institutions able to assist endeavours of this kind can be found either within or outside the region. The use of such assistance should be strongly encouraged.

Component 3: Specialization of manufacturing at the enterprise level

Support should also extend also to companies prepared streamline their product range depending on whether the new product structure and the related manufacturing structure can be considered technologically coherent. Specialization should go together with the development of close co-operations in manufacturing²⁹. Special support should be given to enterprises specializing in the manufacturing of parts or components or supplying the manufacturing process (e.g. making tools, maintaining machinery or packaging) thereby establishing business relations directly with several manufacturing or assembly plants. As far as its content is concerned co-operation is supposed meet the requirement that specific stages or supplying activities of the value producing (manufacturing) chain should be performed by separate economic units (enterprises). In order to obtain support the co-operating partners should submit joint applications in which the physical activities should definitely complement one another and it is demonstrated that the facilities within the enterprise for the activities that are to be performed by the partners are eliminated, while the resource required (both material and intellectual) are distributed among the co-operating partners on a functional basis.

Component 4: Vocational training and further training at the workplace

Supporting new forms of training performed by organizations in close connection with the enterprises to complement the traditional vocational training (which takes several years), to develop the skills of semi-skilled workers, prepare for the requirements of (special and timely) practical work during the working hours or outside them. Special attention should be paid to the development and introduction of the suitable training methods and systems, the use of distance learning methods as well as

²⁹ This refers to the need of technical co-operations (professional clusters) within the micro-regions.

computerized training materials and programmes (e.g. to allow self-education). Support should be used to foster application, but in some cases it can contribute to the development of the system as well. In former case it is the enterprise (or the would-be employees (or job-seekers) that is granted the support – subsidizing occasionally the use of services provided by the regional training centre. The development of educational and training systems, especially of the practice-oriented techniques (e.g. case studies, materials for distance learning and self-education) should be the responsibility of the service providing centre³⁰ in the first place, therefore the grants should be allocated to this organization.

Beneficiaries

Direct beneficiaries of the support are those who actively contribute to the main objective of this measure, i.e. the strengthening of the employment potential of the clothing industry in the South Transdanubian region and work for this development. Support should be granted to the SMEs in the textile, leather and clothing industries which meet the following requirements:

- Manufacturing enterprises ready to develop products (collections) of their own and enter well-defined niches of the market;
- Plants specializing in the manufacturing of parts and components in the course of distribution of labour in the micro-regions;
- Organizations engaged in supplying the manufacturing enterprises in the clothing industry of the region (e.g. maintenance, tool making, packaging and marketing);
- Consulting organizations and experts who participate in laying the foundations for the competitiveness of the clothing industry in the region as described in the operative plan

Financing sources

Section 2.1.1. of GVOP entitled ‘Development of a technical-technological background for the SMEs’ provides the right framework for the modernization of manufacturing, allocating grants for the purchase of machinery (to cover 50% of the costs in the case of new machines up to 25 m HUF and 30% of the costs in the case of used machines, up to 15 m HUF). Support for the modernization of the management systems of enterprises can be applied for under Section 2.1.2 of GVOP 2004, entitled: ‘Support to up-to-date management systems and techniques’. Grants cover 50% of the costs of quality management development projects (up to 1 m HUF per economic unit). Section 2.2.2. of GVOP 2004, entitled ‘High level, trade-specific consulting services for SMEs’ allocates funds to finance expert services, covering 50% of costs related to marketing and the development of business skills, to the tune of 1.2 m HUF. Section 2.3.1 of GVOP, entitled ‘Support to the organization of co-operations among SMEs’ is particularly important for the improvement of regional co-operation because it provides grants to cover 50% of management, consulting and certain material costs in the case of enterprise networks and 80% in the case of non-profit organizations, to the tune of 4 m HUF. Practically the same purpose is served by section 2.3.2 of GOVP 2004, entitled ‘Support to the development projects of co-operating enterprises with common objectives’, also covering 50% of the costs up to 40 m HUF, in case of networks with 3-5 members. The creation of Internet home-pages and portals can be financed from the ‘Széchenyi Enterprise Development Programme launched by the Ministry of Economy and Transport (GKM) entitled ‘Support to the appearance of micro and small enterprises on the Internet (Code No. SZVP 2004-I), covering 40% of the costs up to 300 th HUF.

The implementation of the independent product structure requires an amount of working capital that the SMEs formerly engaged in contract production cannot raise, therefore they badly need suitable, easy-to-access *bank loans* with subsidized interest, offering the materials purchased and/or the confirmed order (business deal) as collateral.

³⁰ Even if external organizations are involved in the specific development activities

Measure 6.3.: Improving the market position and competitiveness of enterprises in the machine industry, metal working and electronics.

Justification

The role of the machine and electronic industry within the national economy has changed fundamentally since the 1990s. The changes induced by the change of regime and especially the collapse of the large enterprises and the loss of the eastern markets broke its long-term trend. Its output fell considerably between 1990 and 1992 but its recovery was surprisingly rapid and even a growth could be observed in a short time. Its share within the industry increased from 12% in 1992 to 35% in 1998 and 43% in 2003. In the meantime changes in its inner structure led to a 57% share of electronic machines and instruments and 31% of vehicle manufacturing, as a result of privatization and investments by multinational companies. The share of machines and equipment is down to 12%. The output of the sector has also increased considerably, by about eightfold, to 5,390 billion HUF between 1992 and 2002. This rate of growth suffered a setback in recent years, bringing a fall from 34.9% in 2000/1999 to 6.2% in 2002/2001. The structural changes have brought a rapid increase in the share of machines and equipment while the manufacturing of the electronic machines and vehicles is in stagnation. Most of the products, 67% of the total output is exported. The main trends in the industry are determined mainly by the large, highly productive, multinational companies employing advanced technologies. The per capita GDP produced by the large number of small enterprises is rather low, the technologies they use are obsolete and the skills of their managements are well behind the European level and certainly not sufficient for survival. The restructuring performed over the last 15 years has led to the close-down of the traditional companies, and their place was taken by a small number of large companies and a large number of small enterprises. What is missing from this structure is the presence of the medium-sized enterprises of proper financial standing, capable of delivering larger supplier contracts and flexibly adjusting themselves to the market niches. As a result, a duality is observed today in the structure of the industry. With the close-down of the large companies the professional organizations and forums that had formerly provided up-to-date knowledge/information to their managements have also lost their role.

The geographical distribution of the capital invested in the machine- and electronic industry is rather uneven with 86% of manufacturing concentrated in the regions of West Hungary, Central Transdanubia and Central Hungary. Consequently, the contribution of the large machine industrial enterprises in foreign ownership to the national income is less important in South Transdanubia than in the other regions of Transdanubia and the enterprises operating here are more strongly characterized by undercapitalization, the low technological level and obsolete technology.

A large number of enterprises is engaged in contract production of parts and components, very few of them have products of their own. As a result, the information or vision these companies have of the market is rather limited and they lack the expertise required for changing the strategy.

Their position at the market of suppliers is not too bad, but they have not been able to establish business relations with the companies that have emerged in the other Transdanubian region and their share of the domestic market has also remained rather low or is even declining. This export orientation relies mainly on cheap labour, and can be maintained in the medium or long run only if the costs, reliable quality and clocklike regularity of delivery remain unchanged. The outsourcing of labour-intensive phases of manufacturing to East-Europe was motivated by the relatively cheap labour. However, the great prestige that trades in the machine industry formerly enjoyed in Hungary has been shaken and the country's accession to the European Union has led to a relatively dynamic increase in wage levels, which may jeopardize our competitiveness. In this respect Hungary has recently experienced deterioration in its position in contrast with the other accession countries. (Wages have decreased in Poland, they are stagnating in the Czech Republic, most of the Baltic states represent low

wage costs, and Hungarian wages are exceeded only by Slovenia). Labour costs – although they are not, on the whole, determinant within the cost structure of the machine industry – have become revalorized in the current close-to-recession situation of the world market which has increased price competition and has also a significant impact on the German machine industry dependent on its Hungarian supplier network. Besides other factors this is also the reason why Hungary, as a target for investments, has significantly fallen behind the other countries (especially Poland and the Czech Republic).

This situation could be offset by high productivity based on developed technology and well managed manufacturing processes which, however, require capital input, familiarity with the new technologies and skills for using them, state-of-the-art maintenance, quality management, logistics, human resource management and market activities.

Changes cannot be made without considerably more up-to-date and better trained labour than what is available today.

Other factors required for a breakout include network-type co-operation, joint performance of certain functions, manufacturing of specialized, unique products for small niches at the market, as well as specialization in activities requiring great outstanding expertise and management as well as the application of extraordinary processes and materials. In the life of SMEs this would mean the redefinition of their strategy and a shift from their uncertain, dependent position towards market autonomy.

Such a solution would require the development of own products and the introduction of new manufacturing processes but, due to their small size, limited staff capacity and poor financial standing, SMEs are not always able to implement it.

R&D expenditure and the number of patents is rather low, accompanied by weak marketing activity. Changes could be facilitated by assistance from an innovation centre (e.g. a Regional Innovation Office) jointly maintained by the SMEs and providing services to all of them which could mobilize its technological, market and logistical knowledge base to make up for the above shortcomings in market activity (tools of promotion, participation in fairs and exhibitions, development of business relations). Such an organization could also foster the development of both vertical and horizontal network-type co-operations with the more progressive enterprises acting as competence centres, so that the cluster of smaller enterprises should be able to compensate for their small size at the increasingly concentrated buyer's market like a virtual medium-sized enterprise.

The factors causing their disadvantaged situation mean a serious challenge for the SMEs in the machine and electronic industry but favourable changes at the world market, the experiences gained during their co-operation with foreign (mainly German) companies, familiarity with the quality and delivery requirements, the relatively high labour costs – which are, however, in proportion to the quality of work – can all serve as a good basis for the improvement and strengthening of competitiveness. Convergence triggered by the enlargement of the EU will induce faster growth at the internal markets of the accession countries, and a single Europe will be more easily permeable for the West European SMEs ensuring a reliable environment for investments. Once the German economy starts to grow more intensively, it can act as a driving force for the Hungarian machine industry as well. The objectives and specific measures should be defined in a way that allows them to contribute to a more balanced market position by eliminating the disadvantages and strengthening the advantages

Aims and objectives

The overall objective of this measure is to help the SMEs in this industry to significantly improve their strategy and the quality of their management and thereby enable them to become competitive, stable, recognized actors at the market with increasing market share as suppliers capable of meeting the increasing requirements, as developers and manufacturers of products of their own which require small plant size, but special technology or the use of special materials and meet the demand of particular market niches.

Another objective is to foster the development of active relations among the enterprises, the actors of the market, the money and investment markets as well as the Regional Innovation Office to be setup within the framework of RIS. These relations would bring quality advantages in R&D, training, market and technological activities as well as significant savings.

The immediate objective of the measure is to enhance the development of management, strategic, market- and performance-oriented thinking of SMEs in the machine and electronic industry and to facilitate their flexible adjustment to changing market demand. Immediate goals also include the development of the technical capabilities, technologies and products of enterprises by specialization, environmentally friendly development of products and manufacturing as well as the strengthening of R&D activities. Another goal is develop the relations and network-type co-operations of the enterprises. Priority should be given to developments in information technology, electronics and telecommunications because these can increase synergy between the activities of machine manufacturers and enterprises in electronics.

Description

Component 1: Developing the quality of enterprise management

After the implementation of the measure the management of the SMEs in the machine industry of the region should be familiarized with all the state-of-the-are information, processes and techniques that can ensure their flexibility at the market, their competitiveness by West European standards and develops their propensity to co-operate, the style of their management and behaviour as well as their skills to make relations indispensable for achieving success in business life. Their preparation requires learning and training programmes, the transfer of experiences and models, as well as the creation and use of a data-base assisting them to get to know both the industry and the market. In the course of the training special attention should be paid to the development of a strategic, market- and performance-oriented way of thinking.

Participation in training programmes providing competitive knowledge and information can mean taking post-graduate courses in higher education or – in the interest of better and faster results – it may be more useful to organize special training courses within the framework of the measure of about 250 hours of concentrated work in line with the objectives described here, i.e. to develop competitive management skills of all those concerned.

The training should cover the following main topics:

- Strategic planning, marketing, systemic approach to management, integrated corporate management systems, the pre-requisites and advantages of their application, the structure and use of data-bases;
- The importance of planning and controlling, business type of thinking in controlling;
- Application of up-to-date planning and process control systems (software);
- Human resource management;

- Trends in the development of the world economy and market, the electronic industry, the machine industry and technology; presentation of innovations;
- Market for the electronic and machine industry in the EU, trends in production management (including international division of labour), environmental protection and quality development ;
- Transportation systems, methods and requirements;
- Forms of co-operation among enterprises and potentials to increase efficiency inherent in co-operation;
- The application system of the EU, objectives, requirements from project proposals and preferences;
- Market requirements prevailing in the EU (customs, VAT accounting, registration, quality rating and environmental regulations, etc.);
- The use of the Internet; becoming up-to-date and maintaining it.

Among the methodological solutions preference should be given to the interactive methods requiring personal participation. The courses should be concluded with an exchange of experiences, or study tour, allowing the participants to get acquainted with Hungarian and foreign examples that can be considered as models of successful market activities. The project can be considered successful if it provides convincing knowledge to the participants, can obtain a subsidy to cover part of the costs, but also requires a contribution from the participants which reflects the true value of the programme and is an incentive for active participation to the very end.

Component 2: Technical-technological development of SMEs in the machine and electronic industry

Improving the technical-technological level is the key issue in the competitiveness and survival of the industry. Enterprises should be encouraged to focus on developing and manufacturing products of their own and achieving market autonomy when defining their development objectives. They should assess their market opportunities and make efforts to specialize in specific products that meet the needs of certain niches rather than the wide range of consumers and even within the group of products identified in this way they should choose the quality categories or technologies that will enable them to further develop and to achieve lasting competitiveness. In order to achieve this goal they will have to start or further develop their R.&D and quality development activities as well.

Setup of an Innovative Group for the Machine and Electronic Industry

Changing the profile and technologies of the enterprises in the region will require a lot of co-ordination and good co-operation between the enterprises and RIS management. This is the reason why in addition to membership in the Chamber of Commerce and Industry as well as the Association they also need an active organization able to co-ordinate their activities and provide them with information acting as consultants in technical development and improvement of management, or as middleman during the implementation of the RIS. The size of the task does not justify the setup of a separate organization of legal entity, therefore the Innovative Group for the Machine and Electronic Industry should operate within the framework of an organization central to innovation or in a technology transfer/innovation centre capable of implementing the objectives and performing regional tasks in the field of R&D activities.

The responsibilities of the group are the following:

1. Creation and operation of the data-base;
 - Data of manufacturers (capacities, machinery, products, technologies, staff),
 - R&D data (patents, research findings, R&D human resources, capacities and laboratory capacities in the region,

- Data of clients present in the East European market, monitoring of marked demand,
- 2. Providing information to support development of product, technology and market policies, consulting;
- 3. Supplier integration, organization of network-type co-operation;
- 4. Participation in the organization of management training programmes
- 5. Consulting on finances and project proposals.

Preparation and implementation of technical-technological development

The activity of the Innovative Group for the Machine and Electronic Industry cannot be really efficient without the financial means that can enhance implementation and are accessible to the enterprises.

