

Challenges of Post-Mining Regions in Central Europe*

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Abstract

Structural change in mining districts is a complex process, challenging cities, regions and governments all over the world alike. It comprises economic, social, ecological, and cultural changes. This article deals with such regions in Central Europe, where the end of mining has provoked the overall decline of industry. The impacts have been far reaching, bringing economic, social, and ecological crisis to vast regions. Overcoming the shock has proved a protracted and painful process. In the big mining regions (like German Ruhr Area) regeneration has been a task of “national” importance, challenging governments, trade unions and big enterprises. Smaller mining regions have rarely attracted such attention, though the effects of decline have been no less drastic there. In contrast to most scientific ventures to date, this article addresses the problems of mining regions with small and medium-sized towns, mostly situated at the outer and inner peripheries of European countries. This spatial category is often limited in general functions, as there is a lack of high-quality education facilities like universities and research centres. Additionally small and medium-sized towns are becoming less important as sites for business and industry in many countries with local authorities generally having little scope for action. Altogether, national politics often pay little heed to this type of mining region, whereas the problems would demand greater political attention to them. This text discusses the basic problems of such regions after mine closure and the challenges to be posed in order to establish a sustainable development path.

1. Introduction

Mining industries have played a crucial part in the European history, being an important factor of economic and social development over the centuries. Without the extraction of raw materials such as copper, iron, silver, salt and coal, the development path of the continent would look distinctly different. Central Europe has in many ways been at the heart of these developments. Starting in the 19th century, the extraction of coal and lignite provided the basis for the industrialisation of many European regions. After World War II, mining in eastern European countries was intensively developed to strengthen heavy industry, while both in the East and the West uranium mining became increasingly important from the 1950s with the development of nuclear energy production and nuclear arms.

Mining is in general a dynamic industry, with some resources being mined for centuries until reserves are exhausted or technical and market conditions change - as in the European mining industry since the 1960s and in the former communist countries of Central and Eastern Europe after 1990. In nearly all known cases, the end of mineral exploitation causes a number of serious problems, the “unavoidable socio-economic drama of pit closure” (Baeten et al. 1999). The problems are very similar in all mining regions (Wirth & Lintz 2007) and research in the ReSource project underlines this diagnosis. Firstly, mining has almost everywhere caused considerable environmental degradation. This encompasses abandoned surface mines, un-

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derground galleries, lowered ground water levels, and contaminated sites in mining and related industries such as energy, iron and steel, and chemicals. Affected towns are usually burdened by disused mining facilities, run-down miners' settlements, and often over-sized and dilapidated infrastructures. Secondly, mining has in many cases been the dominant industrial sector. The decline of mining plunges the entire economic foundations of a region into crisis. It often proves difficult to attract new industry and business, and alternatives such as tourism are usually unable to produce as much prosperity as mining. This leads to a third set of problems: high unemployment with all the associated social impacts. Mining skills are mostly incompatible with the requirements of modern industry. Additionally the bad economic conditions often lead to outmigration, especially of the skilled workforce (Martinez-Fernandez et al. 2012). The final result is usually a loss of human resources, spending power, and taxable capacity in the region (Müller et al. 2005). These conditions put pressure not only on local authorities but also on national governments and the European Union to develop rehabilitation and development strategies. In sum, we can say that the problem is a complex one that often overtaxes the actors involved.

Despite the unpromising situation, it is not acceptable in densely populated countries and regions to leave the affected areas to struggle on their own. Furthermore, extensive experience shows that transforming mining regions is not a utopian project. One of the best-known comprehensive regional approaches is the International Building Exhibition (IBA) Emscher Park in Germany, which took place in the Ruhr District from 1989 to 1999. The ecological and cultural restructuring of an old industrial region was seen in this IBA as a necessary basis for comprehensive renewal. A total of 89 projects were realised with extensive state support; for instance, slag heaps were integrated into green landscape concepts and old mining facilities adapted to accommodate education and innovative services (e.g. Kilper & Wood 1995, Eckart et al. 2003).

On the basis of such experience, this article describes the challenges for the post-mining development of regions and cities. The focus is on areas with small and medium sized towns, where local authorities have little steering capacity and which mostly escape the attention of state government. The results presented here were obtained in the framework of the project "ReSource – Utilisation of post-mining potentials for sustainable re-development in Central European mining cities and regions". It was co-funded by the European Regional Development Fund (ERDF) in accordance with the EU Objective 3 "Territorial cooperation" programme Central Europe. From 2009 to 2012 ten partners worked together to promote urban and regional development in 7 mining regions (www.resource-ce.eu).

