

# POST-MINING POTENTIALS AND REDEVELOPMENT OF FORMER MINING REGIONS IN CENTRAL EUROPE – CASE STUDIES FROM GERMANY AND SLOVENIA

## PORUDARSKI POTENCIALI IN RAZVOJ NEKDANJIH RUDARSKIH REGIJ SREDNJE EVROPE: ŠTUDIJI PRIMERA IZ NEMČIJE IN SLOVENIJE

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The long shadow of mining: a mining slag heap in the Mansfeld area (GER).  
Dolgoletne posledice rudarjenja – kopa rudarske jalovine  
v okolici Mansfelda, Nemčija

# Post-mining potentials and redevelopment of former mining regions in Central Europe – Case studies from Germany and Slovenia

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**ABSTRACT:** This article discusses the character of post-mining potentials and their role in regional development in a German and Slovenian mining region. The many possible uses often include renewable energies (biomass, geothermal energy), or tourism (museums). Discussing two case study regions, this article presents similarities and differences in approaches towards the utilisation of potentials, and compares factors that influence utilisation with reference to national framework conditions. The text argues that in the context of structural change and mine closures, the use of post-mining potentials, such as post-mining landscapes, infrastructures and traditions, can be a way to explore new development options for affected regions.

**KEY WORDS:** geography, regional development, mining regions, post-mining potentials, structural changes Central Europe

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# 1 Introduction

In recent decades, many traditional European centres of the mining industry have been rendered unprofitable, due to new competitors on the world market and cutbacks in national subsidies. These changes have had a profound impact on mining regions and towns: The complete closure or substantial down-sizing of mining and related industries have triggered difficult processes of de-industrialisation, high unemployment and out-migration (Harfst et al. 2009; Baeten et al. 1999). In addition, such regions often face a difficult environmental legacy in the form of persistent pollution of the water, soil and air. Due to a lack of economic alternatives, the organisational, financial and conceptual resources of such regions are generally regarded as extremely sparse, and overtax local and regional decision makers (Lintz, Wirth 2009; Ache 2000).

Within these processes the framework conditions in European countries are different: While structural changes in most mining industries in Western Europe already occurred during the 1970 and '80s, the Central European countries experienced a period of radical transformation after the political upheaval in the last decades of the 20<sup>th</sup> century (Gorzelač 1998; Müller et al. 2005). Nevertheless problems persist, with issues of rehabilitation and development playing an important role in most of the regions under consideration. While in the past, the European Union in combination with national governments has tackled specific structural problems of coal and steel producing regions through such programmes as RECHAR and RESIDER, mining regions today face severe competition from other contenders, such as rural areas, for access to European funding programmes, such as ERDF.

In this context, Central European mining regions are increasingly relying on their own capacities and potentials to master structural adjustment. One way to deal with such far-reaching changes can be to review the mining legacy, in order to identify and use hitherto unrecognized potentials (Harfst et al. 2012; Wirth et al. 2012). Such utilisations have been discussed and applied in many countries, e.g. through the EU projects READY (Leibniz Institute 2006), REKULA and others (Internet 2, 3; Interreg 2005), as conferences and publications have recently demonstrated (Pearman 2009, IBA-Fürst-Pückler-Land 2010).

This paper discusses the role of post-mining potentials in regional transformation processes in Slovenia and Germany. The background is the ReSource project, an Objective 3 »Territorial cooperation« project (Central Europe) that runs from 2009 to 2012. Both case study regions have been impacted by the end of mining activities, and are predominantly characterised by small and medium-sized towns. The comparative analysis will focus on similarities and differences in approaches and utilisations of post-mining potentials. Special attention is given to the overall framework conditions that influence the usage of potentials.

## 2 Methodology

### 2.1 Definition of post-mining potentials

Post-mining potentials as an analytical and development concept were introduced in the project ReSource to designate elements left behind from the industrial past, which potentially represent a resource for new development and investment. As defined by Wirth et al (2012, 20) post-mining potentials are »*legacies, leavings, remains and residues of mining that can be used in a broad sense after the end of mineral exploitation for a number of purposes, ultimately for mastering structural changes*«. Similar terms have been used by Jolliff and Conlin (2011, 244), as well as by Jones and Munday (2001, 585), who focused on »natural and built resources« and Stranz (2010), who analysed potential implementation in Austrian post-mining regeneration processes. In addition, EU policies such as Territorial Agenda (Internet 1) and Europe 2020 (CEC 2010) define them as territorial potentials.

Although all residues of mining are anthropogenic, this research approach distinguishes between natural and cultural potentials: *Natural* potentials are defined as degraded fields or land, woodland, geothermal water or other natural elements which have been modified by mining, and are now present in the post-mining landscape. After rehabilitation, these potentials can be used for recreational purposes, such as hiking, cycling or newly created green areas, such as parks. More innovative uses focus on energy production, such as biomass plantations on post-mining land or mine water and stock pile heat for electric power production. *Cultural* potentials include technological heritage, infrastructure, production facilities and

housing, in short anything human-made and most commonly presented in museums, or turned into concert and conferences venues. Such non-material potentials as mining events, mining traditions and mining identity are also considered as part of this category (Marot, Cernic Mali 2012).

## 2.2 Methodological approach

The results of this paper are based on an analysis of the utilization of post-mining potentials in seven Central European regions, conducted in the context of the ReSource project. Here, regional profiles were drafted, which included general regional information (e.g. statistical data, mining activities and consequences), as well as strategies and projects of regional development which support the utilisation of potentials. Additionally the most important local and regional actors and their interplay have been outlined. The data was upgraded through semi-structured interviews with regional stakeholders, including mining company representatives, politicians, and administrative officials (Černe, Leskovar 2009) and a detailed analysis of national, regional and local policy papers. Researchers also participated in regional meetings on strategy development in 2009 and 2010 (Harfst et al. 2009). Results led to a SWOT analysis of regional strengths, weaknesses, opportunities and threats regarding the utilisation of potentials. Results were then discussed with regional stakeholders (Harfst et al. 2010).

Moreover, through the project output European Initiative Analysis, comprehensive data has been gathered on the projects for utilising post-mining potentials in the Central Europe programme area (Marot, Cernic Mali 2012). The results were evaluated according to the theory of quality standards in policy making and impact assessment practice (CEC 2009; Ekins, Medhurst 2006; Jacob et al. 2008; Simiyu 2011). Of 50 collected good practice projects, one is located in the Mansfeld region, while Zasavje accommodates three projects and one centre of knowledge.

## 3 State of the focus regions

### 3.1 Major overview of the regions

Both regions have a long tradition of mining activities, which has constituted the most important sector of the regional economy: The Mansfeld region contained one of the largest deposits of copper shale in Central Europe, and has been mined since around 1200. During the 1960s the regional mining industry employed around 40,000 people. In Zasavje underground and open-cast brown-coal excavation has existed for almost 300 years. In both cases, mining fostered the establishment of accompanying industries, such as wood processing, metal and chemical industries, as well as power plants. For both regions, the political upheaval of 1990, which was accompanied by rising production costs and a cut in state support for the mining industry, led to the closure of the pits: Mansfeld saw all its production closed in 1990, while for the Zasavje region, the Act on Providing Funds for the Closure of Coal-Mines in Zagorje, Senovo and Kanižarica (1995) established a legal framework for mine closure. Initially, mine closure was scheduled for 2005, but small-scale production still continues to this day, and is set to terminate after 2020 (Černe Leskovar 2009; Velikonja, Starman 2009).

The region of Zasavje is one of twelve Slovenian development areas, which have no administrative power, but are rather merely responsible for administering regional development programmes, while the German Mansfeld-Südharz region is a district (*Kreis*), the major administrative division between that of the states and that of the municipalities. It is larger than Zasavje both in terms of population (155,255 vs. 44,759 in 2008), and area (1449 sq km vs. 264 sq km; SORS 2011). Although both places are located in the centres of their countries, both are distant from national centres of growth, and hence distinctly peripheral in character.