In the course of a transformation of strategic importance it becomes necessary most of the time to use *consultant services* but the realizing the considerable costs this would involve and due to a technique-centred way of thinking enterprises often abandon the idea but in order to promote changes they should be encouraged to use consultant services. This kind of support should take the form of non-reimbursable grant.

The other activities and topics that belong here are the following: product, quality and technological specialization, product development, introduction of new products, application of high technology (complex machining centres, automated systems, testing laboratories, etc), independent R&D activities in line with the priorities identified, purchase of licences and know-how, maintenance of patents, procurement and installation of quality control tools, and laboratory equipment.

The implementation of the related *investments projects* should be fostered at regional level (Research and Technological Innovation Fund) by offering favourable conditions for loans and risk-bearing, linking them to the EU and national system of grants/subsidies.

Component 3: development of co-operation and relations among the enterprises in the machine and electronic industry

Significant potentials can be freed by the co-operation of enterprises and their exploitation can considerably strengthened the competitiveness of enterprises in the machine industry. Companies which intend to counter-balance the disadvantages arising from their small size by co-operating with other enterprises should be given preferential treatment when it comes to assistance provided by RIS. They may be compelled to make compromises in their decision-making but can also enjoy the advantages in market position, risk-bearing, capital-intensity, productivity, etc. that co-operation can offer.

Preference should be given to the following activities:

- Joint performance of certain corporate functions (either vertically or horizontally), co-operation at the market or in technology, by creating integrations supporting developments meant to improve cost-efficiency, productivity or penetration into larger markets;
- Jointly performed R&D activities;
- Joint representation, advertisement, joint participation in trade fairs, exhibition, meetings with investors, road-shows for clients, common Internet portal and design elements.
- Joint logistic activities, appearance as a virtual large company, joint procurement, transportation, warehousing and inventory of basic materials, working clothes, tools protective devices, etc.
- Joint planning and investment in expensive equipment to be used by several enterprises, and for functions to be performed jointly

The support enterprises can obtain should take the form of non-reimbursable grant in the case of participation in R&D events and interest subsidy or risk-minimizing schemes in the case of investment projects. The incentives used here should significantly exceed the support granted to separate projects.

Beneficiaries

The target group of this priority is constituted mainly by the SMEs working in the machine industry (manufacturing of machines, electric equipment, instruments, vehicles, electronic products) and organizations that participate in the performance of joint functions or are established for such functions. The target group can also include individuals who take part in the training programme implemented as part of the measure.

Financing sources

The following sources are available for the implementation of the measures (with the method of utilization):

- Credit financing, with special emphasis on the various interest subsidizing schemes managed by the government
- EU- and national funds after successful applications. The following funds allocate grants to successful project proposals/applications:
 - GVOP 1.2.2. – Development of logistic centres and their services
 - GVOP 2.1.2. – Introduction of up-to-date management systems and techniques in the SMEs
 - GVOP 2.2.1. – Basic level consulting
 - GVOP 2.2.2. – Higher level, trade-specific consulting for SMEs
 - GVOP 2.3.1. – Organization of co-operations among SMEs

 - GVOP 2.3.2. – Joint investments and development projects of co-operating enterprises
 - GVOP 4.1.1. – Electronic business systems within the enterprises
 - GVOP 4.1.2. – Development of e-relations among business partners
 - GVOP 4.2.1. – Development of business content for SMEs
 - GVOP 4.2.2. – Development of the content industry and content provision for public purposes
 - SZVP-2004-I – Appearance of micro and small enterprises on the Internet
- Research and Technology Innovation Fund
- Schemes for capital investments by the government
- Venture capital (mainly in the field of innovations)
- Entrepreneurial capital investment (primarily in joint ventures) in the form of capital increase or new investment projects.

There are several national funds available for the implementation of the measure and enterprises tend to prefer those that support technological investment or real estate development and do not require co-operation. This is the reason why regional (not necessarily financial) resources are also required even if central funds are available, to encourage projects based on co-operation.

Regional resources should be focused on ‘soft’ applications (training, transfer of information, IT development, planning, writing preparatory studies, etc), while the implementation of investment projects can be encouraged with credits of subsidized interest, or risk reduction.

PRIORITY 7: ESTABLISHING COORDINATED COOPERATION BETWEEN THE ENVIRONMENTAL SERVICE/MANUFACTURING COMPANIES, THE R&D SPHERE AND THE ECONOMY

Measure 7.1: Establishing a Competence Centre for Renewable Energetics and Environment

Justification

Examining both the Hungarian and the South Transdanubian situation of environmental technology, environmental industry and energetics, one may find that the dominant sectors are the services and the distribution of equipment rather than manufacturing.

Various equipment of environmental technology (measuring, cleaning, or protecting tools) are manufactured in Hungary only to a very limited scale. The market is dominated by a small number of large companies distributing technologies or equipment as agents or partners of multinational companies. As this field requires considerable capital input and high investment costs, small companies are not expected to enter the market or to have success there in the present or in the future. Neither is the manufacturing of tools serving the purpose of *energy saving or utilising renewable resources* typical in Hungary. Although there are some minor projects even in the region in the field of utilising renewable resources (solar energy, wind etc.), the high costs of development and investment hinder large scale application and investment projects.

According to *sectoral analyses*, concentration is expected to increase in the environmental industry, especially in the field of energetic environmental technology, water management, waste management and recycling. However, Hungarian – and South Transdanubian – companies may benefit from working as subcontractors for companies offering complex services. To encourage them in this respect, it demands measures and government support similar to applied in the subcontractors' programme.

- Assessing the necessity and the opportunity of establishing the Competence Centre, one may conclude that at present there is actually no environmental industry in the region, no harmonised planning, application or implementation of the measures and interventions, or the harmonised cooperation of background research and the practical work. In the future, however – in line with the requirements and the priorities of the EU – regional developments need to be implemented in an innovation-oriented way, with a special focus on energy-awareness and the aspects and interests of environmental sustainability. A particular emphasis is to be put on the following:
- planning and implementing the necessary and expected measures, investments and interventions in the region can only be realised through the introduction and the operation of modern, environmentally and energetically efficient equipment and tools (BAT).
- competitive and research systems in the Union and in Hungary prefer the cooperation between regions and the places of research. Therefore, organising and managing the projects involving several participants demand a significant level of professional and organisational (administrative) background.

Aims and objectives

The overall objective is the sustainable development of the region with the utilisation of the protection of environment and renewable resources of energy, as well as improving the environmental and economic situation of the South Transdanubian Region.

Immediate objectives:

- Establishing a concentrated knowledge base in the field of environmental industry: setting up a non-profit company by the year 2006, elaborating its rules of operation and the organisational structure, securing the personal and material background needed for the operation
- Supporting the operation of SMEs in the environmental industry by encouraging R&D cooperations: in the above framework, by the year 2010 the non-profit company shall operate in a target-oriented way, supporting R&D in the region, setting up and managing a database, consulting and distributing information.

Description

Component 1: Establishing the infrastructural and organisational background of the Environmental Industry Competence Centre

Establishing the infrastructural and organisational background of the Environmental Industry Competence Centre aims the setting up and the operation of a regional centre fit into the institutional system of Hungarian regional innovation network. This centre shall be responsible for supporting and organising the cooperation between the enterprises interested – within the complex system of innovation – in the protection of the environment and the sustainable development and utilisation of renewable energy sources, R&D institutions, “knowledge centres” of the universities, and the research institutes of the academic and the business sphere. The Competence Centre is compliant with the regional institutional framework of innovation in Hungary, serving as an intermediate centre, building bridges between the various actors.

Taking into account the international, the Hungarian and the regional practice, the institutional conditions and links, as well as the regulatory and the economic background, the non-profit company should be set up by the year 2006 together with the rule of operation, staff and infrastructure securing the implementation of the tasks assigned to it. The following has to be done to achieve this:

- bringing together the actors interested in the establishment of the non-profit company, clarifying and adopting the objectives, principles and tasks of the establishment and the operation;
- setting up the managing board;
- elaborating, discussing and adopting the concept of the centre, with a special emphasis on defining the interests of those who participate in the establishment of the centre, the scope of the supported services, the efficiency of the operation and the conditions for further development;
- specifying the economic conditions of the establishment and the operation (state/budgetary subsidies, grants, other support, own revenues);
- determining and securing the personal and material conditions necessary for performing the assigned tasks, functions.

Component 2: Elaborating the services and the practical operation of the Competence Centre

The Competence Centre – as an *intermediate and bridge-building centre* – shall build links between the university *knowledge centres*, the research places of the academic and the business sphere, the enterprises and institutes interested in innovation, as well as the professional, non-governmental and governmental organisations.

The primary objective of the Competence Centre Non-profit Company shall be to organise its activities and services, and to implement the resulting complex tasks; then launching organised operation and establishing the practice by the year 2010. Supporting R&D activities in the region, setting up and managing the database, the tasks to be implemented in the framework of consulting and information supply:

- *Consulting and dissemination of information*
 - *Offering targeted, valuable professional and scientific information* for the actors of the market, the investors, the professional organisations and the NGOs for identifying and selecting environmentally and energetically efficient methods.
 - *Promotion:* leaflets and presentations, events for the general public, the various NGOs, the media, and the various groups of representatives, professionals and politicians.

- *Operating a wide-scale database maintained on a continuous basis on*
 - methods, technologies for the identification and selection of environmentally and energetically efficient processes;
 - market information, the potentials for cooperation and training;
 - the appropriate methods of examination and analysis, and their accessibility;
 - the undergoing and planned research activities in the region, development programmes, projects;
 - the scientific and professional organisations cooperating in the framework of the network organisation;

- *Organisation and management related to R&D activities*

Facilitating, supporting and making more organised the – at present mostly casual – cooperation between the established and forming knowledge centres of the region, the research institutes, the business enterprises, and the organisations interested in investments and developments, thus

 - offering coordination and organising programmes/projects for the organisations participating in research and professional assignments, developments;
 - participation in the professional preparation and elaboration of grant applications.
 - establishing information supply and working links between the local, regional, national and international levels.
 - maintaining contacts and cooperation with the knowledge centres operating in the region and the organisations supporting innovation.

Beneficiaries

The organisations potentially interested/affected in the scope of target groups, beneficiaries:

As far as *Component 1*, the establishment and the creation of the infrastructure and organisational background of the Competence Centre is concerned

- the Regional Innovation Agency of regional competence (taking into account the proposal of the NKTH on the establishment of the regional innovation system) and the relevant non-profit company commissioned by the Regional Development Council.
- other organisations interested in or affected by innovation may obtain a share according to the conditions specified in the statutes of the non-profit company.

In *Component 2*, the elaboration of the services of the Competence Centre and practically operating it

- the enterprises of the South Transdanubian Region acting in the environmental and energy sector including multinational and regional companies (e.g. PANNONPOWER Plc., MEFAG Plc., SEFAG Plc., BLOKOM Ltd., Pécs Waterworks Plc., South Transdanubian Regional Development Plc. etc.), SMEs (e.g. TOTAL Ltd., Pannónia Research Park Ltd., Heliotech Limited Partnership etc.), associations (e.g. Kaposvár Economic Development Non-profit Company, KÖR-TECH Non-profit Company etc.).
- the *university knowledge centres* (Universities of Pécs and Kaposvár), scientific institutes (Research Institute in Ampelology and Viticulture of the Ministry of Agriculture and Rural Development).
- chambers of commerce and industry, professional and scientific organisations, local governments of the South Transdanubian Region.
- consortia set up for a particular R&D project, innovative task.

Financing sources

Neither in the region, nor on the national scale are the economic and institutional conditions of operation fulfilled. Therefore, in the system of the Hungarian innovation network as outlined by the NKTH, the establishment and the successful operation of the Competence Centre Non-profit Company can only be secured by means of governmental/budgetary subsidies in the period up to the year of 2010. The potential resources of establishment and operation:

- the Research and Technology Innovation Fund.
- the Operative Programmes of the National Development Plan that hold as a priority and support the establishment of the infrastructure of scientific, innovation parks forming the framework for the knowledge centres (GVOP), and the training activities of the regional knowledge centres (ROP, HEFOP).
- the grants of the NKHT supporting R&D based on cooperation, the utilisation of knowledge, the cooperation research centres, the R&D infrastructure and the R&D network organisations.
- the grants announced in the EU 6th Research, Technology Development and Demonstrational Framework Programme to encourage research and innovation and the development of infrastructure (e.g. structuring the European Research Area).

In the course of business-oriented operation, targeted income may be generated subsequently; such as fee paid for certain services (information and data supply, consulting, preparing decisions, preparing grant applications, coordination/organising works, technology transfer etc.), or income from other activities (e.g R&D grant applications together with other organisations or SMEs). These revenues may be spent on developing the activities of the Centre and/or on reducing the level of subsidies to a certain degree.

Measure 7.2: Supporting the elaboration of renewable energy concepts on regional or micro-regional level

Justification

Today, the quantity of fuel fossils is well known, and the stocks are expected to run out within a foreseeable period of time (for example, crude oil stocks of known locality shall run out by the year 2050). The renewing ratio of such stocks is relatively low compared to the pace of present consumption. In addition to running out of stocks, the real danger is the increasing of pollutants (CO_x, NO_x, SO₂ etc.) emitted to the environment as a result of using fossils fuels.

The above reasons lead to a world-wide re-evaluation of the role of renewable sources of energy: solar energy, the energy of rivers and seas, wind energy, geothermal energy and biomass.

According to western standards, Hungary is a country of considerable energy consumption (the Hungarian economy uses 1.5 times more energy to produce a single unit of GDP counted on purchasing power parity than other EU member states in a similar climate zone). It is caused by the poor efficiency of energy utilisation. The renewal of industrial production – from the point of view of energetics – is slow, our buildings are poorly insulated, the heating equipment installed are not efficient, the efficiency of the networks of distant heating systems are very poor, the price system applied cannot induce the consumers to spare energy as the alternatives are very expensive. The level of state subsidies is below the western standards, therefore return of investments take a very long time.

The energy supply of the country is based on fossil fuels as illustrated in the following table:

Natural gas	42,9 %
Crude oil	23,9 %
Coal	11,7 %
Electricity	17,5 %
Other	4,0 %

Source: www.gkm.hu

Although not contained in the above table, we know that 63% of the primary energy supply is imported, with a significant share of oil (18 %) and natural gas (34 %). The share of alternative energy sources is very low (3,6 %) and the vast majority of that is firewood (approx. 70 %).

Aims and objectives

The overall objective of the measure is to secure the sustainable economic development of the region with a high quality of environment to improve the standard of living of the population.

The immediate objective of the measure is to increase the decentralisation of energetics: exploring the sources of renewable energy in the region, finding the forms of their utilisation; elaborating the forms of energy management built on renewable energy sources on local and micro-regional level, implementing pilot investments in the energy sector.

Description

The basic aim of the measure is to survey the alternative sources of energy available and affordable in South Transdanubia, examine the demand for their utilisation and to develop a complex plan of implementation that can take into account the demand side, outline the resources, and define the related tasks of priority.