2. Central European Mining Regions – Selected cases

In the framework of ReSource detailed investigations were conducted in the Steirische Eisenstraße (Styrian Iron Route) in Austria, the Czech lignite region Sokolov-vychod, both the Mansfeld-Südharz copper region and the Zwickau-Lugau-Oelsnitz (FLOEZ) coal region in Germany, the brown coal region of Salgótarján in Hungary, and the Zasavje coal region in Slovenia, as well as in Wałbrzych/Poland (see also Fig. 1). Four of these regions are in the post-mining phase. In Styria, Zasavje and Sokolov is mining continuing with longer-term prospects. Nevertheless, in these regions too, the importance of mining is declining and the economy is in transition. All areas are affected by change, all are in search of new perspectives for development in the post-mining period, and all have a number of potentials they can exploit.

In the following section we compare and discuss the state of the regions under investigation, with reference to their specific characteristics and problems, by discussing and comparing basic structural data on all of them. The analysis throws light on the common problems and distinctions between the mining re-

gions, giving a comprehensive picture of the characteristics in Central European post-mining regions at the beginning of the 21st century.

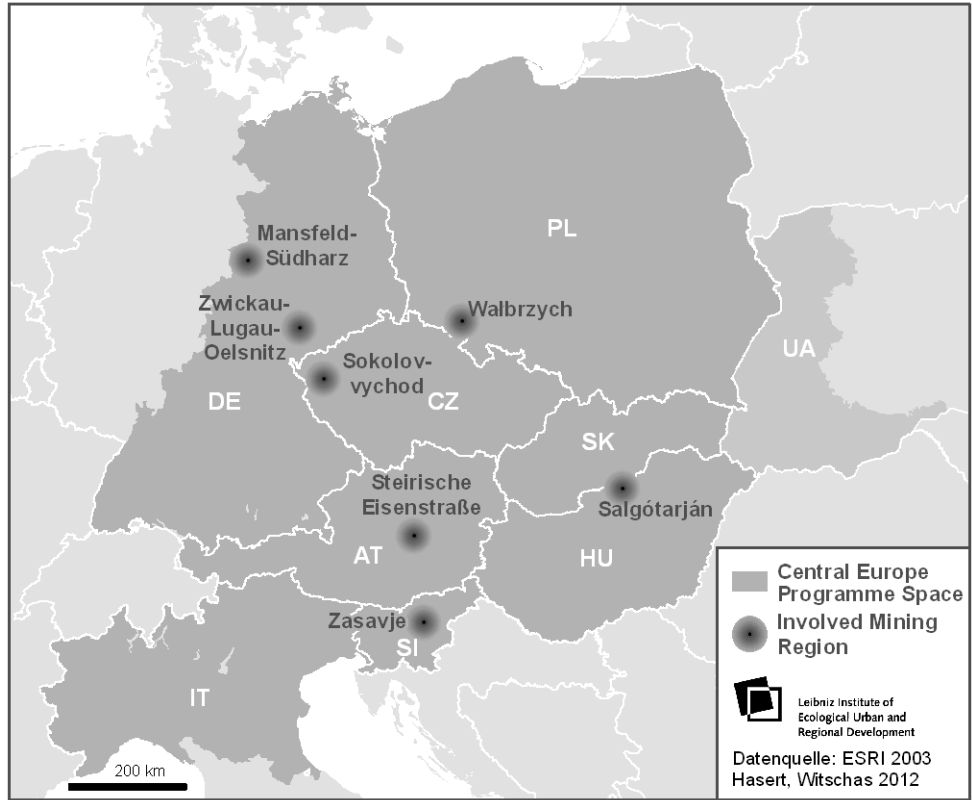


Fig. 1: Regions under investigation in the ReSource project

The institutional framework of the investigated regions in focus ranges from administrative structures like districts and municipalities to inter-municipal cooperation initiatives. Of the cases discussed only Mansfeld-Südharz is an entire administrative district (Landkreis) in its own right. The City of Salgótarján ranks as a district town, while the Steirische Eisenstrasse, Zwickau-Lugau-Oelsnitz (FLOEZ), Sokolov-východ and Zasavje regions are all inter-municipal cooperation initiatives. Only Wałbrzych is currently a stand-alone municipality. The population of the regions and cities ranges from 40,000 to 160,000 (Fig. 2).

