

Report on the regional potential of Nitra region

EMERGING INDUSTRIES

- Active Aging
- Sustainable Development / Green Economy
- Sustainable / Intelligent Mobility

CROSS-CUTTING ISSUES

- Internationalization
- Technology & Knowledge Transfer
- Gender in Innovation, including diversity aspects

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1 Introduction

Nitra region is located in the Western Slovakia and with 6 343 km² covers 12.9% of the territory of Slovakia. It has 705 661 inhabitants most of which (53.4%) form the rural population. The core sectors in the industrial structure of the Nitra region are food-processing industry and plastic industry. Among the most important industrial sectors are also chemical industry and energetics.

Nitra region is known mainly for its well-developed agriculture. The region manages the largest acreage of farmland from all regions in Slovakia. It belongs to the most important producers of agricultural crops, cereals, sugar beet and grapes. Gross agricultural production of the region accounts for more than a quarter of national production. In the structure of total value added generated in the region, agriculture accounts for 6.2%.

Organizational structure of the economy and corporate landscape in the Nitra region is created by 64 974 legal entities, 98.9% of which are private companies. When considering business activity measured by the number of businesses per capita, Nitra region is below Slovak average. The number of businesses per 1000 persons is 33 in the Nitra region, while in Slovakia it is 45. Regarding the structure of economy of the Nitra region, industry is the most important sector employing 30.5% of all employees. It is followed by the sector of services and agriculture. Regional gross domestic product is 7 010 mil. EUR with 11% share in the GDP of Slovakia. With its GDP growth the Nitra region belongs to the regions with average dynamics. GDP per capita is 9 928 EUR.

The main source of innovation is R&D base and qualified labor force. Slovakia may benefit from its individual human resources. Many innovators and researches have been successful abroad. Regional governments initiated cooperation with multinational companies, established several clusters and lobbied for the creation of joint R&D and innovation centers, thus constituting the main strengths within innovations not only for the regions but also for Slovakia as a whole.

The infrastructure of R&D in the Nitra region is diverse and created by universities, Institutes of Slovak Academy of Sciences and R&D in businesses. Three universities are located in the Nitra region. Slovak University of Agriculture is covering education and R&D activities within agrobiolgy, biotechnology, food processing, etc. – the topics of the highest relevance for agriculturally focused Nitra region and for sustainable Europe. The other 2 universities are focused mostly on natural sciences, philosophy, economy, theology, etc. In addition, the Slovak Academy of Sciences has 11 specialized institutes and organizations located in the Nitra region. Applied research is carried out mostly by businesses. In the Nitra region 20 mil. EUR is invested in R&D per year, out of which 2/3 goes to basic research, 1/4 goes to applied research and the rest goes to the development. The level of R&D expenditures on regional GDP is 0.21% in case of the Nitra region. In Slovakia, the percentage of R&D expenditures on GDP is 0.49%. The number of employees in R&D in the Nitra region is 1 999. Most of them are employed in agricultural research (667) and in social sciences (596).

By December 31, 2012, there were 13 390 valid patents registered in the Slovak Republic, 3 170 of them were granted by a national route; 10 220 were European patents with designation for the Slovak Republic. In case of the Nitra region, on average 3 patents are registered each year.

With regard to cluster landscape only one cluster is located in the Nitra region. It is Slovak Plastic Cluster which was established in 2009. The vision is to support the development of plastic industry aimed at higher competitiveness, networking and cooperation of its members, support of specialization, technology transfer and vocational education in plastic and related industries. This cluster was awarded with the Bronze Label of the European Cluster Excellence Initiative.

In addition, the Union of Slovak Clusters was established in Nitra. Currently, it has 10 members including technological clusters but also tourism clusters. The Union of Slovak Clusters is active in the EU policies related to networking and support of SMEs. The main objectives are to initiate and support the development of clusters and cluster policy in Slovakia and to incorporate Slovak clusters into European competitive partnerships including mutual transfer of know-how and knowledge. It is the only organization representing clusters in Slovakia and it has a national dimension covering the entire territory of Slovakia.

2 Emerging Industries

Nitra region is endowed with potential for industry and agriculture. Due to its favorable geographical and climate conditions the Nitra region is oriented mainly to agricultural production as well as to production complementary to agriculture. 30% of all companies in the region operate in agriculture, forestry and fishery. Regional innovation strategy of the Nitra region identifies agriculture, food processing and biotechnologies as the main areas of innovation development for the region. Thus, the emerging industry of green economy plays decisive role in the region.