Component 1: Elaborating regional concepts of energetics

We do not know exactly where the communities capable of economically utilising alternative sources of energy are located within the region, and what their optimal size is. The operational form, structure and management of the systems using alternative sources of energy is still in the experimental phase in Hungary. Target oriented work has to be done (preparing energy monitoring, feasibility studies, supporting the planning, organising and information disseminating work) in order to seek the optimal scope of users in South Transdanubia and the operational form.

Surveys are needed to reveal the quantity, structure, locality, accessibility and exploitability of renewable energy available in the region. On this basis, one can determine what forms of renewable energy can and should be used in a particular settlement of the region, what kind of enterprises can utilise this form of energy cost-effectively.

The related tasks are the following:

- The energy sources must be mapped on a topographical basis as well as according to the various sources, the scale of the resources should be assessed in order to allow for preparing the energy utilisation balance of the region.
- Mapping the enterprises and organisations in the region engaged in manufacturing or services related to the equipment and technology of renewable energy sources. Determining the scope and the orientation of potential manufacturers.
- Mapping the enterprises and institutions using or capable of utilising renewable energy sources (potential users). Organising a survey in the region on the knowledge in the society about the types and sources of renewable energy.
- On the basis of the survey, energetic concepts and operative programmes may be prepared, containing actions feasible in a given area or settlement in respect of the local utilisation of renewable sources of energy.

Component 2: supporting regional energetic pilot projects based on renewable energy sources

Supporting pilot projects and investments on regional or municipal level, targeting the establishment of local energy systems based on renewable resources. The support shall depend on the existence of a local energetic concept and the compliance of the planned investment with the concept.

- Building a pilot plant suitable for supplying distant heating and hot water for a smaller settlement or a group of settlements, based on biomass obtained locally, or on solar energy.
- Establishing a system supplying energy for an institution or a smaller building, based on the combined use of solar, wind and geothermal (heat pump) energy.
- Establishing or transforming SMEs having the necessary professional knowledge and manufacturing practice for planning, manufacturing and operating bio-solar systems.
- Setting up of and supporting the initial investment into SMEs undertaking the collection of biomass, the treatment of biomass to make it ready for use, as well as the storage and the marketing of biomass; supporting the introduction of their products into the market.

Component 3: Laying down the foundations for the training of professionals in the field of the technology equipment of alternative energy sources.

In order to reach a level of utilising alternative energy as experienced in the neighbouring countries, the professionals of the region engaged in planning, regional development, manufacturing, using / operating facilities, the professionals of the local governments, and the managers of SMEs should all be informed on the new technologies and they must be persuaded on the technical and economic benefits of the system.

The knowledge related to the application of equipment using alternative energy must be transferred in the form of short, professionally demonstrated trainings structured in compliance with the practices in adult education.

Beneficiaries

Component 1: local governments, research institutes capable of organising and implementing the research, enterprises, non-profit oriented scientific organisations, professional NGOs or the consortia of the above.

Component 2: local governments with energetic concepts, SMEs, individuals with professional degree and qualification who undertake the planning, implementation or the operation of the above systems.

Component 3: all those scientific and training enterprises, institutions and NGOs having an experience in adult education that can perform the technology transfer of bio-solar systems.

Summarising the scope of those who represent the target market and opinion leaders:

Local governments and the institutions thereof, (as the investor, owner, operator of the system based on alternative energy to be established in the given settlement or group of settlements);

SMEs that can

plan, manufacture, equip, install, operate and distribute equipment using alternative energy by applying a certain technology. (enterprises involved in planning, manufacturing, finishing), use in their operation the form of alternative energy available on the site (e.g. industrial, agricultural, transportation companies, distant heating enterprises, schools, hostels, hotels, restaurants, sports facilities; hot water, heating, water supply, electricity).

Financing sources

All of the presently available sources prescribe co-financing from other or own resources. Any of the above detailed tasks can benefit from a specialised grant scheme, still it is necessary to secure additional support in the region for the successful implementation of the projects.

Global resources:

- UNDP, the development programme of the UN (for making the energy consumption of local governments more efficient)
- GEF, the Global Environmental Fund (protection of the environment)

These funds shall be available in the year 2005. They shall be managed in Hungary by the Energy Centre Non-profit Company of the Ministry of Economy. This is the organisation in charge of organising and financing trainings and offers limited support for energy saving projects (using green energy) by enterprises, local governments and individuals.

Resources of the European Union:

- European Structural Funds
- EU6 framework programme, energy sub-programme (research, technology development, cooperation)
- National Development Plan
- Environmental and Infrastructure Operative Programme

Measure 7.3 supporting the environment-focused operation of SMEs

Justification

The contamination of our environment is greater than ever before, our present behaviour, economic management and development are not sustainable. We are all aware of these facts, still environmental awareness is not in the forefront of our thinking, although environmentally conscious company management should not be the privilege of big companies and the richest countries. Through sustainability, we must focus at the same time on the economic, environmental and social elements in the whole course of the operation.

Our natural and human environment is a value for all of us in the long run, but in the short term we sometimes forget about it and consider the protection of environment a useless burden, the responsibility and the hobby of the greens, or an extra cost without a revenue.

In the operation of the economy, the protection of the environment as well as the management of those activities that can influence the environment are the responsibilities of all SMEs, it is our common interest, obligation and responsibility.

Rarely think we about the following in relation to our economic activities:

- in the production process we extract raw materials from the environment, we use energy and water,
- maintenance, transportation and packaging influences the state of the environment,
- most of the products end up as waste at the end of the lifecycle of the product,
- subcontractors and services create environmental burden, too,
- using the products and the production of the energy needed also create waste and pollution.

Expanding the subcontracting links to multinational companies increase the demand in respect of the smaller companies affected to comply with the environmental requirements set by the big companies and expected by the society as well.

Many SMEs do not have the means to introduce expensive environmental investments, and the scientifically founded environment management systems and environmental accounting are too expensive and complicated for them. It takes simple, practical and well demonstrated tools to involve small companies.

In Hungary, there are only as much as 800 certified KIR (Environment-focused Management System according to the MSZ EN ISO 14001:1997 standard), and some (4) EMAS (European Parliament and Council Regulation, eco-management and auditing system) systems in operation, mainly at large companies.

In the South Transdanubian Region there are almost 2700 companies employing more than 10 persons, and 2400 of them are active in fields that can have a significant environmental impact (not taking into account the 10% of companies involved in financial, financial assistance, training, wholesale trade, software development companies). There are 700 of them in Somogy County, 600 of them in Tolna County and 1100 of them in Baranya County.

There is no EMAS system used in any of the counties, and the number of KIR systems is under 70, if we do not take in to account some enterprises with more than 250 employees.

SMEs can take simple, practical and reasonable steps in order to reduce production costs, to increase the overall efficiency of the company, and to reduce negative environmental impacts. With some

carefulness, these measures can result in preventing material loss, minimize waste, spare energy and water, and improve the operational and organisational processes of the company. The necessary elements, chosen with due care, built into the management processes in the daily operation of the company can lay the foundation for the planned and systematic development of eco-efficiency and the company's competitiveness.

It is important to examine and treat the elements of the environment (air, water, soil) together, in a complex manner, as in a particular situation contamination may be transferred to another field.

Grouping of the most significant harmful environmental impacts:

- air contamination, energy consumption,
- water contamination, water consumption,
- harmful environmental impacts damaging the soil and the geological formations,
- harmful environmental impacts damaging the nature, wildlife, the built environment, and the cultural values.

The task is to find, elaborate, demonstrate and support the introduction of simple tools that can mainly be used by SMEs to decrease the level environmental pollution caused by the companies and to improve their market positions as well (lower costs, better compliance with the demands of the partners etc.).

Aims and objectives

The overall objective is to improve the position of the SMEs in the region by harmonising environmental and economic criteria, decreasing the burden on the environment and launching a sustainable development process

The immediate objective is to introduce environmentally conscious management at the companies with the use of up-to-date management systems and tools.

Description

Our aims can only be achieved by forming tools and methods allowing:

- the monitoring of the company's environmental performance,
- the identification of the most important environmental impacts,
- the elaboration of the detailed solutions proposed for environmental problems,
- the preparation for introducing environmental management systems (EMAS 2001, ISO 14001:1996),
- the analysis of competitiveness on the market,
- the search for resources financing environmental projects, consulting in preparing a grant application.

Component 1: Environmental communication and awareness raising, supporting campaigns and actions

The creation and forming of environmental awareness can be done with many tools and on many target groups, a wide scale of environmental communication (or preventive communication) can be applied on the whole of the companies' fields of operation. Almost any of the methods may be applied on cooperating companies representing various fields or on certain activities of the companies that have environmental impact (in the course of normal operation, or in case of a break-down or an emergency situation). Thus, the following activities can be supported: elaboration of codes of practice; demonstrating the environmental impact of everyday customs (eco-tracing); lists of questions

encouraging the thinking about a more sparing attitude, demonstrating the attitude of due-care; finding best practices within the organisation, importing external examples, demonstrating practical elements, examining case-studies, organising programs “learn from the mistakes of others” together with “green” enterprises, launching programmes to compare levels; encouraging the purchase of “green” products (public procurement!); supporting awareness forming actions on regional level; forming target groups within the company and organising programmes for them (games, tests, events, competitions, open days, waste collecting days, green days, radio programmes on best practices), elaborating a system for expressing opinions, feedback options, collecting remarks from interested parties, periodical opinion poll, report on the atmosphere (weather), satisfaction survey; publications in simple form with numeric data; follow up of legislation, explaining concepts; monitoring of grant announcements, support to prepare grant applications (consulting, writing etc.); organising programmes to influence consumer behaviour; preparing KIR reports, notices, sustainability reports (for local communities, employees, authorities, customers, business partners); preventive “green” communication practices, elaboration of a system of environmental charges, incentive programmes (prizes), honouring extra performance (premiums); setting up forums, facilitating cooperation within a settlement, region or sector.

Component 2: Surveying the environmental problems of SMEs, supporting consultation

The tasks are quite simple, e.g. preparing floor plans, checklists, and filling them out upon examining the sites, areas. The environmental problems shall be marked in the documents, such as distractions, water-, soil-, air pollution, noise, dust, energy, waste and risks, in other words:

Environmental site-survey, recording and analysing the basic situation (site-by-site mapping the emissions on the basis of the plans and the checklists, analysing the data of energy consumed, survey of risks – evaluation on a cobweb diagram –, analysing the use of materials, preparing proposals for measures (eco-mapping, due care treatment); grouping the environmental impacts (air pollution, energy consumption, contamination of water, water consumption, impacts damaging the soil, impacts damaging the natural wildlife, the built environment and the cultural treasures); defining indicator numbers characteristic for the state of the environment, setting and collecting target values, identifying key indicators; evaluation of performance on the basis of the indicators, e.g. analysis of waste per product, energy per product, comparing the trends within the company to the objectives, comparing the level to that of external partners; seeking the steps to prevent the contamination of the environment in the course of monitoring the operation, introducing measures to improve the environmental performance of the company (e.g. reviewing the need to use company cars, using scooters); analysing the opinion of interested partners; evaluating former action programmes, support for external consultants in the above fields.

Component 3: Supporting environmentally conscious methods and developments in the SMEs

After identifying the points of improvement, the definition and timing of the necessary measures, the determination of the scopes of responsibility, the estimation of the costs and the expected environmental - or economic – benefits together with their ranking the order of feasibility, then the implementation of the action plan and controlling the measures.

Eligible activities:

Building KIR, introducing EMAS, certification, utilising similarities within a sector, adaptation of elaborated systems; environmentally friendly product development, eco-labelling, lifecycle analysis, tracing the path of the product from raw material to waste along the activities of the manufacturers and the suppliers; division of environmental costs to visible costs and other costs of contamination (dangerous and non-dangerous waste); saving the environment, environmental awareness in the office, in the everyday life (recycled paper, shopping basket etc.); implementation of the action plan; training

of auditors and professionals, using their expertise; procurement, selection of partners on the market (production of environmentally friendly products, refund for packaging materials); widening the selective collection of waste; topics and technologies to follow up the results achieved (random checking of data, information, planned and factual figures, reviewing action plans, overview of the general order).

In the application of the above mentioned components a/, b/ and c/, several methods, technologies and tools may be used. Any of the following tools can be related to any element of the components (in the fields of communication, planning, implementing or controlling measures to improve the environment), as the topics taken into account in creating the forums should cover and support the individual elements (without requiring complete coverage):

- organising trainings, courses, conferences on regional level
- brainstorming within the company, interviews with the personnel, workshops, consultations, receiving new workers, awareness raising in certain case with external or individual consulting,
- setting up an educational, informative base (creation of knowledge base, dissemination of knowledge), training, extension training for environmental managers with the participation of expert lecturers from and outside the region,
- organising open days (rotation between companies may be used),
- multimedia tools, films, audio materials, radio recordings, taking pictures, showing best practices (how to do and how not).

There should be an organisation in charge of coordinating the above tasks and the work to be done by training and consulting companies, as well as offering information, preparing publications, organising events, therefore it would be advisable to support the creation of a regional organisation in order to improve the efficiency of coordination and the actions.

Beneficiaries

Component 1:

consulting organisations, non-profit organisations

Component 2-3:

Direct support for SMEs who use the consulting services and implement the necessary investments

Financing sources

EU Structural Funds

Support from the National Development Plan, Operative Programme of Economic Competitiveness

Life

KvVM-BM grants

KöViCe (targeted expenditure for environmental and water management purposes)

National R&D Programme

Innovation Fund

Decentralised sources

Bilateral international support

Measure 7.4: Establishing a complex waste management system

Justification

After the change of the political regime, in the 1990's the overall quantity and the average dangerousness of waste decreased as a result of economic restructuring and the modernisation of production. In a parallel process, the quantity of packaging materials of reusable material increased, and there are more and more types of materials the utilisation of which challenge the traders and manufacturers concerned.

It is important to focus on prevention, or – if no prevention is possible – on decreasing the quantity of waste and on reaching a higher share of utilisation. Most of the waste is simply dumped, the share of utilisation is below 30%. Only 2.5-3% of solid communal waste is utilised as a material, the level of selective waste collection is low, there is no processing background, and the price of primer raw materials is low. Although there are hundreds of dumps in Hungary, only about 15% of them, established in the past 4-5 years, comply with the modern requirements, but as a whole they are outdated compared to the requirements of the EU. To meet the expectations, the technological developments must come together with a changing attitude, the introduction of new incentives and a higher level of information background. This measure is in line with the National Waste Management Plan and to the National Environmental Programme II. Document 2003-2008, with a special emphasis on EU-conformity and the hierarchy of prevention, utilisation and disposal. Improving planning and efficiency are priorities.

The environmental regulations put into force upon our EU accession challenge the economic actors of the South Transdanubian Region in many respects. Although the EU funds contribute to creating a solvent demand in this respect, there is a risk of environmental companies outside the region obtaining such support. To counteract such tendencies as well as to gain and strengthen positions on the market it is an objective of priority to organise the SMEs in the region in networks, together with linking such networks to the interdisciplinary research bases. The creation of environmental industrial services can be induced indirectly by supporting the establishment of environmentally conscious production systems. Some enterprises have been quite successful in the region in the field of the selective collection and the processing of waste. Such projects should gain extra support. The cooperation and the links between the spheres of research, innovation, local governments and NGOs should be facilitated.