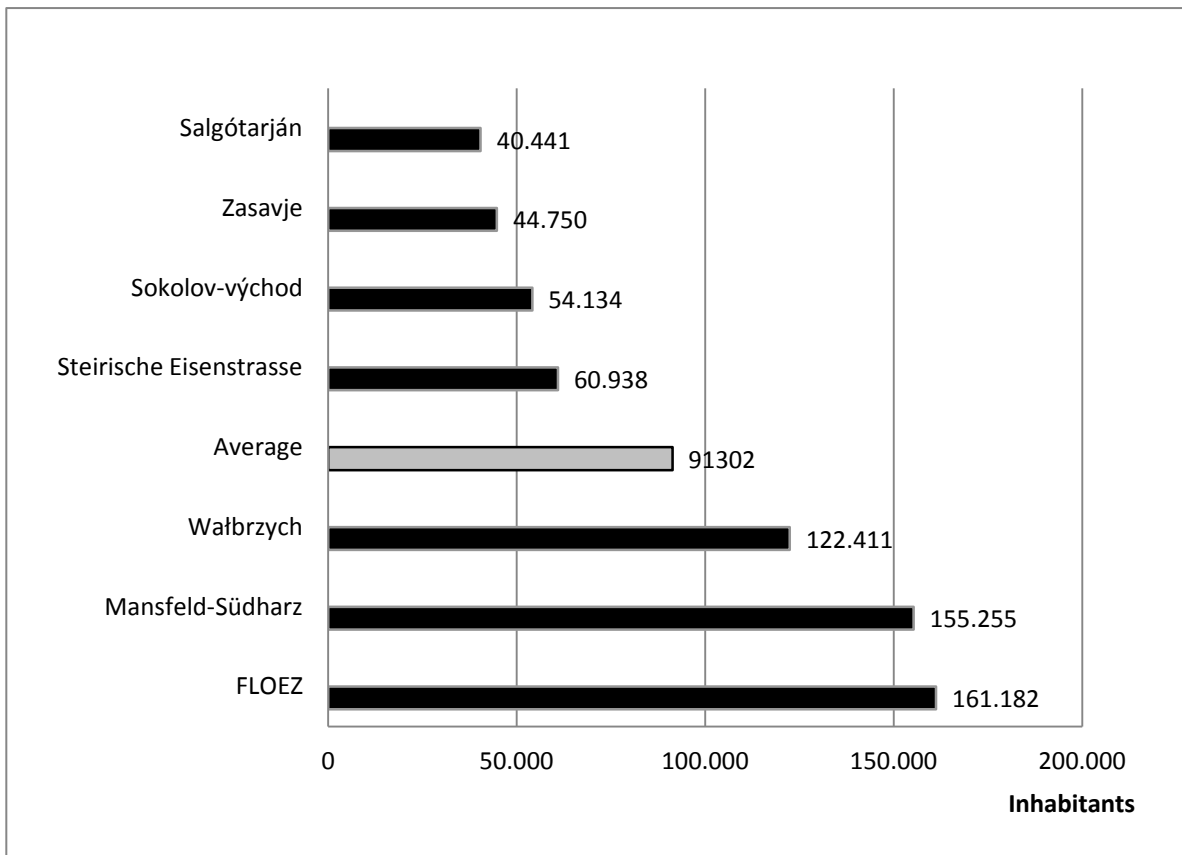


Fig. 2: Inhabitants in investigated regions 2008 (Harfst et al. 2010)

The regions under consideration include densely populated urban centres like Zwickau and Wałbrzych, as well as sparsely populated regions like the Steirische Eisenstrasse and the Mansfeld-Südharz district. Population data shown in Fig. 3 identify three urban regions with more than 300 inhabitants per km² (Wałbrzych, FLOEZ, Salgótarján), two densely populated areas with around 150 inhabitants/km² (Zasavje, Sokolov-východ) and two rural regions with fewer than 110 inhabitants/km² (Steirische Eisenstrasse, Mansfeld-Südharz). Nevertheless the focus of this investigation is on spatial units characterised by small and medium-sized municipalities.