Similar trends in population and economic development have been observable since the mine closures: In the German region, the population shrank rather dramatically between 1981 and 2008, while in the Slovenian region, the change was less pronounced (see Fig. 2). The age structure, too, indicates on-going demographic change, with the share of older population (65+) exceeding that of the younger population (< 18), which is more evident in Mansfeld (20% vs. 12%) than in Zasavje (15% vs. 14%) (Harfst et al. 2009; SORS 2009, 2011).

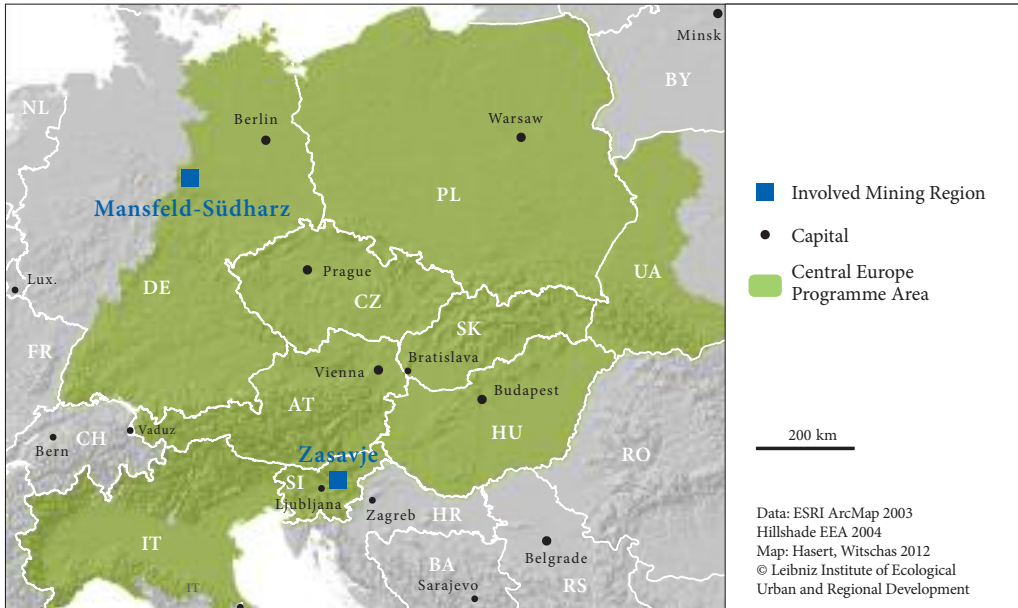


Figure 1: Location of the two regions (Source: IOER 2012).

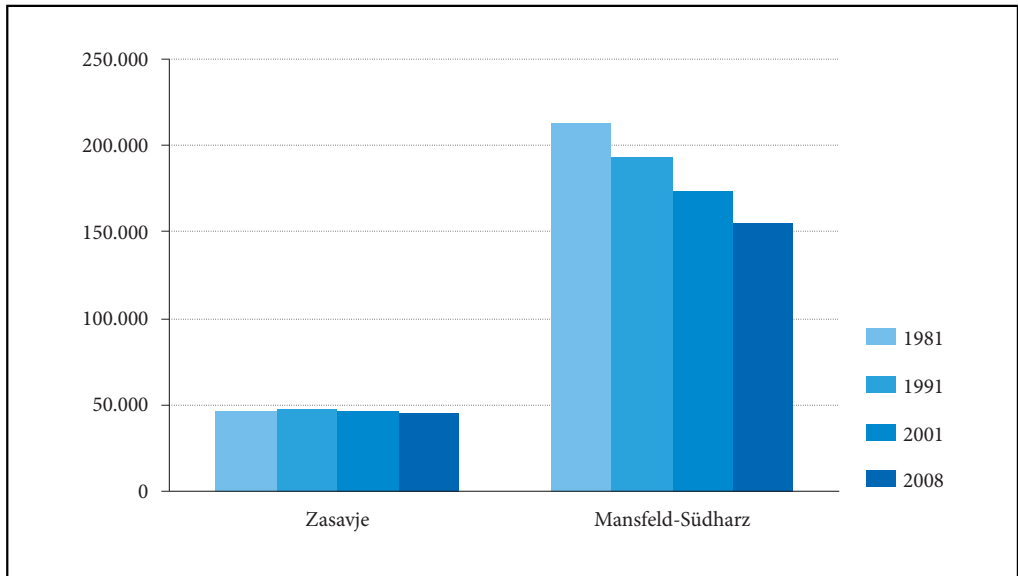


Figure 2: Comparison of the population developments in the two regions. (Harfst et al. 2010 based on national statistics; SORS 2011).

The best illustration of economic transformation is change in employment structure. In both regions, a similar picture can be observed between 1991 and 2008: A vast decrease of employment in the secondary sector (Mansfeld -19.7%, Zasavje -18.5%) is matched by a rise of the tertiary sector (Mansfeld 23.8%, Zasavje 18.8%). Fig. 3 underscores the dramatic overall loss of jobs in both regions.

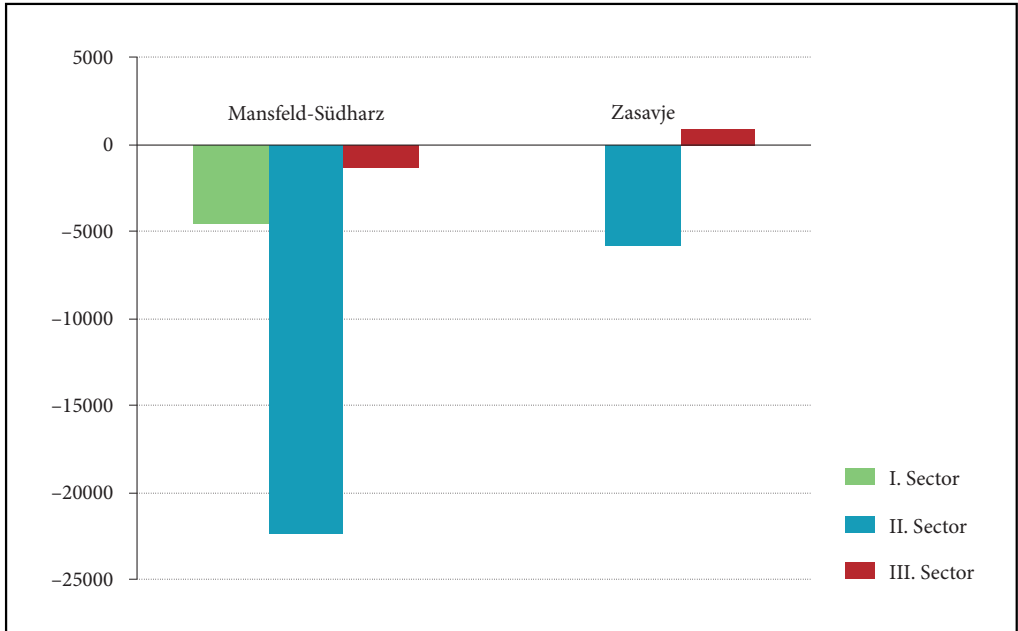


Figure 3: Change in jobs, by sector (total), 1991/1996 – 2007/2008 (Wirth et al. 2012; AJPES 2009).

The total loss of jobs corresponded with rising unemployment figures. Both regions now have higher unemployment rates than the national averages, with figures in the German region almost double the national rate, while in Slovenia, the gap is smaller (see Table 1). Also, regional GDP in both regions was well below the respective national averages (Harfst et al. 2010; Marot 2012).

Table 1: Unemployment rates during the periods between 1981 and 2008.

Unemployment rates	1981	1991	2001	2008	National average, 2008
Mansfeld	0.0%	11.5%	22.8%	17.8%	8.1%
Zasavje	0.0%	7.2%	16.1%	11.5%	7.7%

Source: Harfst et al. 2010 based on national statistics; SORS 2010.