Sustainable Development / Green Economy

Green Economy (GE) is the most important emerging industry and priority of the Nitra region. The region has favorable climate conditions for agricultural production and the best natural and socio-economic potential for agriculture in Slovakia. Agricultural land covers 74% of the area. Given the high production potential of agricultural land, material-technical base and agricultural traditions, prioritization of production function of the region is logical and from the perspective of national economy also highly required. Out of the total labor force employed in agriculture in Slovakia, the share of the Nitra region is 16.7%. The percentage of labor force employed in agriculture in the Nitra region is 6.1%.

Investments in sustainable development and green economy are considered necessary for the growth and development based on the use of **available natural resources**. The main natural resources of the Nitra region can be found in agriculture, water and geothermal sources. This availability has led to the increased interest in the efficient use and protection of natural resources (land and soil, water, air), healthy food and renewable energy sources – the areas of great potential for the region. Almost half of the R&D investments in the Nitra region go to agriculture.

The issues of GE are important for many reasons, e.g. it is not possible to separate economic growth from resource consumption and concern for the environment. This is why the concept of GE occupies an important place in the strategic documents of the Nitra region, e.g. in the Regional innovation strategy and/or the Development plan. The biggest emphasis is put on the management of natural resources and agricultural R&D. According to these strategic documents the future R&D activities will focus on agriculture and biotechnologies by enhancing the cooperation of R&D institutions with private sector and by the development and support of science and technological centers, parks and incubators. In addition, one of the objectives of the region aimed at the provision of labor market opportunities for the rural population and the maintenance of the landscape is the development of multifunctional agriculture, greening of agricultural production and rural development. All these activities will be closely linked to the transfer of research results and technologies to the practice.

The main strengths of the region within GE are: tradition in agriculture and food processing, availability of fertile agricultural land, presence of the Slovak University of Agriculture and Institutes of the Slovak Academy of Sciences participating in the development of agriculture and R&D activities in the area of green biotechnologies and ecological research. Regarding the R&D potential in agriculture, other strength of the region is in the establishment of research center “**AgroBioTech**”. This is currently being established by three key players in the area of agrobiological, agroecology, biotechnology and bioenergetics: Slovak University of Agriculture, Constantine the Philosopher University, Institute of Plant Genetics and Biotechnology of the Slovak Academy of Sciences. The AgroBioTech Center will provide the necessary infrastructure for the implementation of applied research by forming an active scientific and production incubators and by more effective cooperation with practice. This infrastructure will consist of laboratories with unique and top class equipment and high level R&D human resources. The AgroBioTech Center will constitute a step towards the establishment of the National center for innovation of agricultural and food technologies which will considerably support the efforts of the Slovak Republic in increasing the food security, self-sufficiency and the production of domestic foodstuffs of high quality.

In addition, the cross-cutting **transfer center** will form an integral part of the AgroBioTech Center and will create more favorable conditions for active participation in the international excellent research across the European research area. The transfer center will create place for cooperation of business sector with R&D and with foreign partners. Among the most important tasks of this center will be, e.g. cooperation with SMEs, popularization of science results, building of integrated solutions for technology transfers, provision of know-how in the area of intellectual property, search for potential investors for custom research and cooperation with institutions in the field of technology transfer at the European level.

Until now, no particular cluster in the area of GE has been established in the Nitra region nor in Slovakia. However, the cooperation of institutions within the AgroBioTech Center and its integrated Technology Transfer Center together with other research institutions concerned with GE issues create conditions for future establishment of **agro cluster**. It will be the outcome of the AgroBioTech Center. The potential of this cluster towards GE could be based on the research in the area of integrated efficient use of natural resources, transfer of knowledge, networking and internationalization. In order to further develop the potential of the cluster and the region in the area of GE it is necessary to involve the most relevant stakeholders and to carry out social awareness activities which require financial sources. These could be obtained, e.g. from the Rural Development Programme, Operational Programme Research and Innovation, Danube programme, Horizon 2020.