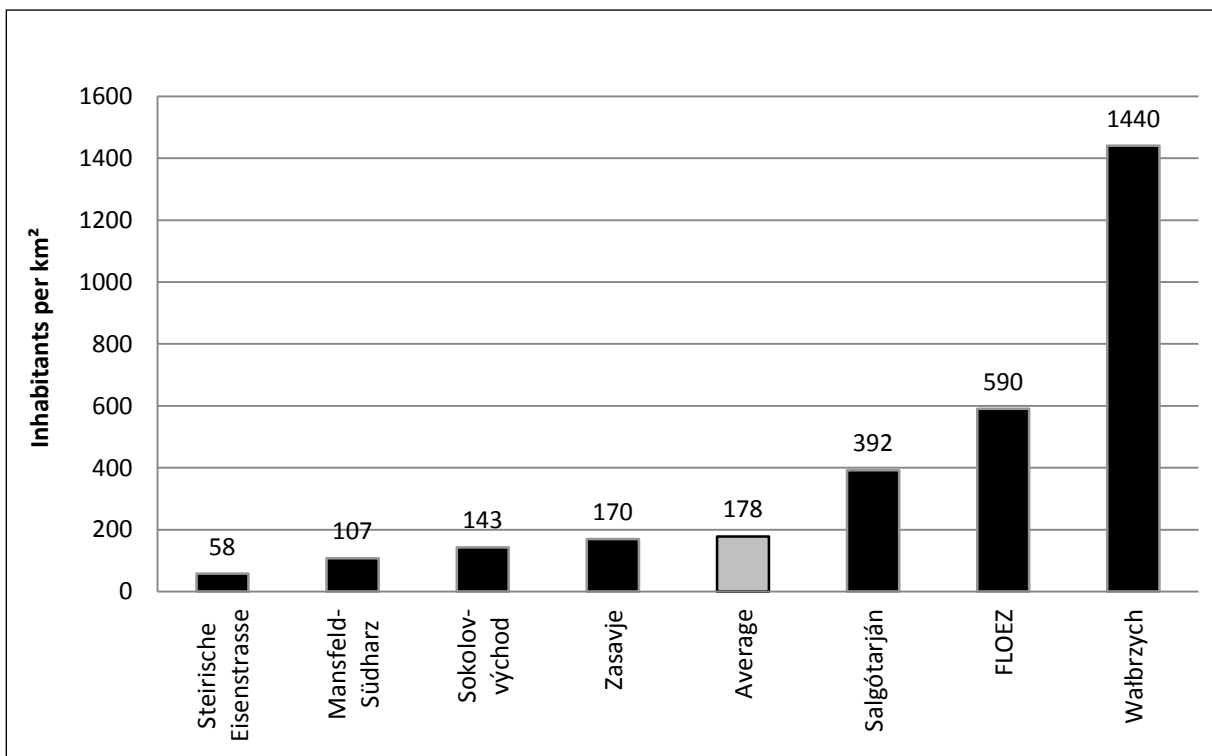


Fig. 3: Inhabitants per km² in investigated regions 2008 (Harfst et al. 2010)

The type of mining practised also differs from area to area: brown coal mining (underground and open-pit) in Salgótarján, Sokolov-východ and Zasavje, as well as underground hard coal mining in the FLOEZ and Wałbrzych region; copper and iron ore mining are represented by Mansfeld-Südharz and the Steirische Eisenstrasse.

Fig. 4 gives a simplified overview of final period of mining activities. It highlights the different stages of development across all regions. In the FLOEZ region active mining ended already in the late 1970s when replacement industries were introduced under the then state-planned system of the German Democratic Republic. Three other examples experienced “shock-therapy,” with active mines being closed shortly after system transformation in former Eastern Bloc states. Mines in Mansfeld-Südharz and Salgótarján were thus closed in the early 1990s due to economic inefficiency. Production and employment had already fallen in both locations already in socialist times, and in Mansfeld-Südharz phasing-out scenarios had even been discussed. But regime change brought mining to an abrupt end in both regions. In Wałbrzych phasing out was more cautious, but there, too, all active mines were closed in a brief space of time between 1990 and 1998. Mining continues in the regions Zasavje, Sokolov-východ and Steirische Eisenstrasse, but production and employment have been substantially downsized over recent decades and a long-term time horizon for the closure of the industry has been set in all of these regions (2020-2040).