In addition to social and economic difficulties, both regions also need to tackle environmental damage. Particulate contaminated by heavy metals is one of the major hazards in Mansfeld, a problem addressed by the state-funded »Major Ecological Project – Mansfelder Land« which ran from 1993 to 2011. It was the only major federal funding programme the region has profited from with regard to its mining legacy (Harfst, Wirth 2011). Another problem in the German region is the numerous slag heaps left in the region as a result of the removal of 50 million m<sup>3</sup> of material in the course of the copper mining history, which are not restored. In Zasavje environmental damages has been mainly restored through mine closure programmes run by the mining company. For example, in Zagorje, a water control system was established together with a cherry orchard to prevent denuding and erosion, and in Trbovlje, recultivation of open cast mining areas was carried out. The polluted air which in the second half of 20<sup>th</sup> century made Zasavje one of the most polluted regions has been tackled with the two sulphur scrubbing plants built on the site of the coal power plant and the cement factory. However, the soil is still contaminated by heavy metals, and cannot be used for agriculture. While ash disposal has significantly changed one of the tributary valleys of the river Sava, the areas now have been recultivated into a green area, so no large slag heaps are any longer evident. Geomorphological transformations such as landslides and cracks still occur due to the

continuing coal mining, and also present an obstacle for future use, since no construction is allowed in the area for the next 30 years (Klančičar Schneider 2010; Marot 2010). In conclusion, both regions face similar environmental problems stemming from mining, and even with rehabilitation measures, a long time period will be needed before these landscape fully recuperate from the physical damage (Harfst et al. 2009; Klančičar 2006).

### 3.2 Utilisation of post-mining potentials

Although mining legacies are generally viewed as negative, both regions are rich in post-mining potentials that can be qualitatively assessed for future development. Natural potentials can be found in the form of formerly degraded and now partially recultivated surfaces, e.g. the recreational area Europark in Zagorje ob Savi. Such use of natural potentials is to some extent conditioned by the current restoration phase in the area. In addition, pilot studies in Zasavje have revealed a potential for using geothermal mining water to supply the local heating system. Similarly, the Mansfeld region has recently invested in a pilot project for energy production based on warm mine water at the site of the mining museum in Wettelrode (Harfst et al. 2009). In the state of Saxony-Anhalt, the project is considered a pioneer in the utilisation of such a technology. Moreover, biomass production on the former mining areas in Zasavje has been tested, but the area available is too small for economically viable production (Klančičar Schneider 2010).

Both regions are set in interesting, preserved natural landscapes, which are suitable for a range of recreational activities and tourism development. The Slovenian region has two regional parks and Natura 2000 areas, the potentials of which have been recently utilised under the ERDF-sponsored project »V tri krasne«, which catalogued all natural sights attractive for tourism, established tourist information billboards, and financed creation of tourist souvenirs. This new focus on tourism is connected with local mining traditions that have been exploited for a long time: They consist of artistic performances and works as well as a long museum tradition, focused especially on the technological heritage (RDC 2007)

While Zasavje has only just started to create a tourism image, the Mansfeld-Südharz district already has a strong brand in place – the legacy of Reformation leader Martin Luther. In addition, the area has interesting landscapes with low-key cultural facilities (Harfst et al. 2009). The mining heritage is used in various ways as an additional cultural potential in these overall touristic efforts (see Table 2). Moreover, the mining landscape, with its cone-shaped slag heaps, marks the area in a unique way (Harfst et al. 2010).

Table 2: Overview of post-mining potentials utilization in both regions

NATURAL POTENTIALS		
	Existing in the region	Projects, utilisation
Mansfeld region	Disused mining shafts Cone-shaped heaps	Pilot geothermal mining water use study Material for road building and residual mining material
Zasavje	Degraded area Geothermal mining water (32°C) Underground shafts	Pilot biomass plantation Pilot study on the geothermal mining water use Green and recreational areas Solar power plant in the former mining housing area
CULTURAL POTENTIALS		
Mansfeld region	Legacy of Martin Luther Mining traditions The former shafts	Mansfeld Museum in Hettstedt Mining railway between Klostermansfeld and Hettstedt Mining museum and show mine at the Röhrig shaft near Sangerhausen Thematic hiking trails around former mining sites
Zasavje	Former miners' neighbourhoods Technological heritage – tools, warehouses, vehicles Local identity, traditions	Zasavje regional museum Ethnological trail in Trbovlje Youth art festivals on different themes Tourism project »V tri krasne«

Source: Authors compilation based on Harfst et al. 2009.

The utilization of post-mining potentials is managed in a different ways in the regions: While the district of Mansfeld-Südharz lacks any clear overall strategic concept or organisational structure for utilising

post-mining potentials, the Zasavje region usually integrates such projects in the regional development programme coordinated by the Regional Development Centre. Both regions strongly rely on financial support from EU financial sources (e.g. ERDF) for utilising their potentials. In the Slovenian case, additional money has been provided by the special laws adopted for the Zasavje mine closure programme, of which approx. 10% – €265,043 – have been used for the direct closure activities, in this case for Trbovlje-Hrastnik mine (Act 1995, 2000). As a further illustration, investments in the Regional Development Programme of the Zasavje region between 2000 and 2006 totalled €175 million, of which 20% came from the national budget, 15% from the municipalities, 25% from private investors and 40% from the European Structural and Cohesion Funds (RDC 2002; RDC 2007). In Mansfeld, overall project planning and development is strongly dependent on the local LEADER action group (LAG), which has coordinated the realisation of 19 projects with a variety of foci, worth some €3 million through 2006. The LAG serves as an important nodal point for various ideas and actors in the district, especially because of its ability to convert ideas into projects and to involve different actors, such as the Miners' Association. The Zasavje Regional Development Centre assumes a similar role as that of the LAG, but it has not always been powerful enough to support the networking of all important actors in post-mining development, so that there is a lack of sufficient co-operation between the actors (Marot 2005, 2012; Klančičar 2006; Harfst et al. 2012).

## 4 Discussion

A comparison of the two regions generally underscores the similarities in the development path of the regions after mine closure (Dale 2002). In both places, the importance of post-mining potentials has been recognised by local actors, with similar potentials in focus: In both regions, the use of natural potentials includes pilot studies and projects for the use of warm mine waters and biomass, although to date, the latter has been tested only in Slovenia. There are several factors which influence the use of the natural potentials in each: They range from the size of available areas, the extent of the environmental mining legacies, the phase of the restoration processes, the funding opportunities, national and local energy policies, and regional know-how (i.e. access to funds and technical knowledge) regarding the development on the global energy markets, which tailor regional decision-making and investments.

Tourism activities represent a major potential for utilisation, which are in both cases incorporated in wider tourism strategies: The Mansfeld region has integrated several of its mining traditions and heritage elements with the Martin Luther label, which serves as the main regional tourism brand. In Zasavje, mining is the core of a newly established tourism product, based on protected Natura 2000 areas. Nevertheless, neither of the regions can be considered strong tourism destinations yet, with infrastructures and service provision still only weakly developed. A better, more successful utilisation of cultural potentials is hindered by several factors: Obviously the poor image of the mining regions as the sites of »black« industrial production presents a distinct disadvantage in the highly competitive tourism market. Also, in both regions, actors have opted rather for cautious and secure investment regarding tourism, i.e. smaller museums and tourist routes. Therefore both regions lack distinct – and hence innovative – landmark projects, such as featured, for example, in the German IBA-Fürst-Pückler-Land project in Lusatia. Consequently, valorisation of tourism potentials is one of the most challenging choices: a poor image, a lack of infrastructures, unclear property rights, safety and liability issues, and a lack of planning instruments, all hinder the full realisation of potentials and the attraction of new investment.

