



SUPPORT FOR COAL REGIONS IN TRANSITION FINAL REPORT

Socio-economic analyses to improve the use of ESIF.

Expert study

Horná Nitra, Slovak Republic
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DISCLAIMER

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Executive Summary



The question of phasing out coal mining in Horná Nitra is not if, but when and how? Although the regional position of the mining industry has been steadily declining, it is still the economic backbone of the region. The most recent number of mining company employees is 3782 (July 2018). Besides a threat to direct employees of losing their jobs, we have, according to our calculations, additional indirect jobs that could be affected.

Quantitative and qualitative analyses conducted for this report indicate positive structural conditions for a successful transition of the Horná Nitra Region (HNR); yet, there are potential challenges and problems as well. Considering the economic, social, and environmental data, and factors and trends, the region has a strong potential for successfully phasing out coal, and the present timing may provide a unique “window of opportunity.” There are several reasons for the assessment, each of them described in detail in the main body of the report:

- Brown coal and lignite produced in Horná Nitra is of problematic quality and the productive deposits are reaching their limits. Even if the new mine (so called Field 12) is opened, a system of direct/indirect subsidies are in the place, and no restrictions imposed, mining will still not last much longer than 2030.
- The state subsidies mining of lignite with surcharges provided to Nováky TPP (ENO), owned by *Slovenske elektrárne* (SE). The subsidies are increasingly unpopular and are disputed by experts and the public. The rising price of emission trading permits (under ETS) and evolving emissions norms and investments to BAT/BATNEEC will further undermine the present economic model. There is decreasing support for the continuation of the subsidy system among the coalition and opposition parties. Phasing out coal has support from part of the local municipalities and business community.¹
- The SE company would need to invest seriously into TPP if they want to operate the system after 2021. The company is, so far, reluctant to do this without strong state support.

¹ See, for instance, Future of the Region Roundtable outcomes <http://www.prievidza.sk/spravodajstvo/horna-nitra-je-zivotaschopny-region/> The roundtable was organised on September 18, 2018 by the mayor of Prievidza.

Although there are no exact estimations, investments are foreseen in the range of tens of millions EUR.

- The Slovak Republic will have, after the completion of two new blocks of NPP Mochovce and after increasing their share of RE (obligation affiliated with EU 2030 climate targets), surpassing the current energy produced and continuing the combustion of coal in ENO would be increasingly costly, inefficient, and obsolete.
- The economy of the Prievidza district diversified in the 2000s with activities in the automotive sector, machinery, manufacturing of plastics, and production of safety and control technologies. The HBP coal mine and its daughter HBz are among the largest employers in the region, but their productivity (in terms of revenue per employee) declined by 19% in the period 2010-2017. Other major employers, however, significantly expanded their revenues in the region during the same period. Economic, social, and demographic trends further create a positive environment for the transition.

On the one hand, there are concerns that the transformation may bring about increased unemployment and an economic and social decline of the region. The immediate total closure of the HBP coalmine would most likely push the regional unemployment rate in the Prievidza district from the current 4.6% to an estimated range of 8-10%, depending on the effects of the indirect employment from coalmining. On the other hand, new and incumbent businesses have expanded their activities in the last five years. Employers report a shortage of workers and, unless we see a new economic crisis, it is highly likely that the labour market would already be able to partly counterbalance the impact of the closed mine.

Successful closure of the mines will inevitably require a gradual process, enabling structural changes in the economy affiliated with creation of new labour opportunities. The present conditions are favourable. The unemployment rates in the Prievidza district (4.6%) and Partizánske district (3.3%) are lower than the overall Slovak average (5.4%) (June 2018).

The population forecast developed for this report (up to 2040) suggests that the age structure of the Horná Nitra region will undergo dramatic changes. The proportion of elderly in the population is expected to rise to 33.0% and 34.9% in the Prievidza and Partizánske districts, respectively. Demographic developments were responsible for about one quarter of the total decrease in the unemployment rates in the period 2012-2017, and the trend continues. The region will face a further and rapid decline of the working age population in the next two decades.

There are also substantial challenges. First of all, replacement of relatively well-paid jobs in the mining industry with new opportunities should support the manufacturing industry and innovations and progressive technologies. The service sector (affiliated here especially with the tourist industry) has, according to our assessment, a relatively limited potential. The region's main attractions are concentrated in a small area and it is easy to visit all of them in

a day, which means a negative trend in the number of nights spent. Future potential, however, can be seen in wellness and spa tourism.²

The number of total businesses and foreign-owned businesses per 1000 inhabitants in the region is significantly lower than the Slovak average. The gap in business intensity has always been skewed by high business intensity in the Bratislava region. The gap, however, widened significantly after 2008.

Foreign Direct Investment (FDI) to HR is below the national average as well. The latest available data refer to the end of 2015. The stock of FDI was €328.0m (0.78% of the total Slovak FDI) in the Prievidza district and €52.6m (0.12% of the total Slovak FDI) in the Partizánske district. Even so, foreign companies (especially in the automotive supply chain) provide increasingly important opportunities for counter balancing the potential loss of opportunities for skilled mine workers.

In the transformation of the region, we will work with three basic scenarios based on the qualitative assessment of the major stakeholders:

- *Scenario 1 (business as usual)*: Promoted by the mining company and part of the municipalities and has some political support at the regional and national levels. The scenario builds on the estimated amount of available coal reserves and legal requirements to utilise open mines to their full potential and incorporates a gradual phasing out of the coal till 2030.
- *Scenario 2 (rapid transformation)*: Under this scenario, mines are closed by 2023 and no further investment is undertaken for the new combustion technologies, and the central heating systems based on coal are replaced by other sources.
- *Scenario 3 (partial phasing-off)*: Coal mining is phased out by 2023 for electricity production, but the central heating continues using the coal and the mining activities are here only for heating purposes. The mining of coal may run under this system beyond 2030.

Outcomes of the qualitative research point out to the need to take a decision by the Slovak government soon. Uncertainty not only creates political tensions on the local, regional and national level, it also influences significantly development strategies of the key stakeholders and makes planning for the ESIF more complicated. Setting up a date is the key to develop realistic “roadmap” backed by allocated resources.

The year 2023 seems to be a milestone from the perspective of investments into electricity production. As analysed in Chapter 1.5.2, ENO is approaching the lifetime limit of several key parts of the power station. If this power plant were to operate after 2023, it would require investments estimated by the SE Company in the range of tens of millions of euros for the reconstruction and renewal of the plant.

A number of projects were supported through a cohesion policy in the region, combined with support from the state’s budget. Compared to the other regions, it is below the average, pointing to the lack of local capacities. On the other hand, when analysing the statistics, the mining town Handlová and to some extent Prievidza were rather successful in

² In addition, it has been also going through structural changes, and there are tendencies for increasing efficiency affiliated with a smaller demand for labour.

using European Structural and Investment Funds (ESIF) for significant development of the cities' infrastructure and improving living conditions. Overall success of the coal phase-out will depend on the ability of the local stakeholders, regional self-government body, and central government to combine three main strategies or approaches: (i) use relatively favourable age structure of the mines' employees for creating an early retirement scheme;³ (ii) use the present and upcoming programming period of ESIF as the leverage for creating enabling condition and supporting labour market; (iii) use state backed policies, subsidies, and incentives to attract FDI to support local capital.

A quantitative and qualitative assessment of the situation and structural drivers and barriers to a successful management and steering of the process point out the following factors for planning future interventions:

- Economic and demographic factors together with a relatively good age structure, education, and skills of the miners provide an enabling environment for the transformation;
- There is a strong framework of a national Work Group in place, supported by the government and cooperation of local stakeholders who already work on the transition strategies;
- The key for successful planning is to have a political decision of which of the potential scenarios will take place and what year the benchmark is;
- The Horná Nitra region needs to improve its transportation infrastructure (connection with metropolitan regions) and energy infrastructure. The region has to promote a new identity – a dynamic modern economy. Reinventing the regional economy may help stop outmigration by young people and attract newcomers;
- Offsetting the potential loss of labour opportunities in the present situation is not sufficiently guaranteed by local initiatives and project proposals. The most important stakeholders for the generation of additional project ideas are local municipalities and HBP;
- A successful transformation and jobs offset would require further development of the industrial and manufacturing base in Prievidza and surrounding areas. The new economic activity would have to enhance diversification of the regional economy from dependence on one major industry enterprise to a multi-industry and enterprise economy;
- A strategic decision on the future heating system in the region would require a comprehensive technical feasibility study with cost-benefit analyses of available alternatives;
- Revitalization of the underground structures and the surface after mining will have to - in harmony with the law – follow the basic environmental principle of “the polluter pays.” However, scope and complexity of the mining impacts on the landscape and the environment will require external assistance.

The ESIF may, due to its programming focus, system of priorities, and links with the EU and national goals and objectives, provide the key leverage in the regional transformation. The

³ See Chapter 1.2.2 for data on age structure of the mining company employees.

main challenge is presently linking the upcoming Action Plan/National Strategy with funding opportunities. A quantitative and qualitative assessment of the project proposal included in the report points to the problem of insufficient capacities and lack of project/investment ideas able to sufficiently address potential losses of the industrial jobs.

For a successful transformation, the region and the key stakeholders would need technical assistance through the transformation process, exploring the potential of Joint Assistance to Support Projects in European Regions (JASPERS) and/or national support schemes. Since JASPERS targets assistance on larger infrastructure projects that are defined as 'major' projects in the Common Provisions Regulation, the potential for its assistance could be discussed in the energy transformation of the heating system.

The starting point in development of national assistance to capacity building is in the exploration of synergies among the existing and planned interventions. There is Národné podnikateľské centrum (Slovak Business Association) centre in Trenčín with a potential to support local activities at the HNR. There will be social entrepreneurship centre established in Trenčín by the December 2018 with a potential to provide additional assistance to the Horná Nitra Region. There is flagship initiative of the Slovak Government in boosting local economies and start-ups through Slovak Investment Holding.⁴

The key entity in the transformation, the mining company, has the potential for at least a partial transformation but would require special treatment in the process, such as the establishment of a special fund to back up the diversification of their work portfolio.⁵ One of the main obstacles to the company's transformation is that in the moment they start downsizing and phasing out coal, they will substantially decrease their commercial rating, which in practise means problems with obtaining loans and support needed to start up and develop other business activities.

Assessment of the projects generated so far by the stakeholders in the region reveals rather weak capacities in the development of projects in research and innovation, energy production, or agriculture. Besides infrastructure projects, only a minority of the concepts would have potential to be eligible for support provided by the ESIF. The fewer project concepts in key areas of smart growth point out the need for special provisions, such as considering special provisions in the key operational programs (OPHR, OP Research and Innovations, IROP, OP Agriculture and Rural Development, OP II, or OP Quality of Environment). The special provisions could make the region more attractive for companies and entities from outside and stimulate local development in the key identified sectors.

The report explores approaches to identify key projects to be financed through ESIF. The transition of the Upper Nitra region from coal would require the matching of local capacities with strategic goals and objectives at the national, regional, and local levels. The focus here

⁴ The main idea of this initiative is more effective management of resources from the European structural and investment funds allocated to the Slovak Republic in areas such as infrastructure, small and medium-sized enterprises, energy, waste management and the like, especially where revenues and/or cost savings are expected.

⁵ Here, we get to the potential issue of the EU competition rules

will be placed on the assessment of the potential projects vis-à-vis the framework of cohesion policies, exploring the targeted ways to use available resources to generate and support projects with the highest potential impact and added value.

1. INTRODUCTION

The European Commission has launched the "Coal Regions in Transition Initiative" as a practical guidance to help overcome economic, environmental, and social challenges affiliated with the process of phasing out coal. Horná Nitra with its brown coal and lignite mining is one of the European Union's priority regions. Among the 52 identified regions in eight member states, the report describes the potential of Horná Nitra to be a successful example.

The Report is based on the ToR for Expert contract 018CE160AT028, which defines three tasks and key deliverables. It builds on three interlinked survey questions:

- *What is the present situation and how does it influence the transition?* Here we focus on the present social, economic, and demographic situations in the region and identified trends, while we also describe approaches to assess local capacities for transitions, ranked by their potential importance for the planning of future interventions.
- *Where do we want to go?* The focus here is on the national, regional, and local framework of policies, programmes, and plans and the sector and economic activities that are important for the transition to smart, inclusive, and sustainable growth.
- *How can we get there using ESIF?* In line with the ToR, the third section will provide analyses of the typology of the projects based on the local capacities assessment and national, regional, and local development priorities. It will explore the potential for combining national projects and demand-based approaches and examine the possibility of off-setting and mitigating the impact of the phasing out from coal mining and related activities.

In the first section of the report, we analyse the local situation and economic and social factors and capacities. In order to address the questions and issues defined and foreseen under the individual tasks and deliverables, we build on the previous analytical work and studies of coal region transitions. The point of departure for the background analyses was the JRC 2018 report: *Socio-economic transformation in coal transition regions: Analysis and proposed approach - Pilot case in Upper Nitra, Slovakia*. The JRC Report is mostly based on the NUTS 3 – level data. We develop the scope with a focus on the data available at the LAU 1 – level and, where needed, on data generated by individual business units in the Prievidza and Partizánske districts. Quantitative data are then combined with a qualitative survey, where we lead discussions with mayors of the towns affected by the transition, management of the mining company, NGOs, and other stakeholders.

The second section provides analyses of national, regional, and local framework of policies, programmes, and plans that shape the direction of the transformation. This section defines what kind of transformation is in accordance with the declared and approved policy frameworks and goals, and identifies the priority sectors and areas where to support future investments.

The main goal of the report is to identify factors for the optimal use of ESIF in the transformation and to assess potential projects to be financed through Operational

Programmes for the transition of the Upper Nitra region from the coal. At the same time, we may see transformation as a tool for modernisation and general transformation of the region towards smart, inclusive, and sustainable growth.

The third section, therefore, focuses on the typology of the projects based on the local capacities' assessment and national, regional, and local development priorities. The section is built on collecting and evaluating the most important project intentions and explores approaches to financial planning and a timetable for implementation of the strategy. The report concludes with a discussion, how to support a successful targeting, and utilising opportunities provided by the ESIF in the way it addresses key economic, social and environmental challenges vis-à-vis broader vision and goals of the country and/or of the Horná Nitra Region.

2. SECTION I.

2.1.

2.2. 1.1 Horná Nitra Region - Location and settlement structure

The region of Horná Nitra consists of four districts in two self-governing regions. While Prievidza, Bánovce nad Bebravou, and Partizánske districts belong to the Trenčín region, the Topoľčany district is the administrative part of the Nitra region. For a full list of towns and villages, see Appendix 2. The mining operations are located in the district Prievidza and its four towns Bojnice, Handlová, Nováky, and Prievidza and 52 villages, and they would be most affected by the transformation.

Prievidza district has 135 750 inhabitants. Patterns of commuting indicate local poles of growth and the dynamics of the labour market. The most important centre for a daily commuter is the town of Prievidza (with an average of 6.6 thousand people in 2011). The figure has been steadily dropping; in the period of 2001-2011, it decreased by 26%. Other centres of commuting are the towns of Nováky (4.8 thousand in 2011), Bojnice (1.9 thousand in 2011), and Handlová (900 in 2011). The later faced a slight decrease by 14.4 %.

2.2.1. 1.1.1. The mining, transition and development poles

While the Horná Nitra Region consists of the above-mentioned districts of Prievidza, Bánovce nad Bebravou, and Partizánske, the regional and spatial distribution of the transitional impacts will have some specifications. First of all, although Partizánske is part of the region, it is the one district that would not be directly impacted by the transition. It is neither a mining town nor a place where miners live. We may, however, anticipate some potential secondary effects here.

The main development pole in the region is Prievidza. It is not the place of the mining activities itself, but the town provides dwellings for a significant number of the miners, and it is the industrial hub where most of the investors are concentrated. Prievidza is located in the middle and on the crossroads of mining activities. There are located in Nováky (11 km from the town), Cígeľ (10 km), and Handlová (16 km). Mining in Cígeľ started in 1962, and the mine was officially closed in October 2017. The place will now require substantial investments into the recultivation and cleaning of the industrial sites. The miners were transferred to Nováky and Handlová.

Handlová was the central hub of mining since the early beginning in the 19th century. As the only one of the analysed towns, and contrary to Prievidza, which builds its future on the vision of industrial town, Handlová is in the process of transitioning to a post-industrial space. As we describe in Section III of the report, Handlová builds its future on the combination of tourism, spa and wellness, as well as on attracting people to settle down and commute to work from here. Due to its geography (it is in a valley surrounded by forests and

close to the Nitra development pole), it is an increasingly attractive location. Mining activities here are in decline; yet, depending on the phasing out decision and timing, they may still operate for a decade.

While Cígeľ and Handlová are becoming the periphery of the mining activities, there would be a strong impact on Nováky. The mining activities here would depend on the decision to open the new mine, Field 12. The process is currently on hold, waiting for the outcome of EIA process. In the case of a transition, the scale of impacts will depend on the future of Novaky TPP. As we will discuss in Section III, several alternative scenarios may be considered. Novaky has only 4,500 inhabitants and most of the miners and TPP employees commute from Prievidza.

A specific case and central part of the regional tourism and spa/wellness strategies is the town Bojnice. Located on the outskirts of Prievidza, it is the most visited tourist attraction in the Horná Nitra region, with the spa town, historic castle, and zoo.

2.3. 1.2 Human resources

The Horná Nitra region already experiences its transition from extraction of primary resources and energy production towards manufacturing. The region benefited from influx of the FDI, state aid to some key investors, but also from infrastructure-oriented investments by the SF/CF. The Horná Nitra has already developed a well-diversified regional economy. The economic specialization of the region developed around specialization of the Slovak economy. Manufacturing exports accounted for 90% of the Slovak GDP in 2017. The cars and car-parts generated 25%, articles of electrical engineering 18% and articles of machinery 11% of the total manufacturing exports in the same year. The abovementioned industries were covered by the Implementation Plan of the Slovak RIS3 document. All these industries operated in the Horná Nitra region in 2010s.

Gradual decline of the coal mining has not been accompanied by rising unemployment rates. The region has already enjoyed some inflow of the FDI. The unemployment rates and wage levels are comparable with those in other non-Bratislava regions in Slovakia. Major regional employers enjoyed steady growth in their revenues. They also announced plans for further expansion of their businesses. Moreover, the Horná Nitra region is likely to reap benefits coming from activities of two large carmakers established in the neighbouring regions. Four large car-makers operated in Western Slovakia by 2018. Networks of car-makers' suppliers extended and deepened in last decade. There is no doubt that expansion of the automotive industry is a natural way to manage transition from the coalmining in the Horná Nitra region. The transition is assisted by availability of human resources. The region operates network of secondary schools and vocational training institutions. The schools signed agreements on dual education with major regional employers.

Any regional economic policies should promote continuation of the abovementioned trends. National and European infrastructure investments should concentrate on improvements on road connections with major industrial centres in the Nitra and Žilina districts, and new eco-friendly energy sources.

The regional and local planning documents highlight importance of tourism for the future economic development. Importance of tourism in regional economy, however, should be considered with care. All major tourist attractions of Horná Nitra concentrate in the Bojnice town. The spa tourism is the most valuable round-the year product. Any significant expansion of spa tourism may hit environmental limits (e.g. stock of geothermal resources). Other tourist products (castle, ZOO and thermal swimming pools) are tied to the summer season. The Horná Nitra lacks high mountains. Horná Nitra's skiing resorts cannot compete with those in the High and Low Tatra mountains. The region also has limited potential for business and congress tourism. Tourism business depends on low-skill / low-wage labour force, and accounts for seasonal patterns of employment. Tourism, therefore, should be considered complementary, rather than fundamental economic activity in the Horná Nitra region.

Combined effects of economic boom and some trends in population development contributed to rapid and deep decline in unemployment rates in late 2010s. All major regional employers reported problems with availability of workforce. Numbers of unemployed per one job vacancy hit record low by 2018. Demographic trends may partially mitigate impacts of coalmine closure. Some miners from the HBP coalmine transit to retirement. Current demographic trends (low birth rates and high outmigration rates), however, are significant challenges for future development of regional economy. Future economic growth may boost wage levels and reverse trends in internal migration in the Horná Nitra. Major regional employers already import workforce from abroad. The regional and local governments should also think about permanent immigration from abroad.

2.3.1.

2.3.2. 1.2.1 *Demographic trends for the Upper Nitra region and main municipalities*

Similar to many other Slovak regions, Horná Nitra benefited from rapid socialist-style industrialisation in the 1950s and 1960s. Significant increases in the total population were related to the high birth rates and intensive internal migration.⁶⁶ The migration was related to the abundance of jobs in the coal mining and energy sector in the Prievidza district and the development of the footwear and rubber industries in the Partizánske district. Work

⁶⁶ The population of the Prievidza city increased from 28,425 in 1970 to 53,424 in 1991. Population of the Partizánske city increased from 14,539 to 24,907 in the same period. Source: Statistical Office of the Slovak Republic (2018): *Obce Slovenskej republiky* {Slovak Municipalities}. Available at: <http://www.sodbtn.sk/obce/index.php#>

migration was also encouraged by the large-scale development of communal housing. The gradual decline in fertility rates and in the migration slowed down the population growth in the late 1980s.

The collapse of the centrally-planned economy was a turning point in the economic fortunes of many Slovak regions after 1989. State support to ineffective productions decreased. Many state-owned businesses were either privatised or were closed⁷ There was a rapid increase in unemployment rates in all Slovak districts outside Bratislava⁸. The economic decline coincided with a significant drop in fertility rates in the 1990s⁹. The abovementioned demographic developments resulted in (a) an overall decline in the total population, and (b) a change in the age structure of many Slovak regions, including Horná Nitra.

The population of the Prievidza district peaked in 1998 with 141,445 permanent inhabitants, but had dropped to 135,111 inhabitants by 2017 (-4.5%). The population of the Partizánske district dropped from 48,596 to 45,967 (-5.0%) in the same period. The region has faced a combined population decline in last two decades (Figure 1). Both low birth rates and high outmigration rates have contributed to the decline. As a result, the region already has a rapidly ageing population. Young people were the first to outmigrate from the region.¹⁰ The process of ageing is likely to speed up in the next two decades. The average age of the population was, by two years, higher in the Horná Nitra region than in Slovakia in 2017. The gap is expected to widen to 2.5 years by 2035.

The Forecast of Population Development in Slovak districts up to 2035¹¹ suggests that, if the abovementioned demographic trends continue, the population of the Prievidza district should further decrease to 129,638 (-4.1%) and the population of the Partizánske district to 43,488 (-5.4%) by 2035. Both the Prievidza and Partizánske districts should rank in the 10 Slovak districts with the oldest population by 2035.