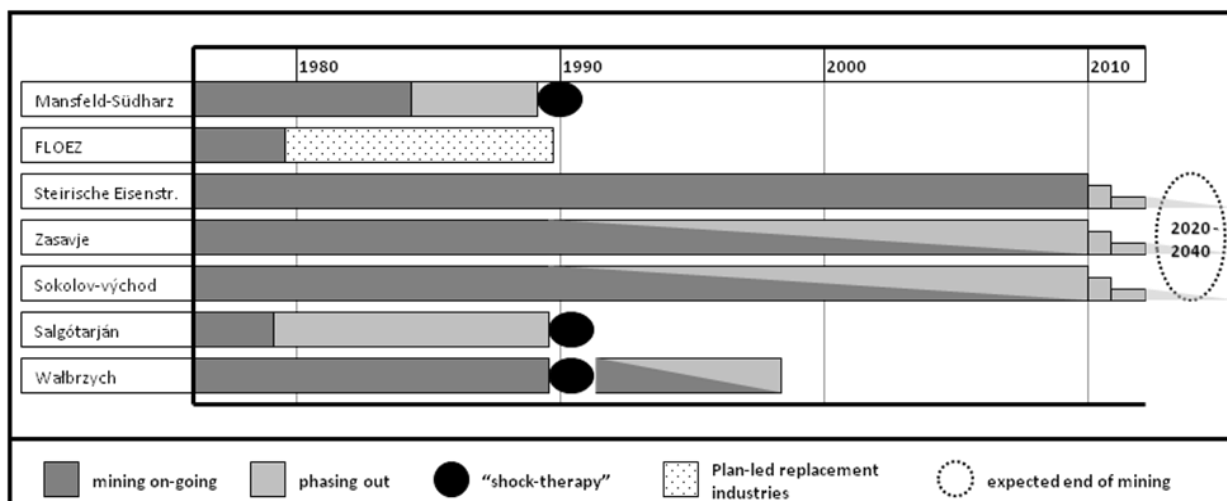


Fig. 4: Development of mining activities in investigated regions (source: IOER)

Nevertheless, the imprint of mining did create some similarities even across such diversely structured places. All these regions record negative demographic development since 1990, when (with the exception of FLOEZ) the mining industry had experienced closure or substantial down-sizing. The population in at least three regions still grew considerably in the 1980s. Tab. 11 shows that this trend was particularly strong in Zasavje and Wałbrzych. Over the last two decades the population numbers have fallen substantially in all regions, with the exception of Sokolov-východ, where population development has remained stagnant. In the past 20 years the total population decrease ranged from 5.5% in Zasavje to 20% in Mansfeld-Südharz. In addition to the overall decline in population, the regions in focus have recorded a rise in the proportion of older residents, in some cases inverting the figures for the under 15 and over 65 age groups. These trends have been especially pronounced in Mansfeld-Südharz, Salgótarján and the Steirische Eisenstrasse (Harfst et al. 2009).

Tab. 1: Population development (total) 1981 – 2008 (Harfst et al. 2010)

Region	1981	1991	2001	2008	Change 1991-2008
Mansfeld-Südharz	213,090	193,837	173,631	155,255	-19.9%
FLOEZ	n/a	195,041	172,205	161,182	-17.4%
Steirische Eisenstraße	77,420	70,223	64,459	60,938	-13.2%
Zasavje	46,304	47,356	46,123	44,750	-5.5%
Sokolov-východ ¹	53,585	53,634	54,200	54,134	0.9%
Salgótarján ²	49,603	47,822	44,964	40,441	-15.4%
Wałbrzych ³	133,549	141,000	131,650	122,411	-13.2%
Total	n/a	342,649	318,918	294,580	-14.0%

data available for: ¹ 1980+1990 / ² 1980+1990+2000 / ³ 1980

These demographic changes are more or less the result of the profound and far-reaching transformation of regional economies. All regions have experienced – sometimes rapid, sometimes gradual – pronounced down-scaling in the number of employees working in the industrial sector over the past 25 years. Many

jobs were lost as mining and related industries ceased production or were downsized, regardless of whether other industrial or service related sectors had a footing in the region. All regions have accordingly faced a shift in jobs from industry to services over the past 30 years. Table 2 shows this trend. According to the data available, most regions experienced a reduction in the share of industrial employment of around 20% (Soloklov-východ, Zasavje, Steirische Eisenstrasse, Mansfeld-Südharz), while in some regions the shift has been even more severe (Salgótarján) or less pronounced (FLOEZ, Wałbrzych). In most regions this trend resulted also in a **net loss of employment**. In the last 25 years only the Austrian region managed to create more jobs than were lost.