Any utilisation of post-mining potentials will require cooperation and coordination of several actors in order to establish good and coherent projects. Both cases underscore the importance of policy making and planning processes in this regard, as both lack a comprehensive vision and strategy for the rehabilitation process, as has been argued as being necessary by Fischer, Stranz (2011), Digby (2010) and Hudson (2005). Comprehensive approaches in both regions are also hampered by rivalries between the municipalities and a lack of agreement on development issues and visions at various levels. Thus, individual projects have often only been carried out ad hoc because existing national development programmes and legislation are often too broad and do not focus specially on the problems of the mining areas. Both examples also show the lack of strong regional planning bodies that might establish consensus between municipalities for joint development initiatives. Financially, both regions rely heavily on EU funding for the utilisation of potentials, adding an element of instability, as the availability and overall amount could change in future. An overview of the SWOT is given in Table 3.



Table 3: Partial SWOT analysis concentrating on the utilization of potentials

STRENGTHS	WEAKNESSES
Established preservation of mining heritage and tradition, along with museum activity	No comprehensive renewal and rehabilitation strategy, Lack of leadership
Biomass and geothermal energy potentials	Rivalry between municipalities
Pilot studies and projects for the use of renewable energy	Population and job loss
Potentially attractive tourism location	No higher academic infrastructure in the district
Specific knowledge of mining engineering	Peripheral location to national growth poles
For the Slovenian region: Regional development programme and programme of measures for mine closure	Minor use of natural potentials
For the German region: post-mining landscape including cone-shaped slag heaps as a landmark and identification symbol	Polluted soil and vegetation
	Land rehabilitation process only partially concluded
OPPORTUNITIES	THREATS
Increased domestic tourism	On-going population loss and economic decline
Increasing raw material and energy prices, diversification and decentralization of the energy market	Subsidy decrease at the state and EU levels
New development areas, available after rehabilitation	Centralised national policy
	Continuing landscape degradation in the case of Slovenian region

Source: Author's compilation based on Harfst et al, 2010.

With regard to the national differences between Germany and Slovenia, research has shown that different state support in terms of funding and instruments allows more innovative utilisation in Germany than in Slovenia. Germany supported the use of renewable energies earlier, and established various programmes for addressing the complexity of urban degradation in former industrial/mining regions, even though Mansfeld has not directly profited from those programmes. In Slovenia, such policy documents are still lacking, except for brief guidelines in the National Spatial Development Strategy (Ministry 2004). These findings correspond to the overall results from the European initiative analysis carried out within the ReSource project (Marot, Černič Mali 2012). Here, the results show that Germany has more projects utilising natural potentials than do other Central European countries, and also best scores regarding innovativeness and sustainability. This is a result of the better framework conditions (state support, larger development areas available, greater environmental awareness). As for cultural potentials, the results are more evenly distributed in the two countries.

## 5 Conclusion

The analysis in this text has highlighted the often very complex and difficult situation of many European mining regions at the end of mining activities. Such places are especially marked by a lack of economic alternatives and spare resources for future regional development efforts (Lintz et al. 2005). This also applies to mining regions, both in Germany and in Slovenia, although the framework conditions in each of these countries is different, particularly regarding measures that foster the utilisation of certain potentials (e.g. energy policies) and local governance structures.

The analysis here showed that both regions pursue the realisation of similar cultural and natural post-mining potentials with differing intensities. This corresponds to observations elsewhere, which stated that potentials are distributed evenly across mining regions, but their realisation varies with differences in elements (e.g. size of the redevelopment area, type of mining, financial resources available, etc.) (Marot, Černič Mali 2012; Scholz, Schwartze 2010). Utilisations are mainly found in the fields of tourism and renewable energies. Tourism potentials seem to be easy to establish by local actors, often in combination with other regional initiatives and European funding (Jones, Munday 2001). The utilisation of renewable energies often depends on outside funding and national policy agendas, and is sometimes also hampered by a significantly damaged environment, which needs decades to recover from the ecological damage.

Both regions have clearly reviewed their mining legacy to address two of the most pressing issues in terms of the future development of mining regions: image and identity, as well as economic development. Post-mining potentials therefore obviously hold the prospect for establishing new options for the development in those regions without denying their past. Thus, the utilisation of post-mining potentials can

be seen as an especially important pathway in the development of such regions after the abandonment of mining, where other development options are lacking. Although the utilisations of cultural and natural potentials often have often only limited effects on local job creation, especially the utilisation of natural potentials for energy production opens up the possibility for the region to connect to an innovative economic sector, which is often missing in those regions.

Nevertheless both examples discussed show that a successful use of post-mining potentials is not an easy task. If regions do not possess or develop the necessary technical, financial and institutional capacities to support utilization, these potentials are to likely remain unutilized (Harfst et al. 2012). A coherent multi-level approach is needed which includes an improvement of European and national framework conditions (e.g. on energy policies or programmes for the development of post-mining areas), as well as a more integrated strategy formulation at the local and regional levels (Dale 2002; Marot 2010). The goal should be to initiate a process of strategic development that realises post-mining potentials by including all necessary stakeholders, and that overcomes local and regional conflicts of interest between various actors regarding the utilisation of post-mining sites.

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# Porudarski potenciali in razvoj nekdanjih rudarskih regij srednje Evrope: študiji primera iz Nemčije in Slovenije

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**IZVLEČEK:** Članek obravnava značilnosti porudarskih potencialov in njihovo vlogo v regionalnem razvoju v izbrani nemški in slovenski rudarski regiji. Možnosti za uporabo potencialov so različne, največkrat gre za uporabo obnovljivih virov energije (biomasa, geotermalna energija) ali turizem (muzeji). Avtorja predstavita dve izbrani regiji, podobnosti in razlike v njunem pristopu pri uporabi potencialov in primerjata dejavnike, ki vplivajo na uporabo, upoštevajoč nacionalni politični in zakonodajni okvir. V sklepu so porudarski potenciali, na primer porudarska pokrajina, infrastruktura in rudarska tradicija, prepoznani kot ena izmed pomembnih razvojnih možnosti za rudarske regije, prizadete zaradi strukturnih sprememb in zaprtja rudnika.

**KLJUČNE BESEDE:** geografija, regionalni razvoj, rudarske regije, porudarski potenciali, strukturne spremembe, srednja Evropa

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# 1 Uvod

Novi proizvajalci, naraščajoče cene goriv na svetovnem trgu in zniževanje nacionalnih subvencij so v zadnjih desetletjih povzročili upad gospodarske moči velikih evropskih industrijskih središč, kar je vplivalo tudi na rudarske regije in mesta. Popolno zaprtje rudnika ali obsežnejše zmanjšanje rudarjenja in z njim povezane industrije sta jim prinesla proces deindustrializacije, visoko brezposelnost in izseljevanje prebivalstva (Harfst et al. 2009; Baeten et al. 1999). Dodatno se te regije soočajo še z okoljskimi problemi, kot je npr. onesnaženost vodnih virov, prsti in zraka. Zaradi pomanjkanja gospodarske perspektive, organizacijskih in finančnih virov ter razvojnih konceptov so ta porudarska območja vse redkeje poseljena in tudi finančno obremenjujejo lokalne in regionalne odločevalce, saj proces preobrazbe industrijske v postindustrijsko družbo ne poteka enako uspešno kot v gospodarsko uspešnih regijah (Lintz, Wirth 2009; Ache 2000).

Procesi deindustrializacije se tako ne kažejo v vseh evropskih državah enako. Medtem ko so se strukturne spremembe v panogi rudarstva v zahodni Evropi pojavile že v 70. in 80. letih 20. stoletja, so se države srednje Evrope z njimi soočile zlasti v obdobju večjih političnih sprememb in preobratov ob koncu stoletja (Gorzela 1998; Müller et al. 2005). V preteklosti je Evropska unija skupaj z vladami držav članic vzpostavila ukrepe in programe, kot sta RECHAR in RESIDER, s katerimi naj bi regije, proizvajalke premoga in jekla, lažje premostile specifične strukturne probleme, saj je konkurenca za pridobitev evropskih sredstev, na primer Evropskega regionalnega razvojnega sklada, velika.