Aims and objectives

A model region of clean and high quality environment with a competitive environmental industry offering innovative services and products. The immediate objectives of the measure:

- Improving planning and efficiency in waste management
- Improving prevention and utilisation in the field of communal and industrial waste
- Low environmental risk management of the communal and industrial waste to be disposed
- Supporting R&D in the field of waste management
- Strengthening environmental SMEs in the environmental industry sector

Description

Environmental impact studies of products and manufacturing technologies must be introduced and applied in a wide scale, together with adequate planning and environmental qualification. With the lifecycle analysis of the products, applying the concept of “from cradle to tomb” – in addition to other economic benefits – it will be possible to plan in time the system for the collection and the management of future waste, the costs of the various alternatives will be calculable, as well as their social, environmental and economic benefits and drawbacks. In the planning phase, the general natural and ecological impacts of the future waste and the treatment thereof shall be taken into account.

It is the primary responsibility of the manufacturer to make products with a technology that produces little waste, and the products themselves as waste must be ready for utilisation or treatment. In case of some waste the treatment of which is of special importance, it shall be the responsibility of the manufacturer to treat waste. The trade sector and the consumers must co-operate actively in this respect.

Supporting measures shall be applied – in addition to market mechanisms, if they prove inadequate – to disseminate and promote in the market the technologies that produce less waste.

The structure and the operation of the liability chain on the products' side must be examined carefully in order to enforce in practice the liability of the manufacturer and to make it able to stand for its liability. To achieve this, it is necessary to share liability between those involved in the lifecycle of the product from production to disposing or utilising the waste, in accordance with their actual role, and all of them should have a share from the expenses of enforcing liability.

Information databases should be set up to offer adequate market information for the companies active in waste management. The infrastructure of starting business transactions should be established, links must be created between the waste collectors and utilising facilities all over the country in order to have the transactions concluded swiftly and simply. Some companies in the region have professional knowledge and references in the field of preparing and organising waste-related programmes far beyond the national average – this is what we have to build on.

Component 1: Product lifecycle planning

- Setting up coordinating, organising and intermediary organisations to secure implementation. The experts delegated by the environmental NGOs and the professional enterprises can be in charge of implementation. A non-profit company or a public foundation should be set up with the participation of professionals, NGOs and companies. The organisation shall be in charge of offering professional support, consultation, dissemination of information and awareness forming regarding the planning of product lifecycle. In the region this task should be performed with a centre in Pécs and sub-centres in Kaposvár and Szekszárd.
- Qualification criteria should be elaborated in the planning of product lifecycle, together with the elaboration of the criteria for eco-labelling, as well as the establishment of evaluation, control, and supervision criteria. The creation of the set of criteria shall be the task of the coordinating organisation (non-profit company, public foundation), as the coordinating organisation shall be able to introduce and monitor the qualifying criteria system after the elaboration of the criteria.
- In order to get prepared to new developments and investments complying with the special requirements of planning product lifecycle (introducing new products and processes, manufacturing technologies) it is advisable to prepare feasibility and market studies. To follow up the planning of the product lifecycle on a constant basis, lifecycle analyses and environment improvement examinations should be made. The above studies and analyses shall be performed by the coordinating organisation and the experts registered there, on the assignment of the enterprises (large companies, SMEs) implementing the developments.
- Introducing general services of enterprise development for the SMEs and the big companies: market analyses related to the introduction of new products and services of environmentally positive impact, consultation on product development, market research, consulting on marketing, sales and business development performed partly by the coordinating organisation and the experts registered there.

Component 2: Selective collection of waste

- Special equipment not used before is needed to improve the selective collection of waste. Therefore, technological developments and innovative technologies are to be found and adopted.
- The programmes encouraging the selective collection of waste and raising awareness must be of top priority, since they are the basis of any technological development. Mainly NGOs and the associations thereof might be in charge of this task.
- Investments needed for the selective collection of waste (e.g. waste-yard, collection islands, selecting plant etc.) the number and the optimal territorial distribution of which are defined in the regional and local waste management plans.
- Elaboration of connected trainings, expanding vocational training, since special expertise is needed in the field of selective waste collection. The training shall be implemented in the framework of non-school based professional course modules. Training topics may include: operating vehicles and machinery for selective waste collection, waste selection, logistics.

Component 3: Waste processing, recycling

- Harmonisation of waste management plans on regional and micro-regional level with the involvement of professional associations, local governments and their associations, professional waste management enterprises.
- R&D related to waste management focusing on: foundations of the protection against the harmful effects of waste (selective collection, diversification, and pre-treatment developments supporting re-using and recycling; waste utilisation to produce energy), elaborating modern technologies for decreasing or eliminating the production of dangerous and non-dangerous waste, and to utilise or dispose them.
- Production of biologically degradable packaging material to support the adequate collection and management of bio-waste, and to lessen the environmental burden caused by plastic waste. The companies involved in the production of packaging materials are expected to launch the production of such materials and this technology requires research and development.
- Programmes and actions aimed at supporting home composting, including the procurement of equipment initiated by the local governments and the enterprises involved in waste management with the participation of NGOs. The development of prevention and utilisation as far as non-dangerous waste is concerned is the responsibility of the enterprises and the local governments, coordinated by non-profit companies and foundations established by them.
- It is important to prevent and lessen the production of communal waste; increasing significantly the selective collection of communal waste; pre-treatment and utilisation of communal waste collected selectively, separated treatment and composting of organic waste degrading biologically, supporting local utilisation, using agricultural and food-processing biomass (e.g. for soil meliorisation, energy production). These activities should be implemented by expanding the Eco-City Eco-Region programme initiated in Pécs.
- The implementation of programmes aimed at the collection, industrial pre-treatment and processing of waste flows of special importance (packaging, mineral oil, PCB, small and big batteries, tires, vehicles, electronical appliances, medical waste, animal waste, pesticides) shall exclusively be realised through enterprises having the necessary special licenses and the expertise needed.
- Setting up a network of managing dangerous waste, and the implementation of other sectoral programmes aimed at managing and disposing dangerous waste shall exclusively be realised through enterprises having the necessary special licenses and the expertise needed.

Component 4: Establishment of waste exchanges

Setting up an information database prepared by the organisations supporting enterprises (Chambers of Commerce and Industry, Enterprise Centre). The information database shall *include*:

Presenting basic knowledge related to waste and the utilisation thereof, the legislative background, the features of the Hungarian support system (product feed, licence fee).

Listing the enterprises and organisations involved in waste trading and processing in Hungary, the short description of their activities.

Information of the market of various types of waste (secondary raw materials), the possibilities of utilisation, the actors on the market.

- Setting up the infrastructure supporting waste related transactions on the market. Establishing and operating a registration and intermediary office, coordinating transactions, organising bids. On regional level it is enough to set up a waste exchange established on entrepreneurial basis. The participants of the waste exchange shall be the manufacturing and processing companies offering and obtaining waste and raw materials on the exchange. Creating and operating an Internet portal allowing for electronic on-line transactions.

Beneficiaries

Component 1:

- companies,
 - sole entrepreneurs,
 - foundations, public foundations,
 - non-profit companies,
 - associations, cluster organisations, professional associations
- of resident status under the Foreign Exchange Act, with a principal office in South Transdanubia, engaged in the environmental industry

Component 2:

- companies,
 - sole entrepreneurs,
 - local governments and their associations,
 - foundations, public foundations,
 - non-profit companies,
 - associations, cluster organisations, professional associations
 - training organisations: PRMKK, County Enterprise Centre
- of resident status under the Foreign Exchange Act, with a principal office in South Transdanubia, engaged in the environmental industry

Component 3:

- companies,
- sole entrepreneurs,
- local governments and their associations,
- foundations, public foundations,
- non-profit companies,
- associations, cluster organisations, professional associations

of resident status under the Foreign Exchange Act, with a principal office in South Transdanubia, engaged in the environmental industry

Component 4:

- companies,
- sole entrepreneurs,
- local governments and their associations,
- foundations, public foundations,
- non-profit companies,
- associations, cluster organisations, professional associations

of resident status under the Foreign Exchange Act, with a principal office in South Transdanubia, engaged in the environmental industry

Financing sources

- KöViCe (targeted expenditure for environmental and water management purposes)
- EU Structural Funds

Support from the National Development Plan, Operative Programme for the Protection of the Environment and Economic Development

- Life
- KvVM-BM grants
- National Programme for Research and Development
- Decentralised Resources
- Bilateral international support

PRIORITY 8: DEVELOPMENT OF WIDE SCALE HEALTHCARE SERVICES BASED ON RESEARCH IN LIFE SCIENCES

Measure 8.1: Supporting biotechnology industry based on research in life sciences

Justification

One of the promising breakthrough points of the South Transdanubian Region can be the development *R&D and the related services on the basis of research in life sciences*. Both universities of the Region, the University of Pécs and the University of Kaposvár have in the past decade achieved significant results in the research and education of life sciences. The Medical University of Pécs has always been one of the Hungarian basis institutions of research in human biology and clinical studies, but in the past it stood alone in representing this dynamically developing sector in the complex social and economic field of medical industry, without regional co-institutions. This is the reason why the internationally acknowledged results of the academic sphere have been transferred into R&D and innovation only to a limited extent, and they have not been represented in the industry of the region on the scale it would have been justified by the potentials.

In the past decade, the restructuring of the universities (the so called integration) and the formation of the University of Kaposvár changed the regional position of research in life sciences and higher education. The Medical Faculty and the Faculty of Natural Sciences of the University of Pécs performed significant developments in the fields of biology and medical-biology, using various Hungarian and international grant schemes. The establishment of the Faculty of Animal Sciences at the University of Kaposvár allowed for extending the scope of formerly exclusively human-oriented biology research by forming a complex professional background better shaped to meet the challenges and widening the process of “knowledge transfer”. Even today, the PhD schools of both universities guarantee the supply of highly qualified professionals needed for such process. Consequently, *the Region has got the professional background and the human resources needed for developments in the medical industry*.

As early as in the 1990's there were small enterprises in the region in the biotechnology sector on the basis of basic and applied research in life sciences. They have been primarily micro-enterprises linked closely to the university sphere. All through the world, the accelerated development of biological sciences and the emerging of biotechnology industry have been experienced in a similar way, linked to the university/research sphere. Despite of the highly qualified professional background in the region, this process could not develop further. Available data show that there only 10-12 micro- and small enterprises as potential basis for further development of regional biotechnology. Three of them is active on international markets as well, and their export activities are increasing measurably; another small enterprise is successful in the field of developing medical instruments, primarily on the Hungarian market.

In the recent years, many professional meetings and studies have been discussing the development of regional biotechnology. All analyses clearly pointed out the *lack of capital and dispersion* as the factors hindering further development in the field of developing *diagnostic agents and reagents*. Despite of the considerable activities in applying for grants, no breakthrough was experienced in this respect in the recent years. It has been clear, that grants alone are not enough to secure a more accelerated development built on existing strengths (professional knowledge, international links etc.). Increasing the volume of product development and the connected marketing activities can be implemented neither from own resources, nor from competitive grants. Presently, on the market of diagnostic agents and reagents – similarly to other fields of molecular biotechnology –, the

determining factor is shortening the period between the publication of the research results and introduction on the market. As the processes of research, R&D and production are closely linked to each other with some overlaps, the above period is measured in weeks or months. Therefore, intensive marketing work is indispensable for the success on the market. In the present situation, no regional small enterprise can achieve it. However, processes have already been started between the small enterprises to eliminate dispersion (profile streamlining, product development and distribution co-operations) and in the course of the development they are expected to accelerate spontaneously due to focusing on efficiency.

Developing instruments used in the medical industry had in the recent years significant results in two directions. In addition to the development of medical instruments, prostheses and accessories, there have been successful innovations in the field of laboratory instruments, too. Both directions of development was formed on the basis of local practical experiences, and the products resulting from the innovative processes have been introduced on the Hungarian and international markets. There is a significant difference in the kinetics of introduction on the market in respect of molecular biotechnology and instrument development: in case of developing instruments, just as in technical R&D in general, the protection of industrial rights plays a key role. It is the primary interest of the companies to obtain patent rights to the product after the innovative phase and before manufacturing/distribution. This time- and money consuming process can only be managed by the companies separately, in the form chosen by them. Similarly, in a parallel process with manufacturing, marketing activities are to be implemented by the enterprise performing the innovation.

One of the primary challenges in the South Transdanubian Region is the elimination of long term complex environmental pollution inherited from the past. It is important not only because of the EU requirements, but primarily for the protection of the health of the inhabitants of the region. Assessing the situation and monitoring the activities is a task of interdisciplinary research, R&D and services. *Biotechnology connected to environmental industry* can play an important role in this process.

One of the main profiles of laboratory reagent development and measuring services is the micro-analytic detection of environmentally harmful components damaging the living systems. It means in part the development of new reagent families as well. Bio-terrorism and increased migration resulted in new tasks in this respect where both basic and applied research, R&D and other actors of the innovation chain may be affected.

Another interdisciplinary field closely related to the above is food security. In the past decades, *alimentation studies* have gradually become an independent field within life sciences. This new innovative sector is related to the use of genetically modified foodstuff, the changing of lifestyle, preserving health, and preventing diseases in close connection to efficient food processing technologies. In the recent years we experienced a growing demand for new products and services as well as for the training of specialised experts. Demand has increased not only for classic professions (e.g. dietetics, animal breeding, feeding etc.), but there is a growing need of R&D and production of foodstuff requiring highly qualified professionals with complex skills.

The reform of the university sphere in the Region allowed for the emergence of *new directions of development*. In the field of alimentation studies the faculties of the University of Pécs and the University of Kaposvár offer the professional background.

Aims and objectives

Strengthening micro-enterprises and SMEs operating in the field of biotechnology, improving their position on the market and increasing their role in forming the regional product structure.

Laying down new foundations for the cooperation between the university sphere and the enterprises. To achieve this, the two universities of the region must cooperate closely and innovatively, and integration within the universities must be strong.

Reforming the internal structure of the universities by creating “entrepreneurial higher education” can be a cornerstone of successful regional innovation strategy.

Description

On the basis of present profiles, four main fields offer development in the middle term. These are the following:

Development of reagents and diagnostic processes

Instrument development

Biotechnology R&D related to environmental industry

Research and R&D in alimentation sciences

Component 1: Development of reagents and diagnostic processes

In the region, this professional field has the most traditions concerning the application of “highly developed technologies” in biology. The micro-enterprises closely linked to the university sphere with experiences of decades can serve as the basis for developments. According to the international tendencies, and despite of the difficulties, this sector of the medical industry can generate swift revenues of big volume for the region, therefore **it deserves extra support**. To improve the competitiveness of the region, it is important to increase the efficiency of existing micro-enterprises. Based on the analysis of international indicators and the experiences of other regions, the development of biotechnology can boost the development of other sectors of industry and services.

To overcome the lack of funds, the banking sector must be involved together with the introduction of **venture capital**. It would be advisable to elaborate a regional support model where the input of capital is to be used on financing the introduction to the market and the own resources of the enterprises together with grant support should be spent on R&D.

Component 2: Instrument development

As in the case of developing reagents and diagnostic agents, this field is to combat with the lack of funds. However, in this sector, a growing cooperation is expected with traditional industries (e.g. plastic and metal processing, micro-electronics etc.). The elaboration of the support model must include the peculiar features of the sector (e.g. increased demand for the protection of industrial property rights). A **regional innovation and R&D office** could contribute significantly to both processes – in addition to other tasks performed – and increase the efficiency of the sector.