Tab. 2: Employment change per sector 1991-2008 (Harfst et al. 2010)

Region	Sector	date		change	
		1991	latest	total	relative
Mansfeld-Südharz ¹	I	6,800	2,300	-4,500	-66.2%
	II	34,600	12,300	-22,300	-64.5%
	III	35,300	34,000	-1,300	-3.7%
FLOEZ ²	I	3,500	2,500	-1,000	-28.6%
	II	55,900	45,900	-10,000	-17.9%
	III	89,800	92,500	2,700	3.0%
Steirische Eisenstraße ³	I	1,110	1,280	170	15.3%
	II	10,263	8,665	-1,598	-15.6%
	III	14,694	16,490	1,796	12.2%
Zasavje ⁴	I	105	16	-89	-84.8%
	II	12,389	6,586	-5,803	-46.8%
	III	5,510	6,370	860	15.6%
Sokolov-východ ⁵	n/a				
Salgótarján ⁶	I	547	31	-516	-94.3%
	II	10,932	2,979	-7,953	-72.7%
	III	9,897	6,731	-3,166	-32.0%
Wałbrzych ⁶	n/a				
Average	I	12,062	6,127	-5,935	-49.2%
	II	124,084	76,430	-47,654	-38.4%
	III	155,201	156,091	890	0.6%

¹ Due to administrative changes, data before 1990 not available, time span: 1996/2007 // ² Data: Zwickau district, due to administrative changes, data before 1990 not available, time span: 1996/2007 // ³ Time span: 1981/2007 // ⁴ Time span: 1981/2008 // ⁵ Data: Sokolov District, time span: 1980/2001, based on residence principle, class "not identified" omitted // ⁶ Time span: 1980/2007, based on residence principle // ⁷ Time span: 1991/2003

The transformation of the employment base has led to persistently **high rates of unemployment**. In all focus regions the level of unemployment is considerably above the national average. In only two of the seven regions are unemployment rates below the 10% marker (Steirische Eisenstrasse and Wałbrzych) as shown by Fig. 5. The figures show the lasting effects of mine closure in all regions on local employment markets, where the loss of industrial sector jobs could not be compensated totally by the creation of jobs in the service sector.

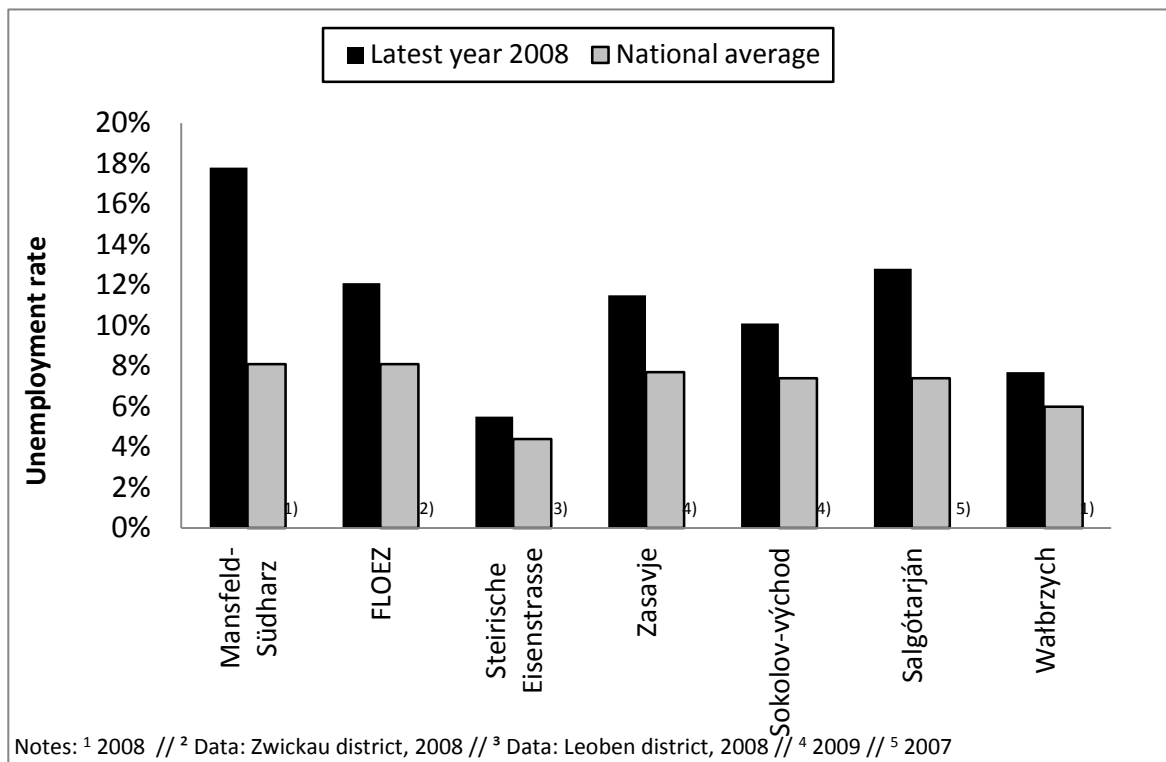


Fig. 5: Unemployment rates in investigated regions 2008 (Harfst et al. 2010)