Kljub tem investicijam gospodarska preobrazba srednjeevropskih porudarskih regij ni končana, saj se te v zadnjem času ukvarjajo predvsem z revitalizacijo in sanacijo površin in z načrtovanjem razvoja. Pri tem se zanašajo predvsem na svoje sposobnosti in potencialne. Eden izmed načinov spopada s tako velikimi spremembami je pregled in ovrednotenje rudarske zapuščine, znotraj katere lahko regije prepoznajo in uporabijo doslej neprepoznane porudarske potencialne (Harfst et al. 2012; Wirth et al. 2012). Takšen pristop so uporabile že številne države, med drugim tudi v evropskih projektih READY (Leibniz Institute 2008) ali REKULA (Internet 2, 3; Interreg 2005) ali kot je predstavljeno na konferencah in v tematsko temu namenjenih publikacijah (Pearman 2009, IBA-Fürst-Pückler-Land 2010).

V članku je podrobneje obravnavana vloga porudarskih potencialov v procesu preobrazbe porudarskih regij v Sloveniji in Nemčiji. Raziskava je bila izvedena v okviru projekta ReSource, ki je v obdobju od 2009 do 2012 potekal znotraj programa Cilj 3 Teritorialno sodelovanje za območje srednje Evrope. Obe izbrani regiji označuje konec rudarjenja in poselitve v obliki mreže majhnih in srednjevelikih mest. Primerjalna analiza se osredotoča na podobnosti in razlike v pristopih in uporabi porudarskih potencialov, pri čemer je posebna pozornost namenjena celoviti institucionalni podpori in upravljaljski sposobnosti, ki pogojujeta uporabo potencialov.

## 2 Metodologija

### 2.1 Opredelitev porudarskih potencialov

Porudarski potenciali so bili predstavljeni kot analitični in razvojni koncept v projektu ReSource kot vir, ki je produkt industrijske preteklosti in potencialno nova osnova za razvoj in možne investicije. Kot je opredeljeno v Wirthu in drugih (2012, 20), so porudarski potenciali »*zapuščina ali preživeli pomniki rudarjenja, ki jih po končani dejavnosti lahko uporabljamo na različne načine in v različne namene, še zlasti pa za uspešen 'spopad' s strukturnimi spremembami*«. Podoben izraz sta v svoji raziskavi uporabila Jolliff in Conlin (2011, 244), enako tudi Jones in Munday (2001, 585), ki sta se osredotočila na naravne in grajene vire, ter Stranz (2010), ki je analizirala uporabo potencialov na primeru procesa porudarske prenovne v eni od avstrijskih regij. Tudi evropske politike, ko sta Teritorialna agenda (Internet 1) in Evropa 2020 (CEC 2010), omenjata pojem potencialov, vendar z izrazom 'prostorski potenciali'.

Čeprav je celotna zapuščina rudarjenja antropogenega izvora, smo se odločili za razlikovanje med naravnimi in kulturnimi potenciali: *naravne* potencialne predstavljajo degradirane površine in zemljišča, gozdovi, geotermalna voda ali drugi naravni elementi, ki jih je rudarjenje spremenilo in so danes prisotni v porudarskih pokrajini. Po opravljeni revitalizaciji lahko takšne potencialne uporabimo v športno-rekreativne namene, na primer za ureditev pohodnih in kolesarskih poti ali za nove zelene in parkovne površine. Inovativnejša uporaba naravnih virov vključuje proizvodnjo energije ali energetskih virov, kot so na pri-

mer plantaže biomase na nekdanjih rudarskih površinah ali uporaba jamske vode ali toplote deponij za proizvodnjo toplote ali elektrike. *Kulturni potenciali* vključujejo tehnično dediščino, infrastrukturo, proizvodne hale in rudarska stanovanja, skratka vse, kar je ustvaril človek in je prisotno bodisi v obliki stavbne dediščine, bodisi kot eksponat v muzejih, bodisi je bil objekt celo spremenjen v koncertno ali konferenčno prizorišče. Dodatno h kulturnim potencialom prištevamo še nematerialne potenciale, na primer tradicionalne rudarske dogodke, rudarsko tradicijo in identiteto, značilno za rudarska območja (Marot, Cernic Mali 2012).

## 2.2 Metodološki pristop

Ugotovitve, predstavljene v članku, so rezultat analize uporabe porudarskih potencialov v sedmih srednjeevropskih državah, ki so sodelovale v projektu ReSource. V okviru znanstvene sekcije projekta so bili najprej pripravljene regionalni profili, ki vsebujejo splošne regionalne informacije, na primer fizičnogeografske značilnosti regij, demografske in gospodarske statistične podatke s poudarkom na rudarski dejavnosti in njenih posledicah, ter pregled strategij in projektov regionalnega razvoja, ki vključujejo rabo potencialov. Izdelana je bila analiza delovanja in sodelovanja najpomembnejših lokalnih in regionalnih akterjev, ki je bila dodatno nadgrajena s polstrukturiranimi intervjuji s predstavniki rudarskih podjetij, politike in uprave (Černe, Leskovar 2009) ter s poglobljeno analizo nacionalnih, regionalnih in lokalnih političnih dokumentov. Raziskovalci so v obdobju od 2009 do 2010 sodelovali na regionalnih srečanjih, namenjenih oblikovanju ali izvajanju regionalnih razvojnih strategij (Harfst et al. 2009). Rezultati analize stanja so bili nadgrajeni s SWOT-analizo prednosti, slabosti, priložnosti in nevarnosti, ki se je v tem primeru osredotočila zlasti na rabo potencialov. Ugotovitve analize so bile kot povratna informacija posredovane regionalnim deležnikom (Harfst et al. 2010).

Poleg pregleda regij je bila izdelana še analiza evropskih pobud oziroma dobrih praks, znotraj katere so bili izbrani obsežnejši podatki o projektih, ki na območju programa Srednja Evropa uporabljajo porudarske potenciale (Marot, Cernic Mali 2012). Projekti so bili s pomočjo pridobljenih podatkov in poenoteni projektini opisov ovrednoteni po vnaprej pripravljenem postopku in kriterijih, določenih v skladu s teorijo o standardih kakovosti v postopku priprave politik in praksi presoj učinkov (CEC 2009; Ekins, Medhurst 2006; Jacob et al. 2008; Simiyu 2011). Od 50 izbranih primerov dobre prakse je eden lociran v nemški regiji Mansfeld, v Zasavju pa najdemo tri takšne primere in en center znanja.

## 3 Analiza izbranih regij

### 3.1 Splošen opis regij

Obe izbrani regiji imata dolgo tradicijo rudarjenja, hkrati pa je njuna industrija najpomembnejši gospodarski sektor. V Mansfeldu najdemo eno največjih srednjeevropskih nahajališč bakrove rude, ki so ga začeli izkoriščati že leta 1200. Ob presežku proizvodnje v 60. letih 20. stoletja je rudarska industrija na območju zaposlovala kar 40.000 ljudi. V Zasavju se je rudarjenje začelo kasneje in traja že 300 let. Rjavi premog so nekdanj pridobivali v dnevnih kopih, danes pa v podzemnih rovih. V obeh regijah je rudarjenje vplivalo na razvoj drugih industrijskih panog, največkrat odvisnih od rudarjenja, kot so predelava lesa, kovinska in kemična industrija ali postavitve termoelektrarne. Politične spremembe v letu 1990, ki so jih spremljali naraščajoči stroški proizvodnje in zmanjšanje državne podpore rudarjenju, so povzročile zaprtje rudnikov: v Mansfeldu se je to zgodilo že leta 1990, medtem ko je bila leta 1995 s sprejetjem zakona o zagotavljanju sredstev za zaprtje rudnikov rjavega premoga Zagorje, Senovo in Kanižarica postavljena osnova za zaprtje prvega zasavskega rudnika. Zaprtje rudnikov na celotnem območju je bilo na osnovi dopolnjenega zakona o postopnem zapiranju Rudnika Trbovlje-Hrastnik in razvojnem prestrukturiranju regije (2000) predstavljeno na leto 2020, kar še nekaj časa omogoča ohranitev proizvodnje v manjšem obsegu (Černe Leskovar 2009; Velikonja, Starman 2009).