From the perspective of cluster development the success factors of the Slovak Plastic Cluster (SPK) located in the Nitra region are also connected to region’s natural resources. Actions of the cluster within GE require relying on innovative technologies and practices. SPK and its members are

specialized in processing of new plastic materials and in research and development of biodegradable materials.

The activities of the Nitra region and its stakeholders will reply to the societal challenges of Horizon 2020 on food security, sustainable agriculture and the bio-economy and will accelerate the move towards sustainable development. Among the specific challenges is the unused potential in the production of renewable energy sources and the support of environmentally sustainable sources.

Sustainable / Intelligent Mobility

Except of agriculture, the Nitra region has very well-developed energetics and plastic industry. These areas contribute to the sustainable mobility thanks to the production of renewable energy sources, biofuels, bioenergy sources and production of materials for automotive industry.

Big potential for the development of the emerging industry of sustainable mobility is in the **plastic industry** producing mostly for automotive sector. The development of automotive industry stimulates the demand for new plastic materials. Slovakia has leading position in the automotive industry. It produces the highest number of cars per capita in the world (171 cars per 1000 inhabitants in 2012). This position is maintained due to the presence of modern plants of three car brands: Volkswagen, PSA Peugeot Citroen and Kia Motors. These producers have recently started with the initiative of **e-mobility**. Volkswagen Slovakia is producing hybrid cars in Slovakia since 2011 and PSA Peugeot Citroen started to produce electric cars in 2010. Even though none of these plants is located in the Nitra region there is a large number of suppliers producing for automotive industry. Some of the important players in this sector are associated in the Slovak Plastic Cluster. It has 44 members (in 2012). Well-established plastic industry supplying components for automotive industry creates future potential for the development of sustainable mobility. However, the challenge can be seen in low investments of private companies into R&D and innovation activities which is a prerequisite for the development of innovation potential of the region and thus, also to the development of sustainable mobility.

Regarding the contribution of **energy industry** to the sustainable mobility, the **Energy Agency** was established in the City of Nitra. Formation of Energy Agency was conditioned by the current state of energy which is crucial factor of sustainable economic development of the state and its regions. The Agency is financially supported by the EU's Intelligent Energy Europe Programme. Almost continuous rise of prices of fossil fuels, the environmental consequences of their extensive use, high dependence on imported energy sources and the associated risks are increasing the attention to the issues of efficient usage of existing resources, reduction of energy intensity and focus on renewable sources. Energy Agency is involved in the organization of European Mobility Week activities in the Nitra region. The **European Mobility Week** is an awareness raising campaign aiming at encouraging citizens to the use of public transport, cycling, walking and at encouraging European citizens to

promote these modes of transport and to invest in the new necessary infrastructure. Energy Agency in Nitra in cooperation with the City of Nitra organizes each year for the European Mobility Week a series of events. Mobility Week usually culminates with “The day without cars” – free public transport for all residents of the city. Other events include bicycle contests, presentations related to the theme, ride on electric bicycles, hybrid cars, etc.

Within the area of energy the City of Nitra participates in the South-East Europe project “**RE-SEEties**” - Towards resource efficient urban communities in the South-East Europe (SEE) which tackles two major elements related to resource efficiency, i.e. energy and waste, in an integrated manner. The main objective of the project is to turn SEE cities into resource efficient urban communities in the context of renewable energy, energy efficiency and waste valorization. These topics cover also sustainable/intelligent mobility issues.

Another similar project dealing with the waste treatment and the use of waste for energetic purposes is the project within the programme of cross-border cooperation: Hungary – Slovakia (see part “Internationalization”). Nitra region is the partner in this project “**Waste as a renewable energy source**” which objective is to decrease the consumption of energy, to increase the share of renewable energy sources on the total consumption of energy, to improve the waste management and to find new possibilities for waste disposal such as the production of electric energy.

The City of Nitra also participated in the project “**Smart Cities**” which dealt with medium-sized cities and their perspectives for development in various areas. “Smart cities” were ranked and benchmarked according to the set of indicators showing their respective differences and comparative (dis-) advantages towards each other. The project involved 70 European cities. City rankings assessed the attractiveness of urban regions with regard to different economic, social and geographical characteristics in order to reveal the best (and the worst) places for certain activities. In association with sustainable mobility the smart city is used to describe the use of modern technology in everyday urban life. This includes especially modern transport technologies, logistics and new transport systems as “smart” systems which improve the urban traffic and the inhabitants’ mobility. Within the indicator of smart mobility the following factors were evaluated: local accessibility (public transport network per inhabitant, satisfaction with access and quality of public transport), (inter-) national accessibility, availability of ICT infrastructure, sustainable, innovative and safe transport systems (green mobility share, traffic safety, use of economical cars). Within this indicator the City of Nitra was ranked on 52nd place out of 70 cities. The ranking of Nitra in all factors was below the total average. This indicates that there is still a gap and place for improvement.