Component 3: Biotechnology R&D related to environmental industry

The background of university research and the cooperation of small enterprises engaged in biotechnology allows for **new thematic product development** in the region. The research and enterprise background in biotechnology can offer **internationally accredited measuring services** in addition to product development. It takes strong cooperation between the interested actors in the region and it can only be viable **with the participation of actors outside the region**. The implementation of the development should be done in the form of setting up a new **Cooperation Research Centre of biotechnology profile**.

Component 4: Research and R&D in alimentation sciences

The **thematic cooperation of the region's two universities** by putting together some elements presently separated can lead to the emergence of a new field of development in the middle run as well. Cooperation can be implemented on many levels. Among others, in the framework of the so called "Bologna process" started in the higher education, the elaboration and the accreditation of the thematics of a joint, multi-step training of professionals could be initiated to encourage other processes of R&D and innovation in the narrow sense. Biotechnology connected to alimentation sciences can be the field of realising a new regional R&D strategy on the borderline of traditional medical industry and the classic food industry.

Activities:

On the basis of the above, the following concrete activities can serve the implementation of the overall objectives:

- Elaborating a new regional support model with the involvement of the banking sphere. This model should supplement other grant schemes (of Hungarian and EU resources), with a special focus on supporting regional thematic biotechnology developments.
- Setting up a regional innovation and R&D office. This task is in the core of reforming the institutional structure. The office shall be in charge of coordinating all components of performed innovation and introduction to the market.
- The establishment of a new cooperation research centre of biotechnology profile would allow for creating a system of new product developments and services together with territories outside the region.
- It is part of the RIS to support the reform and the enterprise-oriented development of the academic background as an innovative basis, as well as to encourage the multi-level cooperation of the universities of Pécs and Kaposvár.

Beneficiaries:

On the basis of the above activities,

- higher education institutions and research institutes
- companies
- sole entrepreneurs,
- local governments and their associations
- foundations and public foundations
- non-profit companies
- associations, cluster organisations, professional associations

of resident status under the Foreign Exchange Act, with a principal office in Hungary and operating primarily in the region.

Financing sources

The resources presently available are applicable only to a limited extent for supporting the biotechnology industry based on research in life sciences, and they are not targeted on serving the interests of the region. These are the following:

national research and R&D funds

funds from the EU6 framework programme

other international research and R&D funds

In addition to the above, we need other forms of support to be implemented in the framework of the RIS. The potential forms are the following:

- thematic regional calls for proposal
- involvement of venture capital
- favourable development loan constructions for regional development objectives

Measure 8.2: Development of health-tourism services with the development of new technologies and medical processes

Justification

For the detailed examination of services development in relation to health-tourism, it is indispensable to define the concept in question. Health-tourism as a group of tourism products is based on the motivation that plays a certain role in the decision-making of tourists. Motivation is what makes people travel. In case of health-tourism this motivation is the wish to maintain health, to have the diseases healed and recreation. However, such motivation can be induced by various attractions, therefore the product family of health-tourism contains several tourism products such as medicinal tourism, thermal water tourism and sports tourism.

MOTIVATION	ATTRACTION	PRODUCT TYPE
<ul style="list-style-type: none"> • recreation • healing • wish to be healthy 	medicinal water, medicinal resort, healing climate	Medicinal tourism
<ul style="list-style-type: none"> • healing • maintenance of health • wish to be healthy 	thermal water	Thermal water tourism
<ul style="list-style-type: none"> • maintenance of health • hobby sports 	sports facilities	Sports tourism

Based on the above, in South Transdanubia medicinal and thermal water tourism can be the tourism products of priority, but the perspectives of sports tourism are also promising. The regional development of products is justified by the following:

- the region has got favourable endowments such as thermal waters of excellent quality, unique climatic potentials (cave, Mecsek Hills), facilities with a strong medical background, small spas which are not overcrowded, sports facilities, a lot of service providers.
- Adaptation to the trends on the international and domestic markets: from the second half of the 1990's new trends have emerged in the traditional medicinal and thermal water tourism. Wellness, fitness, special therapies (sound and light effects, thalasso- and aromatherapy etc.) as well as special cures have become fashionable. In addition to traditional forms of entertainment, both foreign and Hungarian guests lay a great emphasis on expensive services that contribute to preserving beauty, fitness, and physical-mental recreation.
- National developments of thermal spas encouraged by the Széchenyi Plan resulted in a significant competition between spas and regions. In this process, South Transdanubia is in an unfavourable position. In Hungary, 22-23 million entrance tickets are sold in spas yearly. The majority of this significant demand is effectuated in Budapest, the North Great Plain, South Great Plain and Balaton regions. The capital has the biggest share with as much as 17% of the total market; South Transdanubia is ranked the 6th in the competition of the regions with a share of 8.7%. The developments may lead to interesting processes in the competition of the regions. West Transdanubia and Budapest received the most significant support. These regions have traditional, well known resorts with reinforced services and their geographical location is favourable in terms of easy transportation access to absorb foreign demand. They are expected to be flagships, becoming popular not only among foreigners but in Hungary as well with increased demand. In other regions, there are only some places expected to play a prominent role, others will serve mostly domestic guests or will get specialised to a great extent. This trend can be felt even today,

as for the foreign tourists coming mainly from the West – and in the long run for the Hungarians – it is not enough to perform maintenance developments. South Transdanubia needs a new marketing strategy and the elaboration of special concepts to give the thermal baths of the region a distinctive character among the dozens of spas.

- Stopping and correcting the trend of decreasing the number of guests experienced for several years: medicinal and thermal water tourism is one of the most important pillars of the tourism of South Transdanubia, justified by the fact that in the year 2003 more than 2 million people visited the baths of the region. Among the baths, Harkány has the large share with more than half of the total turnover. The constant fall of the number of guests is tendency experienced for several years.
- The sector is characterized by a serious lack of funds. The implemented developments are of low or middle volume, still the project owners have to utilise all of their financial resources, thus they are not able to finance from own resources further developments in the long run.
- With the exception of Harkány, there are only small- and medium sized service providers in the region's medicinal tourism. Their small size and the lack of financing make it difficult to enter the market or to start developments. Therefore, the service providers are interested in joining their efforts and the foundations for that are given. According to international and Hungarian experiences, many baths are interested in cooperation. The objective of this natural process of associating is threefold. It is a tool for the joint enforcement of interests, it helps the more effective entering on the market and it is a tool for sharing experiences. Deeper cooperation is not typical among the baths.

Aims and objectives

- Starting developments needed for creating the image of South Transdanubia as a region offering an answer to health problems
- Supporting the technology transfer related to the introduction of “expected services”
- Introducing innovation activities in the framework of regional cooperation

Description

Component 1: Supporting R&D activities based on special endowments

Not only Hungary, but also our region is rich in medicinal waters of excellent quality with medical effects proven by the relevant institutions. We also have a cave suitable for the treatment of asthmatic problems. According to the studies, our medicinal waters can cure several diseases including some special ones. It is necessary to continue the studying of our thermal waters to learn more details about their beneficial effects. It is important to support the programs linked to publishing the results, as their dissemination among the professionals is an excellent tool of promotion as well.

Component 2: Introducing special prevention, health-preserving and medical services

The development of services related to known or proposed new cures on the basis of R&D activities can be examined on more than one level:

- Procurement of equipment or the building of facilities suitable for the treatment or the prevention of special health problems which are unique on international or Hungarian scale,
- Development of innovative tools, equipment, services not existing on the market, with marketing and supporting the purchase thereof,
- Infrastructure developments directly linked to the operation of new services.

Component 3: Establishment of new services of medicinal tourism and modernising the existing ones

The creation of an efficient prevention and medical image is greatly influenced by the services already used on domestic and international level as the visitors are expecting to have such services. All institutions must offer such services with the most up-to-date technology, as they have to meet the demands of the market.

Component 4: Encouraging regional cooperation to support efficiency

- Forming clusters results in improving the efficiency of the operation in the form of cheaper operation and implementing more efficient methods.
- Establishing an electronic health tourism market and company management systems
- R&D activities: launching studies about the scope of guests, analysing the subcontractor networks of the service providers, examining the wide scale economic effects of their operation, setting up a monitoring system, programme of using geothermal energy
- Innovation brokering: innovation brokering activities in the field of the medicinal and thermal water tourism cluster cover the following: transferring relevant innovative potentials to the members of the cluster, forwarding know-how and contracting partners as required by the members of the cluster.
- Training: attitude-forming manager trainings, vocational training needed for the supply of services.
- Introducing Medicinal Tourism Service System (MTSS), a joint subcontracting-service provision system: MTSS is a practice-oriented service package offered by the appropriate unit at regional level with coordination activities involving specialised experts for the undertakings requiring it. With the help of MTSS the companies can save costs or implement new tasks to improve their competitiveness. The field of services is the following: logistics, purchase of materials, marketing, technical services, bath operating services, legal representation, financing issues, grant applications, company management services, economic services, IT developments, travelling agency services, translation, interpretation, correspondence in foreign languages, general inquiries.

Beneficiaries

Companies, local governments, institutions, research institutes, medical facilities running medicinal and thermal baths, spa, cave, sports facilities, the Association of South Transdanubian Medicinal and Thermal Baths

Financing sources

In 2004 there is a GVOP fund offering support for starting cluster formation on regional level. There are no EU or Hungarian funds to finance further developments. Until the year 2007 there are no funds available for financing the programmes.

Measure 8.3: Improving the institutional and IT systems of environmental health

Justification

The *National Environmental Health Action Programme* (NEHAP) for 6 years was launched in 1997 as the sub-programme of the *National Environmental Programme*, on the basis of the recommendation found in the declaration of the 2nd conference of the Ministers of Environment and Health (Helsinki, 1994.). Its basic objective is improving the health of the population and helping the development of an environment that supports health; overviewing and ranking the most important problems related to environmental health to find solutions on national, regional and local levels; elaboration of concrete actions and feasible projects for the creation of an environment securing the preservation of health.

The implementation of NEHAP requires the collection, storage and processing of data related to health and the environment as well as securing wide-scale access to the results, and the regular collection, utilisation of the related comments and opinions. The IT system of the NEHAP was designed and developed on the basis of the recommendations of the WHO, using modern IT tools. Attempts have been made to collect data available for the whole territory of the country. Environmental data include – using the broad sense of the term – not only the physical or chemical pollutants of the environment, but the data related to the sociological or cultural environment as well.

A partly similar regional system was set up in 2001-2002 by the South Transdanubian Regional Health Council (STRHC) with the support of the Ministry of Health. The South Transdanubian Regional Health Knowledge Base project offers data on the mortality and morbidity indicators of the region on local, micro-regional, county and hospital district levels, and it can be supplemented with environmental data as well.

Collecting, monitoring and publishing environmental data that influence human health is important not only for the purposes of health and the whole of the population. Other sectoral priorities of the RIS are closely connected to the state of the environment: in producing high quality foodstuff it is important to monitor not only the food itself but the place of production as well; also in case of bio-production it must be certified that the environment is pollution-free; the wide-scale application of eco-mapping and monitoring the environment is an important component of the region's touristical attractiveness. The environmental health working group of the Regional Health Council is the main professional coordinator of environmental health; its working organisation is the South Transdanubian Regional Health Association (STRHA) which operates the regional environmental health information system. Developing a new set of tools for monitoring the environment is an important element of the region's R&D activity.

Aims and objectives

Overall objective: improving the quality of living of the region's population

Immediate objectives:

- establishing a complex system of environment-monitoring covering the protection of water bases, healthy living environment, the region's bio-production, as well as the most important places of tourism, or the biggest industrial sources of pollution.
- increasing in the region the number of accredited SMEs specialised on environmental monitoring, environmental status certification and consultation, encouraging R&D cooperations in the field of environmental monitoring

Description

Component 1: Establishing the environmental health working group of the STRHC, elaborating and operating the environmental health information system of the STRHA

In the framework of the component, the Regional Health Council (RHC) shall set up a working group on environmental health and shall define its tasks in accordance with NEHAP II. The South Transdanubian Regional Health Knowledge Base – presented below under the component 5.3/2 – is developed by the South Transdanubian Regional Health Association as the professional background organisation, and data as well as indicators on environmental health shall be added to it, in local and micro-regional division.

- In the framework of RHC, inviting experts on environmental health, setting up a working group;
- Securing the conditions for the operation of a regional environmental health information system in the STRHA: transfer of complex environmental monitoring data from component 1, further development of the existing GIS, presenting new environmental health indicators on the Web

Component 2: Setting up a regional network supporting local collection of data

For the development of the regional environmental monitoring system cooperation should be improved between the authorities, the higher education institutions, the local governments, the NGOs and the SMEs, on the other hand, the tasks should be divided reasonably.

- Survey and examination of the parameters monitored and measured by the environmental and environmental health systems in South Transdanubia, including the density of measuring stations as well as the relation between the measuring demands and the measuring stations (e.g. bio-production, water bases, tourism centres, industrial sources of pollution etc.)
- Based on the above, the planning of a complex environmental monitoring system covering the region including the definition of the tasks of and the relations between the cooperating partners
- Organising the regional network

Component 3: Supporting SMEs specialised on local or micro-regional environmental monitoring/certification by encouraging R&D aimed at the development of new systems of monitoring tools

Supporting the development of a new set of tools for environmental status monitoring by promoting the R&D cooperation between the university sphere and the SMEs. In the cooperation of the university sphere and the SMEs interested in environmental R&D new individual or complex measuring equipment should be developed, which is cheaper but more modern than the presently used, suitable for remote measuring allowing the establishment of the complex environment monitoring system and as a tool for sale can contribute to the innovative development of the region.

In the future, the increasing consumer demands, environmental requirements (fees) or merely the improvement of the products marketing shall necessitate the individual monitoring and certification not only of the product or service concerned but e.g. also of the place of production or the thermal bath (environment), the environment of a tourism attraction etc. Supporting SMEs specialised on these tasks is mentioned in many priorities. Such services may use the data retrieved from the complex environmental monitoring system mentioned in component 2, and they can supplement them with a set of special features or data that can contribute to the comprehensiveness of the system:

- Surveying environmental monitoring tools existing in the region or available on the market, defining the tools missing or being available on a high price, elaborating the potentials of development (e.g. remote sensing)
- Encouraging innovative R&D targeted on this field, supporting cooperation between the university sphere and the SMEs
- Supporting the procurement of equipment by SMEs engaged in local or micro-regional environmental monitoring/certification
- Supporting SMEs in obtaining qualification/accreditation
- Supporting the monitoring and certification of clean, pollution-free environment

Beneficiaries

Component 1:

The RHC and the STRHA as the professional background organisation operating the knowledge base

Component 2:

The STRHA and the regional institutions interested in environmental health that have the feasibility study prepared and utilise it: State Service of Public Health (ANTSZ), competence centre for environmental industry, higher education institutions, local governments, environmental NGOs

Component 3:

- The relevant faculties and institutes of the universities of Kaposvár and Pécs, and the SMEs involved in environmental R&D.
- SMEs active in environmental monitoring, consulting, and certification, with a principal office in the region.