Slika 1: Lokacija izbranih regij (IOER 2012).  
Glej angleški del prispevka.



Zasavska regija je ena od 12 slovenskih razvojnih regij, ki nimajo administrativne moči, so pa odgovorne za pripravo in izvajanje regionalnega razvojnega programa. V nasprotju s slovensko je nemška regija upravno okrožje in je hkrati tako po številu prebivalcev (155.255 vs. 44.759 v Zasavju, 2008) kot po velikosti (1.449 km<sup>2</sup> vs. 264 km<sup>2</sup> v Zasavju; SORS 2011) večja od obeh regij. Čeprav sta regiji locirani v središču države, sta zaradi oddaljenosti od centrov rasti in slabše prometne mreže označeni kot periferni regiji.

V obeh regijah lahko od zaprtja oziroma začetka procesa zapiranja rudnika opazimo podoben trend v razvoju prebivalstva in gospodarstva. Kot prikazuje slika 2, se je v nemški regiji število prebivalcev v obdobju med 1981 in 2008 drastično zmanjšalo, v slovenski regiji se je prav tako zgodil upad, vendar manjši. Demografske spremembe zaznamuje tudi starostna struktura, v kateri delež starejših (+65 let) presega delež mlajših prebivalcev, kar je izrazitejše v Mansfeldu (12 % vs. 20 %) kot v Zasavju (14 % vs. 15 %) (Harfst et al. 2009; SORS 2009, 2011).

Slika 2: Primerjava razvoja prebivalstva v obeh regijah (Harfst in drugi 2010 na podlagi nacionalne statistike; SORS 2011). Glej angleški del prispevka.

Najboljši prikaz gospodarske preobrazbe je sprememba zaposlitvene strukture. V obeh regijah v obdobju med 1991 in 2008 opazimo podobno sliko: obsežen upad zaposlitve v sekundarnem sektorju (Mansfeld –19,7 %, Zasavje –18,5 %), ki mu premosorazmerno ustreza porast terciarnega sektorja (Mansfeld 23,8 %, Zasavje 18,8 %). Slika 3 nazorno prikazuje dramatično izgubo delovnih mest v zadnjih 30 letih, ki je prisotna v obeh regijah.

Slika 3: Sprememba števila delovnih mest po sektorjih, 1991/1996–2007/2008 (Wirth in drugi 2012; AJPES 2009). Glej angleški del prispevka.

Celotna izguba delovnih mest se kaže tudi v naraščajočem deležu brezposelnih. Obe regiji se v svojih državah uvrščata med regije z visoko brezposelnostjo, ki je nad državnim povprečjem. V Nemčiji je ta številka kar dvakratnik državnega povprečja, medtem ko je slovenski presežek povprečja manjši (glej preglednico 1). Zaradi upada gospodarske moči je tudi bruto domači proizvod obeh regij pod državnim povprečjem (Harfst et al. 2010; Marot 2012).

Preglednica 1: Stopnja brezposelnosti v obdobju med 1981 in 2008

stopnja brezposelnosti	1981	1991	2001	2008	nacionalno povprečje, 2008
Mansfeld	0,0 %	11,5 %	22,8 %	17,8 %	8,1 %
Zasavje	0,0 %	7,2 %	16,1 %	11,5 %	7,7 %

Vir: Harfst et al. 2010 na podlagi nacionalne statistike; SORS 2010.

Poleg družbenih in gospodarskih problemov se obe regiji soočata z veliko ekološko škodo. Eno izmed glavnih okoljskih tveganj v Mansfeldu pomeni fin prah, ki vsebuje delce težkih kovin. Onesnaženost zraka in prsti so poskušali odpraviti s pomočjo projekta, imenovanega »Major Ecological Project – Mansfelder Land«, ki ga je financirala država v letih med 1993 in 2011. Ta projekt je edini primer zveznega financiranja, namenjenega rudarski zapuščini (Harfst, Wirth 2011). Drugi problem nemške regije so številna, še neurejena odlagališča jalovine, ki so nastala kot posledica odstranitve 50 milijonov m<sup>3</sup> materiala zaradi pridobivanja bakra. V Zasavju so ekološko škodo zaradi rudarjenja poskusili zmanjšati predvsem s programom zapiranja, ki ga letno pripravi in izvaja premogokopna družba. V Zagorju so vzpostavili sistem odvodnjavanja in na površini zasadili češnje, ki preprečujejo denudacijo in erozijo. V Trbovljah so v procesu primarne rekultivacije zamenjali zgornjo plast prsti in površino zatravili. Onesnažen zrak, ki je Zasavje desetletja uvrščal med najbolj onesnažene slovenske regije, se je izboljšal s postavitvijo dveh razžvepljevalnih naprav, ene v termoelektrarni in druge v industriji cementa. Prst na večini območja nekdanjega dnevnega kopa je še vedno onesnažena in ni uporabna za kmetijstvo. Razen deponije pepela, ki je spremenila geomorfologijo ene od stranskih dolin reke Save in je bila v preteklih letih rekultivirana v zeleno površino, v slovenski regiji ne najdemo jalovišč, saj izkop že dolgo poteka le podzemno. Geomorfološke spremembe, kot so plazovi, prelomi in opusteli kamnolomi, so še vedno prisotne in se zaradi nadaljevanja proizvodnje pojavljajo na novo, tako da predstavljajo oviro za prihodnji razvoj, saj gradnja na območju

ne bo možna vsaj še nadaljnjih 30 let (Klancičar Schneider 2010; Marot 2010). Iz zapisanega sklepamo, da se obe regiji soočata s podobnimi okoljskimi problemi, ki jih kljub obstoječim ukrepom sanacije zemljišč ne moremo odpraviti v krajšem obdobju, kar močno vpliva tudi na izkoriščanje porudarskih potencialov (Harfst et al. 2009; Klancičar 2006).

### 3.2 Uporaba porudarskih potencialov

Čeprav je rudarska dediščina s podobo rudarskih regij večinoma prepoznana kot 'črna' in negativna, sta obe regiji bogati s porudarskimi potenciali, ki jih je treba najprej ovrednotiti in nato vključiti v prihodnji razvoj. Naravne potenciale najdemo v obliki degradiranih in do določene mere saniranih površin, kot je na primer rekreacijski park Evropark v Zagorju ob Savi. Pri tem je treba upoštevati, da je vsakršna izraba naravnih potencialov pogojena s fazo remediacije, v kateri je porudarsko območje. Pilotne študije v zasavski regiji so odkrile potencial za uporabo geotermalna jamske vode, ki bi jo lahko uporabili v lokalnem daljinskem sistemu ogrevanja. Tudi regija Mansfeld je v zadnjem času investirala v pilotni projekt proizvodnje energije iz tople jamske vode, in sicer na območju muzeja v kraju Wettelrode (Harfst et al. 2009). V nemški deželi Saški-Anhalt je projekt prepoznan kot pionirski na področju uporabe takšne tehnologije. Nadalje so v Zasavju na območju nekdanjega dnevnega kopa zasadili manjšo poskusno plantažo biomase, vendar se je izkazalo, da je območje premajhno za dolgoročno ekonomsko učinkovito proizvodnjo (Klancičar Schneider 2010).