Regional potential in sustainable / intelligent mobility may further be enhanced through the concept of **integrated transport**. Nitra region is preparing to introduce this system and to involve all types of public transport (city bus transport, suburban bus transport, railway transport). Additionally, the providers of public transport services in Nitra region have set environmental objectives in order to

eliminate negative impacts of transport to the environment. These include the purchase of environmental-friendly buses using modern technologies and alternative energy sources not affecting the environment.

Since majority of the population of Nitra region is living in rural areas, the emerging industry of sustainable mobility is not related only to green transport, green cars and advanced components for means of transport but also to **special infrastructure** consisting of bike lanes, special zones where traffic is restricted and other actions affecting the attractiveness and cleanliness of the region. This area can be identified as another gap in the region which may be eliminated by future measures of the region and its stakeholders.

Active Ageing

The age structure of population in the Nitra region is the following: 13.7% of population is in the pre-productive age, 72.8% is in the productive age and 13.5% is in the post-productive age. The ageing of population is considered as a threat to the future development of public policy because of increasing values of ageing index from 141.24 in 2005 to 167.12 in 2012. According to the statistics, the Nitra region is the second region with the highest ageing index in Slovakia. Nitra region is also the “oldest region” regarding the share of people in post-productive age. This situation is very unfavorable and brings challenges not only to the future functioning of social system and economy but also to the care for elderly people.

The support of active ageing is only in the beginning in Slovakia and in the Nitra region as well. This issue is new and up to now it has not been given enough attention that would ensure the creation of original and innovative products. However, elderly are becoming the group of people expecting new and innovative products and services which would increase the quality of their lives.

As identified in the mapping, there are few companies in the Nitra region for which active ageing issues matter and which are interested in the **production of innovative products for elderly**. These are mostly from the sectors of electronic products manufacturing, food products manufacturing, manufacturing of basic pharmaceutical products and preparations. The products of so called “silver economy” produced within the area of technologies are televisions and other electronic devices for elderly that are easy to operate, have bigger screen or bigger menu. Another group of products for older people is foodstuffs. Nitra region has strong tradition in agriculture and food processing. Among 40 largest food processing companies in Slovakia, 10 are located in the Nitra region (e.g. Hyza, a.s., Agro Tami, a.s., NovofructSk, s.r.o., etc.). Some of these companies have already identified the gap in the production of foodstuffs for elderly and are trying to introduce new product lines for this group of people increasingly requiring diabetic and dietetic foodstuffs. Finally, pharmaceutical companies are the ones that are most reflecting to the aging of population. Pharmaceutical industry in the Nitra region

is represented by large companies such as: Mevak, a.s. Nitra, Pharmagal, s.r.o. Nitra, Med-Art, s.r.o. Nitra. The product innovation in this area is often aimed at elderly.

However, Slovakia is small and thus export oriented country. Most of the products produced in Slovakia are exported to other countries mainly to Western Europe. One of the main challenges with regard to the marketing of products of silver economy in case of Slovak customers is that from a psychological point of view the older people rather buy products designed for younger generation because none of us want to be included in the older category of consumers. That is why the product marketing does not use the adjective “senior” because it could possibly discourage buyers.

Further, companies in the region dealing with active ageing issues recognize the possibility of economic benefits elderly people may produce. These can be seen in **keeping the older working force on the labor market** because of their extensive knowledge and experience. The rate of unemployment of people from the age group of 50-64 is 12% in the Nitra region. The main measures of companies are aimed at improvement and adaptation of labor conditions to the health and needs of the older workers, ensuring access to life-long learning, provision of supplementary pension insurance, preventive medical examinations, language lessons, relax pass, flexible working hours, etc.