⁷ For detailed discussion of industrial restructuring in Slovakia see: Smith, A. (1996) From convergence to fragmentation,— uneven regional development, industrial restructuring and the transition to capitalism in Slovakia, *Environment and Planning*, 28(1): 135–156; and Smith, A. (1998) *Reconstructing the Regional Economy: Industrial Transformation and Regional Development in Slovakia* (Cheltenham: Edward Elgar).

⁸ For more details on regional polarisation in Slovakia see: Baláž, V. (2007): *Regional Polarisation under Transition: Case of Slovakia*, *European Planning Studies*, 15(5): 587-602

⁹ Average fertility rate decreased from 2.09 to 1.20 births per woman in fertile age in period 1990-2001. Source Demographic Research Centre.

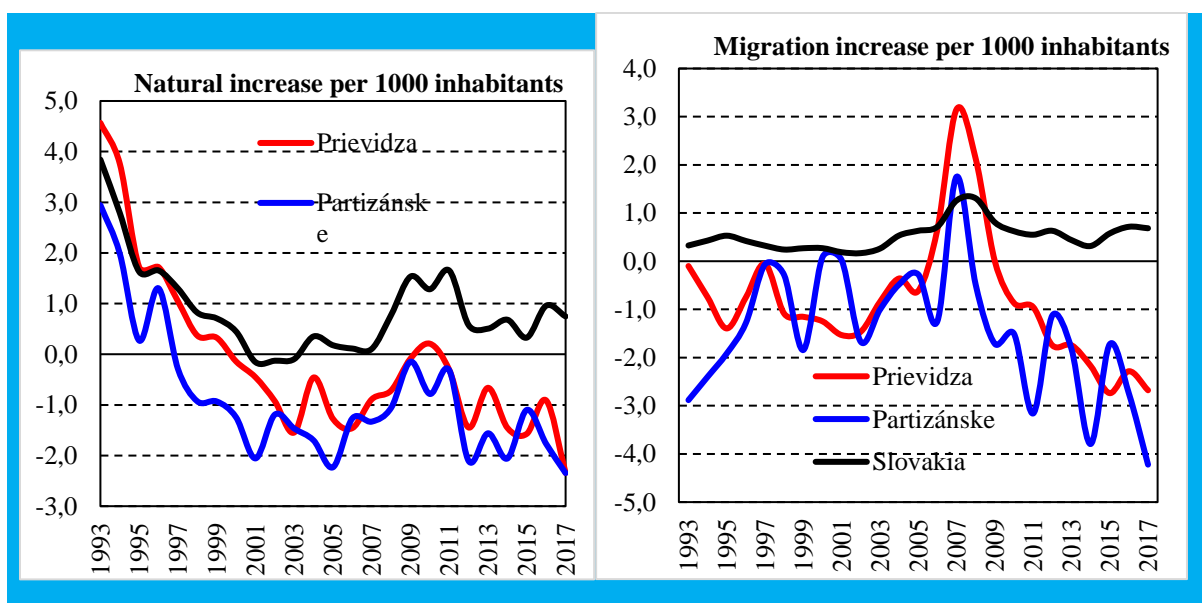
¹⁰ Official data on internal migration are based on the permanent residence records. Actual rates of outmigration likely are higher than those reported by the Statistical Office of the Slovak Republic. Many Slovaks immigrate to the cities and suburban regions of Bratislava and Košice, but keep their permanent residence unchanged.

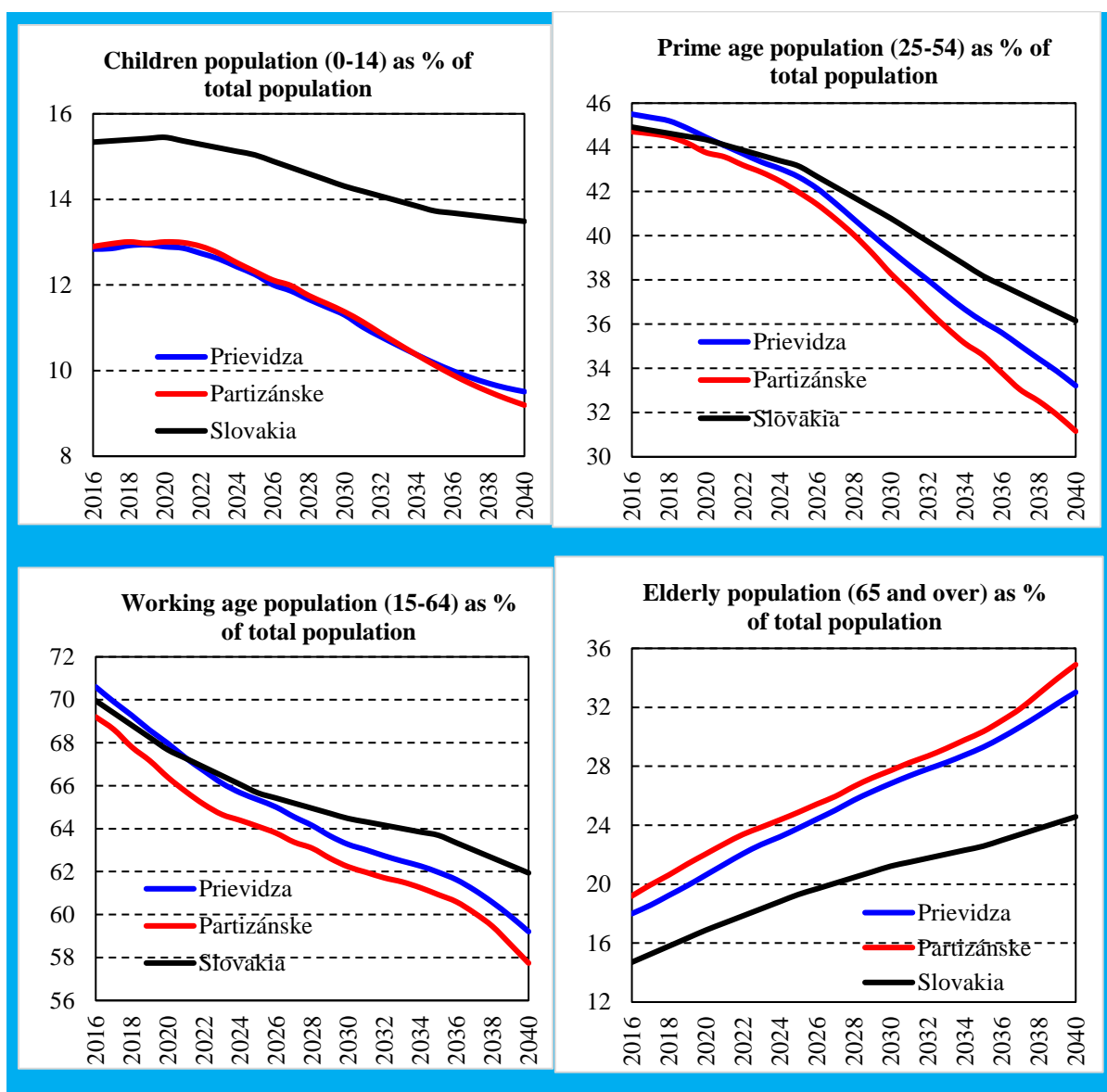
¹¹ Source: Šprocha, B, Vaňo, B. and Bleha, B. (2013): *Prognóza vývoja obyvateľstva v okresoch Slovenskej republiky do roku 2035* {*The Forecast of Population Development in the Slovak Districts up to 2035*}, Institute for Forecasting, Slovak Academy of Sciences, Bratislava

An in-house population forecast by the Institute for Forecasting (Slovak Academy of Sciences) was prepared for this report. The population forecast suggests that the age structure of the Horná Nitra region will undergo dramatic changes until 2040 (Figure 1). The region will lose significant parts of its children (0-14 years) and prime age (24-54 years) populations. The share of the prime age population in the total population of the Prievidza and Partizánske districts stood at 45% in 2017 (close to the Slovak average). The respective shares are expected to drop to 33.2% and 31.2% by 2040. The shares of the working age population are expected to develop in a similar way in the Prievidza and Partizánske districts.

The shares of the elderly population (65 and over) in the total population were already higher in the Prievidza and Partizánske districts (18.6% and 19.9%) than the Slovak average (15.2%) in 2017. The shares of the elderly population are expected to rise to 33.0% and 34.9% in the Prievidza and Partizánske districts respectively by 2040. The abovementioned shares are substantially higher than the Slovak average (26.6%) in the same year. The forecasted demographic developments suggest that the Horná Nitra region might have to try and cope with a lack of labour force in the next two decades.

Figure 1. Demographic indicators and forecasts for the Horná Nitra region. Sources: SOSR and in-house forecasts by the Institute for Forecasting (Slovak Academy of Sciences).





Sources: SOSR and in-house forecasts by the Institute for Forecasting (Slovak Academy of Sciences).

2.3.3. 1.2.2 Population, minorities and disabled

The population of the HNR is rather homogenous. In Prievidza, according to the 2001 census, the population consisted of 96.65% Slovaks, 0.95% Czechs, 0.48% Hungarian, and 0.29% Roma and Germans. However, data from the *Atlas of Roma Communities* from 2014 indicates that the size of the Roma community is 1050 people (or 2.15% of the town's inhabitants). Most of them live in a segregated location at Cígeľská cesta, close to the industrial zone and out of the town. According to the same Atlas, around 500 Roma live in Partizánske (2.10%), while a substantially larger community is in Handlová. Here we find a

segregated community behind the industrial zone of 1,153 people, or 6.52% of the town's inhabitants.¹²

The number of people living on a disability pension in the region is higher than the Slovak average. In the district of Prievidza, the ratio of the invalidity pension beneficiaries to the economically active population is 13.3%, while the average of the Slovak Republic is 9.1%. As illustrated in Table 1, the number of the disabled people is relatively stable in Prievidza and Partizánske.

The number of jobs in the so-called “protected workshops” in the regions (providing labour opportunities for disabled people) is also slightly higher here. While the Slovak average is 4.2% of disabled people working in the workshops, in Prievidza it is 6.9%. It is difficult to interpret this number, as we lack exact statistics about the people who can be employed elsewhere. However, it indicates a potential for social enterprises. At least in theory, the workshop should be gradually transformed into social enterprises. In comparison with the protected workshops, it is a better entity, reflecting the international standards of employment of persons with disabilities.

Table 1. Disabled people in districts Prievidza and Partizánske 2013 – 2017.

District/Year	2013			2017		
	Disability up to 70%	Disability above 70%	Total Disability	Disability up to 70%	Disability above 70%	Total Disability
Prievidza	5 091	3 708	8 799	5 714	3 234	8 948
Partizánske	1 318	912	2 230	1 406	731	2 137

Source: Social Insurance Comp.

2.3.4. 1.2.3 The miners – age structure and data of the employees

2.3.5.

The HBP, a.s. coalmine employed 3782 people¹³ of which 3017 were in the coal sector and 765 in the non-coal sector in 2018 (Table 2). A significant number of the coal sector employees may retire in next few years.

¹² Because of stigma and various other reasons, many Roma do not identify themselves as the ethnic minority members in censuses. The Atlas of Roma Communities is regularly developed for the purpose of planning policy and other interventions, helping social inclusion of the minority.

¹³ The total employment of 3782 jobs also included 177 external employees of which 72 are foreigners.

As for the coal sector, 2002 people were employed in underground and 1015 in above-ground jobs. The data provided by the HBP can be correlated with the number of employees, reported under the law by the Main Mining Office of the SR.¹⁴ According to the Office and in the 2017, as many as 1908 employees were working directly on brown coal and lignite mining (148 on the surface). We see here, compared to 2016, an increase by 663 workers (the number of underground workers dropped by 22). It indicates a relatively significant fluctuation in the number of employees and also the problem of how many people work at a particular time in activities directly related to mining and how many at different workplaces of a diversifying company. According to qualitative research, the company moves workers between their operations as needed.

The job location is important for pension claims,¹⁵ as the pension age is determined by two major factors in Slovakia: (a) number of working years and (b) average life expectancy of the Slovak population. The later factor implies a moving pensionable age over time¹⁶. Some jobs, including miner jobs, account for exceptions from factors (a) and (b).

People employed in the hardest jobs ('category I and II jobs') may retire much earlier than other employees. An employee working 25 years (of which 15-20 years¹⁷ are in underground jobs) may retire at the age of 55.

Jobs with the health risk categories imply earlier retirement age. There were some 65 employees (1.75%) in category 4 and 1256 employees (33.2%) in category 3 in 2017.

The HBP, a.s. provided the age structure of jobs. The company did not provide the structure of jobs by age and pension claims (category I and II versus other categories). The overall age structure suggests that about 25% of employees in the underground jobs are close to the retirement, and an additional 20% will reach pensionable age in next five to seven years.

The age structure of the HBP, a.s. suggests that closure of the coalmines is unlikely to result in mass unemployment in the region. A significant part of the total employment would retire or ask for an early retirement. This conclusion is based on an assumption that the mine closure is spread over several years.

As for the education, some 46% HBP employees has lower secondary education and some 22% upper secondary - vocational education. Some 15% of employees have upper secondary general or specialised education (Table 2a). Only some 8% of the HBP employees have tertiary education.

¹⁴ For more information see: PRÁVA O ČINNOSTI za rok 2017 Hlavného banského úradu a obvodných banských úradov Slovenskej republiky. Available at: <http://www.hbu.sk/files/documents/spravy/2017/ročná%20správa%202017.pdf>

¹⁵ See indent 21 of the 100/1988 Act on Social Security.

¹⁶ Original pensionable age was 62 years in Slovakia. By 2018, the pensionable age increased to 62 years and 139 days (63 days more than in 2017).

¹⁷ The specific time period depends on the character of the job and health conditions of the employee.

Table 2: Structure of the HBP employment

Age group	No. of employees	Per cent
55+	927	24.51
50-54	760	20.10
45-49	683	18.06
40-44	461	12.19
35-39	278	7.35
30-34	270	7.14
25-29	248	6.56
up to 24	155	4.10
Total	3782	100.00

Table 2a: Structure of the HBP employment by education

Level of education	Number of employees
Doctoral or equivalent	5
Master or equivalent	249
Bachelor or equivalent	40
Upper secondary - specialised	512
Upper secondary - general	55
Upper secondary - vocational	835
Lower secondary education (apprentice school with exams)	1,729
Lower secondary education (apprentice school)	61
Primary education	296
Total	3,782

Source: HBP a.s., upon request of the Deputy Prime Minister Office

2.4. 1.3 Economy

The region consists of two districts (LAU 1 units): the Partizánske district and the Prievidza, located in the Slovak administrative (NUTS III) region of Trenčín. The Partizánske district had an area of 301.03 km² and a population of 45,967 in 2017. The Prievidza district had an area of 959.77 km² and a population of 135,111 in the same year¹⁸. The Horná Nitra region had a total area of 1,260.0 km² (2.5% of the total area of Slovakia) and 181,078 inhabitants (3.4% of the country's total) in 2017.

Coalmining has been a key source of jobs and income in the region since the early 20th century. Coalmining, however, has become unprofitable over time. The Institute of Financial Policy of the Ministry of Finance estimated in 2010 the support of the Slovak Government to coalmining at a value of €96m. If calculated per capita/miner, this amounted to double the gross average wage in the coal industry in the same year.¹⁹ Furthermore, the Slovak Government had to subsidise treating ecological damages. The region needs transition, which would inevitably entail a wider structural shift in the local economy.

This chapter firstly summarises the key trends in the socio-economic development of the region. We use in-house forecasts to model future population trends and to analyse the development of key economic variables such as unemployment rates, wages, business intensity, and FDI. We further present the current economic specialisation of the region. Profiles of major regional employers and their future development plans are discussed, alongside the development of a system of dual education in the second part of the chapter. Tourism is of some importance for the economy of the Horná Nitra region and we provide an overview of the major trends in tourism, evaluating the main tourist attractions. The third part of the chapter focus on financing. Here, we analyse the amount and structure of the State's aid and support from the Structural and Cohesion Funds.

2.4.1. 1.3.1 Structure of the economy

The regional economic structure is heavily biased by the Bratislava region. According to the Eurostat, Bratislava had per capita GDP €53,700 and was the sixth richest NUTS 2 region of the European Union in 2016. The extraordinary position of the Bratislava region must be kept in mind when assessing the social and economic position of the Horná Nitra region within Slovakia.

¹⁸ Source: SOSR, Statistical Office of the Slovak Republic (2018): Data Cube. Note: mid-year population.

¹⁹ Institute for Financial Policy of the Ministry of Finance (2011): [Podpora na baniáka predstavuje dvojnásobok jeho hrubej mzdy](#) {Support per miner is double of miner's wage}.

Key socio-economic variables indicate that the Horná Nitra region accounts for the below-average levels of social and economic development in Slovakia (Figure 1). The number of total businesses and foreign-owned businesses (per 1000 inhabitants) is much lower than the Slovak average. The gap in the businesses' intensity has always been skewed by high business intensity in the Bratislava region. The gap, however, widened significantly after 2008.

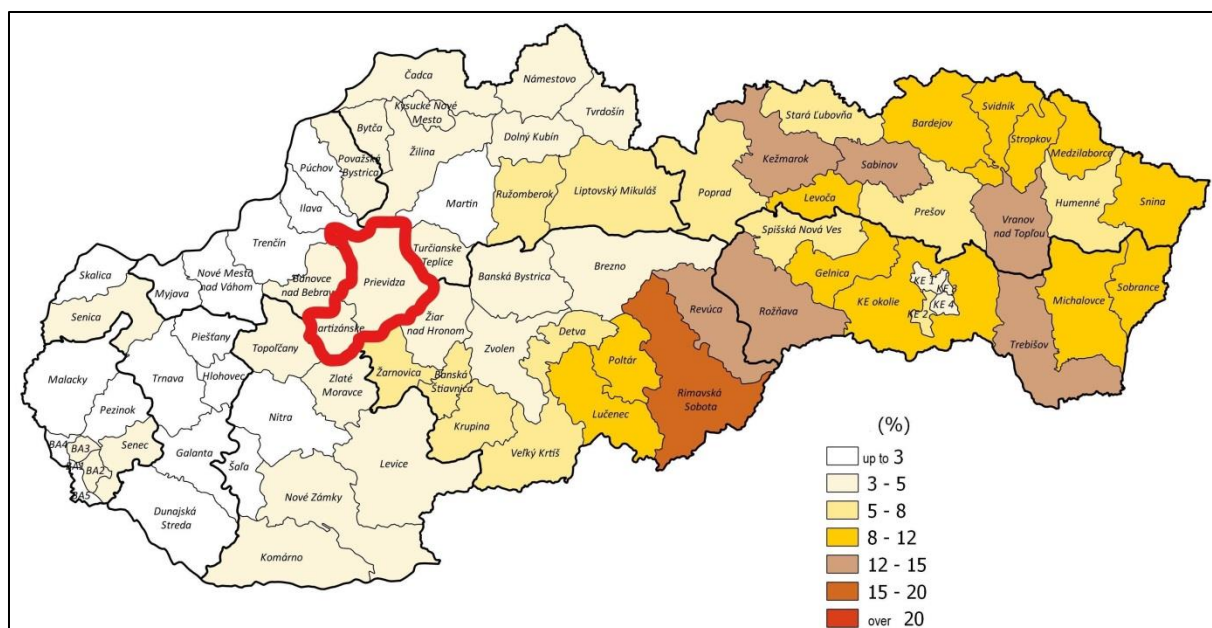
The HNB mining company has been the most important employer in the region. The subsidised jobs in mining have helped to keep unemployment rates and wage levels close to the Slovak average in the last two decades. By June 2018, the unemployment rates in the Prievidza district (4.6%) and the Partizánske district (3.3%) were lower than the Slovak average (5.4%) (Figure 2). In fact, some employers had to cope with the lack of an available workforce in the Horná Nitra region in 2018. Mining and manufacturing industries were key production activities in the Prievidza district. They, however, tended to be less productive than the Slovak average in terms of value added per inhabitant²⁰. The Partizánske district is quite rural. Its manufacturing industries account for the low productivity levels (Table 1).

Demographic trends and below-average living standards have impacted housing development (Figure 2). Annual numbers of finished flats are significantly lower in the Horná Nitra region than the Slovak average.

Figure 2. Unemployment rates in Slovak districts in June 2018 (%).

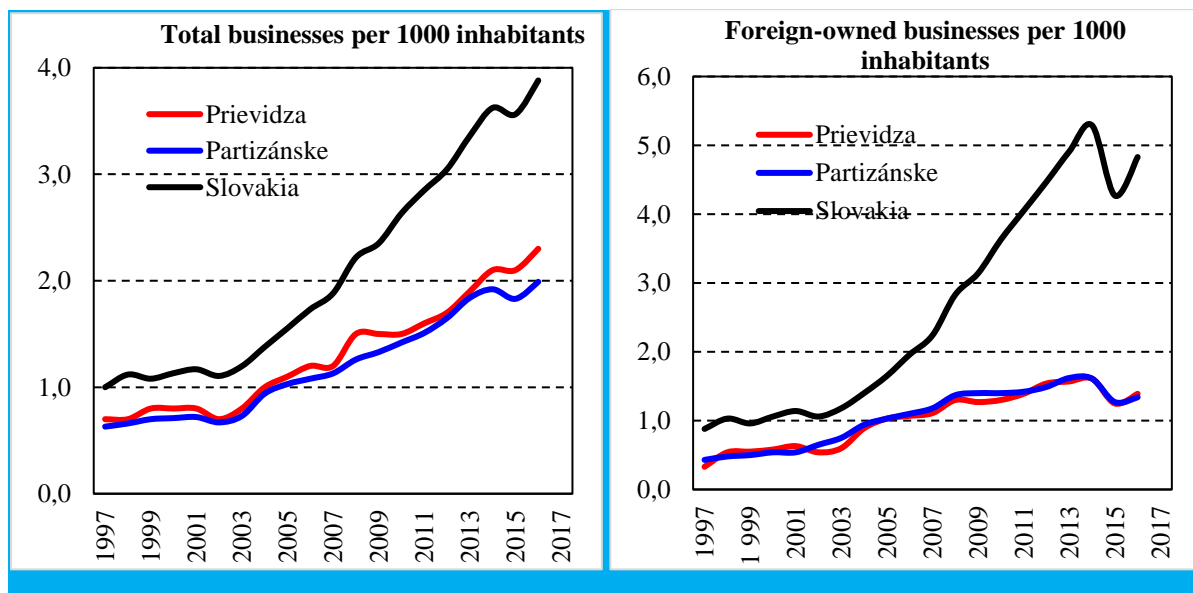
²⁰ The SOSR published data on gross turnover and value added by regional branches of manufacturing firms. Data on employment by regional branches of manufacturing firms are not available.