Obe regiji se nahajata v pokrajini, kjer je narava kljub rudarjenju toliko ohranjena, da omogoča rekreacijske dejavnosti in tudi razvoj turizma. V zasavski regiji najdemo dva regionalna parka in več območij Nature 2000, katere potencial je bil prepoznan v okviru projekta »V tri krasne«, ki ga je sofinanciral Evropski sklad za regionalni razvoj. V projektu so popisali vse naravne znamenitosti, privlačne za turizem, postavili informativne table in financirali oblikovanje in izdelavo turističnih spominkov. Najnovejše dejavnosti, ki so povezane s turizmom, vključujejo tudi rudarsko dediščino oziroma umetnost, ki temelji na njej, na primer plesne predstave, in uveljavljeno muzejsko dejavnost, ki skrbi zlasti za tehnično dediščino (RDC 2007).

Medtem ko so v Zasavju šele dobro začeli z vzpostavitvijo turizma in spremembo podobe regije, je v regiji Mansfeld-Südharz tradicija turizma zlasti zaradi zapuščine in »turistične znamke« Martina Luthra že dolga. Nanjo je vezana tudi dodatna turistična ponudba, ki vključuje manj znane možnosti za kulturno dejavnost (Harfst et al. 2009). Načine, kako je rudarska dediščina vključena v turistično strategijo, prikazuje preglednica 2. Pokrajina je dodatno zanimiva in prepoznavna zaradi »rudarskih kupov jalovine«, po katerih se razlikuje od okoliške pokrajine (Harfst et al. 2010).

Preglednica 2: Pregled rudarskih potencialov, prisotnih v obeh regijah

NARAVNI POTENCIALI		
	obstoječi v regiji	projekti, ki uporabljajo potenciale
Mansfeld	neuporabljeni jamski rovi kupi jalovine	pilotna študija uporabe geotermalne jamske vode uporaba jalovine za gradnjo cest in nadaljnje pridobivanje mineralov in rude iz jalovine
Zasavje	degradirano območje geotermalna jamska voda (32 °C) podzemni rovi	poskusna plantaža biomase pilotna študija uporabe geotermalne jamske vode zelene in rekreacijske površine sončna elektrarna na strehi nekdanje rudarske kolonije
KULTURNI POTENCIALI		
Mansfeld	zapuščina Martina Luthra rudarska tradicija in običaji nekdanji rovi	mansfeldski muzej v Hettstedtu rudarska železnica med Kostermansfeldom in Hettstedtom rudarski muzej in muzejski rudnik v Röhrig-Schachtu v bližini Sangerhausna tematske pohodniške poti na nekdanjem rudniškem območju
Zasavje	nekdanje rudarske kolonije tehnična dediščina – orodja, skladišča, vozila lokalna identiteta, tradicija	zasavski regionalni muzej etnološka pot v Trbovljah mladinski umetniški festivali, različna tematika turistični projekt »V tri krasne«

Vir: prirejeno po Harfst et al. 2009.

Pristop k uporabi porudarskih potencialov v obeh regijah je različen. Medtem ko v upravnem okrožju Mansfeld-Südharz manjkata jasen strateški koncept in organizacijska struktura za uporabo potencialov, v zasavski regiji projekte, ki uporabljajo potenciale, vključijo v regionalni razvojni program v pripravi Regionalnega centra za razvoj. Obe regiji se opirata predvsem na finančno pomoč EU, zlasti na Evropski sklad za regionalni razvoj. V preteklosti so bila za slovensko regijo dodatna sredstva zagotovljena s posebnim zakonom za zapiranje rudnika in prestrukturiranje regije, od katerih je bilo 10 % (tj. 265.043 evrov) neposredno namenjenih zapiralnim aktivnostim, v tem primeru za rudnik Trbovlje-Hrastnik (Act 1995, 2000). Za dodatno ponazoritev, investicije regionalnega razvojnega programa za Zasavje v obdobju med 2000 in 2006 so bile v celoti ocenjene na 175 milijonov evrov, od tega jih je 20 % zagotovila država, 15 % občine, 25 % zasebni investitorji in 40 % evropski strukturni in kohezijski skladi (RDC 2002; RDC 2007). V Mansfeldu sta celotno načrtovanje in razvoj odvisna samo od lokalne akcijske skupine LEADER (krajše LAG), ki je do leta 2006 izvedla 19 projektov z različno tematiko v skupni vrednosti 3 milijone evrov. Skupina LAG predstavlja pomembno stičišče različnih idej in akterjev v okrožju, še zlasti zaradi sposobnosti uresničevanja in prenosa idej v projekte, ki vključujejo različne deležnike, na primer zvezo rudarjev. Zasavski regionalni center za razvoj opravlja podobno vlogo kot LAG, vendar mu ne uspe vedno zagotoviti ustreznega sodelovanja vseh pomembnih deležnikov v porudarskem razvoju, kar se večkrat omenja kot institucionalna slabost regije (Marot 2005, 2012; Klančičar 2006; Harfst et al. 2012).

## 4 Razprava

Primerjava obeh regij je pokazala podobnosti v regionalnem razvoju po zaprtju rudnika (Dale 2002). Na obeh območjih so lokalni akterji prepoznali pomen porudarskih potencialov, ki jih uporabljajo podobno. Uporaba naravnih potencialov je zaenkrat še na ravni pilotnih študij in projektov, na primer uporaba tople jamske vode in biomase, pri čemer so proizvodnjo in uporabo slednje testirali le v Sloveniji. Dejavniki, ki pogojujejo rabo potencialov, so številni: velikost območja, ki je na voljo za razvoj, obseg ekološke škode, povzročene z rudarjenjem, faza revitalizacije, v kateri je regija, možnosti financiranja, nacionalna in lokalna energetska politika in predvsem znanje, prisotno v regiji, in dostop do njega. Na dogajanje vpliva tudi razvoj globalnega energetskega trga, ki usmerja regionalne odločitve in investicije na področju proizvodnje in rabe energije.

Turistične dejavnosti prevladujejo pri uporabi potencialov, saj so ti v obeh regijah vključeni v turistično strategijo in ponudbo. V Mansfeldu so rudarsko tradicijo in dediščino združili s prepoznavnostjo Martina Luthra, ki je glavna regionalna turistična znamka. Tudi v Zasavju rudarjenje služi kot osnova za sicer komaj oblikovane turistične produkte, ki temeljijo na območjih Nature 2000. Kljub vlaganju v turizem zaenkrat še nobena od regij ni prepoznavna kot pomembnejša turistična destinacija na območju države, tudi turistična infrastruktura in storitve še ne ustrezajo povsem sodobnim turističnim standardom. Učinkovitejšo uporabo kulturnih potencialov ovira več dejavnikov, med katerimi izstopata slaba prepoznavnost in negativna podoba regije kot »črnega revirja«, ki pomeni veliko slabost na sicer izredno konkurenčnem turističnem trgu. V obeh regijah so se tako odločili za »varne investicije« v tradicionalne turistične produkte, kot so manjši rudarski muzej ali tematske poti. Zaradi tega obema regijama primanjkuje samosvojega in inovativnega pristopa ali produktov, kot je nemški IBA-Fürst-Pückler-Land, kjer so izdelali celovit načrt za postopno urejanje nekdanjega dnevnega kopa v turistično destinacijo. Posledično je uporaba potencialov v turistične namene eden izmed večjih izzivov, saj negativna slika, pomanjkanje infrastrukture, nejasne in neurejene lastniške pravice, problemi z varnostjo in odgovornostjo ter pomanjkanje načrtovalskih instrumentov ovirajo optimalno rabo potencialov in zmanjšujejo privlačnost regij za nove investicije.