What is more, **GDP is lower** than the national average. As Fig. 6 shows, this trend is especially pronounced in Salgótarján and Mansfeld-Südharz, where local GDP rates are only half the national average. This indicates that these regions obviously lack strong economic structures since the end of mining.

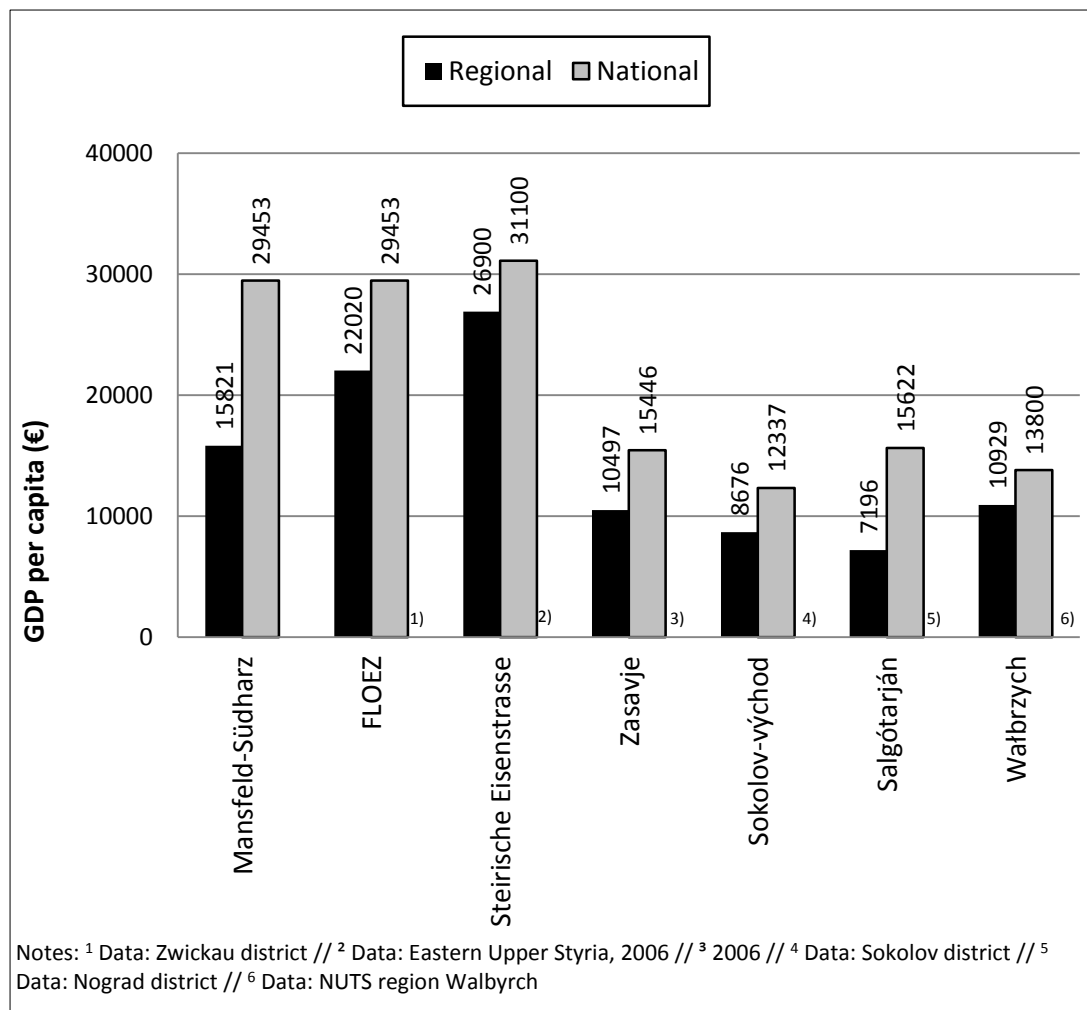


Fig. 6: GDP per capita (€) in regions under investigation 2007 (Harfst et al. 2010)