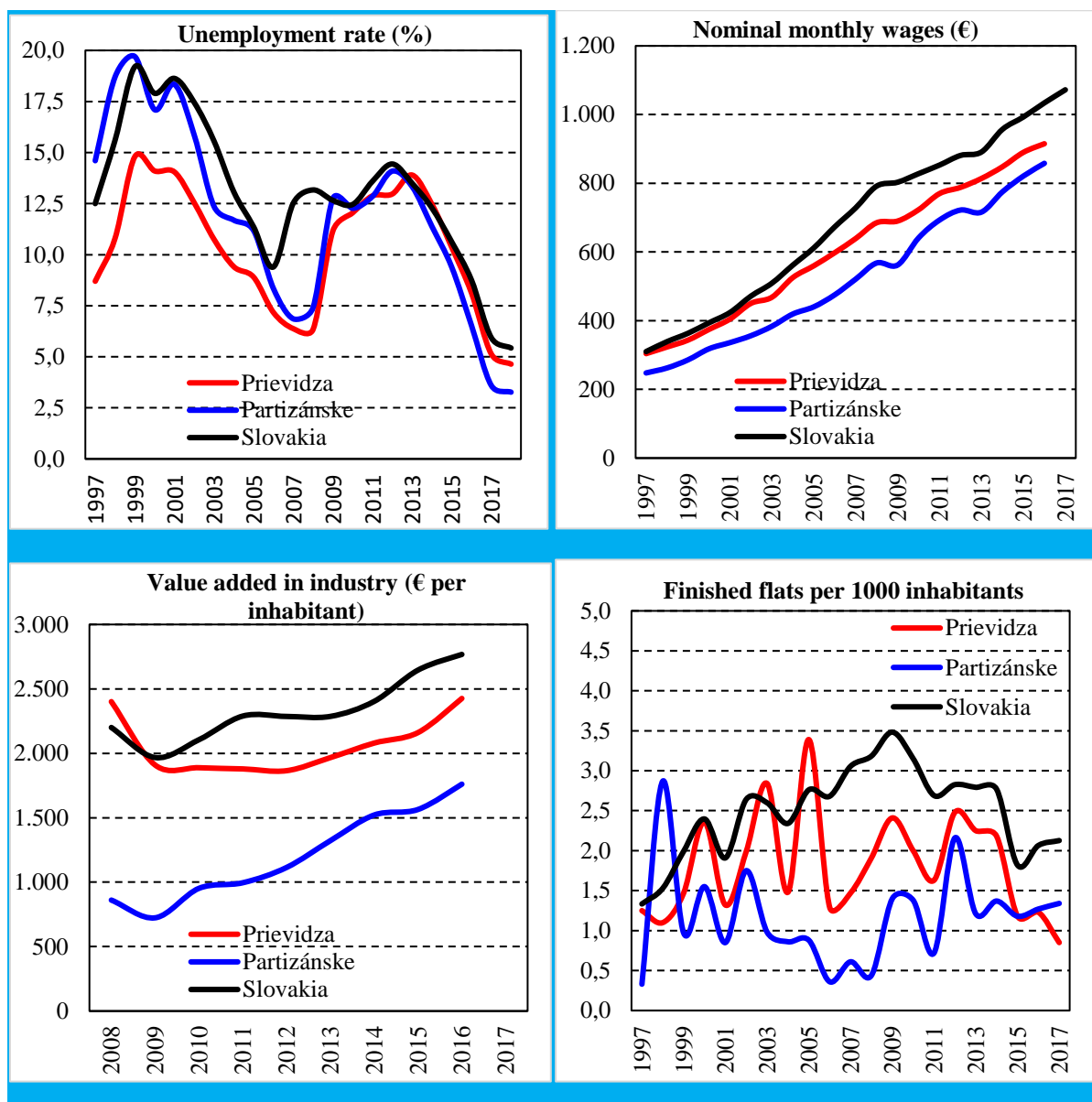
SUPPORT FOR COAL REGIONS IN TRANSITION



Source: COLSAF, Central Office for the Labour, Social and Family (2018).

Figure 3. Key socio-economic indicators of the Horná Nitra region.





Source: SOSR (2018): Data Cube

The National Bank of Slovakia publishes data on the stock of foreign direct investment (FDI). The latest available data refer to end of 2015²¹. The stock of FDI was €328.0m (0.78% of the total Slovak FDI) in the Prievidza district and €52.6m (0.12% of the total Slovak FDI) in the Partizánske district.

In Slovakia, the FDI stock is significantly concentrated in Bratislava city. The five districts of the city and the three suburban Bratislava districts accounted for 68.7% of the total Slovak FDI by the end of 2015. If Bratislava city is excluded from the analysis, the Prievidza district absorbed 2.5% and the Partizánske district 0.4% of the total non-Bratislava Slovak FDI. The Prievidza district accounts for the above-average FDI intensity within the 71 non-Bratislava

²¹ The time series are published for period 1997-2015. Source: The National Bank of Slovakia (2018): Foreign direct investment [statistics](#).

districts. The Partizánske district, on the other hand, accounts for very low levels of the FDI intensity within the non-Bratislava districts.

2.4.2. 1.3.2 Economic performance

Current structure of economic activities: The Horná Nitra region specialises in two key activities. Coal mining and coal-based energy production have been dominant in the Prievidza district (city of Prievidza and towns of Handlová and Nováky). Tourism (spas and culture tourism) has been a complementary industry. The economy of the Partizánske district has been dominated by the footwear, leather and rubber industries and, to a lesser degree, by the production of furniture.

The economy of the Prievidza district diversified in the 2000s. Foreign investors built on the relatively cheap but skilled labour force. They developed activities in the automotive sector, machinery, manufacture of plastics, and production of safety and control technologies (Table 3). The HBP coal mine and its daughter HBz ranked as the largest employers in the region, but their productivity (in terms of revenue per employee) was quite low by 2017. Foreign-owned businesses (Nestlé Slovensko, ILJIN Slovakia, Brose Prievidza, GeWiS Slovakia, FORTISCHEM Nováky) accounted for substantially higher productivity levels.

The Partizánske district is much smaller and its population is about one third of the Prievidza district. The major employer in the Partizánske district (Rialto footwear) accounts for the low productivity. The footwear industry has to compete with other producers in low-wage countries. Declining unemployment rates have pushed up nominal wages in Slovakia in the last two years. Average nominal wages increased by 3.3% in 2016 and 4.6% in 2017. It is difficult to state the extent to which footwear production is sustainable in a period of rising labour costs.

Table 3. Major businesses in the Horná Nitra region.

Prievidza district	revenue (€m)	profit (€m)	employees	revenue per emp. (€)	area of business
Nestlé Slovensko	167.07	9.85	745	224,260	food products & distribution
ILJIN SLOVAKIA,	164.53	2.99	307	535,928	wheel bearing
FORTISCHEM a. s, Nováky	140.44	4.47	1097	128,025	plastics
HBP, a.s	105.82	2.25	3346	31,627	coal mining
GeWiS Slovakia	104.82	9.05	1110	94,432	car parts and machinery
Carcoustics Slovakia Nováky sro	50.18	1.08	298	168,372	car parts (encapsulating tech.)
Brose Prievidza	47.20	1.55	500	94,402	car parts
MAKS-D, s.r.o. Nováky	41.55	0.44	75	553,947	machinery, pipes
Honeywell Safety Products Slovakia s. r. o.	26.92	5.26	650	41,420	safety and control tech.
HBz., a.s	17.85	-0.95	250	71,412	rail transport & machinery
Kúpele Bojnice	10.82	2.41	246	43,967	spa tourism
Bojnice ZOO	3.16	0.02	33	95,697	culture tourism
Partizánske district	revenue (€m)	profit (€m)	employees	revenue per emp. (€)	area of business
ContiTech Vibration Control Slovakia s.r.o.	92.76	12.46	575	161,327	rubber compounds
Rialto s.r.o	91.30	2.01	1770	51,584	footwear
Partizánske Building Components-SK s.r.o.	91.05	2.46	367	248,101	internal dormers
SaarGummi Slovakia s.r.o	81.07	7.58	1325	61,183	sealings for car industry

SLOVAKTUAL s.r.o. Pravenec	75.07	1.00	429	174,979	plastic and vinyl windows
VEGUM a. s	36.61	-0.13	689	53,129	rubber compounds
NOVESTA, a. s, Partizánske	14.38	-0.05	381	37,732	footwear
VIPO a. s., Partizánske	8.03	0.32	132	60,803	machinery

Sources: the Finstat databases for revenues and profits. All data refer to 2017. Employees: the latest annual reports of the respective companies. Most data refer to 2016. Notes: the list does not include the Unipharma Bojnice. The company had revenue 473,915m in 2017, but developed its drug distribution business around Slovakia.

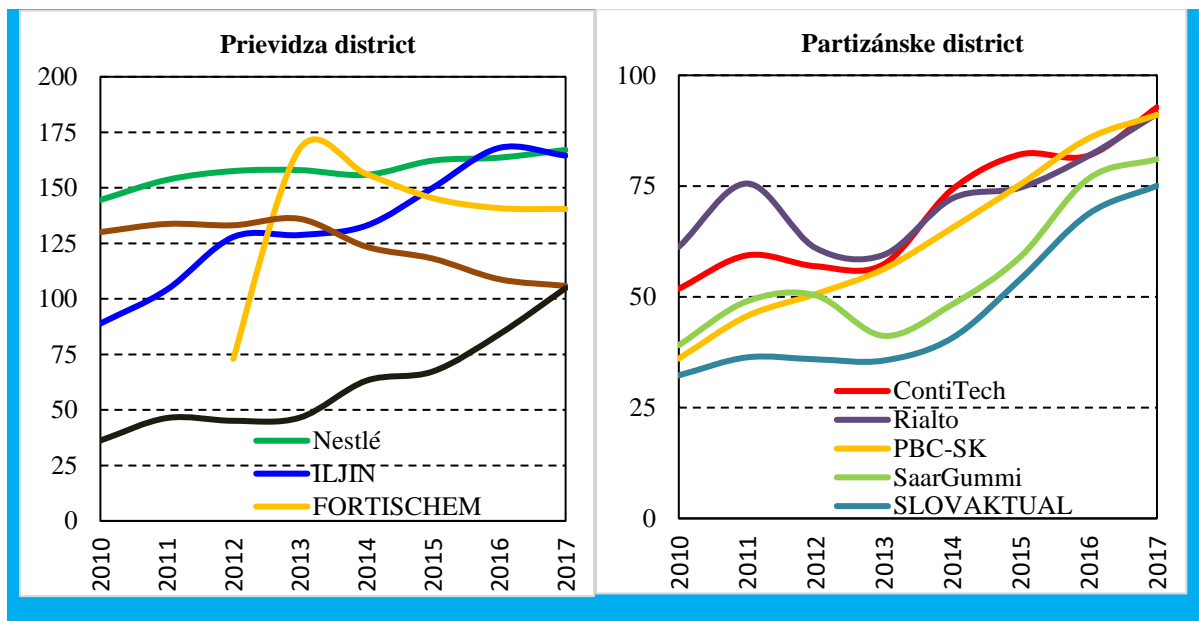
2.4.3. 1.3.3 Training and education

Vocational training and dual education: Several regional secondary schools have already signed contracts with major regional employers and developed programmes of dual education. The above-mentioned employers include HBP Prievidza (coal mining), Brose Prievidza (automotive), GeWiS Prievidza (car parts, electrical engineering, machinery), Nestlé Slovensko (food processing), Scheuch (metal processing), ContiTech Vibration Control Slovakia (rubber and polymer fabrics and compounds), and ZKW Slovakia (LED lighting and electronics). The most important dual education programmes include:

- The Secondary Vocational School in Prievidza, which offers education and on-the-job training in metal processing, mechatronics, programming for software-controlled machines, and food processing.
- The United School of Handlová offers education and on-the-job training in metal processing, mechatronics, and electrical engineering.
- The United School of Nováky offers education and on-the-job training in mechatronics.

Future development of business: The revenue of the HBP coalmine declined by 19% in the period 2010-2017. Other major employers, however, significantly expanded their revenues in the abovementioned period in the Prievidza region (Figure 4). Foreign-owned firms (Nestlé, GeWis, Ilijn), in particular, were able to develop their businesses. Similar trends can be observed in the Partizánske district.

Figure 4. Development of revenue by the largest regional firms in the Horná Nitra region in 2010-2017 (€m).



Source: Finstat database.

Major regional employers (outside the HBP coalmine) expressed positive expectations about their future business developments. Brose Prievidza plans to invest €57.4m by 2020. The company declared it would add another 350 jobs by 2022. Brose Prievidza also wants to establish an R&D centre in Prievidza city²².

Nestlé Slovensko ranks as Slovakia's largest producer / distributor of food products. It reallocated three production lines from its Austrian parent company to Prievidza. The company increased its product portfolio from 480 to 600 products in 2017. Nestlé Slovensko has increased wages for operators by 31% in the last two years in order to retain its skilled workforce.²³

GeWiS Slovakia sought planning permission for the extension of its production premises in 2017. The company also wants to add 100 new jobs.²⁴ FORTISCHEM invested €42 in the modernisation of chemical technologies in 2016-2017. The company plans to invest another €8m in 2018.²⁵ Carcoustics Slovakia built new production premises in 2017.²⁶

²² Source: Pravda daily (2018, 18 June): [Brose chce investovať v Prievidzi do rozšírenia výroby 57,4 milióna eur](#) {Brose wants to invest €57.4m in Prievidza}

²³ Source: TREND weekly (2018, 6 June): [V potravinárstve sa rozbehol boj o platy. Nestlé pridalo vyše 30 percent](#) {The food industry fights for wages. The Nestle increased its wages by over 30 percent}

²⁴ Source: Teraz webnews (2017, 18 August): [Prievidzský výrobca kovových komponentov chce rozšíriť výrobu](#) {Producer of metal component in Prievidza wants to expand its production}

²⁵ Source TREND weekly (2018, 2nd February): [10 investičných zámerov, ktoré môžu najviac nakopnúť ekonomiku](#) {10 investment plans for upstarting Slovak economy}

²⁶ Source: Sme daily (2017): [Spoločnosť Carcoustics sa rozširuje o novú výrobnú halu](#) {The Carcoustics Slovakia builds new production premises}

The Horná Nitra region is likely to benefit from the expansion of the automotive industries in neighbouring regions. Two major car-makers are located near Prievidza city: Kia Motors in Žilina city (62 km) and Jaguar Land Rover in Nitra city (81 km). Poor road infrastructure has limited co-operation with Kia Motors so far. Investments from the Structural Funds have somewhat improved the road infrastructure in recent years (see chapter 3). The Slovak Government has declared its support for the building of the R2 and R3 expressways. The R3 expressway would connect the cities of Prievidza, Martin, and Žilina. The R2 expressway should interconnect the Prievidza and Nitra cities.

2.4.4. 1.3.4. Potential impacts of transition from coal to a new economy

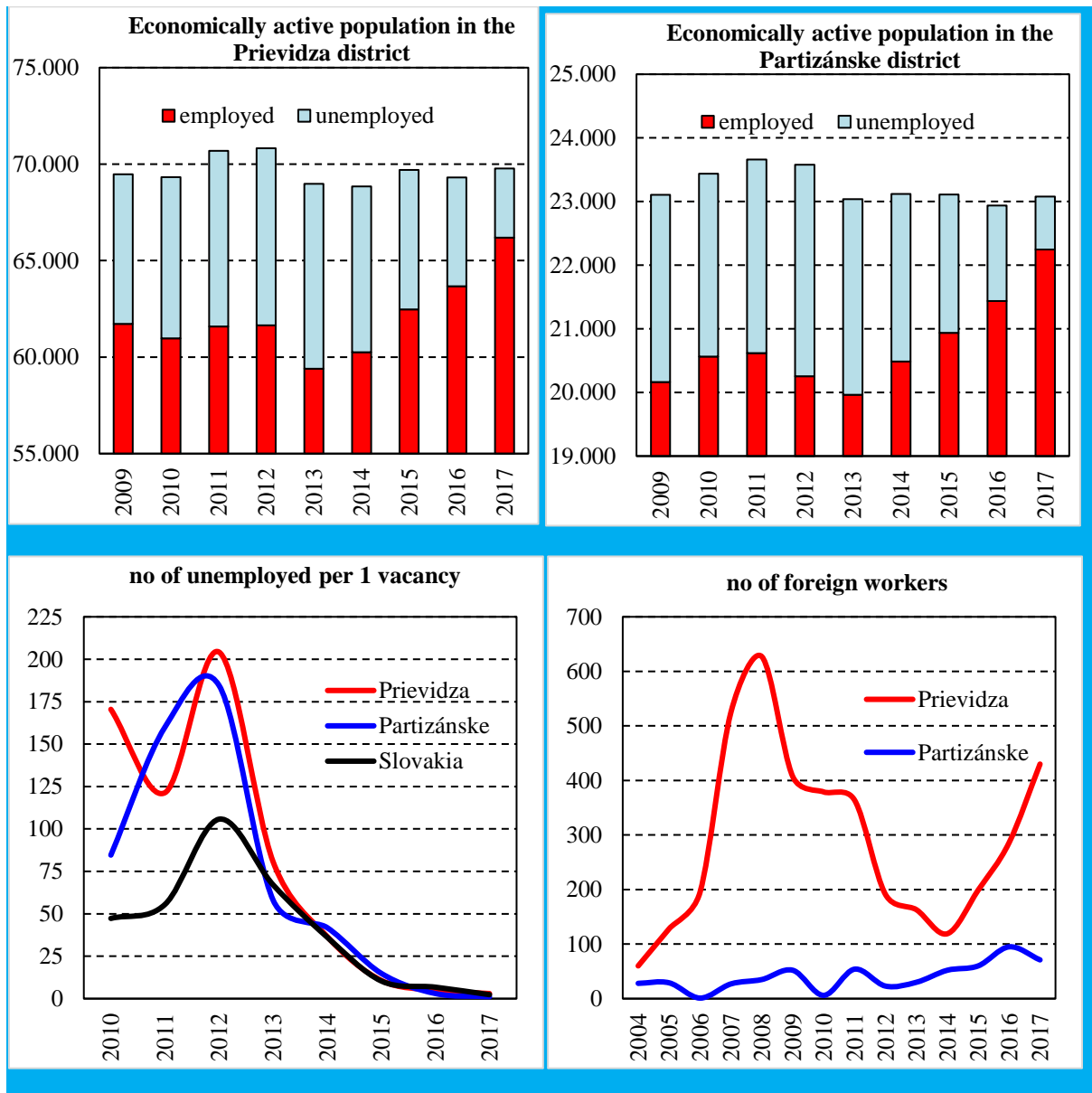
The unemployment rate decreased steadily both in the Prievidza and Partizánske districts over the 2010s (Figure 6). The decrease in unemployment rates was primarily fuelled by an economic boom and increase in total employment in each district in period 2012-2017. The decrease in stock of the workforce was a contributory factor to the decrease in the total unemployment. The total number of employed people increased by 8.2 thousand (7%) in the Prievidza district and by 4.5 thousand (10%) in the Partizánske district.

The total number of the economically active population (employed + unemployed) decreased by 1.5% in the Prievidza district and by 2% in the Partizánske district. The demographic developments were responsible for about one quarter of the total decrease in unemployment rates in the period 2012-2017.

Figure 5 visualises the impacts of the economic cycle and the demographic developments on the regional labour markets of the Horná Nitra. There were 204 unemployed people per job vacancy in the Prievidza district and 184 unemployed people per job vacancy in the Partizánske district in 2012. The numbers of unemployed people per job vacancy dropped to two in the Prievidza district and three in the Partizánske district by 2017.

Regional employers were forced to cope with serious shortages in the labour force by 2017. Some of them used the services of job agencies and hired foreign workers to replace missing domestic labour. The situation in the regional labour markets was somewhat reminiscent of that of 2007-2009, when unemployment decreased sharply and missing domestic labour was supplemented by foreign workers. While numbers of foreign workers were still lower in 2017 than those in 2007-2009, the number of unemployed people per job vacancy was much lower in 2017 than 10 years previously.

Figure 5. Key employment indicators in the Horná Nitra region.



Source: COLSAF

Direct employment in the mining business stood at approximately four thousand employees in the Prievidza district in 2017. The healthy development of the regional labour market of the Prievidza district, where the HBP coalmine is located, added some 8.2 thousand jobs in the period 2012-2017. An immediate total closure of the HBP coalmine would push the regional unemployment rate in the Prievidza district from the current 4.6% to some 8-10% or higher, when the effects of indirect employment in coalmining are considered.

A phased-out closure of the HBP coalmine would spread the increase in unemployment levels over several years. The actual increase in the unemployment rate is likely to be lower than that in case of immediate closure. Both new and incumbent businesses have expanded their activities in the last five years. The demographic developments imply higher ageing rates in the Prievidza district compared to the Slovak national average. More and more coalminers are likely to retire, while fewer will enter the labour market in years to come.

2.4.5. 1.3.5 Culture, sport, leisure, recreation and tourism

All the tourist attractions of Horná Nitra are concentrated in the Prievidza district. The Partizánske district has much less to offer. The regional distribution of tourism between the Prievidza and Partizánske districts is reflected in the number of beds, tourist arrivals, and nights spent (Figure 5).

The Bojnice Spa, Bojnice Castle, and Bojnice Zoo are the main tourist attractions in the Prievidza district. The attractions are concentrated in a small area and it is easy to visit all of them in one day. Bojnice Castle and Bojnice Zoo are popular destinations for families with children. Tripadvisor ranked Bojnice Castle the third most popular castle in Slovakia (414 reviews) after Bratislava Castle (4,142 reviews) and Spiš Castle (473 reviews) in 2017. Bojnice Zoo (216 reviews) was the second most popular attraction for leisure in Slovakia.

Bojnice town ranks as a popular but not a prime tourist attraction in Slovakia. The Statistical Office of the Slovak Republic (SOSR) publishes data on nights spent by 79 Slovak districts and 10 most popular destinations. Bojnice town is not included in the top 10 destinations. The whole of the Prievidza district reported 409,718 nights spent (2.7% of the Slovak total) in 2017.

The Bojnice Spa specialises in two main products: (1) thermal swimming pools for one-day visitors, and (2) multi-day stays with healing procedures in medicine spas. The Prievidza district benefited from multi-day stays at the Bojnice Spa. The importance of spa tourism is visible in the average number of days spent by one visitor. The number was higher in the Prievidza district compared to the Slovak average (Figure 6).

