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Dissertation

Framework conditions and development potentials of (old) industrialised towns and regions in Central Europe

Utilising endogenous, place-based development potentials

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Abstract

This PhD discusses regional development in (old) industrial regions in Central Europe. It especially addresses regions which are predominantly characterised by small- and medium-sized towns. Such entities have not featured prominently in discussions of structural change and regional development over the past thirty to forty years. Interconnected, the work sheds light on the role of utilising endogenous place-based potentials as a way to create alternative development paths for such regions, by also taking into account multi-level governance arrangements and European cohesion funding.

The PhD is structured around 5 articles, which all have dealt with different aspects of regional development in Central European and were published between 2011 and 2020. These articles draw on a range of different case studies. To understand the underlying dynamics of regional development in such (old) industrial places, the work utilises a range of important theoretical concepts, including theories of uneven development, 'new regionalism', and interconnecting concepts of endogenous, place-based development potentials, as well as multi-level governance arrangements in an European context.

In its results, the PhD shows via the case-study regions how (old) industrial regions outside agglomeration areas are affected by processes of structural change and maps the challenges which they face creating new development paths. It highlights the fact that the processes of structural change can be all consuming, combining a range of economic, social and ecological elements. This affects regions, which often suffer already from low administrational and human capacities. Related to this, the work shows that especially local and regional development initiatives (fostered by multi-level governance settings) enable regions to develop new capacities and innovative development solutions.

Overall, the results of this PhD raise important questions on how to conceptualise and maintain long-term perspectives of regional development in the focus regions under European cohesion policies.

Keywords

regional development, old industrialised regions, governance

Kurzzusammenfassung

Diese Dissertation befasst sich mit der Regionalentwicklung von (alt-)industriellen Regionen in Mitteleuropa. Sie fokussiert insbesondere auf solche Regionen, die überwiegend von Klein- und Mittelstädten geprägt sind und damit in der Diskussion um Strukturwandel und Regionalentwicklung in den vergangenen dreißig bis vierzig Jahren nicht im Vordergrund der Betrachtung standen. Dabei beleuchtet die Arbeit die Rolle endogener, ortsbezogener Potenziale als Möglichkeit, alternative Entwicklungspfade für solche Regionen zu schaffen und berücksichtigt dabei insb. Multi-Level-Governance-Systeme und die europäische Kohäsionspolitik.

Die Dissertation basiert auf 5 Artikeln, die sich alle mit unterschiedlichen Aspekten der Regionalentwicklung in Mitteleuropa befassen und zwischen 2011 und 2020 veröffentlicht wurden. Sie stützt sich dabei auf eine Reihe von unterschiedlichen Fallstudien aus ganz Mitteleuropa. Um die zugrundeliegende Dynamik der Regionalentwicklung in solchen (alt-)industriellen Orten besser zu verstehen, nutzt diese Arbeit eine Reihe theoretischer Konzepte, darunter Theorien der ungleichen Entwicklung, des "neuen Regionalismus", sowie damit zusammenhängende Konzepte endogener, ortsbezogener Entwicklungspotenziale, sowie Multi-Level-Governance im europäischen Kontext.

Im Ergebnis zeigt die Dissertation anhand der diskutierten Fallstudien-Regionen, wie (alt-)industrielle Regionen außerhalb von Agglomerationsräumen von Prozessen des Strukturwandels betroffen sind und bildet die Herausforderungen ab, vor denen sie bei der Gestaltung neuer Entwicklungspfade stehen. Dabei wird hervorgehoben, dass die Wandlungssprozesse allumfassend sein können und oftmals eine Reihe von ökonomischen, sozialen und ökologischen Elementen vereinen. Dies findet oft in Regionen statt, die ohnehin mit nur geringen administrativen und personellen Kapazitäten ausgestattet sind. In diesem Zusammenhang zeigt die Arbeit, dass es insbesondere lokale und regionale Entwicklungsinitiativen ermöglichen (gefördert durchKohäsionspolitik und Multi-Level-Governance-Settings), neue Kapazitäten und innovative Lösungen im Bezug auf regionale Entwicklung zu schaffen.