Financing sources

- Own resources undertaken by the beneficiaries;
- Contribution allocated by the County Development Councils for the implementation of the measure;
- Regional contribution allocated by the Regional Development Council for the measure;
- EU Structural Funds' resources

Measure 8.4: Development of the health IT and logistics system

Justification

At present, in the health service system of the South Transdanubian Region, the set of IT equipment and infrastructure is outdated and incomplete. Most of the tools and the software systems used are inadequate for swift and secure data management and processing of high quality in the institutions, including the internal integration and communication of data, e.g. digital recording, storing and forwarding of the results of examinations made with modern digital equipment. The systems are disproportionately distributed within the region, those institutions that serve social layers of multiple disadvantages are lagged behind more. In addition to the field of direct contacts with the patients, there are needs for development in the management and processing of information in health management and the support of regional/local professional policies as well. The lack of adequate data- and information management hinders not only the service of patients, but also the cost-efficient management and operation of healthcare institutions. Another problem is the complete lack of the conditions for adequate knowledge management.

In more developed countries, however, there is a change of paradigm – primarily due to network technologies – with a shift in the IT support from service providers and services to supporting the IT and the communication of the whole environment of the patient in a patient-centered way.

The patient-centered complex health IT system of the region shall be established and developed in line with the national development plan. One of its inter-institutional elements shall be the regional health GIS database containing the updated morbidity and mortality data of the region as well as other related data (some elements from the environmental health system would be transferred here). The database would be useful in forming and developing the region's health policy.

The healthcare institutions are altogether the biggest employer in the region, and they use as much as 50 billion Forints of financing from the national healthcare budget. Almost 40% of this amount (20 billion Forints) are spent on medicine, materials, equipment and maintenance costs. The minimum level of stocks of the healthcare institutions amounts to several hundred millions of Forints as well. Although the individual institutions try to optimise their stocks management and procurements, cooperation in this respect would result in significant improvement in cost-effectiveness.

Aims and objectives

The overall objective is to set up an inter-institutional, multifunctional healthcare information system suitable for further developments, performing high quality health services, and all hospitals of the region should have up-to-date IT systems supporting the patients, the hospital management, and the regional inter-institutional IT services.

Built on and connected to the above IT system, the immediate objective of the measure is to set up a regional healthcare logistics centre as a background organisation to support the cost-effective operation of the healthcare institutions in the region, in order to solve the problems of stocking, storage and transportation as well as the stocking and joint use of expensive implants and implanting sets.

Description

Component 1: developing the internal IT systems of the healthcare institutions

IT development of the healthcare institutions – presently of very diverse IT level – of the region, forming a patient-centered IT and communication system to offer services for the complete environment of the patient.

Procurement and installation of software, hardware and network equipment supporting the medical work and the cost-effective operation of the healthcare institutions with the trainings necessary.

Component 2: Operating an up-to-date regional GIS database

The component secures the foundations for the health- and professional policy tasks of the RHC by supporting the system elaborated, developed and continuously operated by its professional background organisation, the STRHA.

Using the “data warehouse” module of the inter-institutional healthcare information system to be set up and the adequate data of the HCSO (Hungarian Central Statistical Office), the company operating the system updates on a yearly basis and develops the GIS-based Internet database covering the morbidity and mortality figures of the region in order to support the professional tasks of the RHC.

Component 3: Establishing and operating a regional healthcare logistics centre

The ambulance and in-patient institutions interested in the cooperation, the local governments in possession, and the potential business partners – with the non-material support of the RHC – shall expand the scope of operation of the STRHA’s consortium into the direction of healthcare logistics, so as the partners can benefit from the services of a regional logistics centre.

- Feasibility study: it will examine the scope of potential partners, the areas to be covered by logistics activities (procurement, distribution, shipping, renting etc.), the resources to be used in setting up the centre, three areas to be served (county or regional level), the operation of the logistics centre, as well as the economic benefits expected.
- Organising the consortium to form the logistics centre, selecting the appropriate form of operation, establishing the company, constructing and operating the logistics centre.

Beneficiaries

Component 1

Those healthcare institutions of the region the internal IT system development of which has not – or has only to a limited scale – been implemented from the support budget of the Human Resources Development Operative Programme in the measure 4.4.

Component 2

Company established by the STRHA or/and the regional IT consortium

Component 3

STRHA, consortia set up on county and/or regional level by healthcare institutions and their owners

Financing sources

Measure 4.4. of the Human Resources Development Operative Programme of the National Development Plan “*Healthcare IT development in the regions lagged behind*” is to be followed as it aims the development of a regional inter-institutional healthcare IT model system. It is clear right now that the resources available shall cover neither the full-scale development of the system, nor the utilisation of all potentials.

PRIORITY 9: DEVELOPMENT OF TOURISM AND SERVICES OF CREATIVE INDUSTRY BASED ON THE INTELLECTUAL AND CULTURAL PRODUCTS PRODUCED BY THE CULTURAL SECTOR

Measure 9.1: Tourism-oriented development of cultural product packages

Justification

The role of cultural tourism is increasing within the sector of tourism which shows a constant development. It is due to certain demographical reasons (increasing share of senior citizens who can afford travelling often) and (mainly) in Western Europe the general level of the people's education and culture has been rising since decades, and several generations have grown up who prefer spending their free time with cultural activities instead of passive vacations. In addition, with the development of transportation, travelling has become relatively cheap and simple, and it reformed the recreational habits of people: short (few days) trips have become more common, with mostly cultural motivation, targeted mainly on big cities.

Culture is manifested in space and it is closely linked to its location. As in the cities human and social contacts are more intense, here the creation of cultural values and cultural events are concentrated more in space, forming the framework of those human and social relations that create the values typical for the specific community. Therefore, the culture of a place, the human and economic resources that create this value are less mobile than the international companies of the globalised world economy; it is worth implementing the local strategy of economic development by developing the cultural industry.

The attractiveness and individuality of a place is determined by the state of the built environment, heritage, the cultural institutions and attractions in the broad sense, and the events, festivals. Neither of the above elements alone is enough to attract tourists. The animation role of culture is important and increasingly indispensable for creating the positive, attractive image of a place. In addition to attracting tourists, festivals and special events are useful tools of settlement marketing, they support the involvement of the inhabitants into the local cultural life: increase the public interest in culture, reflected in the increased consumption of cultural goods, improved demand for cultural industry.

To have successful cultural tourism, it is indispensable to

- secure the quality and the unique nature of primary products (built environment, museums, galleries, theatres, other cultural attractions, events),
- secure the quality and diversity of secondary products (hotels, restaurants, shopping facilities) on the level internationally expected in order to offer services for the tourist who spend more and have the region or settlement included in the offers of world-wide tour operators,
- secure additional services, as infrastructure, allowing access to and visit the attractions (parking places, hygiene facilities, marked routes etc.).
- in addition, the quality of soft elements must be developed as well by appropriate marketing work, the development of wide-scale information systems and the quality of the connected services.

Cultural events play an important role in the tourism supply of a region. Events can form the image of the region, they can contribute to expanding the tourism season and increase the number of guests in "dead seasons". The most important events of South Transdanubia are the cultural and artistic programmes.

Most of the South Transdanubian events take place in early summer and in the autumn. It is important to organise big events with good coordination in time and place, in order to prevent crowded periods when more than one important festivals are held at the same time in different places and there are no events at all in other periods.

The present supply of South Transdanubian cultural tourism needs significant development. Improvements are justified both by the general trends on the market and the demands raised by the guests visiting the region. According to the surveys, as much as $\frac{3}{4}$ of the tourists visiting the region consider it very important to meet cultural values when in the region.

The region has good endowments for developing such product type: there are many attractions in South Transdanubia that can form the basis of creating a regional supply of high quality.

Aims and objectives

Objectives of developing cultural tourism:

- increasing the consumption of cultural goods, improving the participation of local people in the cultural events
- improving local image, individual character
- supporting the involvement of the regions in tourism by including the region's cultural tourism attractions in programme packages, supporting the preservation of traditions: establishing and managing cultural routes
- coordinated organisation in space and time of cultural events

Description

Component 1: Improving cooperation between the actors of culture and tourism

Culture and tourism have for a long time been developed together in close interrelation, still this mutual dependence has not been acknowledged by the public and private actors of the spheres concerned. Tourists generate demand to be met by the cultural sector offering cultural goods and services. Both supply and demand are very segmented, still this diversity is not reflected in the offers of the most important tour-operators and travelling agencies. Despite of the technical developments, the access to cultural goods (exhibitions, performances etc.) is still more difficult – due to the lack of proper channels of distribution – than the access to the cultural target sites with improved means of transportation. As a result, tourists are often frustrated not being informed of the cultural events they might be interested in. The representatives of the sides of supply and demand as well as the intermediaries engaged in incoming travel should cooperate better:

- establishment of channels of information
- using IT potentials in promotion and sales
- developing existing endowments into cultural products.

Component 2: Supporting coordinated organisation of events, establishment of a regional programme office

The events of the region must be coordinated on regional level, forming a database of events, and promoting the events in a unified manner on regional level.

The development institutions in the public sphere of both sectors must reflect the interdependence of culture and tourism, thus the management of these fields should be harmonised more, both on local level and on higher levels of public administration.

By harmonising the individual events of the region and by the regional organisation and promotion of the connected supply of cultural tourism, there will be less loss of profit due to the overlap of events and the tourist visiting the region will be informed more efficiently. The establishment of a regional programme office should be supported, in charge of coordination and information transfer, with qualified staff, organising cooperation between programme hosts, programme organisers, and service

providers, securing the external and internal flow of information. The regional office should create and maintain a calendar of events both in written and electronic form in order to allow the efficient flow of information and the regional organisation of events.

Further responsibilities of the office are supporting regional promotion activities in the cooperation of the organisations and companies interested, by securing the local coordination of resources.

Publishing regional publications renewed year by year on the supply of cultural tourism, the cultural programme elements.

Component 3: Product development

The development of new tourism products is vital for securing the sustainability of tourism. The development of cultural products can be implemented in the form of creating new attractions, events or by grouping together existing endowments not yet formed to products.

Product development should be linked to the development of other sectors. Urban rehabilitation is often implemented through investments in the cultural sector (utilisation of industrial sites etc.). These investments reinforce the supply of cultural tourism in the settlement concerned.

During product development, the “market niche” attitude must be followed: the market share can only be increased by offering unique, special products targeting a well defined public. Similar cultural attractions in a region without links of communication fade each other instead of a synergy effect. Therefore, the local endowments and strengths must be surveyed and the development of cultural products must be coordinated on regional level.

One of the biggest problems in cultural tourism is the dispersity of the elements of supply; there are no links between them: the supply of cultural tourism is not harmonised on regional level. This way, cultural attractions (built environment, museums, traditional craftsmen, traditions of wine-making and gastronomy, equestrian attractions, cultural events) cannot meet the demand raised by the tourists visiting the region.

To utilise our potentials and to present the regional tourism supply adequately, it is necessary to create complex tourism products from the elements of cultural tourism, to organise and operate round trips and sell them with adequate marketing tools. The museums, exhibitions, religious relics, historical memorial sites and other cultural sights alone cannot produce an attraction on national/international level, such elements cannot induce significant turnover of guests. In their present state, such elements can offer additional programs for the tourists who visit the region with other purpose. Routes should be created of the geographically dispersed objects to create new programme packages.

Component 4: Cluster development

Development of cultural products can be oriented either on the demand (consumer) side or on the supply (production) side. The demand-oriented approach concentrates on meeting the demand which is in many cases standardised by the tourism sector; it can be successful in the short term, but in the long run it may result in losing the individual character of the place. Meanwhile, the supply-oriented approach supports the creation of cultural products, resulting in new jobs and the biggest part of the revenue generated remains in the region.

The actors of tourism industry are in general sole entrepreneurs, micro- or small enterprises with a good ability to adapt to swift organisational changes and transformations. Increasing cooperation between the partners is a vital interest of all of them, still in many cases there is no critical mass to start spontaneous cluster formation. It can only be organised on the initiative of the public sphere.

The conditions of successful cluster development:

- good background infrastructure (IT equipment, artists' flats, ateliers, galleries)
- easy access to venture capital and other financial resources

- training and education, teaching secondary school students on local culture and sub-cultures
- supporting spatial concentration by supporting and funding the establishment of sites
- harmonising urban rehabilitation plans with the priorities of developing the cultural industry (turning run-down industrial areas into places used by the cultural industry (production!), including them into tourism routes)
- incubation activities
- cooperation with the universities (technology transfer, transfer of management techniques, call for proposals by university students for designing street furniture forming the image of the city, visual elements, logos etc.)
- introducing various cultures.

Scope of beneficiaries

Coordinated and efficient management of organising, developing and marketing the products consisting of elements that stretch over the county borders shall be formed with the contribution of the Regional Tourism Board, the Regional Marketing Directorate, the Baranya County Cultural and Tourism Centre, the Somogy County Tourism Office and the Tolna County Centre of Human Services.

Local governments, county museum directorates, organisers of events, county tourism offices, wine route associations, gastronomy organisations, handicrafts associations, equestrian tourism service providers, South Transdanubian Equestrian Tourism Association, South Transdanubian Regional Marketing Directorate of the Hungarian Tourism Plc., South Transdanubian Regional Tourism Board, Tourinform offices, travelling agencies in the region organising incoming tours, special travelling agencies

Financing sources

- tourism development grants of the Ministry of Economy
- grants of the Ministry of National Cultural Heritage connected to tourism development
- regional development funds
- county development funds
- local tourism development funds

Measure 9.2: Developing the marketing of cultural products and services

Justification

The share of cultural tourism is increasing steadily within the tourism sector growing constantly. It is due to certain demographical reasons (increasing share of senior citizens who can afford travelling often) and (mainly) in Western Europe the general level of the people's education and culture has been rising since decades, and several generations have grown up who prefer spending their free time with cultural activities instead of passive vacations. In addition, with the development of transportation, travelling has become relatively cheap and simple, and it reformed the recreational habits of people: short (few days) trips have become more common, with mostly cultural motivation, targeted mainly on big cities

However, several settlements and regions across Europe have discovered the development potentials of culture and cultural tourism and have reacted in a similar way to this challenge: they developed cultural life and cultural industry, tried to save the built environment in order to make the settlements attractive for potential investors, tourists and the population, too. A fierce competition has been started between the cities. Therefore, developing the cultural life of a settlement without proper management and marketing activities does not guarantee the achievement of the results in urban policy and economy aimed by the development of culture.

Tourism marketing must target both domestic and foreign segments, taking into account the particular features of the various elements of supply. The inhabitants of the region must be addressed as well in order to develop the market of daily tourism; in addition to increasing the turnover of guests, it may have positive effects in improving the cohesion of the region's population by developing regional identity.

Effective marketing work informs the potential guests on the regional supply of tourism, and it forms the image of the region as well. The positive image of the region can have beneficial effects not only on the turnover of guest but on business life, too.

As tourism marketing is quite expensive, it is important to implement the tasks on a planned basis, taking into account the market tendencies.

Aims and objectives

Creating the image of the region for the potential guests by taking into account the region's cultural attractions, the related programme packages and "cultural routes", promoting the cultural tourism supply of the region in Hungary and abroad, increasing the number of guest and the revenues.