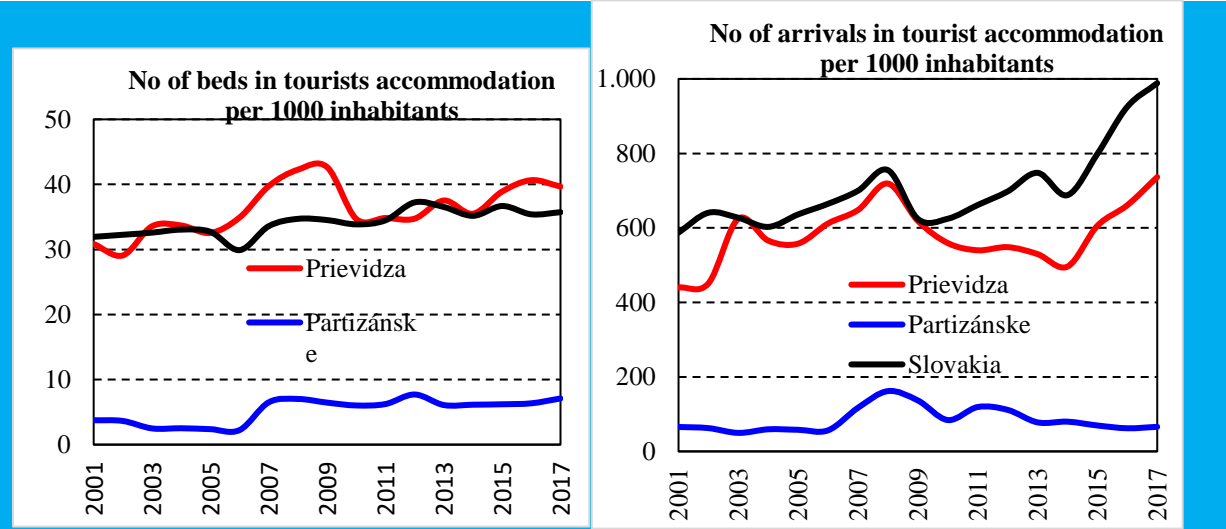
The Bojnice Spa reported 900 beds and 200,000 nights spent in 2017²⁷. This was about 7% of total nights spent in all Slovak spas in 2017²⁸. The Bojnice Spa plans to invest €45m in the development of a large-scale wellness centre. The Bojnice Spa entered into a fierce dispute with HBP over natural resources. The Bojnica Spa sued HBP for ‘abusing its dominant market position and selling low-quality coal for excess prices’ in 2017²⁹. The Bojnice Spa also claimed that the ‘further extension of mining activity is dangerous for thermal spring and can kill the spa business.’

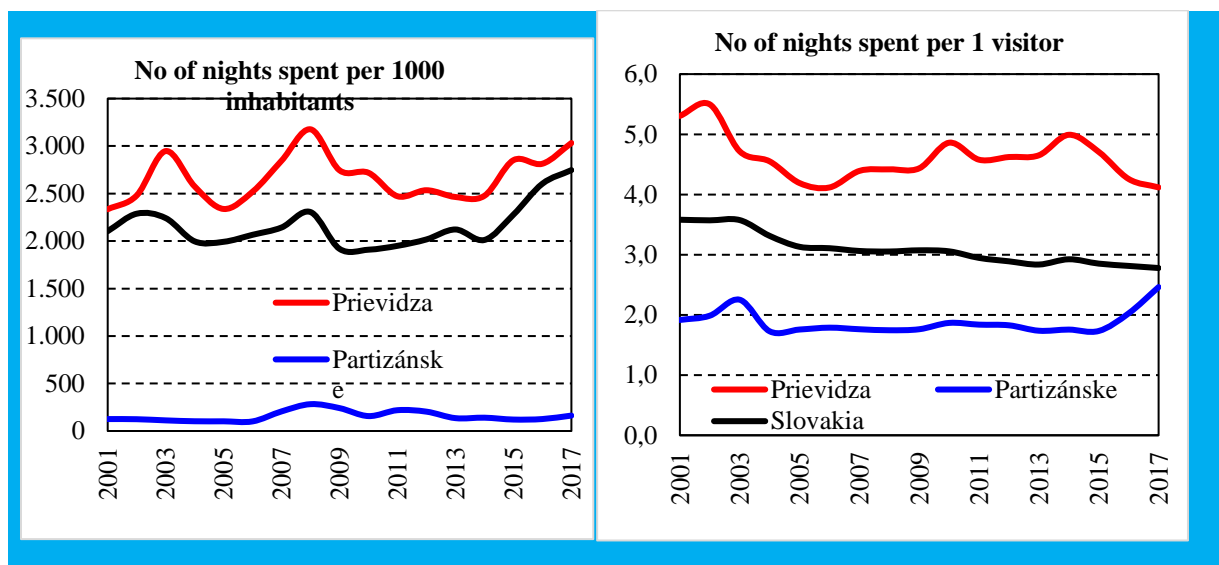
²⁷ Source: Sme daily (2018, January 17): [Bojnické kúpele s rekordnou obsadenosťou](#) {The Bojnica spas reported record occupancy rates}.

²⁸ Source: Ministry of Transport and Construction (2018): [Kúpeľný cestovný ruch 2017](#) {Spa tourism in Slovakia 2017}.

²⁹ Source: Dennik N daily (2017, July 10): [Kúpele Bojnice podali podnet na Protimonopolný úrad](#) {The Bojnica spas brought legal action with the Antimonopoly office}

Figure 6. Tourism development in the Horná Nitra region in 2001-2017.





Source: SOSR, Data Cube

2.5. 1.4 Transport

Outcomes of the quantitative and qualitative research point to the shared understanding of the transport infrastructure as the main development condition. When we analyse the programming period 2007-2013 (Chapter 3.2 of the report), the construction of roads and railways was the second most important target of support by the SF and CF (€32.85m). The project improved the road quality and increased road safety on the rail crossing. The most important road segments included I/50 Nováky - Prievdza (Banská) TEN-T (11.054 km) and I/50 Veľká Čausa - Handlová TEN-T (10.908 km). There are some improvements, and a bypass of Prievdza is planned, which should solve the chronically overloaded transport in the city.

However, the key problem in the road transport is that the Prievdza Region is located outside the road and railway routes, which are part of the core network within the TEN-T trans-European transport networks. No section of the highway or speedway has been built up in the region, yet. In the future, the region should lead the planned speedway R2, which will allow the region to be linked to the D1 motorway in the direction of the regional city of Trenčín and the R1 speedway to Žiar nad Hronom. The R2 is part of the TEN-T aggregated network. The nearest continuous stretch of the expressway R1 is 33 km away. The road distance from Prievdza to Bratislava is approximately 185 km (114 min.) and 65 km to Trenčín. The short-term transport infrastructure is the first priority in the planned future utilisation of the ESIF. The local stakeholders point to transport as the main handicap of the region. There is no direct connection to the network of highways and speedways, and the completion of the R2 for the connection between Považie and Upper Nitra (towards Žiar nad Hronom) and the R8 for the connection from Nitra and Topoľčany is the priority.

The potential of the railway transport is not fully utilised, as the region is not on the main Slovak (backbone) railway route Bratislava – Nitra – Košice. There are currently two new railway lines with regular passenger services in the region - Nové Zámky - Nitra - Prievidza and Prievidza - Horná Štubňa, which continues in the direction of Vrútky or Banská Bystrica. On the regional railway line Prievidza - Nitrianske Pravno, passenger rail transport is currently stopped. The public bus service ensures the connection of the region with the neighbouring regions, in particular, the bus routes Bratislava - Bánovce nad Bebravou - Martin - Poprad - Svidník and Nové Mesto nad Váhom - Trenčín - Prievidza - Zvolen - Banská Bystrica.

There is no significant potential for water transport. A challenge is public transport, especially for the town of Prievidza. The municipality is currently only served by buses, but given the missing bypass and increasing volume of the traffic, public transport does not have a competitive advantage to individual car transport. There would be a potential for a tram or city tram to connect Prievidza with Bojnice and potentially with Handlová, but these plans are now only in the stage of long-term visioning.

2.6. 1.5 Technical infrastructure

2.6.1. 1.5.1 Water management

The situation in HNR with regard to the water supply from public water sources is generally good. In 2016, only one municipality in the Prievidza district had no public water supply, and almost all the inhabitants of the region had a connection to the water supply network (99%). This means that in terms of this indicator, the region belongs to the most advanced places of the Slovak Republic.

The comparatively worse situation is in the field of drainage and wastewater treatment, as only the towns Prievidza, Bojnice, Handlová and Nováky and other 12 municipalities had a public sewer system, which was completed in 2016 and covered 62% of the region's population. Mining towns were already a priority for public investment during the former regime prior to 1989, and as a result, the worst situation in HNR is in Partizánske district, which is technically in the region but not in a mining area. Here, many municipalities remain without sewerage

Sewage treatment has been identified as a priority for the infrastructure projects, and there are several closed, on-going, and foreseen projects using ESIF. While major towns are connected to the network, the problem remains with small villages and settlements. There is an extensive ESIF project from OPE in the Partizánske district, "WWTP North." The project addresses a situation in Bošany, Partizánske agglomeration, and Veľké Uherce. After its completion, the area should be in full harmony with the requirements of Directive 91/271 /EEC. The agglomeration of Chynorany has prepared projects for the completion of the sewage network and the reconstruction of the existing WWTP. The project is currently in the phase of obtaining the required building permit. There are another 13 municipalities in the

Partizánske district with uncontrolled sewerage; yet, these are below the threshold of 2 000 EO and therefore cannot be supported by OPE.

Villages Cigeľ, Koš, and Sebedražie are in the process of getting sewage network, the estimated cost of sewage pipelines in Nedožeroch-Brezanoch, Lazanoch a Porube are at the level of 13 million EUR, and Stredoslovenská vodárenská spoločnosť are gradually developing projects for the IROP. Two new wastewater treatment plants (WWTP) are built in Nitrica, while a WWTP in Bystričany will increase its capacity. Nitrica got approval for a non-repayable financial contribution of EUR 3 151 294, the total eligible costs of the project amounting to EUR 3 317 152. Bystričany received support in the amount of EUR 2 587 168; total expenditure is EUR 2 723 335.

Water and wastewater management in the Horna Nitra region is coordinated and operated by Stredoslovenská vodárenská spoločnosť, a.s. (Central Slovakia Water and Sewage Company, Shareholding Comp.). There are currently 113 water sources for the Prievidza district, while the dominant source is the water dam Turček, operating since 1996. Water supply sources serve to supply water for the local public water supply or group waterworks.

Prievidza, Nedožery-Brezany, Poluvsie, Pravenec, Nitrianske Pravno and Kľačno belong to Prievidza's waterworks group. The Nováky waterworks group is connected to water sources in Nitrianske Rudno and wells in Ješkovej Vsi. Daily water consumption in Prievidza in 2017 was at the level of 8 054 000 litres of potable water.

Similarly, to many other Slovak regions, water consumption has been steadily decreasing. Unfavourable trends are associated with social stratification of the population. The per capita water consumption per day reached 200 litres in the early 1990s, and today it is approaching the hygienic minimum. This set by the World Health Organization at 70 litres. Among low-income households it goes as low as below 40 litres per day, putting increasing pressure on the operating costs of the infrastructure (economy of scale). The Stredoslovenská vodárenská spoločnosť estimated an annual decrease in water consumption by 3 per cent.

The volume of wastewater discharged into surface water [thous.m³] reached the level of 708 716 in 2014 and decreased to 595 234 by 2015. The positive trend is visible in the increasing number of inhabitants supplied with water from public water mains. While only 77.8% were supplied in 1993, 82.9% of the population were supplied in 2000 and 88.3% in 2015.

2.6.2. 1.5.2 Power engineering

The production of electricity from domestic lignite (brown coal) in Slovakia takes place on the basis of a decision by the Ministry of Economy of the Slovak Republic, and it is defined as the so-called general economic interest.³⁰ The decision is valid and may theoretically last till 2030. While official justification of the decision is based on employment concerns and energy security, it has been criticized from the beginning by the key stakeholders, including Slovenské Elektrárne (SE) who operates Nováky, political parties, NGOs, and civic associations. The system works by subsidizing SE and its Thermal Power Plant Nováky (commonly referred as ENO). The SE then buy lignite from Hornonitrianske bane for a bilaterally agreed upon price.

The Thermal Power Plant ENO constantly struggles with the problem of combustion of the lignite, first, because of its low quality and carbon content and secondly, because of the emissions and increasing demands imposed by the EU and national legislation and norms. The ENO began with electricity production in 1949 and went through several stages of reconstruction and technology updates of its 2 block – ENO A and ENO B. The current plant capacity of ENO A and ENO B totals 266 MWe. Since October 2011, biomass is co-combusted also at the lignite-fired Nováky TPP.

For many years, the power plant operator has been protesting against forced production in the Nováky power plant. SE points to technical obsolescence and the inability to meet prescribed production volumes, loss of operation, and non-recognition of all related issues costs of the regulatory authority.³¹ The long-term problem is the cost of production. Illustrative is the latest dispute between SE and URSO, which preceded the September 9, 2018 decision to increase the surcharge for all electricity customers that contribute to the extraction of brown coal originating from the Horná Nitra mines. By this decision, URSO changed one of the electricity price components, meaning a general increase in the combustion of domestic coal at the Nováky power plant, which will increase by 17.7 million Euros this year (Table 4).

From September 1, all subscribers of electricity pay the higher system-operating fee (TPS). The Regulatory Office for Network Industries (URSO) approved its increase by 3%. The so-called ENO component of this tariff has increased by 18.07% compared to the current level, from € 4.359 / MWh to today's 5.11428 € / MWh. In practise, it means that both households and companies are paying TPS, which is applied to the final consumption of electricity in Slovakia for 2018, which is currently at 26,988 € / MWh. According to last year's decision in December 2017, URSO planned to subsidize the combustion of lignite in ENO in the amount of 98 million euros. According to new decisions by the Regulatory Authority, in 2018, the ENO component of this tariff should be up to 115.7 million euros.

³⁰ In Slovak: *Rozhodnutie ministerstva hospodárstva o takzvanom všeobecnom hospodárskom záujme (VHZ)*.

³¹ Look to the official reports from the SE, or positions of the SE in negotiations with the Regulatory Office for Network Industries. SE, for instance, appealed the decision of the URSO in early 2017, but the regulatory board supported URSO's decision in August 2018.

Table 4. Trends in ENO energy production and level of the surcharges.

	2012	2013	2014	2015	2016	2017	From 01.01.2018	From 01.09.2018
Supplied energy in GWh	1,630	1,542	1,466	1,425	1,350	1,350	1,350	1,350
Surcharge EUR/MWh	31.99	45.7	63.4	66.3	70.7	70.7	72.6	85.7
Total surcharge in mil. EUR	52.1	70.5	93	94.5	95.5	95.4	98	115.7

Source: URSO, 2018

When we analyse trends in ENO energy production and the level of the surcharges (Table 1), it is clear that subsidizing the lignite mining through surcharges on energy is an increasingly bigger burden paid by the consumers. The official justification for the changes is increasing costs of the permits needed under the European Emission Trading System (ETS).

Increasing costs of the emission permits also indicates a deeper problem with the operation of ENO. Although the decision on general economic interest is valid till 2030, SE claims that unless substantial investments are made prior to the 2021, TPP will not meet technical and environmental limits. According to the official press release of the company, “the operation of the Nováky power station after 2021 and 2023 respectively is problematic. The lifetime of several key parts of the Nováky power station is nearing its end, and if this power plant is to operate after 2023, it would be necessary to spend tens of millions of euros in the reconstruction and renewal of the plant. Without this investment, the power plant could not be operated safely and reliably and meet all legal, technical and environmental limits.”³²

ENO as a heating source

The ENO produces heat by combined heat and power generation from the brown coal (in recent years, combined with biomass). The heat supply is provided for own consumption of the TPP and for the city of Prievidza, located 14 km from the ENO plant. Besides the town, heat is also supplied to industry and households in Nováky and the Koš municipality. Another municipality connected to the heat supply is village Zemianske Kostolány. The heat supply is important for many public and private sectors buildings, schools, offices, institutes, and others. Nearby firms like Porfix, Xella, and Vojsko Zemianske Kostolány benefit from the heat and steam supply.

³² More information in Slovak at <https://venergetike.sk/banikom-sa-podla-sas-vyhrazali-vyhadzovom-ak-nedonesu-podpisy-pod-peticiu/>

From the perspective of phasing out coal, there is an important issue of heating for largest regional settlement, Prievidza. Since 1987, ENO provides (as a part of co-generation) heat for the inhabitants and public buildings. A constructed heat feeder line to the town of Prievidza has a capacity of 137 MWt. It is 13.2 km long, using a pipeline diameter of 2 x DN 600. According to the SE data, both the feeder line and other heat supply equipment provide from the ENO a source for heating 15,000 dwelling units and heat supply in steam to the surrounding industrial works.³³

The heating operates in the city under the Prievidzske tepelne hospodarstvo PLC (Public Limited Corporation). The town has 51% of the shares, while the mining company owns the minority share. The majority owner had a longer term dispute about decision-making procedures in the company, where the minority owner passed key managerial rights, but it was recently able to change the system and now effectively controls the company.³⁴

Prievidzske tepelne hospodarstvo PLC has the dominant position in the market, and in the case of closing mine operations, would require changes in the source of heating, while the system of the distribution would require adjustments based on the type and location of the new source or sources.

There is currently no strategy that could replace the heat, but there are various opinions among the key stakeholders (or in this case, shareholders). There is a tendency to support using some sort of the lignite for the heating even after the mine closure, while an alternative solution would be to change the complete source of the heat and replace it with gas, biomass, and/or other renewable sources.

Increasing costs of the permits needed under the European Emission Trading System (ETS) was recently reflected by the URSO decision to increase the cost of heating in Košice and Žilina, while others will most likely follow. The parameter entering the regulatory formula for heat increased between years by 27%, by almost € 9 per megawatt hour (MWh). We may assume that using lignite would be increasingly expensive and would require substantial investments to fulfil legal, technical, and environmental regulations.

2.7. 1.6 Environment

2.7.1. 1.6.1 Nature and landscape

The region is situated in the middle of the hilly countryside between the mountains and their territories (Strážovské vrchy, Mala Fatra, Kremnické vrchy, and Vtáčnik). The region of Prievidza has been, in the recent years, significantly outpaced by other regions, more

³³ More information (in English) at the company web site: <https://www.seas.sk/elektrarne-novaky>

³⁴ Personal interviews, September 2018.

successful in building of a positive image with attractions for permanent and temporary inhabitants and visitors.

On the other hand, there is an important factor, which is the visual appeal of the area. It is mining, industrialisation, and later on deindustrialisation of the area. Post WWII industrialisation, propelled by priority for the heavy industry of coal and iron, was accompanied not only by rapid construction of industrial buildings but also by newly erected blocks of flats – often built side by side with destruction of former towns and villages.

Regional development is a typical example of the historical development and industrialization of the country. It was heavily affected by the industrial revolution based on the exploitation and processing of mineral wealth. The socialist economy, especially in the 1950s and 1960s, did not take into account longer-term concerns for the cultural and environmental heritage.

When the post-1989 transformation began, the main competitive advantage of the region became one of its main threats. There was initial decline of the region with the downsizing of production and deindustrialisation. It was also the time when discussions about environmental liabilities associated with development patterns started.

The forests made up to 55% of the total area of the Prievidza region. This scale provides a good starting point and perspective for the future for ensuring ecological stability and the creation of the recreational potential of the area. The main tree species are oak, beech, spruce and fir spruce; however, industrial and mining activities have significantly affected this environment. There is need for the implementation of eco-stabilization measures and investments in the environment.

The development of industry and the extraction of mineral resources have made the region a highly polluted area. There are negative trends in many key environmental indicators. More than 55% of the population lives in areas with severely impaired environmental quality. If we look specifically at the water - according to the degree of contamination, we find in the 3rd groundwater quality class as much as 45% in the Prievidza area, 16% in the Handlová area, up to 83% in the Nováky region, and 71% in the Bojnice area.

The quality of the environment is of increasing concern among the population and is a basic and necessary precondition for implementation of the development plans in tourism and post-industrial development.

2.7.2. 1.6.2 Air pollution

The most important pollutants in the atmosphere are sulfur oxides (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), hydrocarbons, organic substances, and particulate matter (PM), which are mainly related to large industrial sources (energy, chemical industries). The region of Prievidza is the region most heavily loaded with emissions of solid pollutants in Slovakia. The region is also exposed to extraordinary negative values on the first strides of national statistics in other emission issues (sulfur dioxide, nitrogen oxide, carbon monoxide). Since the stability of the area is heavily influenced by mining activity and since the region faces problems associated with slope deformations, the management of undermined areas and (former) mining areas and facilities is an inevitable question of future investment. As illustrated in Table 5, the main sources of air pollution are affiliated with mining and energy production.

Table 5. Main sources of the pollution and type of emissions in HNR.

Source of the pollution	Emissions
ENO Zemianske Kostofany	PM, SO ₂ , NO _x , CO
Fortischem a. s., Novaky	PM, NO _x , SO ₂ , CO
Hornonitrianske bane Prievidza	PM, SO ₂
Handlovska energetika Handlova	NO _x
KRONOTIMBER SK, s.r.o., Lehota pod Vtacknikom	PM

Source: SHMÚ, 2016.

When analysing 2016 data from Slovak Hydro-Meteorological Institute, the Horná Nitra region is clearly indicated as one of the most problematic areas in Slovakia.³⁵ There are two monitoring stations in the region: Prievidza, Malonecpalska and Handlova, Morovianska cesta.

Prievidza/Malonecpalska reported in 2016 a total of 16 days when the threshold limit for NO₂ was overcome. For PM¹⁰ there were 23 occasions and for PM^{2.5}, 21 days all together. The station also reported ad hoc problems with arsenic. An emissions model calculation model (CEMOD) confirmed the increase in sulfur dioxide concentrations in the air in 2015 as compared to 2014 in the territory of the Prievidza District, as a consequence of the increase in the emission streams from the ENO, the source of the air pollution.

Handlova/Morovianska cesta reported 23 violations of the limits for PM¹⁰ and 16 for PM^{2.5}. The largest area of localities with higher concentrations of sulfur dioxide is around the most

³⁵ SLOVENSKÝ HYDROMETEOROLOGICKÝ ÚSTAV: Hodnotenie kvality ovzdušia v Slovenskej republike – 2016.

prominent sources of sulfur dioxide pollution. According to the results of mathematical modelling, three stations in the Prievidza district reported about 80% of total of violations of limits in Slovakia. Not surprisingly, localities in the vicinity of ENO are the most problematic in the country.