Po ugotovitvah analize kakršna koli uporaba porudarskih potencialov zahteva sodelovanje in koordinacijo različnih deležnikov. Tako je treba za izvedbo dobrega projekta zagotoviti ustrezno politiko in učinkovito načrtovanje, saj v obeh primerih manjkata celovita vizija in strategija za proces prenove, kar številni avtorji, kot so Fischer, Stranz (2011), Digby (2010) in Hudson (2005), opredeljujejo kot ključno za celoten proces. Celovite pristope v obeh regijah ovirajo notranji konflikti med občinami in pomanjkanje soglasnosti glede razvoja in vizije na različnih ravneh. Namesto projektov, vključenih v celotni program prenove, tako največkrat pride do izvedbe posameznih projektov, ki nastanejo ad hoc, kar je hkrati posledica obstoječih nacionalnih razvojnih programov in zakonodaje, ki je največkrat presplošna in se ne osredotoča

posebej na probleme rudarskih območij. V obeh primerih tako manjka regionalna načrtovalska institucija, ki bi poskrbela za soglasje med občinami glede skupnih razvojnih pobud. Finančno sta tudi pri uporabi porudarskih virov obe regiji odvisni od evropskih sredstev, kar še dodatno vnaša nestabilnost, saj je v prihodnje pričakovati spremembe dostopnosti sredstev prek tega vira. Dodatne prednosti, slabosti, priložnost in nevarnosti, s katerimi se soočata obe regiji pri uporabi porudarskih potencialov, so prikazane v preglednici 3.

Preglednica 3: Tematska analiza SWOT, namenjena uporabi potencialov

PREDNOSTI	SLABOSTI
<p>Uveljavljeno ohranjanje rudarske dediščine in tradicije, skupaj z muzejsko aktivnostjo.</p> <p>Potencial za rabo biomase in geotermalne energije.</p> <p>Pilotne študije in projekti za rabo obnovljive energije.</p> <p>Potencialno turistično privlačne lokacije.</p> <p>Specifično znanje s področja rudarskega inženirstva.</p> <p>Za Slovenijo: regionalni razvojni program in program ukrepov zapiranja.</p> <p>Za Nemčijo: porudarska pokrajina, ki vključuje kupe jalovine kot pokrajinski in identifikacijski simbol.</p>	<p>Ni celovitega pristopa k prenovi in rehabilitaciji površin, pomanjkanje vodstva.</p> <p>Rivalstvo med občinami.</p> <p>Izguba prebivalstva in delovnih mest.</p> <p>Odsotnost inštitucije za visokošolsko izobrazbo.</p> <p>Periferna lokacija v primerjavi z nacionalnimi centri rasti.</p> <p>Obrobna raba naravnih potencialov.</p> <p>Onesnažena prst in rastje.</p> <p>Proces sanacije zemljišč je končan le delno.</p>
PRILOŽNOSTI	NEVARNOSTI
<p>Naraščajoče število domačih turistov</p> <p>Naraščajoča cena surovega materiala in energije, diverzifikacija in decentralizacija energetskega trga</p> <p>Nova območja za razvoj, ki so na voljo po procesu rehabilitacije.</p>	<p>Nadaljnje izgubljanje prebivalstva in gospodarski upad.</p> <p>Zmanjšanje državnih subvencij in sofinanciranja EU.</p> <p>Centralizirana nacionalna politika.</p> <p>Nadaljnja degradacija pokrajine v primeru slovenske regije.</p>

Vir: Prirejeno po Harfst in drugi, 2010.

Ob pregledu nacionalnih razlik med Nemčijo in Slovenijo ugotovimo, da nemška vlada inovativneje podpira uporabo potencialov kot slovenska tako z vidika financiranja kot z vidika instrumentov. Tudi spodbude za rabo obnovljivih virov so bile v Nemčiji na voljo veliko prej kot v Sloveniji. Enako velja za različne programe, ki vključujejo probleme urbane degradacije in prenove nekdanjih industrijskih in rudarskih regij, čeprav sama regija Mansfeld s temi programi ni veliko pridobila. V Sloveniji strateških političnih dokumentov razen Strategije prostorskega razvoja Slovenije (Ministry 2004), v kateri so navedene usmeritve za razvoj degradiranih območij, ni. Te ugotovitve ustrezajo rezultatom analize evropskih pobud, prav tako pripravljene v okviru projekta ReSource (Marot, Čerňič Mali 2012), s katero smo ugotovili, da Nemčija v primerjavi s preostalimi srednjeevropskimi državami prednjači pri uporabi naravnih potencialov. V evalvaciji je dosegla najvišje ocene po kriterijih inovativnosti in trajnosti, kar je zlasti posledica boljših institucionalnih pogojev – državna podpora, na voljo so večja razvojna območja – in višje ekološke osveščenosti. Uporaba kulturnih potencialov je enakomerno porazdeljena med vsemi državami srednjeevropskega območja.

## 5 Sklep

Analiza, predstavljena v članku, je izpostavila kompleksnost in težavnost razvojne situacije, s katero se soočajo številne evropske industrijske regije ob koncu rudarjenja. Takšna območja so še posebno zaznamovana zaradi pomanjkanja gospodarskih alternativ in redkih virov, ki so na voljo za prihodnji regionalni razvoj (Lintz et al. 2005). To velja tudi za nekatere nemške in slovenske regije, čeprav je institucionalni okvir v obeh državah različen; še zlasti se razlikujejo lokalne upravljalvske strukture in ukrepi, s katerimi naj bi regije okrepile uporabo posameznih potencialov in so zapisani na primer v energetskih politikah.

Primerjava obeh regij je pokazala, da uporabljata podobne kulturne in naravne porudarske potencialne, vendar z različno intenziteto. To se ujema z uporabo potencialov drugje in s predpostavko, da so potenciali enakomerno porazdeljeni med rudarskimi regijami, da pa je njihova uporaba zaradi številnih dejavnikov, kot so velikost območja, tip rudarjenja, dostopni finančni viri, različna (Marot, Čerňič Mali 2012; Scholz, Schwartze 2010).

Prevladujoča raba potencialov obsega turistično dejavnost in rabo obnovljivih virov. Turistične potencialne regije lokalni akterji s pomočjo evropskih sredstev izkoriščajo lažje in v večjem obsegu kot ostale (Jones, Munday 2001). Uporaba obnovljivih virov energije je pogosto odvisna od zunanjih virov financiranja in nacionalne politične agende, lokalno pa tudi od stopnje prizadetosti okolja (zemljišč), ki je za nadaljnjo rabo primerno šele po daljšem obdobju.

Rudarska zapuščina je bila v obeh regijah ustrezno ovrednotena z namenom, da bi se vključila v prihodnji razvoj, spremenila podobo in regionalno identiteto ter podprla gospodarski razvoj. Porudarski potenciali so tako nova možnost za razvoj regij brez zanikanja njihove rudarske preteklosti. Tako uporabo porudarskih potencialov prepoznamo kot pomembno osnovo, še zlasti na območjih brez drugih večjih spodbud. Čeprav uporaba kulturnih in naravnih potencialov največkrat omejeno učinkuje na ustvarjanje novih delovnih mest (še zlasti uporaba naravnih potencialov za proizvodnjo energije), je to možnost regij za povezavo z inovativnimi gospodarskim sektorjem, ki je v regijah navadno v manjšini.

Tudi z izpostavitvijo pomanjkljivosti v analizi SWOT smo v obeh regijah pokazali, da učinkovita raba porudarskih potencialov ni preprosta naloga. Če regije nimajo ali ne razvijejo potrebnega tehničnega znanja, institucionalne in finančne usposobljenosti (s čimer bi podprle rabo), prisotnih porudarskih potencialov največkrat ne bodo izkoristile (Harfst et al. 2012). Potreben je celovit pristop, vzpostavljen na več ravneh, ki vključuje izboljšanje evropskega in nacionalnega institucionalnega okvira in pogojev znotraj njega, na primer energetske politike ali programov za razvoj porudarskih regij, kot tudi bolj integrirano pripravo strategij na lokalni in regionalni ravni (Dale 2002; Marot 2010). Njihov namen naj bi bil pobuda za takšen strateški razvoj, ki vključuje porudarske potencialne in vse pomembnejše deležnike ter hkrati ni oviran zaradi lokalnih in regionalnih konfliktov oziroma interesov različnih akterjev, ki se sicer vključujejo v razvoj porudarskih območij.

## 6 Literatura

Glej angleški del prispevka.