Another important issue from the perspective of promotion of active ageing in the Nitra region is the **health care**. It includes not only product innovation of pharmaceutical companies but also tourism, wellness and spa, i.e. physical well-being activities in which the Nitra region has significant advantage. Most of the hotels and spa are already adapted for seniors who constitute high percentage of visitors. Seniors have specific needs and travel more than before. They are interesting group of visitors for such service providers because of big potential for off-season traveling and using of capacities of tourism.

Additionally, the Nitra region is involved in the Central Europe project “**HELPS**” – Housing and Home-care for the Elderly and vulnerable people and Local Partnership Strategies in Central Europe. The main objective of this project is to promote development strategies and practices with a view to improve the quality of life of vulnerable groups, with a strategic focus on elderly and people with disabilities in urban areas in Central Europe. The specific objective is to develop innovative housing and care solutions by bringing together the main actors active in housing and ageing-related fields from both the public and the private sector at EU, national and regional level.

The year 2012 was the European Year of Active Ageing and Intergenerational Solidarity. Representatives of the Nitra region together with its stakeholders reacted very flexibly to the challenges brought by the ageing of population and prepared a lot of interesting events for elderly people since **social life** is one of the options how to keep them active. Social activities organized by the Nitra region in cooperation with other stakeholders include, e.g. lectures, creative workshops, sightseeing tours, tourism, competitions and other regular meetings of seniors.

3 Cross-cutting Issues

Internationalization and knowledge and technology transfer are considered the most important cross-cutting issues (CI) in the Nitra region. This is mainly the result of globalization incentives and the need to create partnerships and exchange knowledge in order to be competitive and innovative. The importance of gender issues in innovation is lagging behind because the region firstly has to focus on better support of R&D activities, building of R&D infrastructure, and on stronger cooperation and networking of all stakeholders.

Internationalization

The Programme of economic and social development of Nitra region for 2008-2015 defines the following specific objectives in the area of cooperation with other regions:

- Support of institutional transnational and cross-border cooperation
- Development of regional cooperation and cooperation within the region

Within the **transnational cooperation**, the Nitra region has contracts with partner regions across the Europe: in all V4 countries, France, Belarus, Italy, Serbia, Bulgaria, Russia and Croatia. Additionally, the Nitra region participates in various European programmes: Central Europe, South-East Europe, Interreg IVC, 7th Framework Programme, Eurostars.

Comparing the success of R&D institutions in the projects of FP7 and Operational programme R&D, the institutions obtained 30 mil. EUR from the FP7 while from OP R&D it was 56 mil. EUR. This situation points out that it is necessary to increase the participation of R&D institutions in the new FP in the area of agriculture and food-processing technologies in order to maintain the European level of these R&D activities which are core for the region.

Considering the **cross-border cooperation**, the Nitra region is involved in the programme of cooperation: Hungary – Slovakia. The main objective of this programme is to increase the level of economic and social integration of the Hungarian – Slovak border region. Two calls have been launched within this programme. Project partners from the Nitra region were involved in 19 successful projects within the first call and in 26 projects within the second call. Projects were submitted mainly by towns, cities, universities as well as by the Nitra region (5 projects) in the areas of networking, joint support of tourism, cross-border accessibility, etc.

According to the survey in the Nitra region, 111 towns and cities (43%) have had a cooperation established with foreign partner institutions. The remaining 57% has not established such cooperation, even though they are interested in the regional cooperation with foreign partners. Therefore, this is a perspective area for development of further foreign relations and internationalization activities on the level of regional cooperation.

The important role in the development of the region is played by mediators acting on national and regional level. These mediators support internationalization, contribute to the development of SMEs and the region. **Support to internationalization on national level** is provided by Enterprise Europe Network, Bratislava Innovation Center, Slovak Chamber of Commerce and Industry, National Agency for Development of SMEs, Slovak Investment and Trade Development Agency, Slovak Innovation and Energy Agency, Union of Slovak Clusters, Ministry of Economy of the Slovak Republic and Ministry of Foreign Affairs of the Slovak Republic.

On regional level the support is provided by: Regional Development Agency, Regional Chamber of Commerce, Regional Advisory and Information Center, EUROPE DIRECT Nitra.

These units support SMEs and other companies, clusters in Slovakia and regional institutions. Among the main incentives are brokerage events, partner search, promotion of Slovakia and its regions abroad, support of SMEs in international trade fairs and exhibitions, counseling, networking, lobbying, support of investment projects of domestic and foreign investors, assistance in establishing joint ventures with foreign firms, and creating of business-friendly environment.