On the other hand, there has been some positive development recently. Extensive reconstruction of ENO B1 and B2 blocks, including, but not limited to improvements to the decomposition devices (deSOX, deNOX, SNCR, electrostatic precipitators) was implemented under the pressure of stricter emission limits applicable on 1 January 2016. The reconstruction has positive outcomes in the drop in the amount of discharged emissions of basic pollutants.

The Nováky power plant was the second largest producer of sulfur dioxide and nitrogen oxide emissions in 2016 and the third largest producer of solid pollutant emissions in the Slovak Republic. Another major source of air pollution in the region is the chemical plant FORTISCH located in Nováky, producing chemical products made from PVC. The plant is among the five biggest producers of solid pollutant emissions in the country. The region of Prievidza is thus ranked among the regions of the Slovak Republic producing the most emissions of basic pollutants and, in particular, sulfur dioxide (in 2016, the second largest producer behind the Košice region) and nitrogen oxides (the third largest producer behind Košice and Bratislava in 2016). Yet, compared to the previous year, this is a fundamental decline.

2.8.

2.9. 1.7. The region and the cohesion policies

2.9.1. 1.7.1. Programming period 2007-2013

Table 6 analyses the support from the Structural and Cohesion Funds (SF/CF) in the period 2007-2015 in the Horná Nitra region. It lists only regional projects, where a beneficiary had its seat in the Horná Nitra region³⁶.

The total amount of the regional projects was €4,788.8m and the average per inhabitant amount was €1261.9 in the period 2007-2015 in Slovakia. The Horná Nitra region received €143.72m in the same period. The Horná Nitra region accounted for the below-average spending by SF/CF. Spending per inhabitant was €826.9 in the Prievidza district and €676.2 in the Partizánske district in the same period.

³⁶ The Horná Nitra region also benefited from the national projects, e.g. in fields of active labour market policies. Regional shares of national projects are not available in Slovakia.

The public sector was the major beneficiary of the SF/CF projects in the Prievidza and Partizánske districts. The SF/CF projects targeted the modernisation, reconstruction, and redevelopment of the basic infrastructure:

- Item 'General public administration activities' received €49.24m, one third of the total support by the SF/CF. Most projects under this item were allocated via the Regional Operational Programme (ROP). Typical projects included the reconstruction and revitalisations of town centres, the modernisation of local roads, building pedestrian zones, and reconstructing public lighting.
- The construction of roads and railways was the second most important target of support by the SF and CF (€32.85m). The support was channelled via the Operational Programme Transport and was implemented in one single project in the Prievidza district. The project improved the road quality and increased road safety on the rail crossing. The most important road segments included I/50 Nováky - Prievidza (Banská) TEN-T (11.054 km), and I/50 Veľká Čausa - Handlová TEN-T (10.908 km).
- Projects in water, sewerage, and waste management were financed by the Operational Programme Environment (OPE). Projects allocated €19.06m and supported improvements in air quality, the adaptation to and mitigation of climate change, the reconstruction of sewerage plants, and building a biogas station.
- Other important allocations included building an LPG station and the modernisation of public transport in the Prievidza city (€5.44m), the modernisation of local health care facilities (€4.16m), and the development of the Bojnice Zoo (€4.18m).

Support given to the private sector basically followed patterns of regional economic specialisation. The highest allocations targeted the manufacture of rubber products (€3.68m), the manufacture of articles of concrete (€2.49m), the manufacture of footwear (€1.70m), and the manufacture of other furniture (€1.70m). It should be noted that some regional firms also benefited from generous state aid (see next chapter).

Table 6. Support from SF/CF in the Horná Nitra region in the period 2007-2013/15 (€m), by NACE code of beneficiary. *Source:* Office of Deputy Prime Minister (OLAP Cube) and authors' computation. Note: NACE code by project beneficiary.

NACE	activity	Prievidza district	Partizánske district	Total
03.2	Freshwater aquaculture	0.00	0.74	0.74
05.2	Mining lignite	0.22	3.59	0.22
14.1	Manufacture of wearing apparel	0.34	0.00	0.34
15.2	Manufacture of footwear	0.35	1.36	1.70
16.2	Manufacture of products of wood,	0.04	0.23	0.27
17.2	Manufacture of articles of paper	0.00	0.31	0.31
22.1	Manufacture of rubber products	3.68	0.00	3.68
22.2	Manufacture of plastics products	1.08	0.00	1.08
23.6	Manufacture of article of concrete	2.49	0.00	2.49

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25.9	Manuf. of other fabricated metal products	1.10	0.00	1.10
28.9	Manuf. of other special-purpose machinery	1.29	0.44	1.73
31.9	Manufacture of other furniture	0.98	1.25	2.23
35	Electricity, gas, steam	0.00	4.00	4.00
36-38	Water, sewerage, waste management	5.83	13.24	19.06
42.1	Construction of roads and railways	32.85	0.00	32.85
43.2	Electrical, plumbing activities	0.00	0.34	0.34
45-46	Wholesale trade, repair	0.24	0.00	0.24
49.31	Urban and suburban passenger transport	5.70	0.00	5.70
55-56	Accommodation & food	2.94	0.00	2.94
72-74	Professional & scientific activities	0.23	0.06	0.30
84.1	General public administration activities	40.67	8.57	49.24
85	Education	1.53	0.31	1.84
86-87	Human health	3.68	0.48	4.16
91.04	Botanical and zoological gardens	4.18	0.00	4.18
93.1-93.2	Sports & recreation	1.40	0.00	1.40
94.9	Activities of other membership org.	1.57	0.00	1.57
Total	Total	112.43	34.92	143.72

2.9.2. 1.7.2. Programming period 2014-2020

Table 7 analyses support from the European Structural and Investment Funds in the period 2014-07/2018 in the Horná Nitra region. It lists the contracted amounts of regional projects, where a beneficiary had its seat in the Horná Nitra region.

The total amount of contracted projects was €33.90 by July 2018. As in the previous programming period, the public sector was a major beneficiary of the ESIF projects in the Prievidza and Partizánske districts:

- The item 'General public administration activities' received €18.55m, over half of the total support by the ESIF. Most projects under this item were allocated via the Integrated Regional Operational Programme (IROP) and the Operational Programme Quality of Environment (OPQE). Typical projects included waste management and remediation in towns and villages, and increasing energy efficiency in municipal buildings (including local schools).

- The VIPO Partizánske is active in R&D and the production of machines and electronic systems. The company received five grants for ‘Establishing R&D Centre in Advanced Rubber Technologies’ (€5.87m) from the Operational Programme Research and Innovation (OPRI)³⁷.
- Local schools and other educational facilities of the Horná Nitra region benefited from support given by the Operational Programme Human Resources (OPHR) and IROP. Typical projects aimed at local education included (a) the modernisation of technical equipment, and (b) improvements in teaching programmes. The total amount of support given to the local education was €2.48m.

Table 7. Support from ESIF in the Horná Nitra region in the period 2014-07/2018 (€m) by NACE code of beneficiary

NACE	Activity	Prievidza district	Partizánske district	Total
11.01	Distilling, rectifying and blending of spirits	0.00	0.21	0.21
16.2	Manufacture of products of wood	0.90	0.00	0.90
20.14	Manufacture of other organic basic chemicals	0.32	0.00	0.32
25	Manufacture of fabricated metal products	0.42	0.00	0.42
28.2	Manuf. of other general-purpose machinery	0.00	5.87	5.87
28.9	Manufacture of other special-purpose machinery	0.68	0.00	0.68
30.3	Manufacture of air and spacecraft	0.27	0.00	0.27
38.1	Waste collection & treatment	1.77	0.00	1.77
46.9	Non-specialised wholesale trade	0.24	0.00	0.24
70.2	Management consultancy activities	0.38	0.00	0.38
73.11	Advertising agencies	0.00	0.11	0.11
81.10	Combined facilities support activities	0.00	0.56	0.56
82.9	Business support service activities n.e.c	0.38	0.00	0.38
84.11	General public administration activities	16.39	2.16	18.55
85	Education	1.66	0.82	2.48
94	Activities of membership organisations	0.62	0.14	0.76

³⁷ The Ministry of Education, Science, Research and Sports suspended several calls on industry R&D centres in 2017. VIPO projects were also suspended.

Total	Total	24.04	9.86	33.90
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Source: Office of Deputy Prime Minister (OLAP Cube) and authors' computation. Note: allocations refer to contracted projects. NACE code by project beneficiary.

2.9.3. 1.7.3. Support from the national resources/state budget

Support given to regional businesses was provided via the investment aid and the MINIMIS schemes. Foreign firms bringing new technologies and creating jobs were major beneficiaries of state aid. Investment aid was allocated via job and equipment subsidies and tax reliefs. The total sum of investment aid was €14.048m³⁸. Investment aid was provided to two businesses: (1) Iljin Slovakia (€1.548m in 2006, all in tax reliefs), and (2) Brose Prievidza (€12,50m in 2015, €3.5m in tax reliefs and €9.0m in subsidies). The MINIMIS schemes allocated €1.763m to 16 out of 20 large businesses in 2015-2018³⁹ in the Horná Nitra region. VIPO Partizánske was the single largest beneficiary of the MINIMIS schemes (€0.763m). A list of major businesses and beneficiaries of state aid is provided in Annex 1.

The Horná Nitra region is already experiencing its transition from the extraction of primary resources and energy production towards manufacturing. The region benefited from an influx of FDI, state aid to some key investors, and also from infrastructure-orientated investments by the SF/CF. The Horná Nitra has already developed a well-diversified regional economy. The economic specialisation of the region developed around the specialisation of the Slovak economy. Manufacturing exports accounted for 90% of the Slovak GDP in 2017. Cars and car-parts generated 25%, articles of electrical engineering 18%, and articles of machinery 11% of the total manufacturing exports in the same year. The abovementioned industries were covered by the Implementation plan of the Slovak RIS3 document⁴⁰. All these industries operated in the Horná Nitra region in the 2010s.

The gradual decline of the coal mining industry has not been accompanied by rising unemployment rates. The region has already enjoyed some inflows of FDI. The unemployment rates and wage levels are comparable with those in other non-Bratislava regions in Slovakia. Major regional employers enjoyed steady growth in their revenues. They also announced plans for the further expansion of their businesses. Moreover, the Horná

³⁸ Source: Ministry of Economy (2018): [Zoznam podnikateľských subjektov, ktorým bolo schválené poskytnutie štátnej regionálnej pomoci](#) {List of business approved for the state regional aid}

³⁹ Source: The Antimonopoly Office of the Slovak Republic (2018). Note: Data on the minimis aid is available only for period 2015-2018. List of the de minimis support can be found at: <https://semp.kti2dc.sk/Home/About>

⁴⁰ UPVII (2017): [Implementačný plan stratégie výskumu a inovácií pre inteligentnú špecializáciu Slovenskej republiky](#) {The Implementation Plan of the Slovakia's Smart Specialisation Strategy}.

Nitra region is likely to reap the benefits coming from the activities of two large car-makers established in the neighbouring regions. Four large car-makers were operating in Western Slovakia by 2018. Networks of car-makers' suppliers have been extended and deepened in the last decade. There is no doubt that the expansion of the automotive industry is a natural way to manage the transition away from coalmining in the Horná Nitra region. The transition is assisted by the availability of human resources. The region operates a network of secondary schools and vocational training institutions. The schools have signed agreements on dual education with major regional employers.

Any regional economic policies should promote the continuation of the abovementioned trends. National and European infrastructure investments should concentrate on improvements regarding road connections with major industrial centres in the Nitra and Žilina districts, and new eco-friendly energy sources.

The regional and local planning documents highlight the importance of tourism for future economic development. The importance of tourism in the regional economy, however, should be considered with care. All the major tourist attractions of Horná Nitra are concentrated in Bojnice town. Spa tourism is the most valuable round-the-year product. Any significant expansion in spa tourism might hit the environmental limits (e.g. the stock of geothermal resources). Other tourist products (the castle, Zoo, and thermal swimming pools) are tied to the summer season. The Horná Nitra region lacks any high mountains. Horná Nitra's skiing resorts cannot compete with those in the High and Low Tatra mountains. The region also has limited potential for business and congress tourism. The tourism business depends on a low-skilled / low-waged labour force, and accounts for seasonal patterns of employment. Tourism, therefore, should be considered as complementary, rather than a fundamental economic activity in the Horná Nitra region.

The combined effects of the economic boom and some trends in population development contributed to the rapid and deep decline in unemployment rates in late 2010s. All major regional employers reported problems with the availability of the workforce. The number of unemployed people per job vacancy hit a record low by 2018. Demographic trends may partially mitigate the impacts of the coalmine closure. Some miners from the HBP coalmine will most likely transit into retirement. Current demographic trends (low birth rates and high outmigration rates), however, are significant challenges for the future development of the regional economy. Future economic growth may boost wage levels and reverse trends in internal migration in the Horná Nitra. Major regional employers already import their workforces from abroad and there is support for opening the space for more workers from abroad. This indicates that many employees could find work outside the mining industry, while the others might benefit from offsetting projects supported by a cohesion policy. A combination of positive employment trends and new support to new work opportunities should be able to counterbalance any negative impacts from the mine's closure.

3. SECTION II.

3.1. 2.1. Context of strategies, plans and programmes

The analysis in the previous chapter points to the need to focus attention on counterbalancing potential job losses in manufacturing, electrical engineering, and automotive industries. These are the economic areas with the highest potential for creating new well-paid labour opportunities. In this section, we focus on major national, regional, and local planning documents and discuss their importance for regional economic specialisation.

The local strategies analysed in this chapter do not sufficiently specify areas of economic specialisation. The strategic parts of the documents we focus on mention some technologies and activities to be supported: biotechnologies, mechatronics, nano-technologies, and tourism.

The Programmes of Economic and Social Development (PESD) for the Trenčín region and the cities of Prievidza, Handlová, Nováky, Bojnice, and Partizánske do not explicitly set economic activities that are key for the future development of the region. The PESD documents mention (a) the current profiling industries and (b) the network of secondary schools that is important for the development of human resources.

The RITS TSR document concentrates on regional transport and public services (health care, education, and water management). As for economic specialisation, the document declares support for creative industries and tourism.

The 2007-2013 RIS TSR listed some generic policy instruments that are important for supporting the regional system of innovation (technology transfers, support to regional innovation infrastructure, financial support schemes, incubators, and science and technology parks).

The real powers of the self-governing regions (SGR) and municipalities are limited by their low financial resources. Regional and municipal resources hardly compare to the generous support for regions and municipalities provided by the ESIF. Regional governments support drafting regional development documents and/or innovation strategies. Targets and policy measures suggested by the regional innovation policies may resemble 'wish lists' but at least provide a general understanding of the development of innovations in the region.

The key policy documents relevant for the future aiming of cohesion policy and support are the upcoming Action Plan (AP) and the National Strategy. They should define the strategic economic activities to be supported and developed in the region. The Action Plan/National Strategy is in progress; at the preliminary stage, they set out for priority areas with their own pillars. For the purpose of the report, we work with a draft available in September 2018.

3.2. 2.2. Existing policy and planning framework

Eight Slovak (NUTS 3) regions and 2,927 municipalities draft and implement their own planning and development documents. The policy goals and policy instruments mentioned in the documents have to respect the executive powers and financial resources set out by Slovak law.

The 302/2001 Law on Self-Governing Regions provides eight self-governing regions (SGR) (NUTS 3 level, 'Vyšší územný celok', VÚC in Slovak) with considerable responsibilities related to the 'design and implementation of programmes for the social, economic and cultural development of the regions'⁴¹. Some responsibilities are reserved for the central government in Slovakia. The 302/2001 Law, for example, makes no reference to competences in support of regional innovation and research systems. If a region wants to support research and innovation, the usual way is to include these items into 'support to regional planning and development'. The SGR were given competences in support of human resources. The whole system of secondary education is managed by regional governments. Regional governments also have considerable powers in setting quantitative targets and quality standards in secondary education, including curricula. Grants and tax transfers from the central government are major sources of finance for the SGR. The SGR have to use these transfers for pre-defined allocations in regional education, health care, social care, etc. Discretionary spending by the SGR is rather limited.

The 369/1990 Law on Municipal Governments⁴² and the 582/2004 Law on Municipal Taxes and Levies set out the powers of the local governments in Slovakia. The transfer of income tax from the central government is the main source of municipal finance. Municipalities also charge some local taxes.

The real powers of the SGR and municipalities are limited by their low financial resources. Regional and municipal resources hardly compare to the generous support for regions and municipalities from the ESIF. The ESIF programming documents are designed and

⁴¹ Indent 4 of the 302/2001 Law explicitly specifies areas of policy intervention for the SGR: (a) social, economic and culture development of the region; (b) regional planning and development; (c) regional transport; (d) regional secondary education; (e) regional healthcare and social welfare; (f) regional culture and culture monuments; (g) regional tourism and sports; (h) co-operation with municipalities; and (i) cross-border co-operation with self-governing regions in other countries.

⁴² Indent 4 of the 369/1990 Law sets key responsibilities of municipal governments: 'granting permits for business activity', 'building and maintaining local roads', 'managing public services, including waste management', 'protecting environment', 'supporting local health care, culture and sports', and 'developing local business and investment activities aimed at needs of local citizens and local government'.

implemented by ministries and their agencies, and funded from the state budget. The preparation of strategic policy documents is a multilateral affair and involves dozens of participants from the public and private sectors. The units and departments of the central government ministries provide for the initial drafting and the co-ordination of key stakeholders. Draft materials are discussed in workshops attended by rectors of the most important Slovak universities, the Slovak Academy of Sciences, directors and/or representatives of large industrial enterprises, and industry and employer associations. Regional governments comment on draft documents, but the central government is not bound to incorporate regional views into national strategies.

The division of competences and financial powers between the (a) central government, and (b) the SGR and municipal governments explains why regional and municipal planning documents contain very few details on economic and technology specialisation. Some regional and municipal development documents mention industries and economic activities with development potential, but none of these documents set specific targets in terms of smart specialisation.

Regional governments support the drafting of regional development documents and/or innovation strategies. Targets and policy measures suggested by regional innovation policies might resemble ‘wish lists’ but at least they provide a general understanding of the development of innovations in the region. Moreover, regional governments are able to provide administrative and organisational support in terms of establishing regional networks and platforms for innovations. The municipal development strategies concentrate on targets in town planning and local public services (regulated by the 369/1990 Law) but are quite vague about future economic specialisation (Table 8).

Table 8. Areas of regional specialisation.

	RITS TSR 2014-2020	RIS TSR 2007-2013	PESD TSR 2013-2023	PESD Príevidza 2016-2023	PESD Nováky 2018-2024	PESD Handlová (1)	PESD Bojnice 2015-2020	PESD Partizánske 2016-2022
Areas of specialisation/ development								
agriculture & food			x	x	x			
mining				x	x			
manufacturing		x	x	x	x	x		
automotive		x	x	x	x			
electrical engineering		x		x				
KIBS			x					
creative industries & ICT	x		x					
tourism development	x		x	x	x	x	x	x

Human resources (secondary schools, vocational training)				
agriculture & food	x	x	x	
mining		x		x
construction		x		
machinery / mechatronics		x	x	x
automotive		x		
electrical engineering		x		x
electronics				
chemistry			x	
rubber and plastics			x	x
business academy		x		
tourism and catering		x		
ICT				x

Sources: regional and local programming documents. Notes: (1) under development in 2018.

3.3. 2.3. Economic specialisation in regional and municipal planning documents

Major regional and local programming documents in the Horná Nitra region include: the Regional Integrated Territorial Strategy for the Trenčín Self-Governing Region (RITS TSR) 2014-2020, the Regional Innovation Strategy for the Trenčín Self-Governing Region (RIS TSR) 2007-2013, and the PESD in the cities and towns of Prievidza, Nováky, Handlová, Bojnice, and Partizánske. Areas of specialisation / future developments covered by the abovementioned documents, as well as the network of secondary schools, are summarised in Table 4.

The RITS TSR document concentrates on regional transport and public services (health care, education, and water management). As for economic specialisation, the document declares support for creative industries and tourism. The document also analyses the system of regional secondary education and lists the professions most demanded by regional employers.

The 2007-2013 RIS TSR listed some generic policy instruments that are important for supporting the regional system of innovation (technology transfers, support to regional innovation infrastructure, financial support schemes, incubators, and science and technology parks). The introductory analysis mentioned the strong position of manufacturing, electrical engineering and the automotive industries, but did not specify any areas of economic specialisation. The strategic part of the document mentioned some technologies and activities to be supported in competence centres: biotechnologies, mechatronics, nano-technologies, and tourism.

The PESD for the Trenčín region and the cities of Prievidza, Handlová, Nováky, Bojnice, and Partizánske reflect the role of regions and cities set out by the 302/2001, 360/1990, and 582/2001 laws. Neither the region nor the municipalities attempt to go beyond the competences and (relatively modest) financial resources granted by the abovementioned

laws. Regional and municipal governments concentrate on small-scale development projects but do not prepare their own visions and strategies for smart specialisation. No PESD document explicitly sets out the economic activities that are key for the future development of the region. The PESD documents mention (a) the current profiling industries, and (b) the network of secondary schools that is important for the development of human resources.

The PESD documents most frequently refer to manufacturing, machinery, the automotive industry and electrical engineering, when identifying the competitive edge of the Prievidza district. The PESD for Partizánske city identifies its traditional strength in the rubber, leather, and footwear industries. All the PESD documents consider tourism to be a prospective activity for a generation of regional jobs and income.

The PESD documents also list the network of secondary education in the Horná Nitra region (including vocational training). The region benefits from a decent system of secondary education.

Three general secondary schools ('gymnasium') prepare students for university studies in the Prievidza district and one in the Partizánske district. The future development of human resources corresponds with the current economic profile of the region. The Horná Nitra region has a good network of professional secondary schools. Major study programmes include mining technology, mechatronics, and electrical engineering. No university has its seat in the region; however, the Faculty of Management Science and Informatics (University of Žilina) operates its local branch in the city of Prievidza. The PESD documents affirm support for the further development of human resources in traditional regional industries.

3.4. 2.4. Action plan and national strategy

The transformation process is progressing and, as illustrated in Figure 7, the key actor in the process is the *Work Group for Preparation and Implementation of HNR Transformation* (WG). The WG is coordinated by the *Office of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization*, and its activities are guided by the frameworks of European and national strategies, programmes, and policies. The key document guiding the transformation will be the AP to be followed by the National Strategy.