While data analysis underlines the diversity of the regions, it also shows that all have to face the **same challenges** in overcoming the negative effects of the cessation or downsizing of mining activities. The problems faced are high unemployment, low GDP rates, and negative demographic developments (especially the outmigration of younger and skilled people). These problems tend to occur in varying degrees, depending on the **development path** taken by each region and specific national and local framework conditions. While some regions were able to rely on other industries and/or profited from state intervention to help mastering transformation (FLOEZ, Steirische Eisenstrasse, Wałbrzych), others have largely been left to cope alone with the full force of mine closure or industrial downsizing. Overall, the examples show that the regions under study have attained varying stages in overcoming path-dependency in regard to the mining industry.

3. Results: Challenges to Development in Post-Mining Regions

The figures discussed above underline the difficult situation in many European (post-)mining regions at the turn of the 21st century. The research within the ReSource project has therefore underlined the relevance of the “old” question of how to give mining cities or regions a viable future after mining activities have ceased. The investigations done in Central Europe show that the problem-solving concepts of the 1980s and 1990s have little to offer today, due particularly to considerable changes in economic and political framework conditions. European mining regions have had to face continuous changes, which have even tended to accelerate in recent decades. They have included integration in the world market on various

levels, for example through the European common market, as well as the incorporation of former state-capitalist regimes in market-led systems. This has brought greater competition, which along with cutbacks in state subsidies, has made many European mining industries unprofitable and led to the often rapid cessation of activities (Steiner 2003; Müller et al. 2005).

In the 1970s and 80s, European mining regions could hope for active state intervention in structural change. At that time, the effects of mine closure in planned-economy countries were counteracted by establishing new economic sectors in affected regions. In Western Europe generous regional development programmes were often set up by national governments. But the overall strong growth rates still attained in the 1980s, at least by many Western European regions, have given way to more uneven growth patterns across Europe (Wissen 2000). Falling growth rates, the mixed results of restructuring, and a general shift in the political agenda mean that government support for affected regions has become less focused and more competitive. While the beginning of the 1990s still saw special EU programmes for old industrial regions such as RECHAR and RESIDER³, such direct, sectoral policy approaches have played less of a role since the late 1990s. National and EU policy now focus strongly on growth potentials in existing economic development hot spots. This has relegated many old industrial and mining regions, especially when outside bigger agglomerations, to the bottom of the political agenda. Today, as the studies in ReSource underline, such areas receive little special funding and face severe competition from other underdeveloped regions (such as rural areas) for support from European funds (e. g. ERDF). Regions dominated by small and medium-sized towns, in particular, have to compete for funding and stretch already limited resources.

Research has also underlined the problems in mining regions themselves. Internal factors often hamper the development of coherent and comprehensive strategies to counter the outcomes of structural change. Examples show often narrow, rigid and hierarchically organised power structures in key actors and networks, often composed of stakeholders connected with defunct mining industries. Such key actors often hold considerable power, for example through the ownership of former mining lands or professional links with remaining industries. Another important finding is that still active mining can be a stumbling block for new impulses and reorientation. The impact of mining on regional development and its underlying strategies is all-embracing. Mining and related industries often constitute the most important economic, social and cultural matrix for society as a whole. Creative plans and approaches are often seen as conflicting with mining, traditions, and the predominant role of the hierarchical actor network. Many regions suffer from classical “lock-in” (Grabher 1993; Wirth & Lintz 2007; Zimmermann et al. 2007).

Despite the need for concerted action and coherent strategy building on various political and administrative levels, collaboration is hampered in many regions by insufficient forms of cooperation, organisation, and funding. Such problems can arise from (political) disagreement within mining regions, as well as from unclear, changing or conflicting administrative structures, responsibilities and interests between different administrative levels and overall political goals pursued on various policy levels. The result is often a lack of coherent strategic visions, options and support, which can, for example, hinder the successful application of investment and funding.

Overall, the lack of European and national support, inconsistent forms of multi-level governance and local “lock-in” can obstruct innovative and successful forms of regional management involving new ways of using post-mining potentials to promote development. Therefore it is argued here that post-mining regions need to be generally strengthened, especially when small and medium-sized towns predominate. This requires capacities to be enhanced, notably through sound new conceptual, organisational and managerial approaches for and in the region. These measures should include holistic urban and regional devel-

³ The programmes supported the restructuring of European coal and steel regions from 1989 to 1999.

opment concepts, participative and integrative governance networks, and transparent responsibilities and decision-making.

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