The role of clusters in the internationalization process should be based upon the active support of its members and the effective popularization and promotion of their services and products. Slovak Plastic Cluster has informal strategic plan of internationalization. This plan includes participation in trade fairs and matchmaking events, projects of transfer of knowledge and standards in education (know-how flow), educational projects, cooperation with other clusters, organization of specialized seminars and other activities enhancing the internationalization of cluster and its members.

Knowledge and Technology Transfer (KTT)

One of the long-term objectives of the national science and technology policy of the Slovak Republic until 2015 is to build a large technical infrastructure, e.g. science and technology parks through investment aid, to create attractive environment for domestic and foreign investors and to enhance technology transfer and exchange of knowledge between public research organizations and private sector.

In relation to this objective and to the cross-cutting issue of KTT the main strengths of the Nitra region can be identified in the existence of numerous scientific and technology parks, incubators, centers of excellence, competence centers and other types of knowledge and technology transfer centers. Therefore, the favorable conditions for the establishment and development of various types of technology transfer centers make this CI together with internationalization the most important.

The infrastructure of KTT is created by two **scientific and technology parks** established in the Nitra region. The first one was established by German company Mühlbauer which is developing and producing prototypes of machines according to the requirements of customers. This park plays

important role for the whole Eastern Europe. It employs people in research, construction and production of innovative solutions. In the near future an education center for college students and secondary-school students will form an integral part of this park.

The second park is aimed at training of professionals in the field of science and R&D for the companies in the first park. It is an incubator for start-ups, students and graduates who will thus be able to move from theory to practice. It includes laboratories, education center, congress center and production and storage facilities.

Additionally, Nitra region supports the establishment of **incubators, centers of excellence and competence centers**. Until now 2 incubators have been established: Production incubator and European educational virtual incubator. Such incubator brings a wide range of support services for entrepreneurs under one roof. The centers of excellence are first-rate deliverers of research at the international level. In the Nitra region the following centers exist: Centre of excellence for food processing industry; Centre of excellence for research of genetic animal resources; Bio-experimental laboratory of quality, utilization and security of nutritional sources in animal production; Centre of excellence for protection and use of agrobiodiversity; Centre of excellence for integrated management of river basins; Laboratory for breeding, computational genetics and research of animal genetic resources. In addition, the competence centers in the Nitra region support the collaborative applied research of academic institutions and industrial companies. These are established in the Nitra region by the company Viessman (2 centers in Topoľčany and Komárno) and by the Slovak Gas Industry.

Another activity enhancing the technology transfer as well as internationalization of the Nitra region and its stakeholders is the development of **Danube technology transfer centers (DTC)** as a part of the EU strategy for the Danube region. These centers will be established in Nitra and Bratislava and will create a network with other centers in Europe, e.g. in Romania and Serbia. The aim of such network is to link the partner institutions in order to form a Joint action plan for innovations and technology transfer centers in the Danube region for the period 2014-2020. Danube Technology Transfer Center in the Nitra region will be established by the Slovak University of Agriculture. The University will have the opportunity to participate in solving current projects closely linked to practice.

The main role of DTC in Nitra will be to identify the current challenges and needs of practice. The University will develop an active dialogue between scientific research institutions and industry, ensure effective transfer of new knowledge to enterprises, support joint research of industrial companies and provide advisory and consultancy services. Additionally, the Center will assist in the administration and solving of projects and training of experts. DTC will answer to the huge demand in all segments from SMEs to the large size national projects and will provide tailored services according to the customers' needs. DTC in Nitra will form an integral part of **AgroBioTech Center** which is currently being established by the Slovak University of Agriculture together with Slovak Academy of Sciences

and Constantine the Philosopher University (see part “Green Economy”). Additionally, the Slovak University of Agriculture together with the Union of Slovak Clusters are involved in the FP7 team under INCO call for technology transfer with the acronym **NoGap** – Knowledge Transfer Community to bridge the gap between research, innovation and business creation. The overall objective of the project is to reinforce the cooperation with Eastern Partnership countries (Georgia, Belarus and Ukraine) to develop a common knowledge and innovation space on societal challenge of secure, clean and efficient energy.