The level of a national strategy should ensure cross-sector coordination and support the implementation of declared goals. In parallel, the Association of Towns and Villages of the HNR developed its Local Action Plan, which in the summer of 2018, was merged with the WG process. The association has been fully integrated in the activities of the WG. It indicates that the AP and the National Strategy will be prepared in a participatory way, reflecting the broad perspectives of the stakeholders. As mentioned in the introduction to this section, this AP will be finalised and available only after the deadlines for the report. For the purpose of the report, we work with the draft available.

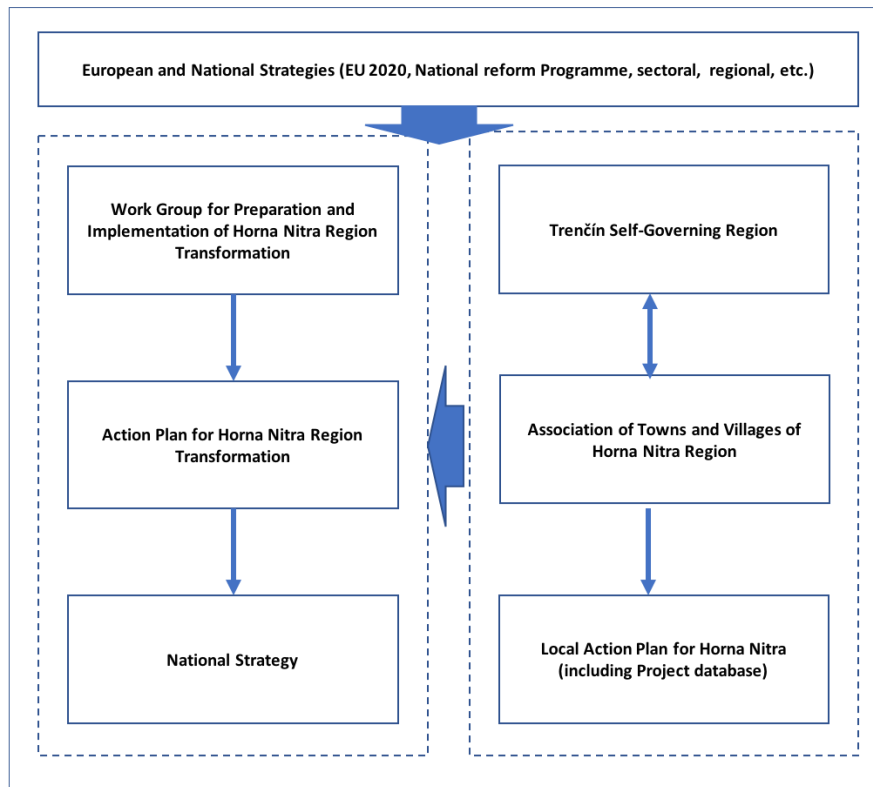
The future National Strategy should guide the transformation process, while respecting and building on the existing policy and planning framework. We may assume that it will follow the already presented structure based on four priority areas with their own pillars. The priority areas are:

- *Priority 1/Creation of sustainable labour opportunities:* Here it focuses on research and innovation, conversion and diversification of the industrial production and services, increasing the share of locally produced energy, energy conversion, agriculture, and tourism.
- *Priority 2/Accessibility:* Priorities are the pillars of inter-regional transport modalities and transit and the improvement of regional transport sustainability.
- *Priority 3/Development and stabilisation of the labour force:* Pillars here are education and life quality.
- *Priority 4/Addressing environmental liabilities and health impacts from mining and related activities:* Here it deals with environmental liabilities, environmental conversion, and environmental infrastructure, health care, and social services.

The AP focuses on three identified and interlinked areas of social, economic, and environmental investments for transformation. The AP's financing strategy is based on a combination of internal and external resources, where a key role should be played by the ESIF together with support from the state budget and other approaches based on PPP, revolving schemes, and alternative financial tools.

Figure 7. Schematic description of the stakeholders and process leading to the National Strategy's adoption

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4. SECTION III

4.1.

When discussing projects focused on offsetting labour opportunities, we need to discuss two factors: the number and time. As we note in Chapter 1.2.2 (*The miners – age structure and data of the employees*), most recent number of mining company employees is 3782. Besides direct employees affected by the threat of losing their jobs, we have to calculate additional indirect impacts. The calculation of indirect jobs is always tricky and involves a great deal of uncertainty. There are approaches to these calculations based on the Input-Output models or Economic Base Theory. The latter suggests that for every "basic" job added, other "non-basic" jobs arise from the goods and services demanded by the people making (generally) higher wages in the basic sector. For estimation, we may also use the Base Multiplier used to project the amount of indirect employment that is created from the addition of direct employment: $Base\ Multiplier = Total\ Employment\ Year\ i / Basic\ Employment\ Year\ i$. The JRC Report from 2018 (EU coal regions: opportunities and challenges ahead)⁴³ works with number of indirect jobs in coal-related activities at intra- and inter-regional level. The number of intra-regional is calculated to be 1189 and inter-regional 2058. It means a total of 3247 jobs.

The JRC special Report on Horná Nitra⁴⁴ estimates HBP group activity leading to indirect economic benefits in the Upper Nitra area of 3000 jobs. The JRC Report refers here to other business activities (e.g. heat production and supply, electricity generation, rubber industry, engineering industry, transport services, food industry) are linked to the coal sector. These calculations do not confirm the estimates of HBP, or the conclusions of the European Economic and Social Committee from 2016 (CCMI/138), which account for up to 2.5 times the job per one directly in mining and the 3000 jobs seems as the most realistic estimation.⁴⁵

In the case of primary and secondary jobs, we face two interlinked problems. The number of jobs lost is rather high for a region of this size, especially direct jobs in an industry with higher wages that are usually not replaceable by opportunities in the service sector.

At the same time, offsetting mining jobs is not a simple game of 1 for 1. It requires a complex approach to regional and municipal development based on the assumption that the new economic development will generate enough opportunities for everyone. The second factor is at what time these opportunities arise.

In transforming the region, we will work with three basic scenarios based on the qualitative assessment of the major stakeholders:

- *Scenario 1 (business as usual)*: Promoted by the mining company, is part of the municipalities and has some political support on the regional and national level. The scenario builds on the

⁴³ Dias, A., et al. 2018. *EU coal regions: opportunities and challenges ahead*. European Commission, Joint Research Centre.

⁴⁴ *Socio-economic transformation in coal transition regions: Analysis and proposed approach - Pilot case in Upper Nitra, Slovakia*. European Commission, Joint Research Centre, 2018.

⁴⁵ EESC: Indigenous coal in the EU energy transition (own-initiative opinion). Dostupné na: <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/indigenous-coal-eu-energy-transition-own-initiative-opinion>

estimated amount of available coal reserves, legal requirements to utilise open mines to their full potential, and calculated with a slow and gradual phasing out of coal till 2030.

- *Scenario 2 (rapid transformation)*: Under this scenario, mines are closed by 2023, and no further investment is done to the new combustion technologies. The central heating system based on the coal is replaced by other sources.
- *Scenario 3 (partial phasing-off)*: Coal mining is phased out by 2023 for electricity production, but central heating continues using coal, and the mining activities are here only for heating purposes. Mining of the coal may run under this system beyond 2030.

The year 2023 seems to be a milestone from the perspective of investments into electricity production. As analysed in Chapter 1.5.2, ENO approaches the lifetime end of several key parts of the power station. If this power plant is to operate after 2023, it will require investments estimated by the SE Company in the range of tens of millions of euros for the reconstruction and renewal of the plant.

4.2. 3.1. Framework approach to the identification of projects

The support of projects to be financed through ESIF Operational Programmes for the transition of the Upper Nitra region from coal would require one to match the local capacities (section 1) with the strategic goals and objectives at the national, regional, and local levels (section 2).

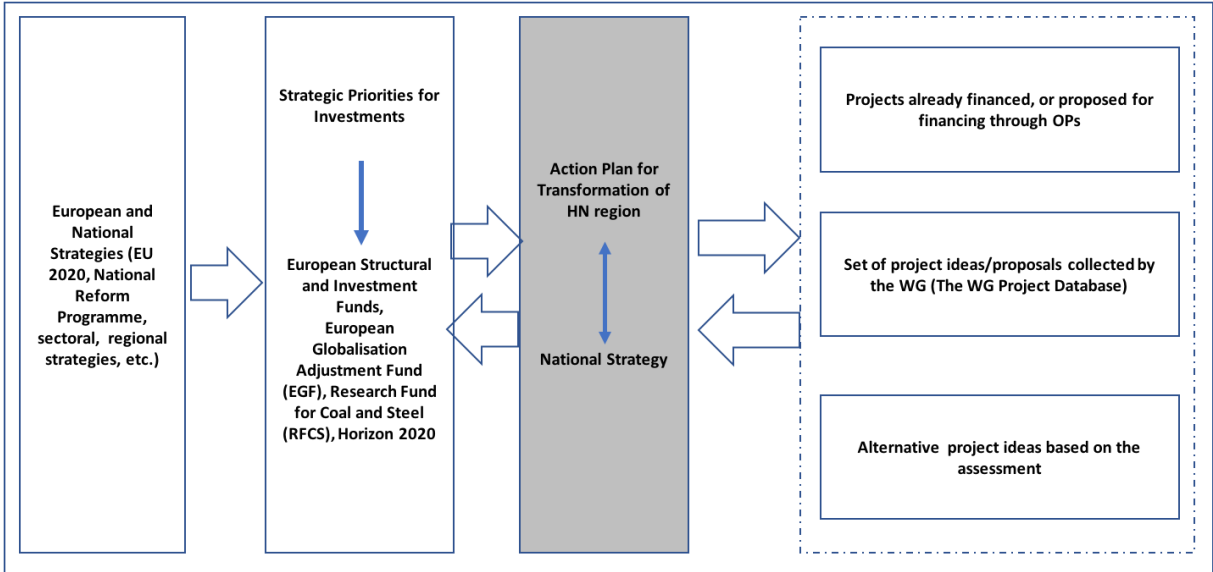
The ESIF are a central part of the transition strategy and may provide key and targeted input to the mitigation of the impacts and offset of labour opportunities affiliated with the mining closure. On the other hand, from the logic of the ESIF, there are possibilities and limitations for the use of the resources. This would also require structural adjustments to the ESIF targeting. The main identified opportunities lie in the following programmes and schemes:

- Operational Programme Human Resources
- Operational Programme Research and Innovations
- Operational Programme
- Integrated Regional Operational Programme
- Operational Programme Agriculture and Rural Development
- Operational Programme Integrated Infrastructure
- Operational Programme Quality of Environment
- Operational Programme Fisheries
- Research Fund for Coal and Steel (RFCS)
- European Globalisation Adjustment Fund (EGF)
- EU Programme for Employment and Social Innovation (EaSI)
- European Funding Research (Horizon 2020)
- LIFE (Integrated Projects)
- Modernisation Fund (2021-2030)

As illustrated in Figure 8, the upcoming Action Plan/National Strategy is being developed in the framework of the EU’s national and regional strategies and policies and programmes. At the same time, there are three main streams of projects already indicated and/or proposed by the relevant stakeholders.

First of all, there are projects already being financed through various Operational Programmes or being submitted for financing in the present programming period. The WG has, as a part of its activities, developed a database of project ideas. Similarly, *The Association of Towns and Villages of the HN Region* generated its own list of project proposals. These two databases were recently merged, and we will refer to it as the WG Project Database. There are projects that according to the qualitative and quantitative assessment could (or should) be developed, but for the time being, they are not included in the WG Project Database. Last but not least, there are various capacity building or supportive initiatives worth to considering by the EU and/or national authorities.

Figure 8. Action Plan of transformation and ESIF financing



While the projects ideas/proposals developed and set forth by the key stakeholders present an important point of departure, the analysis should not limit its scope to these resources. The approach is to identify the key sectors to be supported and to analyse the extent to which the development priorities are in harmony with the capacities of the region regarding social, demographic, and economic trends. Last but not least, it is also a matter of concern as to how much the presented project ideas (collected and foreseen) are in harmony with these priorities. The approach was, therefore, based on three interlinked research questions:

- *How much are project proposals generated by the WG in harmony with the development priorities, local capacities and assessment of national, regional, and local development priorities brought about by the quantitative and qualitative assessment?*
- *What would be a combination of national projects and demand-based approaches to supporting projects with the potential to offset and mitigate the impact of the phasing out of coal mining and related activities?*
- *How could these specific sectors and economic activities be financed through ESIF Operational Programmes and other schemes for the transition of the Upper Nitra region from coal?*

There are several assumptions and risks identified for project development, support and implementation as shown in Table 9. The specific strategies envisaged to guarantee these assumptions remain valid throughout the implementation; they are described in synthesis here. The already mentioned WG Project Database compiled by main actors reflects the interests and capacities of the local business community, municipalities, and NGOs. The projects are backed (to various degrees) by social/economic capital, experience, and capacities.

The WG project database provides an excellent starting point and important indications of the local capacities and interests; however, there is a stronger evaluation missing: to what degree are these project ideas in accordance with the national, regional, and local development plans and what are the options in terms of financing? At the same time, most of the projects would most likely need to go through a process of open competition in demand-based calls.

4.3.

4.4. 3.2. Project intentions – bottom up approach

The *Work Group for Preparation and Implementation of HNR Transformation* (WG) became the main driver in the process of transformation and created a database of project ideas that are considered a priority for the transformation. The database has been partly developed through a public participation process where four working groups at the regional level proposed project concepts, defended them, and selected those with high priority and technical backing. The outcome is the list of an 81-priority project, divided into seven clusters:

- Cluster I. Employment (22 priority project concepts)
- Cluster II. Infrastructure (9 priority project concepts)
- Cluster III. Environment (10 priority project concepts)
- Cluster IV. Human Resources (9 priority project concepts)

- Cluster V. Energy (6 priority project concepts)
- Cluster VI. Innovations (7 priority project concepts)
- Cluster VII. Tourism (18 priority project concepts)

According to preliminary estimations, the total cost of all 81 concepts would be in the range of €1,162m, while generating at least 6472 jobs (Table 9). For many of the project ideas, it is difficult to estimate job potential, so the figure here is very rough estimation. While this numbers looks impressive at the first sight, we have to consider several factors. First of all, many of the project concepts are not eligible for ESIF funding (e.g., tourism, water dam) or if supported, they provide only temporary jobs for external companies and their subsidiaries (e.g., transport or water/sewage infrastructure). Only some of the projects are backed by municipalities and entities with strong capacities, financial and human capital, and expertise.

The key factor in the transition would be offsetting relatively well-paid industrial jobs in the mining sector with sufficient opportunities in industries with higher added value. In line with all major national documents on smart specialisation and regional planning documents, the implementation plan of the Slovak RIS3 document highlights five major domains of smart specialisation. The domains include automotive and manufacturing industries, which already have a strong presence in the Horná Nitra region.

When we compare lists of the projects proposed with the outcomes of the qualitative survey, we may see differences among the districts and among the key stakeholders, as they are based on their strategic assessment of the capacities and potentials. It is clear that Prievidza's strategy is to stay as the regional industrial hub, attracting FDI and domestic investments. Four key projects identified by the municipality Pievidza are: (i) Central heat supply for Prievidza; (ii) Construction of industrial park in Prievidza Industrial zone Prievidza - West II; (iii) Development of social services in Prievidza; (iv) The municipal communal service of the Upper Nitra. The general tendency in Prievidza is to concentrate on attracting industry using the foreseen Industrial Zone Prievidza - West II, while the adjacent town Bojnice provides a recreational zone for the locals and attracting spa and wellness tourists.

The strategy of Handlová is, on the other hand, lead by a longer-term vision based on their geographical location and natural capital. It builds on making the town an attractive recreational zone focused on spas, wellness, and a high quality of life, attracting people to settle down and commute from here to work. Handlová aims, in the short and middle terms, on the continuation of its industrial heritage, planning to use ESIF for building access roads to its industrial zone. However, a majority of the project proposals are aimed at using an old stabilization hopper as a recreation zone with a golf playground, sport facilities, and free-time activities. Plans for a city spa complex, or revitalizing the city park, fall into their longer-term goals.

The key stakeholder in the transition is inevitably the HBP mining company. The management has been developing its longer-term strategy on various scenarios and timing of the mine closure.⁴⁶ What we may indicate from the selection of projects included into the

⁴⁶ Personal interviews, 18.09.2018.

database is that the strategy is based on using industrial infrastructure and manufacturing capacities (projects like creating spaces to support start-ups and/or growing businesses and entrepreneurs, research of hybrid biofuels, a bioplast manufacturing plant, innovations in repairs and production of railway wagons, or a logistics centre of biomass), and the second stream is using the mines and premises (e.g., construction of cavernous natural gas reservoirs in the mining corridors, construction of a small hydro power plant running on the mining water, research of natural microbial gas in the Horná Nitra basin for its potential exploration). Last but not least, the company plans to use its premises and industrial architecture for follow-up tourism projects (revitalization of the Cígeľ Mine area for tourism equipment, rebuilding of the Mine Tile Reservoir Area Cígeľ for the Tourism and Fisheries Facility, educational walkway and protected area Košovsko-Laskárske wetlands). A specific case is agriculture, where the HBP daughter company AGRO SEKTOR plans an enlargement of its activities in greenhouse food and fish production (in both cases, using thermal water from the mines). See Table 10 for more details.

Table 9. Project concepts generated in the region and divided by clusters.

Cluster I. Employment

No.	Project name	Project name (in Slovak)	Est. job creation	Cost Est.	Entity
1.	Creating spaces to support start-ups and/or growing businesses and entrepreneurs	Výbudovanie priestorov pre podporu začínajúcich alebo rastúcich podnikov a podnikateľov	50	50 000 000,00	HBP, a. s., Prievidza
2.	Bioplast manufacturing plant	Závod na výrobu bioplastov	50	50 000 000,00	HBP, a. s., Prievidza
3.	The municipal communal service of the Upper Nitra	Podnik komunálnych služieb Hornej Nitry	275	36 134 400,00	Town Prievidza
4.	Expansion and transport connection of the industrial park	Rozšírenie a dopravné napojenie priemyselného parku	1 000	22 018 000,00	VAŠA, s. r. o., Nováky
5.	Innovations in repairs and production of railway wagons	Inovácia opráv a výroby železničných vagónov	300	16 000 000,00	HBP, a. s., Prievidza
6.	Construction of industrial park in Prievidza Industrial zone Prievidza - West II.	Výbudovanie priemyselného parku v meste Prievidza „Priemyselná zóna Prievidza – Západ II.	NA	7 351 200,00	Town Prievidza
7.	Development of social services in Prievidza	Rozvoj sociálnych služieb v meste Prievidza	60	7 020 000,00	Town Prievidza
8.	Expansion of African Bullhead fish breeding	Rozšírenie chovu Sumčeka afrického	50	6 500 000,00	AGRO SEKTOR, s. r. o., Prievidza
9.	Industrial Zone Handlová	Priemyselná zóna Handlová	300	5 100 000,00	Town Handlová
10.	Enlargement of the greenhouse production	Rozšírenie skleníkového hospodárstva	25	4 000 000,00	AGRO SEKTOR, s. r. o., Prievidza
11.	Elderly house for miners	Banický dom dôchodcov	40	3 900 000,00	Town Handlová

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12.	Integrated plant and livestock production project in the Handlovska Valley micro-region	Integrovaný projekt rastlinnej a živočíšnej výroby v mikroregióne Handlovskej doliny	39	3 150 000,00	AGROPRODUKT SLOVAKIA, a. s., Lehota pod Vtáčnikom
13.	Ecofarm	Ekofarma	150	3 000 000,00	Centrum rozvoja záhradníctva, spol. s r. o., Prievidza
14.	Construction of the Potato Fries Plant	Vybudovanie závodu na výrobu zemiakových hranoliek	20	2 500 000,00	AGRO SEKTOR, s. r. o., Prievidza
15.	Construction of natural table water bottling line	Vybudovanie plničky prírodných stolových vôd	20	2 500 000,00	AGRO SEKTOR, s. r. o., Prievidza
16.	Building the Seniors' House	Vybudovanie domu seniorov	40	2 500 000,00	HBP, a. s., Prievidza
17.	Reduction of the energy intensity of administrative and production buildings, change of machinery, sandstone facility modernization and construction of metal paint shop	Zníženie energetickej náročnosti administratívnych a výrobných budov, obmena strojového parku, modernizácia pieskovne a výstavba lakovne kovov	8	2 160 000,00	Unistav Prievidza, a. s., Prievidza
18.	Building a fruit farm	Vybudovanie ovocného hospodárstva	10	2 000 000,00	AGRO SEKTOR, s. r. o., Prievidza
19.	Construction of a municipal social enterprise for the cultivation of flowers and tulips	Vybudovanie mestského sociálneho podniku na pestovanie kvetín a tulipánov	20	1 300 000,00	Town Handlová
20.	Home of Social Services Krásno	Domov sociálnych služieb Krásno	15	600 000,00	Municipality Krásno
21.	New building of poly-functional building	Novostavba polyfunkčného objektu	NA	180 000,00	Municipality Cigeľ
22.	Revitalization of the former Krásno cooperative	Revitalizácia bývalého družstva Krásno	40	100 000,00	Municipality Krásno

TOTAL	2512	228 013 600,00	
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Cluster II. Infrastructure

No.	Project name	Project name (in Slovak)	Est. job creation	Cost Est.	Entity
1.	Improve mobility at the Upper Nitra	Zlepšenie mobility na hornej Nitre	NA	9 145 954,00	Trenčín Self-Governing Region
2.	State Route I / 9 (E 572)	Štátna cesta 1. triedy I/9 (E 572)	NA	13 573 690,99	Town Handlová
3.	Parking House	Parkovací dom	5	7 110 447,72	Spa Bojnice, a. s., Bojnice
4.	Building of cycle paths / cycle roads	Budovanie cyklotrás/cyklochodníkov	NA	18 405 430,16	MAS Stredné Ponitrie
5.	Access road to industrial zone	Prístupová komunikácia do priemyselnej zóny	NA	40 000 000,00	Town Handlová
6.	Construction of a permanent bus station	Vybudovanie stálej autobusovej stanice	10	3 000 000,00	Town Handlová
7.	A cycling route linking the Šumonovany Water Castle with the important localities in Partizánske town	Cyklotrasa spájajúca Vodný hrad Šimonovany s významnými lokalitami mesta Partizánske	NA	2 000 000,00	Town Partizánske
8.	Static transport solution for village Bošany	Riešenie statickej dopravy v obci Bošany	NA	1 148 200,00	Municipality Bošany
9.	Road reconstruction III. classes	Rekonštrukcia ciest III. triedy	NA	336 210,00	MAS Stredné Ponitrie
TOTAL			15	115 584 932,87	