Immediate objectives of the measure:

- improving the content and the quality of the promotion tools showing the cultural supply of the region, using up-to-date media
- implementing well organised, targeted internal and external PR actions, improving regional professional links with the national, county, micro-regional and local government levels
- conscious and coordinated planning in management and promotion activities taking into account the tendencies of supply and demand

Description

Component 1: Incentives for the protection of origin

Local cultural products are considered the intellectual products of the local communities producing them, and they need protection and promotion to have them marketed profitably. Cultural goods are the capital of the community, therefore they deserve brand protection and protection of origin.

Creating values within a geographically limited space is the result of concentrated cultural activities. In the cultural districts so created, there is a creative force in the intensive links between the individual actors, supporting the realisation of innovative ideas. In cultural districts, the undertakings are dependent on each other, they cooperate and compete at the same time. In an environment of cultural stimulation, values are created out of creativity, and it can be transferred to valuable economic goods or services.

Cultural districts with vertical business links and horizontal co-operations can be created:

- around a product (e.g. film, pottery), or
- on a given location (it is called institutionalised cultural district), where the territory is identified with a leading product, and all cultural products enjoy advantages in protection and promotion. Institutionalised cultural districts are represented in the form of a collective trade mark of origin (AOC, DOC, the best example is Chianti in Italy).

As a consideration for using the trade mark of origin, all cultural producers contribute to the financing of joint marketing campaigns as well as to regular quality control. The marketing of products with protected origin can cut the selling of cheap products of low quality. A well marketed protected product can become the best marketing element of a settlement, reflecting the message of individuality and popularity (e.g. Zsolnay porcelain as a potential unused by the city of Pécs).

Component 2: Supporting the training of modern management and marketing skills:

The marketing of cultural tourism takes special professional skills. Therefore, it is necessary to include special subjects on cultural tourism in addition to modern marketing studies in the curriculum of tourism trainings. In the academic level of tourism training, there are courses in Pécs for the training of “heritage managers”. This training should be continued and – within the limits of the possibilities – an independent specialisation of tourism should be launched with special focus on heritage management and cultural tourism. In addition to academic training, the secondary level should be expanded with special regard to offer more so called “OKJ” (national register of trainings) trainings as demanded on the market.

Component 3: Facilitating the using of IT

Modern IT tools can help establishment of intense communication in both directions between the actors of cultural life and the consumers of culture (tourists and local inhabitants). Today, the producers of cultural products have almost no feedback from the consumers.

The role of IT in cultural tourism:

regulatory role: offering information with the creation of an access to a database, informing on the habits of the consumers of culture, allowing access to cultural goods by reserving tickets,

quality improvement role: increasing the amount of information on a region, settlement, allowing for the individualisation of route plans, travelling plans, better adaptation of the cultural sector to the various needs,

role of increasing profits: tourists coming with individualised route plans are more satisfied, they tend to stay longer and spend more.

In order to make the local communities profit the most from cultural tourism, the local supply must be presented on the Internet as widely as possible. Small enterprises engaged in culture and tourism must be supported in training and procurement of equipment as well, the communities must have adequate knowledge. Local content of Internet must be developed dynamically, on-line connection for all interested parties shall be established.

Beneficiaries

The organisations, local governments, enterprises, organisations of regional tourism marketing, institutions organising programmes, enterprises and organisations engaged in cultural tourism.

Financing sources

The implementation of the above promotion tools is expensive. However, the realisation should not be done at once, but gradually. Regional development sources; grants of the Ministry of National Cultural Heritage, funds and other resources of the South Transdanubian Regional Tourism Board.

Measure 9.3: Developing the services of creative industries

Justification

There were significant changes in the Hungarian economy at the turn of the 80's and 90's, resulting in changing the ownership structure and the external environment influencing the performance of economic activities. The role of the state decreased in the economy and in the regulation thereof, to be replaced by competition on the market. All these changes had an impact on the scope of products and services, the supply has become more diverse and products of better quality have been offered. The role of design has been re-valued with an increased importance of product-, services- and webdesign as well as image design to enhance competitiveness and marketability, by using tools of visual communication. Today, design is an activity resulting in a specific quality and it can be applied in many fields from furniture to fashion, from buildings to vehicles, covering the functional and usability creation of almost all equipment and tools. The role of design is inevitable both in the market economy and in the fields of marketability and competitiveness. Design can help to distinguish the companies and their products from their competitors. The state of design in our region as far as intellectual innovation is concerned has not reached the potential and desirable level.

In the media sector, local/regional TV stations cover the latest information. Pécs TV has got an innovation: it is the first station in Hungary to use the info-TV broadcast structure, using multiple fields of information on the screen to offer the latest news. Most of the regional radio stations can broadcast live programmes. The most important radio stations have up-to-date technical equipment. Both media have good contacts, they are the first to inform on regional issues, they have a good position in supplying information/content.

Producing cartoons for advertising and other purposes has its own traditions in the region, however, there are only a few companies specialised in this field due to the concentration on the market and the lack of demand. In making advertisement spots or cartoons, the main activities are key-drawing, animation, lay-out, storyboard, background, but the tasks are often changing, due to the limited demand. According to the available data, there are some micro- and small enterprises forming the basis for the further development of regional production of cartoons and films. Most of the companies involved also deal with activities other than making cartoons due to the limited demand on the market and the irregularity of orders. In the field of producing cartoons, foreign links can be useful by generating additional demand on the market for the companies in the region.

The press and publishing sector is in a better position, they can undertake various tasks depending on the set of machinery used. There are proofing studios and other small enterprises engaged in sheet cutting, lacking, binding, doing the jobs not accomplished by the printeries in-house.

In the region, part of the professional and theoretical background for creative industrial services is secured. Improving the infrastructure of the training institutions would enhance the professional level and the application-oriented side of the professional training. Widening the possibilities of cooperation between the university and the enterprises would have the same results.

The limited potentials for practical training have a negative impact on training. Typically, there is no practical feedback in the training system. As most of the workplaces used for practical training offer employment for the students after graduation, the wider scale of places for practical training can act against migration from the region. Another problem is the weakness of basic professional knowledge, especially in the field of industrial design. There is no adequate trainer basis for the software used in the training, demonstrating the practical utilisation of the software in the appropriate depth. It is caused by the swift development of software. The teachers are involved in training artists in the

classical sense, there is no management basis for the development of applied creative services. The knowledge base of the university is not linked to the trends and development mechanisms of the industry, the commerce and other factors of the economy.

Another significant problem of the sector is that there are many companies calling themselves creative without the necessary practical and theoretical background knowledge, thus they cannot represent the artistic level of high quality demanded in the creative industry. Such enterprises offer prices way below the reasonable prices on the market, produce low quality and harm the reputation of the sector. Nevertheless, potential consumers are not aware of the necessity and the market value of the services offered by the sector, they are not ready to spend much on creative services. Creative industrial services, in particular designers, do not have organisations or associations offering information, consultation or the protection of professional interests. By forming a consulting network and regional expert groups, the design demands of various sectors of the economy may be revealed and channelled to enterprises offering and guaranteeing high level services.

Aims and objectives:

The overall objective on medium term is supporting competitive creative industries with an innovative production culture.

Immediate objectives:

- Strengthening micro-enterprises in the creative industry, improving their marketability, enhancing their role in forming the regional product structure.
- Development of services supporting the operation and improving the market position of other manufacturing sectors.
- Supporting the cooperation of enterprises in the creative industry, securing the conditions of complex product- and service portfolios that meet market demands to improve their market position.
- Improving the quality of creative industrial services, supporting professional training using the regional training basis.

Description

Component 1: Establishment of a creative industrial service office and network

The responsibilities of the office would include the following:

- creation of an innovation basis collecting the demands raised and the potential supply, and supports their matching. The professional database guarantees the provision of quality services and improves the market position of the service providing companies compared to the ones that do not have appropriate professional background. This “yellow pages” shall contain only companies and entrepreneurs with adequate training, expertise and references. Local/regional companies shall have an input in defining the system of criteria.
- joint marketing activities, informing potential users on the acknowledgement and the importance of the profession
- linking the university sphere and the entrepreneurs, setting up a basis of experts, mapping co-operations with other sectors in order to reveal the industrial design demands of various sectors of the economy.

The management of the office, the members of the network are the prominent enterprises of the creative industry (with high level of theoretical and practical expertise as well as references), experts of various industries with 2-3 persons per industry. This group shall be responsible for putting forward proposals continuously, the implementation shall be the duty of the professional office staff coordinated and supported by the above group.

Component 2: Improving the operation and the market position of SMEs in the creative industry

In order to improve the market position of the SMEs in the creative industry, the establishment of networks in the creative industry should be supported. Various enterprise networks linked to the database of the creative industry service office can be more efficient in reaching consumers and in obtaining information supporting their operation. The network concentrating service providers active in different fields also offers a supply of complex creative services.

To improve the cooperation of enterprises offering creative services and other sectors of the economy, image design and product-specific marketing communication services should be connected. The establishment of a complex service portfolio should be supported, including the design of products and image as well as the creation of marketing strategies.

Component 3: Improving the links between university education and enterprises on the market

Creating new foundations for the cooperation between the university sphere and the enterprises is a priority. It takes on one hand innovative, continuous and efficient cooperation between the faculties of the university, and a great emphasis should be laid of trainings complying with the market demands. Market-oriented trainings should be launched, based on the cooperation of the Faculty of Arts and the Faculty of Politechnics of the University of Pécs, by connecting the training of industrial design and applied arts with appropriate infrastructure background (laboratories and teaching-technical staff).

Actions based on the cooperation of the enterprises and the university should be supported, as well as the competitions organised by the university including the elements of professional training. (Advertisement Competition for Students, Industrial Designer Competition etc.) A system should be established within the university offering further training for the best students, organising professional training possibilities and supporting the employment of creative designers in the region.

Beneficiaries

Components 1 and 2: companies operating in the region, sole entrepreneurs, the professional organisations of the above, chambers of commerce and industry

Component 3: higher education institutions, university students, associations, professional unions, chambers and enterprises

Financing sources

The following grants partly serve the above purposes:

- support for upper level, profession-specific consulting services used by SMEs (GVOP-2004-2.2.2.): it may be used for consulting on product development as well
- supporting the establishment of partnerships and networks between the higher education and the enterprises for cooperative research and technology transfer (Cooperation Research Centres, KKK) (GVOP-2004-3.2.2)
- supporting the development of business content for SMEs (GVOP-2004-4.2.1.)

IV. FORMING THE INSTITUTIONAL AND SERVICE FRAMEWORK SUPPORTING REGIONAL INNOVATION

1. THE STATE OF THE REGIONAL INSTITUTIONAL FRAMEWORK SUPPORTING INNOVATION

In 2003 the South Transdanubian RIS Working Group prepared a survey on the region's innovation supporting system, its knowledge bases (research institutes and innovation-oriented SMEs) with the purpose of mapping the regional infrastructure of supporting innovation- and infrastructure development, the supporting policies, innovation services and partnership links; presenting the institutions and organisations of the system with profiles, as well as the evaluation of the services and the forms of support. The main objective is informing the actors on the state of the supporting institutions and the R&D infrastructure, and the targeted re-programming of their activities with the help of the regional innovation strategy under elaboration. In a parallel process, we have overviewed the regional system of supporting technology and innovation, the profiles of the system's institutions and organisations, services and the forms of support. We have examined the role of certain elements of the system as far as efficiency and competitiveness is concerned.

In South Transdanubia, in the recent years, innovation have become part of the scope of activity not only of the enterprises, but of many companies engaged in regional and economic development, or consulting, there are more and more institutions and organisations dealing with the support and organisation of innovation in the region, and there is a significant increase in the number of industrial parks, incubator houses, and the first innovation transfer centres have already been established. However, the above institutions have not produced measurable results so far, with the exception of significant databases (of experts and clients) established from public financing as well as own investment, and the market value of such databases increases steadily. The activities of bridge-building organisations has been improved, although their efficiency differs in each case, their cooperation is casual and the division of labour between them is not always well coordinated.

The high number and the wide scale of organisations and institutions operating in the region in the field of innovation prove that in South Transdanubia – both in the public and the private sphere – there is the critical mass needed for joining actively in the process of innovation, to be used as a foundation for the innovation strategy after finding the points of interest.

Nevertheless, there is a number of gaps and deficiencies in the operating system. New institutions and enterprises of innovation show a significant territorial concentration within the region³¹. The activities of bridge-building organisations have been improved, although their efficiency differs in each case, their cooperation is casual and the division of labour between them is not always well coordinated. Still there is a lack in the region of certain technology-transfer, financing and innovation

³¹ According to the survey prepared in 2000 by the Regional Research Centre of the Hungarian Academy of Sciences, innovative companies and organisations are concentrated in Baranya County and especially in Pécs. Almost the half of them (48%) is located in Baranya County, with the vast majority of them (88%) to be found in Pécs. From the county seats in the region, Pécs has a prominent role as a potential regional innovation centre with a share of 42% of the enterprises and organisations of innovation-oriented profile.

service providing (consulting) institutions. Market-oriented R&D activities are still to be developed, the concentration and the company links of the knowledge bases are weak, the research potential is to be improved and the basis of research institutes needs expansion.

Both the framework of innovation support institutions and the services offered by them demand improvement. Improving the efficiency of the services offered by the existing set of institutions is a priority task. There are some not qualified institutions offering innovation services without the necessary competences, resulting in parallel services (fragmentation) in the institutional system. Profiles need to be cleaned with better coordination and the division of labour on the basis of real competencies without parallel services.

The survey showed that the problem is not the lack of institutions, but the lack of operational innovation forums and no cooperation between the actors. There are no new forms of cooperation and partnership established, no pacts of cooperation, consortia and networks. More coordination is needed with the state and the EU's support system, innovation support is sometimes influenced by politics on the detriment of professional aspects. Therefore, we have institutions supporting innovation, but we do not have a regional institutional framework of innovation operating coherently.

The outdated organisational management and the institutional system as well as the lack of adequate institutions of regional coordination prevent not only the companies in utilising technology-innovation potentials, but it also hinder the deepening of the links between the research sphere and the business sphere. Only an efficiently coordinated regional institutional framework can support appropriately the innovative and development activities of the companies. Therefore, there is a need for the elaboration of a modern institutional system of innovation with multiple participants on regional level, in order to establish the *network cooperation* of the institution and companies interested in innovation. All potentially interested partners and organisations should be involved in the regional institutional framework.

This process must be implemented parallel to the modernisation of the institutions of innovation on national level as well as regionalising it on the basis of the principle of subsidiarity.

2. THE OBJECTIVES AND PRIORITIES OF THE INSTITUTIONAL DEVELOPMENT OF INNOVATION

The overall objective of the development of the regional system of institutions of innovation is to improve the innovation environment of the region, to develop the innovation potential of the region through increasing the share of innovative products and services, leading to the development of the region's economy embedded in the European R&D space.

Direct objectives of the development:

- Improving the efficiency of the institutional framework of innovation: the companies should find easily the technical, financial, marketing etc. services and supports necessary for implementing innovation;

- Improving the absorption capacity of the region in the field of obtaining resources supporting innovation;
- Supporting the search for, development and industrial utilisation of “hidden” good ideas, research results, increasing the level of utilising research results;
- Improving links between the academic sphere and the businesses, incentives for the scientists to improve business links;
- Development of existing knowledge bases, creation of new ones.