Finally, **Slovak Plastic Cluster** in the Nitra region belongs to one of the crucial actors connected with knowledge and technology transfer. In the process of KTT future role of clusters could be based precisely on the organization of workshops, study visits, seminars and the publication of textbooks, which allows establishing contacts and cooperation between potential collaborators since contacts usually take place in the framework of workshops, expert consultations, exchange of staff and in the framework of cooperation with specialized regional and national institutions in KTT. Slovak Plastic Cluster and its members support KTT through, e.g. involvement in vocational education and training, cooperation with educational institutions and schools, establishment of testing laboratories for new materials which provide services also to external customers, organization of seminars and conferences.

As a best practice example of KTT, Slovak Plastic Cluster participated in the Leonardo da Vinci programme for training of specific experts in the plastic sector (EDMOULD) which aimed to increase the quality of further education in the field of plastic processing through transfer of innovated content, curriculum and methods used by other European partners in education of setupers of molding machines. Among the transferred and adapted products were: curriculum (from ISPA France), e-learning material (from Slovenia), guide for plastic processing (from the Czech Republic). Project outputs include: accreditation of educational programme “Setup of Molding Machines by the Ministry of Education of the Slovak Republic, 120 attendees trained, book “Basics of injection molding technology”. This project was selected by DG Education of EC as one of the 11 most successful projects of the year in the EU.

Regarding the financial tools available for KTT, the most common form are public sources including structural funds (OPs: R&D, Competitiveness and economic growth), microloans, advisory and education programmes for SMEs and other target groups provided by National Agency for Development of SME, Competitiveness and Innovation Programme (CIP).

One of the main challenges with regard to KTT is low level of transferability of agricultural research results into practice. Nitra region has trans-regional potential in the area of agricultural research. However, agricultural production is decreasing and this influences the transfer of results of R&D activities in the area of agriculture and food production. Improvement of research results transferability is necessary in order to further develop the potential of the region in this CI.

Gender in Innovation including diversity aspects

Regarding the population of the Nitra region, the women population (51.6%) is bigger than the men population (48.4%). According to the statistical portal of the Slovak Republic the rate of unemployment of women is 12.9%. In Slovakia and in the Nitra region as well, the disparities between salaries and labor opportunities of men and women still exist. Women are paid lower salaries than men, regardless of the level of education. The average gross wage of women in the Nitra region is 638 EUR per month, while the average gross wage of men is 833 EUR per month. It means that the average wage of women is 23.4% lower. Lower average wages of women can be seen in all sectors of the economy.

These disparities are perceived also by the residents of the Nitra region. Nitra region conducted a questionnaire survey in order to analyze the public awareness on gender issues. The results of this survey showed the following results:

- 70% of respondents have never heard the term gender mainstreaming (= strategy for promoting gender equality),
- 69% of respondents think that men and women are not equally paid for the same work and the same performance,
- 83% think that men and women have the same possibilities for professional training,
- 65% think that man and women do not have the same conditions for career progress,
- 93% agree that inequality in salaries between men and women in the productive age may influence the standard of living in the future.

Except of the different level of wages one of the big challenges related to gender issues in the Nitra region is the gender representation in the bodies of self-governing region. It is also alarming that the share of scientific workers in academic area with the highest academic titles such as professor and doctor is only 2.3% of the total number of women in science and research, while for men the share is 15.4%. Although the number of female professors has grown recently, it is still far below the level of male professors. When considering corporate landscape, the success is in more visible participation of women in the top management and in leading positions.

Considering the area of research and development in Slovakia, the share of women researchers is 44.2% of total labor force in this sector. The issue of gender equality in R&D is a topic with insufficient background and vision. Transformation of Slovakia to market economy negatively affected the development of R&D. Even despite the declared support of R&D from government, Slovakia invests very few to this area. This is reflected in low level of scientific production and low popularity of this occupation. In such situation the gender equality in R&D is not a priority. The statement that science is not “gender neutral” is reflected, e.g. in the structure of jobs (gender division in scientific and research institutions), in the requirements on working hours (full time job is usually

viewed as a man's work while part time job is usually viewed as a woman's work) and/or in the requirements on mobility (business trips are usually associated with men while work in one place is associated with women). In addition, the existing systems of scientific career progress are based on the uninterrupted career. However, for women who usually have to interrupt their career it is very difficult to compete with men and to start from the same base line. Among the main policies to promote gender equality in science on national level is, e.g. Equal treatment legislation, National Committee on Women and Science, Publication of Sex-disaggregated statistics, Gender Studies and Research at Universities, etc.