Cluster III. Environment

SUPPORT FOR COAL REGIONS IN TRANSITION

No.	Project name	Project name (in Slovak)	Est. job creation	Cost Est.	Entity
1.	Revitalization of the underground spaces and the mine surface after the mining ends	Revitalizácia podzemia a povrchu po ukončení banskej činnosti	NA	94721469	HBP, a. s., Prievidza
2.	Finishing and reconstruction of sewage system	Dobudovanie a rekonštrukcia kanalizácií	NA	50 000 000,00	MAS Stredné Ponitrie
3.	Stabilization hopper	Stabilizačný násyp	30	15 000 000,00	Town Handlová
4.	Technology for mixed municipal waste treatment and its further use	Technológia úpravy zmesového komunálneho odpadu pre jeho ďalšie použitie	3	7 579 200,00	Technické služby mesta Partizánske, s. r. o., Partizánske
5.	Completion, construction and reconstruction of public water supply	Dobudovanie, vybudovanie a rekonštrukcia vodovodov	NA	6 639 788,81	MAS Stredné Ponitrie
6.	Green Line - Mixed municipal waste processing centre	Zelená linka - Centrum spracovania zmesového komunálneho odpadu	15	4 500 000,00	Town Handlová
7.	Completion and reconstruction of sewerage in Partizánske	Dobudovanie a rekonštrukcia kanalizácie v Partizánskom	NA	1 600 000,00	Town Partizánske
8.	Obtaining composters to prevent the generatipon of biologically degradable communal waste for the Central Ponitrie region	Obstaranie kompostérov na predchádzanie vzniku BR KO pre región Stredného Ponitria	NA	300 000,00	MAS Stredné Ponitrie
9.	Purchase of sweeping and cleaning vehicles for the whole region	Nákup zemetacieho a čistiaceho vozidla pre celý región	NA	30 000,00	MAS Stredné Ponitrie
10.	Buying a municipal waste collection vehicle for the entire region	Nákup zberného vozidla komunálneho odpadu pre celý región	NA	30 000,00	MAS Stredné Ponitrie
TOTAL			48	180 400 457,81	

Cluster IV. Human Resources

No.	Project name	Project name (in Slovak)	Est. job creation	Cost Est.	Entity
1.	Horna Nitra centre of education	Hornonitrianske centrum vzdelania	NA	NA	Trenčín Self-Governing Region
2.	Experiential Science Centre in Partizánsky	Zážitkové vedecké centrum v Partizánskom	NA	NA	Trenčín Self-Governing Region
3.	Social innovation and (self) employment	Sociálne inovácie a (samo)zamestnávanie	300	3 300 000,00	Hajcman, o. z., Cigeľ
4.	United re-training and employment centre	Združené centrum rekvalifikácie a zamestnanosti	200	2 800 000,00	REALTIS, s. r. o., Bojnice
5.	Enhancing the availability of skilled labour	Zlepšenie dostupnosti kvalifikovanej pracovnej sily	NA	2 000 000,00	HBP, a. s., Prievidza
6.	Cultural and creative centre in Prievidza	Kultúrne a kreatívne centrum Prievidza	15	2 220 000,00	Jabloň, spol. s r. o., Prievidza
7.	Intensification of financial literacy for primary and secondary school pupils in Upper Nitra	Intenzifikácia finančnej gramotnosti pre žiakov ZŠ a SŠ Hornej Nitry	NA	945 488,00	Občianske združenie Hornonitran, Prievidza
8.	Reconstruction of kindergartens	Rekonštrukcia materských škôl	NA	60 000,00	MAS Stredné Ponitrie
9.	Establishment of vocational training facilities	Zriadenie odborných učební	NA	300 000,00	MAS Stredné Ponitrie
TOTAL			515	11 625 488,00	

SUPPORT FOR COAL REGIONS IN TRANSITION

Cluster V. Energy

No.	Project name	Project name (in Slovak)	Est. job creation	Cost Est.	Entity
1.	Construction of cavernous natural gas reservoirs in the mining corridors	Vybudovanie kavernových zásobníkov zemného plynu v banských chodbách	50	50 000 000,00	HBP, a. s., Prievidza
2.	Central heat supply for Prievidza	Centrálne zásobovanie teplom pre mesto Prievidza	20	40 000 000,00	Town Prievidza
3.	Logistics centre of biomass	Logistické centrum biomasy	100	7 000 000,00	HBP, a. s., Prievidza
4.	Reconstruction of the thermal centre for the recreational facility Púšť	Rekonštrukcia tepelnej centrály pre rekreačné zariadenie Púšť	NA	2 000 000,00	HBP, a. s., Prievidza
5.	Expansion of the thermal power plant source for the greenhouse economy	Rozšírenie tepelnej centrály pre skleníkové hospodárstvo	NA	1 200 000,00	AGRO SEKTOR, s. r. o., Prievidza
6.	Construction of a small hydro power plant running on the mining water	Vybudovanie malej vodnej elektrárne na banskú vodu Cígeľ	8	500 000,00	HBP, a. s., Prievidza
TOTAL			178	100 700 000,00	

Cluster VI. Innovations

No.	Project name	Project name (in Slovak)	Est. job creation	Cost Est.	Entity
1.	Centre for the Development of Underground Technologies	Centrum vývoja podzemných technológií	100	50 000 000,00	GA Drilling, a. s., Trnava
2.	Production of Green Carbon Black from waste tires	Výroba Green Carbon Black z odpadových pneumatík	30	12 000 000,00	Hutira Slovakia s. r. o., Handlová
3.	Research of natural microbial gas in the Horna Nitra basin for its potential exploration	Výskum prírodného mikrobiálneho plynu v Hornonitrianskej kotline pre jeho potenciálnu ťažbu	40	7 000 000,00	HBP, a. s., Prievidza
4.	Centre for Complex Oncology Rehabilitation	Centrum komplexnej onkologickej rehabilitácie	NA	6 819 000,00	Spa Bojnice, a. s., Bojnice
5.	Research of hybrid biofuels	Výskum hybridných biopalív	NA	5 000 000,00	HBP, a. s., Prievidza
6.	National Accelerator for Additive and 3D Printing	Národný akcelerátor pre Aditívnu a 3D tlač	NA	3 800 000,00	FORMA, spol. s r. o. , Prievidza
7.	Development and research of micro-tunneling machines for building of infrastructure projects of municipalities	Vývoj a výskum mikrotunelovacích strojov pre budovanie infraštruktúrnych projektov samospráv	15	540 960,00	Hydrosaning spol. s. r. o., Prievidza
TOTAL			185	85 159 960,00	

SUPPORT FOR COAL REGIONS IN TRANSITION

Cluster VII. Tourism

No.	Project name	Project name (in Slovak)	Est. job creation	Cost Est.	Entity
1.	Theme-fun and accommodation complex Landscape Legends in Bojnice	Tematický náučno-zábavný a ubytovací komplex Krajina legiend Bojnice	2 000	230 000 000,00	Castor & Pollux, s. r. o., Bratislava
2.	Wellness hotel Čajka + Aquapark Bojnice	Wellness hotel Čajka + Aquapark Bojnice	120	66 000 000,00	SALS, spol. s r. o., Zlaté Moravce
3.	Reconstruction of recreational facilities at Púšť for a comprehensive tourism facility	Rekonštrukcia rekreačného zariadenia Púšť na komplexné zariadenie cestovného ruchu	100	50 000 000,00	HBP, a. s., Prievidza
4.	Revitalization of the Cígeľ Mine area for tourism equipment	Revitalizácia areálu Bane Cígeľ na zariadenie cestovného ruchu	30	25 000 000,00	HBP, a. s., Prievidza
5.	Bojnice tourist and ecological enterprise - retraining and cultural center, ecological tourist transport in the region, production of organic food for tourists and guests of the region	Bojnický turistický a ekologický podnik – requalifikačné a kultúrne centrum, ekologická turistická doprava v regióne, výroba biopotravín pre turistov a hostí regiónu	217	19 300 000,00	Naše Bojnice, o. z., Bojnice
6.	City spa complex	Mestský kúpeľný komplex	40	14 500 000,00	Town Handlová
7.	Rebuilding of the Mine Tile Reservoir Area Cígeľ for the Tourism and Fisheries Facility	Revitalizácia priestoru odkaľovacích nádrží Bane Cígeľ na zariadenie cestovného ruchu a rybného hospodárstva	10	12 000 000,00	HBP, a. s., Prievidza
8.	Comprehensive project for the completion of the tourist center of Horna Nitra - destinations BOJNICE	Komplexný projekt dobudovania centra cestovného ruchu Hornej Nitry – destinácie BOJNICE	280	9 990 000,00	Town Bojnice
9.	Multipurpose water reservoir Lehota pod Vtáčnikom	Viacúčelová vodná nádrž Lehota pod Vtáčnikom	166	4 859 000,00	Municipality Lehota pod Vtáčnikom

10.	Revitalizing the city park at NsP at the Park of Culture and Recreation	Revitalizácia mestského parku na NsP na Park kultúry a oddychu	10	2 500 000,00	Town Handlová
11.	Tourist circuit of the Zemianske Kostolian monuments	Turistický okruh pamiatkami Zemianskych Kostolian	NA	1 900 000,00	Municipality Zemianske Kostoľany
12.	Recreational zone Krásno	Rekreačná zóna Krásno	30	1 600 000,00	Municipality Krásno
13.	Viewing tower at Magure in Poruba	Vyhliadková veža na Magure v obci Poruba	NA	130 000,00	Municipality Poruba
14.	Reconstruction and completion of the Observatory in Partizánsky	Rekonštrukcia a dostavba Hvezdárne v Partizánskom	2	1 223 326,00	Hvezdáreň, Partizánske
15.	Regional Information (for visitors) Center (RIC)	Regionálne informačné (návštevnícke) centrum (RIC)	8	769 000,00	OOCR REGIÓN HORNÁ NITRA BOJNICE
16.	Educational walkway and protected area Košovsko-Laskárske wetlands	Náučný chodník a chránený areál Košovsko-Laskárske mokrade	NA	500 000,00	HBP, a. s., Prievidza
17.	Handlova crown	Handlovska koruna	5	318 000,00	ASTERION, n. o., Handlová
18.	Opening of the community centre in a former mansion in Janová Ves	Otvorenie komunitného centra v bývalom kaštieli v Janovej Vsi	1	200 000,00	MAS Stredné Ponitrie
TOTAL			3019	440 789 326,00	

4.5. 3.3. Identification of projects – needs, requirements and opportunities

4.6.

Projects to be supported through the cohesion policy mechanism need to be developed in the framework of the EU, national and regional strategies, and policies and programmes, and in line with the RIS3 document and strategic goals for the Slovak Republic for 2014-2020. On the other hand, it also has to realistically build on the local capacities and opportunities. The analyses of social, economic and the environmental needs, as well as intentions and project proposals from the local stakeholders, point out to the three key areas for cohesion policy interventions: (i) Structural conditions and infrastructure (ii) Economic development and direct job creation; (iii) Post-mining activities.

Structural conditions and infrastructure: Here we refer to investments to the transport, energy, water, and waste management infrastructure as basic structural conditions for economic and social development. While water and sewage infrastructure are progressing well (see Chapter 1.5.1), there are substantial opportunities in waste management, both in terms of waste collection and treatment and in development and application of more advanced technologies for recycling.

Project *Improve mobility at the Upper Nitra* developed by the Trenčín Self-Governing Region, construction of State Route I / 9 (E 572) set forth by Handlová, together with planned reconstruction of roads of 3rd class provide a basis for solving key infrastructure challenges. Operational Programme Integrated Infrastructure, IROP, and state budget allocation would depend on the project development, land permits, EIA, and other technical requirement.

The heating system is a significant challenge. Changing the source of heat is a key opportunity for changing the energy system towards one built on increased efficiency and renewable resources. An alternative approach would be decentralised heat production. Either case would require a feasibility study to assess the potential of local renewable resources (i.e., biomass, thermal) and to assess costs and opportunities of the pipelines system currently using ENO boilers to provide heat to part of the municipalities and industries (see Chapter 1.5.2.).

Instead of a “piece meal” approach of separated municipalities (here we already see a separate project proposal solving heating in Prievidza, see Table X.), it would be good to start with a strategic decision on the already build infrastructure. Besides direct project proposals to OPs, there is an option to explore an ELENA facility developed by the European Investment Bank. The investment sectors eligible are:

(a) Energy efficiency and distributed renewable energy, including one or more of the following areas:

- Public and private buildings, including social housing, commercial and logistic properties, and street and traffic lighting to support increased energy efficiency – e.g., refurbishment of

buildings aimed at significantly decreasing energy consumption (both heat and electricity), such as thermal insulation, efficient air conditioning and ventilation, efficient lighting;

- Integration of renewable energy sources (RES) into the built environment – e.g., solar photovoltaic (PV) on roof tops, solar thermal collectors, and biomass for heating;
- Investments into renovating, extending, or building new district heating/cooling networks, including networks based on high efficiency combined heat and power (CHP), decentralised CHP systems (building or neighbourhood level), and renewable heat/cooling supply;
- Local infrastructure, including smart grids, information and communication technology infrastructure for energy efficiency, energy-efficient urban equipment, and links with transport.

The minimum investment amount is EUR 30 million and requires, at the end of the three years, a leverage factor of 20 for energy projects to be achieved.

Economic development and direct job creation: Here we refer to identified project concepts and analyse the typology of the projects (based on the local capacities assessment and national, regional, and local development priorities). Projects could seek support, combining national projects and/or demand-based approaches.

There are seven clusters identified by the stakeholders (i.e., Employment, Infrastructure, Environment Human Resources, Energy, Innovations, and Tourism). Many of the projects proposed for financing will face difficulties in getting support. Impact on the labour market is controversial in many cases. Out of the estimated potential creation of 6 472 jobs, as many as 3 019 are foreseen in the Tourism cluster, which is highly problematic for ESIF funding. There are some options in linking tourism with agriculture, nature protection, or transport infrastructure (e.g., cycling paths).

In the case of waste treatment and recycling facilities, there is already the potential for financing some of the project ideas (e.g., Project Green Carbon Black from waste tires), but it would require being in line with Best Available Technologies (BAT), a condition stated in the Slovak Waste Management Plan.

Additional potential, so far explored only by Hadlová and its project proposal (Construction of a municipal social enterprise for the cultivation of flowers and tulips), lays in the newly adopted Act 112/2018 Z.z. on social economy and social business. The Act extends the opportunities for getting disadvantaged people to the labour market and for the realization of other activities beneficial to the achievement of the positive social impact in the most diverse areas. It is closely linked with the concept of social procurement. A social enterprise can be operated by a municipality or a body of a different legal form (the law does not restrict the legal form of a social enterprise), while social enterprises set up and controlled by the local authorities (compared to other legal forms) have extended opportunities for trading with their own founders.

The Ministry of Labour, Social Affairs and Family (MPSVaR), through a national project financed by the ESF, operates regional centres. These provide technical assistance necessary for the creation of a business plan, registration of a social enterprise, and the operation of a social enterprise accessible to any social entrepreneur free of charge. HNR could explore

possibilities to request the establishment of a regional centre (see Chapter 1.2.2 Population, minorities and disabled).

At the same time, adverse population and demographic trends (analysed in depth in the chapter 1.2.1) are also indicated by broad interest in municipalities investing in elderly people. The consequences of the rapidly changing population on accessibility of healthcare and long-term care has been increasing problem in the country and in the region. While general availability of the healthcare facilities, doctors and nurses depends on the state policy/budget and regional planning, the region would need to attract new medical personal to replace the aging staff. To cope with the increasing numbers of elderly in the horizon of next years, it would be required to focus investment priorities for 2021-2027 on the reconstruction and creation of new long-term care facilities. Projects like the elderly house for miners, development of social services in Prievidza, or building the seniors' house have a good potential for finding links with social entrepreneurship.

A specific area deserving attention is agriculture. Besides the already mentioned AGRO SEKTOR (subsidiary company of HBN) and agricultural production based on thermal water/heating, there are proposals for eco-farming or integrated plant and livestock production projects in the Handlovska Valley micro-region. HNR has the advantage in terms of available agricultural land relative to most of other Slovak regions. Agricultural land is not so fragmented here and is under great control of the Slovak Estate Fund (Slovenský pozemkový fond).⁴⁷ Cooperation among the Fund, agri-entrepreneurs, and local municipalities may lead to a better utilisation of the opportunities provided by Operational Programme Agriculture and Rural Development.

However, as already indicated in the analytical parts of the Report, key requirements for a successful transformation and jobs offset lays in the development of the industrial and manufacturing base in Prievidza and surrounding areas. Construction of an industrial park in the Prievidza Industrial Zone Prievidza - West II is one of the central opportunities.

The hidden reserves of the region are the untapped potential of empty buildings and unused industrial areas. Brownfields abandoned, or soon to be abandoned by the mining company, may provide the required space for new industries, while at the same time address the problem of cleaning up the sites. As we indicated in the analytical part of the report (See Chapter 1.7.3. and Annex 1. List of major business and beneficiaries of state aid), combined utilisation of ESIF and state aid is the viable approach.

Post mining activities: Phasing out coal would require rehabilitation of the landscape and dealing with the brownfield development. Revitalization of the underground structures and the surface after mining will have to - in harmony with the valid law – follow the basic environmental principle of “the polluter pays.” The scale of the mining infrastructure is, however, rather substantial and after more than 100 years of mining activities, we identify

⁴⁷ A substantial part of the land was confiscated after WWII and therefore was not subject to restitutions and repossessing after 1989.

large areas of land affected. At the same time, part of the revitalisation may be used for development of the brownfields, and there is also potential to use part of the infrastructure for industrial tourism.

4.7.

4.8. 3.4. Context of the financial flows for planning financial resources

Overall success of the coal phase-out depends on the ability of the local stakeholders, region self-government bodies, and the central government to combine three main strategies or approaches: (i) using relatively favourable age structure of the mine's employees for creating an early retirement scheme;⁴⁸ (ii) using the present and upcoming programming periods of ESIF as the leverage for creating an enabling condition and supporting labour market; (iii) use state backed policies, subsidies, and incentives to attract FDI to support local capital.

Using an early retirement scheme is a strategy successfully deployed by the government in early 1990 and in the first stage of a rapid transformation of the mining company. The scheme can combine internal and external resources of the mining company, while respecting provisions of the Labour Code (with its special paragraphs for miners and retirement age).

To use state backed policies, subsidies, and incentives to attract FDI, support from local capital has so far been a successful approach in the Horná Nitra Region. The Slovak Republic has used investment aid in the amount of €14.048m to support ILJIN SLOVAKIA and Brose Prievidza. In 2006, the ILJIN SLOVAKIA received altogether €1.548m, and Brose Prievidza received €12.5m in 2015. In both cases, support went to industrial manufacturers with a long international track record of production and a global supply chain network, specifically focused on the automotive industry. Using de minimis scheme (2015-2018), government used €1.763m to support key companies in the region, such as Nestlé Slovensko, GeWiS Slovakia, Carcoustics Slovakia Nováky s. r. o., Brose Prievidza, MAKS-D, s.r.o. Nováky, Honeywell Safety Products Slovakia s. r. o., HBz., a.s., Spa Bojnice, and Zoo Bojnice (See Annex 1 List of major business and beneficiaries of state aid).

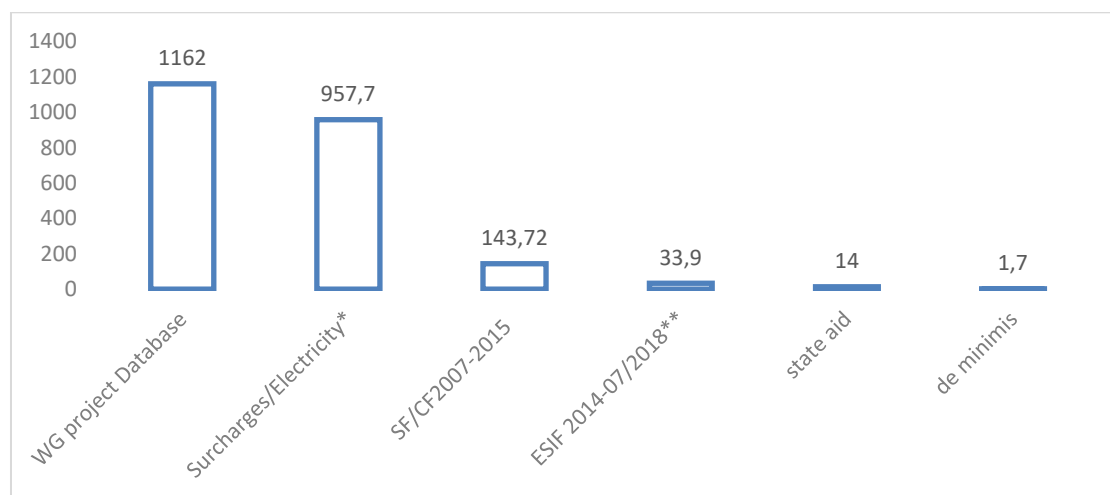
As we analysed in Chapter 1.7 (The region and the cohesion policies) and as indicated in Figure 9, the European Union and its financial mechanisms became the key development factor in the HNR. The total amount of the regional projects was €4,788.8m, and the average per inhabitant was €1,261.9 in the period 2007-2015 in Slovakia. The Horná Nitra region received €143.72m in the same period. The total amount of the projects in the region was in reality higher, because this statistic cannot include national projects and projects with implementation entity located outside of the region (e.g., water infrastructure projects implemented by the Central Slovakia Water and Sewage Company).

The support from the European Structural and Investment Funds in the period 2014-07/2018 in the Horná Nitra region indicates that the total amount of contracted projects was

⁴⁸ See Chapter 1.2.2 for data on the age structure of the mine company employees.

€33.90m by July 2018. As in the previous programming period, the public sector was a major beneficiary of the ESIF projects in the Prievidza and Partizánske districts.