Formation of the institutional framework of regional innovation has three priorities:

1. Building contacts between the regional knowledge bases and the business sphere
2. Increasing the efficiency of the institutions supporting innovation
3. Creation of the South Transdanubian regional institutional framework of innovation

2.1. Building contacts between the regional knowledge bases and the business sphere

In the internal regional development, higher education plays a role not only in the R&D sector, but it has a prominent position in the training of professionals dealing with organising, producing and distributing technologically developed products and competitive services. The university and research institute sphere is the greatest knowledge- and value production potential of South Transdanubia. Unfortunately it has weak links to the business sphere. Two universities dominate the knowledge base of the region, there are no big companies in the region with own R&D institute (even the Nuclear Power Plant of Paks uses external partners for its – significant – innovation activities).

The majority of the considerable number (almost 1500) of well trained and internationally acknowledged researchers are engaged in basic research, and they are not interested in direct cooperation with the business sphere – despite of the financing problems of higher education. Research fields are fragmented, the knowledge bases are weakly concentrated with poor links to the economy, market-oriented R&D activities are scarce.

In certain fields – e.g. IT – the research potential needs to be developed, and the institutional basis should be expanded. In the region, and in the whole Transdanubia – not considering Budapest – there is no academic research institute in the field of natural sciences or technology.

In the recent years, positive trends have been started as the result of the National Research and Development Grants: there are several considerable projects (500-800 million HUF) under way, in the cooperation of the region’s small and medium sized companies as well as big firms. In the field of complex studies for facilitating the rehabilitation of wounded landscapes damaged by coal and uranium mining, with the utilisation of organic waste, and the support of using renewable sources of energy (biomass), the most important companies of the region (Pannon Power, Biokom, Waterworks, Mecsekérc, Bóly Agricultural Plc.) cooperate with the faculties (natural sciences, business and economy) of the University of Pécs. There are projects of national importance under way in the medical sector – one of the determining factors of regional economy – as well: curing and preventing locomotor diseases, medicine research, biotechnology procedures. There are research activities at the

University of Kaposvár in the field of animal physiology, feeding studies, radiology and digital diagnostics. The most important projects are implemented in animal cytology, genetics, environmentally friendly animal husbandry technologies, and the production of animal products of special quality. However, the revenues from applied research amount to less than 1% of the budgets of the universities.

Strengthening market-oriented R&D capacities in the universities and research institutes of the region

The improved participation of the universities in applied research demands the expansion of the profiles of applied research focusing in technology research, in particular technology, IT, life sciences-biotechnology, environmental industry, alimentary sciences. Special attention is to be paid to the reinforcement of potential R&D bases of regional and international importance as well as their business utilisation. Therefore, the universities should rely not only on their existing external links, but on a closer cooperation with the regional institutions and companies of innovative profile.

Market-oriented R&D activities must be facilitated in case of the regional research institutes as well (viticulture-oenology, milk processing, growing plants). It is important that such research institutes should be involved more actively in meeting the research demands of the business sphere; the marketability of their R&D services shall be enhanced.

Creation of University Liaison Offices (of Research Utilisation)

In knowledge production and innovation management, the meeting of the region's companies and universities – utilising their close location and personal contacts as well – would be beneficial. The process of building bridges is facilitated by the *liaison offices built upon the basis of the two regional universities (Pécs, Kaposvár)*, responsible for improving university-industry links, supporting practical utilisation of scientific research results. Such offices can manage the sales and practical utilisation of scientific research results achieved by the universities. The universities are also responsible for setting up R&D supply databases to inform all interested partners on potential R&D activities. It is this fast flow of information and inquiries that can improve the efficiency of the cooperation between the industry and the universities.

2.2. Increasing the efficiency of the institutions supporting innovation

According to the survey, there are several innovation supporting organisations in the region (with a strong territorial concentration), but the levels of competence are not diversified, and some organisations do not have the necessary professional background, therefore there are a lot of parallel activities.

Improving the efficiency of the institutional framework of innovation support, division of labour

It is indispensable to monitor existing institutions and to increase their efficiency; we don't need new and expensive institutions, but *the operation of the existing ones should be made more effective!* It takes a kind of profile cleaning, better coordination and division of labour on the basis of real competencies, without parallel activities. A regional infrastructure and stable institutional framework must be operated and developed, covering the operational costs. Such a financially sound institutional framework can only be operated by a professionally prepared and trained staff. The efficiency of the services offered by the present institutions shall be improved. *The supporting institutions must offer real project management and not short-term consulting*, that undertakes the supporting of SMEs or researchers up to the point of business success.

Developing the services of transfer organisations

As far as the most important innovation support segments lacking from the region are concerned, not only regional financing institutions are needed for marketing the R&D results, but market-oriented *transfer organisations are also needed either by creating new ones or by expanding the services of existing organisations.*

In the South Transdanubian region innovation transfer is the weakest link in the chain of the innovation process; as it cannot be expected to be self-developed based on market forces, it must be supported by the public sphere both in professional and financial terms, although some elements of knowledge transfer (e.g. technical design, financial consulting) can be realised in the business sphere e.g. through the import of professional knowledge. Services supporting the entering to international markets shall in the near future play an important role the development of services. At present the transfer services offered by the chambers (e.g. Regional Innovation Centre of the Chamber of Commerce of Pécs-Baranya) and the operating innovation transfer centres (ITFK - Pécs; Kapos ITK – Dombóvár) have the widest scope of supply that can be used as a basis for further developments.

Establishment of the South Transdanubian Regional Innovation Agency (STRIA)

In addition to improving the efficiency of the existing institutions, there is a need for the establishment *of an organisation coordinating innovation on regional level, organising the interested partners into networks and defining the levels of competence, as well as organising the institutional participants of innovation into a transparent organisational structure.* On regional level, two reasons justify this:

- *It would reinforce the internal coherence of the regional innovation system by preventing parallel developments, to achieve the specialisation of the institutions, efficient division of labour, securing continuous information exchange, and the utilisation of innovation supporting system elements found in various regional centres.*
- *It would reinforce the external coherence of the regional innovation system by forming contacts with Hungarian and international organisations of innovation, the cooperation framework of the coordination with Hungarian and EU support systems as well as its channels, and the regional institutional competences of external links and lobbying activities.*

2.3. Creation of the South Transdanubian regional institutional framework of innovation

The actors of the regional innovation's institutional framework (see attached chart)

In the innovation support system, there are participants of the service system supporting innovation processes, as well as organisations of strategic decision making in innovation support, those who influence the allocation of resources and the ones coordinating the processes.

According to the concept, the *South Transdanubian Regional Development Council* is responsible for the reception of regionally decentralised resources for innovation support (25% of the Research and Technology Innovation Fund, potential future funds from the EU), and for the allocation of the funds.

In the proposed system, the *Regional Innovation and Economic Development Committee* to be formed on the basis of the Regional Innovation Strategy Steering Committee has a prominent role. It shall be responsible for preparing regional support programmes helping the innovation processes, preparing decisions concerning the applications submitted on the call for proposals regarding the programmes announced, monitoring the innovation processes of the region and the operation of the institutional

framework of innovation. The Committee shall work as a permanent committee of the Regional Development Council (similarly to other permanent committees of the Council).

The members of the Committee:

- Local governments' experts (6 persons)
 - o 1 delegate expert from each of the 3 counties of the region
 - o 1 delegate expert from the 3 cities of county rank of the region
- Representatives of the knowledge bases (6 persons)
 - o representatives of the region's two universities
 - o 1 representative of the Hungarian Academy of Sciences Centre for Regional Studies Transdanubian Research Institute
- Representatives of the transfer institutions (6 persons)
 - o 1 representative of the chambers of commerce from each of the 3 counties
 - o 1 representative of the enterprise development centres
 - o representatives of the innovation transfer centres (2 persons)
- Representatives of the banks (2 persons)
- Representatives of national agencies
 - o 1 representative of the Hungarian Innovation Association
 - o 1 representative of the National Research and Technology Office

The Committee shall be responsible for defining the scope of *independent experts* in charge of evaluating professionally the project proposals submitted. The independent experts shall be chosen from the Hungarian and international professionals of the specific fields of science as demanded by the project concerned. The experts shall cooperate with the STRIA in performing decision preparing tasks for the Innovation and Economic Development Committee.

The *South Transdanubian Regional Development Agency (STRDA)* shall act in the system as the organisation in charge of the secretarial tasks of the Council and the Committee, and as coordinating the operation of the regional institutional framework of innovation. The STRDA shall manage the regional programmes financed from the Innovation Fund: publishing the call for applications, receiving them, evaluating the project proposals and performing the administrative tasks in implementing the projects.

Within the STRDA, the STRIA shall be a separate unit with the following tasks:

- Further development of the Regional Innovation Strategy, facilitating the implementation thereof;
- Programme level monitoring of innovation developments, evaluation with the help of external experts;
- Participation in the coordination of innovation development resources;
- Generation of innovative projects: information services and training activities supporting the search for and the development of viable ideas innovation projects;
- Initiating international and interregional projects, transfer and dissemination of best practices in the field of innovation;
- Supporting the development of the regional institutional framework of innovation, setting up and coordinating cooperation between the actors of the South Transdanubian regional innovation network;
- Establishment of a regional innovation database with rules of operation;
- Regular communication services for informing about innovation developments and services.

Establishment of the South Transdanubian Inno-Net (DD-Inno-Net)

The establishment of a network-based efficient institutional framework of innovation is one of the horizontal objectives of the South Transdanubian Regional Innovation Strategy. The main elements of the necessary institutional framework as defined in the present document: establishment of concentrated knowledge bases and research potential, securing effective and interactive flow of information between the network of sectoral actors and the knowledge bases, setting a consultation system needed for the successful application of innovation.

The core of the efficient institutional framework of innovation shall be the South Transdanubian Regional Innovation Network (DD-Inno-Net). The DD-Inno-Net shall be the consortium of organisations and enterprises with the purpose of supporting innovation activities more efficiently in high quality in the whole of the innovation process. Membership shall be a voluntary and open for those who undertake to keep the rules.

DD-Inno-Net shall operate on a network basis, undertaking all activities not linked to other institutions, authorities, state agencies. The elements of network-based operation: elaboration and quality assurance of services of uniform appearance, guaranteed quality, based on joint process management, operating a joint information database, allowing information exchange, joint marketing strategy and uniform promotion. Network-based operation shall secure the synergy of the partners' services.

Members of DD-Inno-Net (DD-Inno-Points)

Regional Innovation Agency – STRIA (organisational unit of the South Transdanubian regional Development Agency)

The function of STRIA within the DD-Inno-Net system shall be professional coordination in the network, maintaining contacts with the partners, securing the flow of information between the members, supporting the development of the regional institutional framework (see above). STRIA and the members of the consortium shall be equal partners in operation, forming together the operational rules of the network, set up the framework of the regional innovation database and define the rules of access and operation thereof.

Knowledge bases

The basic units on the side of the universities shall be the Liaison Offices. Their task shall be twofold: maintaining links with the researchers at the faculties, setting up a unified database containing the research results of the faculties and the researchers as the R&D supply part of the regional innovation database to inform all interested persons on R&D cooperation potentials. On the other hand, they shall be in charge of supporting the universities in utilising research results in cooperation with the transfer institutions outside the universities, participation in the elaboration and implementation of joint projects.

Sectoral Knowledge Centres have to be set up mainly in the fields defined in the RIS programme in order to meet the sectoral and thematic market demands for R&D. These centres build on the university research capacity and the capacity of the regional research institutions with a market-oriented focus: R&D services, cooperation, professional consulting, training. They also offer professional input for the regional innovation database and participate in the operation thereof.

Transfer organisations

The direct demands of the business sphere shall be served by the *transfer/bridge-building organisations*: on the basis of the innovation transfer centres, (ITFK - Pécs; Kapos ITK - Dombóvár), the county enterprise development centres, and the chambers of commerce of the region (e.g. RIC – Chamber of Commerce and Industry of Pécs-Baranya). Transfer organisations shall be in charge of contacting enterprises on the basis of their actual business needs: providing swift and efficient services for the member enterprises that offer and/or seek innovation services, search for the demanded R&D results, transferring the companies to the organisation, the relevant research place rendering the desired service, establishing and forwarding international links. In addition to the University Liaison Offices and the Sectoral Knowledge Bases, the transfer organisations are the direct users and operators of the regional innovation database. The innovation results identified and qualified by them are entered into the innovation database on a continuous basis.

Transfer organisations are also engaged in supporting the preparation of grant applications and project development: identifying project ideas eligible for funding from the Innovation Fund and managing them.

In addition, the transfer organisations can perform consulting tasks in other fields as well (e.g. management, marketing, finances). Transfer organisations should get specified in the course of operation in order to serve certain segments of enterprises to eliminate parallel services. The thematic system of the RIS programme can be used as a foundation for specialisation.

Credit institutions

In the institutional framework of regional innovation, the third dimension in addition to the offices of utilising research representing the scientific-research sphere and the innovation transfer organisations supporting the business sphere, are the *credit institutions* involved in financing and evaluating the credit rating of the companies. Building credit institutions into the system of DD-Inno-Net is a long term process, the regional construction of financing innovation is elaborated in Priority III of the Strategy (*Supported regional financing constructions for the South Transdanubian innovative SMEs*).

Services of DD-Inno-Net

- *Consulting services*: basic and specialised innovation consulting for SMEs (e.g. starting an enterprise, financial consultation, protection of industrial rights, technical development, production management, search for resources), managing the application for grants, marketing services;
- *Training activities*: innovation-related knowledge, general training programmes for developing skills for SMEs, (e.g. innovation management, technology and quality management, industrial rights, copyright), as well as organising and implementing trainings connected to a specific industrial sector, technology;
- *Developing and operating the innovation database*: exploring R&D results, organising the database with the help of the knowledge bases, unified database of offer and demand, links to Hungarian and foreign database service providers, building thematic sub-databases as required, providing services;
- *Enterprise development activities*: setting up an enterprise, acquisition of shares, supporting merger/acquisition, services of company rating and buyout, partner matching on Hungarian and EU basis;

- *Network development*: supporting institutional developments improving the R&D potential of the region, facilitating links between the knowledge-generating sphere and the companies (new organisations, events, programmes other actions), mutual information exchange, internal trainings to enhance the efficiency of the innovation supporting institutions, elaboration of new forms of cooperation, supporting innovative cooperation between the enterprises, forming and operating professional organisations coordinating the cooperations.

The conditions for operating the institutional framework of innovation

- Setting up the Regional Innovation and Economic Development Committee and the Regional Innovation Agency within the South Transdanubian Regional Development Agency;
- Setting up University Research Utilisation Offices (Liaison Offices);
- Founding and establishing Regional University Knowledge Centres with regional support;
- Concluding the consortium agreement of the DD-Inno-Net;
- Defining and securing the infrastructure and human resources needs of the organisations and offices participating in the DD-Inno-Net;
- Setting up the quality assurance system of DD-Inno-Net;
- Regular extension trainings for the DD-Inno-Net staff;
- Creation of the unified regional innovation database system;
- Elaboration of monitoring systems and processes.

Regulation of process flow of the support system of innovative regional projects