Nitra region is continually trying to identify the measures to support gender equality. Nitra is a regional contact point of the Institute of gender equality. The goal of this Institute is to create tools for gender equality, to eliminate gender inequality and inequality in the labor market, and to eliminate the gender discrimination. It has an expert group for gender issues which is trying to network different subjects within the Nitra region to be engaged in active cooperation in the promotion of gender issues and policies. This expert group consists of representatives of Labor office, Statistical office, Labor inspectorate, universities, certain departments of the Nitra region and business sector. Regional contact point in Nitra organizes meetings of expert group, prepares regional analyses on gender issues, creates cooperation and networking with public and private sector, prepares education and training courses, various competitions and provides consultancy and information services. In addition, this contact point established a library and promotes its activities in regional media.

5 Conclusions for pilot development

As we identified in the previous sections, the area of Sustainable Development / Green Economy plays significant role for the Nitra region since Nitra is strongly agriculturally focused. That is why within the pilot actions we would like to focus on this topic taking into account all cross-cutting issues of the project, mainly internationalization and technology transfer.

Danube Technology Transfer Center (DTC) as a flagship project of the Slovak University of Agriculture in Nitra together with Steinbeis Europa Center is being established. The objective of DTC is new growth in industry through business model innovation. Business model will align the Danube strategy goals but will not interfere the existing university know how transfer methods and pathways. DTC will form an integral part of **AgroBioTech Center**, a large 25 mil. EUR project which is being established in Nitra. It will focus on priority themes covering healthy food, efficient use of natural resources, climate change and energy efficiency – the topics of the highest relevance for sustainable Europe. The infrastructure of created AgroBioTech Center will be further supported from the national envelope of cohesion policy. These joint incentives of DTC and AgroBioTech Center are closely related to the **initiative of JRC** aimed at **Scientific support to the Danube Strategy** in the areas of water, land and soil and bioenergy. Additionally, JRC is creating the **Danube innovation partnership** which is going to be launched during the Second Annual Forum of the Danube strategy on October 2013 in Bucharest. Danube innovation partnership will consist of stakeholders in the innovation value chain of the Danube region which will form a partnership that will design and implement actions to accelerate innovation and technology transfer. It is going to be built on the results of a pilot initiative launched recently by the Steinbeis Foundation with 4 partners within the DTC network. This is a very good test case of networking and cooperation which may lead to the creation of a new type of cluster dealing with the societal challenges of green economy.

Additionally, all these activities may be linked to the **European Innovation Partnership (EIP)** which is supposed to be incorporated also in the national Rural Development Programme. EIP will be implemented via the EU Research Policy (Horizon 2020) and will tackle the societal challenges of food security, sustainable agriculture and the bio-economy. It will include the establishment of **Operational Groups** which will have the possibility to submit research projects in order to provide the knowledge base for innovative actions. The support will be provided to practice-oriented formats, such as multi-actor projects, and to innovation brokers, innovation centers, and thematic networks. Thus, the idea for pilot development could be also in the creation of such Operational Group and preparation of project proposal in the area of green economy and other concerned topics.

Further linkages of all activities mentioned above may be established with the **European Institute of Innovation and Technology (EIT)** and its **Knowledge and Innovation Communities** and with other initiatives, projects and networks. With regard to financing the linkages will be created depending on the particular area: research activities may be financed through the Horizon 2020, transfer of

knowledge may use the funds of COSME, and for networking activities the sources of the Danube Programme may be used.

Thus, the establishment of such network and/or Operational Group could be implemented as a pilot action / feasibility study involving various regional / national but also transnational players. This process will involve: Slovak University of Agriculture in Nitra with its AgroBioTech Centre and integrated DTC, Slovak Technical University in Bratislava with another DTC, JRC and its initiative aimed at Scientific support to the Danube Strategy and Danube innovation partnership, European Innovation Partnership and its Operational Groups, European Institute of Innovation and Technology with its Knowledge and Innovation Communities, and last but not least the Union of Slovak Clusters with its members.