Figure 9. Key financial development incentives for the HNR (2006 – July 2018) in Mil. EUR

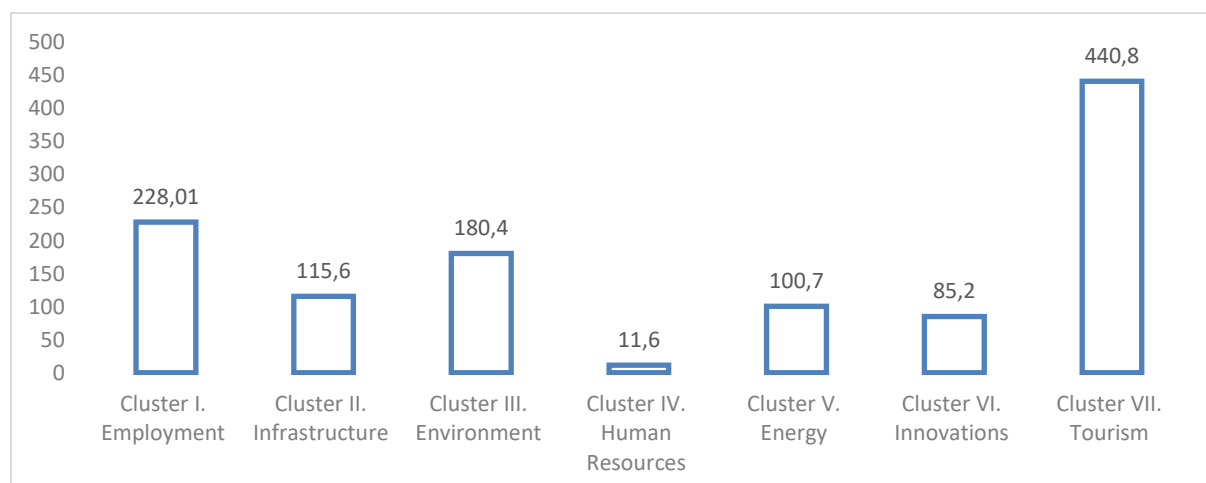


*Data for electricity surcharges are for the period 2008 -2018 (2018 included). See Chapter 1.5.2 for more details.

** As of July 2018. When we compare the previous and current programming period, we may assume that most of the projects will be contracted in the second half of the period, and the number will increase significantly.

The challenge for the future is to use available financial resources from the present programming period and opportunities to be open in the upcoming period 2021-2027, while using state subsidies for specific sectors not covered by the ESIF. In the previous chapter, we analyzed the list of 81 priority projects, divided into the seven clusters. Financial estimation of the total need for the projects is €1,162m. Figure 10 summarises the financial estimations for the WG Project Database.

Figure 10. WG Project Database - Indicative estimations of financial resources in Mil. EUR



As we discussed above, it is highly unlikely that many of the project ideas would be eligible for the ESIF funding (e.g., cluster Tourism). The total amount of the estimated projects is higher than all projects supported so far by SF/CF and ESIF (Figure 9), and impact on the economic transformation of the region is questionable. Most of the projects are longer-term ideas from local municipalities, and only a few are aimed at research and development in sectors with higher added values (e.g., cluster innovations)

Coal mining provides significant and stable (non-seasonal) jobs in the region. The new economic activities would have to diversify the regional economy from dependence on one major industry / enterprise to a multi-industry / enterprise economy. The new structure of the regional economy also has to include some medium-sized private enterprises. The medium-sized companies generate a higher number of jobs and are usually less vulnerable to sudden market shocks than micro- and small enterprises. Two of the four major carmakers operate in the neighbouring regions of Žilina and Nitra. The carmakers are likely to develop their activities on a long-term basis. Some suppliers of automotive industries already established their plants in the Prievidza and Partizánske districts. Projects assisting the transition process should support the inclusion of the Horná Nitra region into the global value chains. Projects supporting seasonal jobs and/or low-skilled jobs (e.g., in specific types of tourism) should be given lower priority.

4.9. 3.5. Framework for planning of future interventions

In the opening part of the Section III, we outlined three scenarios in the transformation of the region, as indicated by the qualitative assessment of the situation and major stakeholders: (i) Scenario 1/Business as usual; (ii) Scenario 2/Rapid transformation; (iii) Scenario 3/Partial phasing-off. The coal deposits in Horná Nitra are approaching their limits and it is clear that the mining in the region is ending. Moreover, decisions on the mine closure and timing are political decisions to be made by the Slovak government. The adopted governmental decision on mining as a general economic interest of the state till 2030 is still valid.⁴⁹ There are strong indications, however, that the decision on finishing by 2023 is seriously considered by the main stakeholders and we should, therefore, take scenario 2 as the benchmark for assessment of the needs and interventions. The indicative framework of the process of transformation is summarised in Figure 11.

The time is crucial not only for planning of the external interventions but also to influence the dynamic of the labour market. Under Scenario 2, we would face rapid diminishing of the labour opportunities in the mines, where most of the present 3782 employees would lose their position by 2023. The mine company will keep only part of the workforce for another anticipated three years (till 2026) for closing operations.⁵⁰

⁴⁹ In Slovak: *Rozhodnutie ministerstva hospodárstva o takzvanom všeobecnom hospodárskom záujme (VHZ)*

⁵⁰ Personal interview 18.09.2018. The mine company has developed detailed internal scenarios for different alternatives of the transformation, including job estimations.

Figure 11. Indicative framework of the process of transformation

Activity/Milestones	TIME LINE												
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Scenario 1 (Business as usual)													
Scenario 2 (Rapid transformation)													
Scenario 3 (Partial phasing-off)													
Action Plan/National Strategy													
Programming Period/Revision													
New Programming Period 2021 - 2027													
Current Programming Period 2014-2020													

Quantitative and qualitative assessment of the situation and structural drivers and barriers to a successful management and steering of the process point out the following main factors for the planning of future interventions (summary Table 10):

- Economic and demographic factors, together with relatively good age structure, education, and skills of the miners provide an enabling environment for the transformation;
- There is a strong framework of a national Work Group in place, supported by the government and cooperation of local stakeholders, already working on their transition strategies;
- The key for successful planning is to have political decisions on which of the three potential scenarios will take place and what year is the benchmark;
- The Horná Nitra region needs to improve its transport infrastructure (connection with metropolitan regions) and energy infrastructure. The region has to promote a new identity – a dynamic modern economy. Reinventing the regional economy may help stop the outmigration of young people and may attract newcomers;
- Offsetting the potential loss of labour opportunities in the present situation is not sufficiently guaranteed by local initiatives and project proposals. The most important stakeholders for the generation of additional project ideas are local municipalities and HBP;
- Successful transformation and jobs offset would require further development of the industrial and manufacturing base in Prievidza and surrounding areas. The new economic activity would have to enhance diversification of the regional economy from dependence on one major industry enterprise to a multi-industry enterprise economy;
- A strategic decision on the future heating system in the region will require a comprehensive technical feasibility study with cost-benefit analyses of available alternatives;
- Revitalization of the underground structures and the surface after mining will have to - in harmony with the valid law – follow the basic environmental principle of “the polluter pays;”

yet, the scope and complexity of the mining impacts on the landscape and the environment will require external assistance.

Due to its programming focus, system of priorities and links with the EU, and national goals and objectives, the ESIF may provide the key leverage in the regional transformation. The main challenge is presently in linking the upcoming Action Plan/National Strategy with funding opportunities. Quantitative and qualitative assessment of project proposals included in the report point to the problem of insufficient capacities and lack of project/investment ideas able to sufficiently address potential loss of the industrial jobs.

For a successful transformation, the region and key stakeholders will need technical assistance through the transformation process, exploring the potential of JASPERS (Joint Assistance to Support Projects in European Regions) and/or national support schemes. Since JASPERS targets assistance on bigger infrastructure projects, defined as 'major' projects in the Common Provisions Regulation, potential for its assistance could be discussed for the energy transformation of the heating system.

Framework approach to enhance cost-effective emission reductions and low-carbon investments (ETS revision post-2020) is also supported by using the upcoming Modernisation Fund (established by amending „Directive 2003/87/EC).⁵¹ The Modernisation fund supports lower-income Member States in meeting their investment needs related to energy efficiency. It supports small-scale investments projects and the modernisation of energy systems.

To utilize opportunities provided by the current programming period, the ACB (administrative capacity building) and project development should become one of the priorities. While, as we describe in the analyses of available project proposals, municipalities (especially towns) do possess experience and track of many successful projects, the key challenge lays in the small and medium enterprises. The SMEs are underrepresented in the project database. The qualitative survey indicates, that this is the stakeholders' group most difficult to reach and involve. There is a need for mapping, analysis of needs and capabilities of local entities using standard approaches (e.g., Capacity Assessment Methodology, Training Needs Assessment, Knowledge Brokering).

The starting point in development of national assistance to capacity building is in the exploration of synergies among the existing and planned interventions. There is Národné podnikateľské centrum (Slovak Business Association) centre in Trenčín with a potential to support local activities at the HNR. There will be social entrepreneurship centre established in Trenčín by the December 2018 with a potential to provide additional assistance to the Horná Nitra Region. There is flagship initiative of the Slovak Government in boosting local economies and start-ups through Slovak Investment Holding. Very important opportunity is

⁵¹ It is estimated, that in the period 2021 - 2030, two per cent of the allowances would be transferred into the fund. I.e., about EUR 310 mil., while Slovakia should be eligible for 7.12% of the total.

to use mechanism for exchange of best practice supported by TAIEX Peer2Peer.⁵² In a nutshell, it enables EU Member State experts to be sent to institutions in other Member States that have requested peer advice and exchange of experience on a specific topic. Focus is in managing authorities, intermediate bodies and coordinating authorities, with option to explore involvement of other bodies (allowed to participate where justified).

The key entity in the transformation, the mining company, has a potential for at least partial transformation, but would require special treatment in the process (e.g., establishment of a special fund to back up diversification of their work portfolio).⁵³ One of the main obstacles to the company transformation is that in the moment they start with downsizing and phasing out coal, they will substantially decrease their commercial rating, which in practise means problems with obtaining loans and support needed to start up and develop the ideas other than mining business activities.

Assessment of the projects generated so far by the stakeholders in the region reveals rather weak capacities in the development of projects in research and innovation, energy production, or agriculture. Besides infrastructure projects, only a minority of the concepts would have the potential to be eligible for support provided by the ESIF. The lower number of project concepts in key areas of smart growth point to the need for special provisions in the key operational programs (OPHR, OP Research and Innovations, IROP, OP Agriculture and Rural Development, OP II, OP Quality of Environment). Special approaches could support pilot projects for HNR focused on youth employment, or to support civil society organisations in helping with stimulations of local business and entrepreneurship projects.

The special provisions could make the region more attractive for companies and entities from outside and stimulate local development in the key identified sectors. I.e., it would be recommended to consider special provisions, already used in OPHR, to attract project developers and/or business from the outside of the region - while the activities, jobs and capital invested must stay in the region.

⁵² More information at: http://ec.europa.eu/regional_policy/en/policy/how/improving-investment/taix-regio-peer-2-peer/

⁵³ Here we get to the potential issue of the EU competition rules.

Table 10. Key assumptions, risks and recommendations identified for utilisation of the ESIF in the region transition.

Assumption	Risk	Recommendations
Adoption of Scenario 2 (rapid transformation) and setting of the new deadline in 2023.	The failure to offset relatively well-paid industrial jobs in the mining sector with sufficient opportunities in industries with higher added value. Increased unemployment and social decline of the region.	To combine three main strategies or approaches: (i) use relatively favourable age structure of the mines' employees for creating an early retirement scheme; (ii) use the present and upcoming programming period of ESIF as the leverage for creating enabling condition and supporting labour market; (iii) use state backed policies, subsidies, and incentives to attract FDI to support local capital.
Successful approach to ESIF financing should build on synergies between strategic development goals and local capacities and development of the industrial and manufacturing base in Prievidza and surrounding areas. The new economic activities would have to diversify the regional economy to a multi-industry / enterprise economy.	Assessment of the projects generated so far by the stakeholders in the region reveals rather weak capacities in the development of projects in research and innovation, energy production, or agriculture. Current opportunities and/or new tailored opportunities for financing projects may not be utilised by local stakeholders because of a lack of know-how, capacities, or resources.	Backing proposed key project areas with capacity building activities and technical assistance from the EU and using national schemes and tools (e.g., Slovak Investment Holding, Slovak Business Agency). The lower number of project concepts in key areas of smart growth point to the need for special provisions in the key operational programs. The special provisions could make the region more attractive for companies and entities from outside and stimulate local development in the key identified sectors. The starting point could be to map out and analyse potential of local business and SMEs in RIS3 implementation, combined with exploring ways how to develop links to research centres and research parks in Bratislava, Žilina, Nitra, Martin and Banská Bystrica.
There is an inevitable tendency of municipalities to use transformation for promotion of the available project proposals addressing their needs.	Some of the project proposals might not directly provide longer term job opportunities and it is difficult to calculate externalities affiliated with the implementation.	To attract investors/people and keeping the people in the place requires a complex approach to regional and municipal development. Investment into infrastructure, municipal development and wellbeing of the people is the key enabling condition for a successful transformation.
Priority is to create enough opportunities also for the people which are nowadays employed in the indirect jobs affiliated with the mining.	Focus on projects/jobs in sectors with higher added value may lead to overlooking opportunities in other sectors.	Adverse population and demographic trends together with the need to create labour opportunities also for people indirectly depended on the mining sector should lead to exploring alternatives of projects in culture, sports, wellness and/or to finding links with social entrepreneurship. social economy and social business.
The key entity in the transformation, the mining company, has a potential for at least partial transformation, but would require special treatment in the process	Coal mining provides significant and stable (non-seasonal) jobs in the region. It has structure, management experience, social, human and economic capital which could be lost in the	One of the main obstacles to the company transformation is that in the moment they start with downsizing and phasing out coal, they will substantially decrease their commercial rating, which in practise means problems with obtaining loans and support needed to start up and develop the ideas other than mining business activities. (e.g., establishment of a special

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	transition with adverse effects on the local economy.	fund to back up diversification of their work portfolio).
The presented expert study builds on the JRC Report and other domestic and foreign resources - most of the available data is processed, the challenge is to interpret them and link them to the defined goals of the transformation - There is however still space for more data gathering, mapping the situation and getting better insight. We still do not have good picture in the SMEs capacities and training needs, overall potential for job offsets and in innovative ways to local economic development.	The so called "low-hanging" fruits especially in quantitative data are explored in the several analyses and reports developed so far. The main risk lays in overlaps among the studies, small added value of the follow up studies and insufficient connection between surveyed areas/techniques and the real needs and requirements of the policy, programming and practice.	In terms of quantitative data, the challenge would be to get and to analyse the data of the Social Insurance Company (needed for estimations of an early retirement scheme). A combination of quantitative and qualitative approaches could be used to map the potential of local industry, small and medium-sized businesses (Limited Technology Foresight). Additional opportunities are in local strategic approaches with building partnerships between the local government and the non-profit sector. There is a need for analysis of needs and capabilities of local entities using standard approaches (e.g., Capacity Assessment Methodology, Training Needs Assessment, Knowledge Brokering)
A strategic decision on the future heating system in the region will require a comprehensive technical feasibility study with cost-benefit analyses of available alternatives	Piece – meal approach to dismantling existing infrastructure and implementation of new projects without analyses and complex approaches to energy savings and demand side management.	For a successful transformation, the region and key stakeholders will need technical assistance through the transformation process, exploring the potential of JASPERS (Joint Assistance to Support Projects in European Regions) and/or national support schemes.
Revitalization of the underground structures and the surface after mining will have to - in harmony with the valid law – follow the basic environmental principle of "the polluter pays." Yet given the scope of the impacts, external assistance would be inevitable.	The scale of the mining infrastructure is rather substantial and after more than 100 years of mining activities, we identify large areas of land affected. The capacities and resources of the mining company will not be sufficient.	Scale of the problems would require a complex approach, based on initial studies, in-depth and detailed mapping of mining area, CBA and using best practise examples from other countries. It would require involvement of academia, civil sector and using opportunities provided by European Funding Research/Horizon 2020 or LIFE/Integrated Projects. Part of the revitalisation may be used for development of the brownfields, industrial zones and there is also potential to use part of the infrastructure for industrial tourism. Special opportunities are in supporting partnership between municipalities and civil society, where the later may bring in project development and implementation capacities.
Central strategy will steer and coordinate individual activities of the stakeholders; interventions will be complementary to each other, and overlaps will be avoided	AP and National Strategy is the key document for the transformation, but it stays on a general level without clear lines of responsibilities, weak backing by funding and indicators.	Coordination and communication, combined with the involvement of experts from different activities/projects, should help to avoid overlaps and generate synergies. Co-ownership of the strategy with local stakeholders and strong backing by the ESIF and state support provide the key to successful implementation.

5. ANNEX 1. LIST OF MAJOR BUSINESS AND BENEFICIARIES OF STATE AID (EUR MIL.)

Prievidza district	investment aid	de minimis 2015-2018
Nestlé Slovensko	x	0.059
ILJIN SLOVAKIA,	1.548 (a)	x
FORTISCHEM a. s, Nováky	x	x
HBP, a.s	x	0.001
GeWiS Slovakia	x	0.033
Carcoustics Slovakia Nováky s. r. o	x	0.012
Brose Prievidza	12.500 (b)	0.000
MAKS-D, s.r.o. Nováky	x	0.005
Honeywell Safety Products Slovakia s. r. o.	x	0.001
HBz., a.s	x	0.000
Kúpele Bojnice	x	0.066
Bojnice ZOO	x	0.000
Partizánske district	investment aid	de minimis 2015-2018
ContiTech Vibration Control Slovakia s.r.o.	x	0.037
Rialto s.r.o	x	0.349
Partizánske Building Components-SK s.r.o.	x	x
SaarGummi Slovakia s.r.o	x	x
SLOVAKTUAL s.r.o. , Pravenec	x	0.056
VEGUM a. s	x	0.280
NOVESTA, a. s, Partizánske	x	0.134
VIPO a. s., Partizánske	x	0.730
Total	14.048	1.763

Source: Ministry of Economy (2018): Zoznam podnikateľských subjektov, ktorým bolo schválené poskytnutie štátnej regionálnej pomoci {List of business approved for the state regional aid}. Notes: (a) = 2006; (b) = 2015.

6. ANNEX 2. ADMINISTRATIVE STRUCTURE: LIST OF DISTRICTS, TOWNS AND VILLAGES

Prievidza district

- Bojnice, Handlová, Nováky, Prievidza (towns)
- other municipalities: Bystričany, Cigel, Čavoj, Čereňany, Diviacka Nová Ves, Diviaky nad Nitricou, Džín, Dolné Vestenice, Horná Ves, Horné Vestenice, Chrenovec-Brusno, Chvojnica, Jalovec, Kamenec pod Vtáčnikom, Kanianka, Kľačno, Kocurany, Kostolná Ves, Koš, Lazany, Lehota pod Vtáčnikom, Liešťany, Lipník, Malá Čausa, Malinová, Nedožery-Brezany, Nevidzany, Nitrianske Pravno, Nitrianske Rudno, Nitrianske Sučany, Nitrica, Opatovce nad Nitrou, Oslany, Podhradie, Poluvsie, Poruba, Pravenec, Radobica, Ráztočno, Rudnianska Lehota, Sebedražie, Seč, Šútovce, Temeš, Tužina, Valaská Belá, Veľká Čausa, Zemianske Kostolany (villages)

Bánovce nad Bebravou district

- Bánovce nad Bebravou (town)
- other municipalities: Borčany, Brezolup, Cimenná, Čierna Lehota, Dežerice, Dolné Naštice, Dubnička, Dvorec, Haláčovce, Horné Naštice, Chudá Lehota, Krásna Ves, Kšinná, Libichava, Lútov, Malá Hradná, Malé Hoste, Miezgovce, Nedašovce, Omastiná, Otrhánky, Pečeňany, Podlužany, Pochabany, Pravotice, Prusy, Ruskovce, Rybany, Slatina nad Bebravou, Slatinka nad Bebravou, Šípkov, Šišov, Timoradza, Trebichava, Uhrovec, Uhrovské Podhradie, Veľké Držkovce, Veľké Hoste, Veľké Chlievany, Vysočany, Zlatníky, Žitná – Radiša (villages)

Partizánske district

- Partizánske (town)
- Bošany, Brodzany, Hradište, Chynorany, Ješkova Ves, Klátova Nová Ves, Kolačno, Krásno, Livina, Livinské Opatovce, Malé Kršteňany, Malé Uherce, Nadlice, Nedanovce, Ostratice, Pažiť, Skačany, Turčianky, Veľké Kršteňany, Veľké Uherce, Veľký Klíž, Žabokreky nad Nitrou (villages)

Topoľčany district

- Topoľčany (town)
- other municipalities: Ardanovce, Belince, Biskupová, Blesovce, Bojná, Čefadince, Čermany, Dvorany nad Nitrou, Hajná Nová Ves, Horné Chlebany, Horné Obdokovce, Horné Štitáre, Hrušovany, Chrabrany, Jacovce, Kamanová, Koniarovce, Kovarce, Krnča, Krtovce, Krušovce, Kuzmice, Lipovník, Ludanice, Lužany, Malé Ripňany, Nemčice, Nemečky, Nitrianska Blatnica, Nitrianska Streda, Norovce, Oponice, Orešany, Podhradie, Prašice, Práznovce, Preseľany, Radošina, Rajčany, Solčany, Solčianky, Súlovce, Svrbice, Šalgovce, Tesáre, Tovarníky, Tvrdomestice, Urmince, Veľké Dvorany, Veľké Ripňany, Velušovce, Vozokany, Závada (villages)

7. ANNEX 3. ACRONYMS

ACB Administrative Capacity Building	NGO Non-Governmental Organisation
BAT Best Available Techniques	NUTS Nomenclature of Territorial Units for Statistics
BATNEEC Best available techniques not entailing excessive costs	OP Operational Programme
CBA Cost Benefit Analyses	OPAaRD Operational Programme Agriculture and Rural Development
EaSI EU Programme for Employment and Social Innovation	OPF Operational Programme Fisheries
EC European Commission	OPHR Operational Programme Human Resources
EFR European Funding Research (Horizon 2020)	OPII Operational Programme Integrated Infrastructure
EGF European Globalisation Adjustment Fund	OPRaD Operational Programme Research and Innovations
EIA Environmental Impact Assessment	OPQE Operational Programme Quality of Environment
ESIF European Structural and Investment Funds	RES Renewable Energy Source
ENO Power Plant Nováky	RFCS Research Fund for Coal and Steel
ERDF European Regional Development Fund	RIS3 Research and Innovation Smart Specialisation Strategy
ESF European Social Fund	R&D Research and Development
EU European Union	SE Slovenské Elektrárne (Slovak Electricity Comp.)
HBP Hornonitrianske bane Prievidza	SME Small and medium-sized enterprise
HNR Horná Nitra Region	s.r.o. Spoločnosť s ručením obmedzeným ("company with limited liability")
ICT Information and Communications Technology	S3 Smart specialisation
IN Input	TO Thematic Objective
IROP Integrated Regional Operational Programme	TPP Thermal Power Plant
JRC Joint Research Centre	URSO The Regulatory Office for Network Industries (Úrad pre reguláciu strategických odvetví)
KET Key Enabling Technology	WWTP Waste Water Treatment Plant
LIFE (Integrated Projects)	
NACE Statistical classification of economic activities in the European Community	

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