Insgesamt werfen die Ergebnisse dieser Doktorarbeit wichtige Fragen darüber auf, wie langfristige Perspektiven für die regionale Entwicklung in den Fokusregionen im Rahmen der europäischen Kohäsionspolitik geschaffen werden können.

Schlagworte:

Regionalentwicklung, (Alt-)Industrieregionen, Governance

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Summary

Manufacturing industries worldwide underwent deep transformation processes at the end of the 20th century due to automation, the need to adapt to globalised production patterns, and the opening of markets in former state-led economies. These processes have triggered deeper shifts within the industrial societies of Europe and have had profound effects on many (old) industrial towns and regions across the continent. These changes have increased in places that already exhibited trends such as job losses in the manufacturing sector, and have triggered manifold social problems including outmigration and the loss of social functions. It can be stated that many of the changes in (old) industrialised towns and regions in the last decades have been dramatic. The on-going shifts in a now common European market and an increasingly globalised world have created a complex spatial pattern of manufacturing, where different trends of continuing de-industrialisation, competitive core industries, and re-industrialisation. The result is a highly diversified picture of manufacturing across Europe. Against this background, this PhD discusses regional development in (old) industrial regions and especially those which are predominantly characterised by small- and medium-sized towns. A particular focus is given to the utilisation of different development potentials derived from the industrial past and present; as well as to the (multi-level) governance settings in which these regional development processes take place.

This dissertation is firmly connected to a series of EU-funded projects, which were conducted across a time span of 10 years. While each project had different research foci, they all dealt with the broader topic of regional development in (old) industrialised regions in Central Europe where small and medium-sized towns predominated. The research in this PhD is based on close interaction between research and regional, applied knowledge, mainly following an 'Action Research' methodology. This was built around close collaboration between research and regional actors. It entailed joint development of project designs and outcomes, as well as close cooperation between partners in fulfilling project tasks, based on intensive knowledge transfer. Overall, the research methods used in the context of this PhD include both qualitative and quantitative elements, such as data analysis, stakeholder-interviews interviews, benchmarking, and so on.

The research results were used to publish 5 articles, which structure this PhD and are presented in the results' section. All of the individual articles deal with different aspects of regional development in Central European and were published between 2011 and 2020. The articles reflect the shifting focus of the author in tackling the subject: moving from single case-studies and their institutional setting in regional and national frameworks, to a better understanding of regional endogenous, place-based potentials, and thence to generating European policy advice on cohesion policy as a whole.

The novelty of this PhD lies in its research focus on those (old) industrial regions that are predominately characterised by small and medium-sized towns. These entities have not featured prominently in discussions of structural change and regional development over past thirty to forty years. Rather, the focus both of European policymaking and academic discourse have been on metropolitan or agglomerated regions, as growth regions. This focus has neglected a large body of settlements which often grew out of, around, and with manufacturing or mineral excavation sites. It is therefore especially

important that the analysis provided here, draws on a range of different case studies from across Central Europe. In so doing it addresses and closes an existing research gap. To understand the underlying dynamics of regional development in such (old) industrial places better, this PhD utilises a range of important theoretical concepts including theories of uneven development, 'new regionalism', and interconnecting concepts of endogenous, place-based development potentials, and multi-level governance in an European context.

In its results, the PhD shows via the case-study regions discussed in the articles, how (old) industrial regions outside agglomeration areas are affected by processes of structural change and maps the challenges which they face with regards to creating new development paths. It highlights the fact that the processes of change can be all consuming, that they may combine a range of economic, social and ecological elements, and that they are often located in regions, which may suffer from low administrational and human capacities. Related to this, the work shows that especially local regional development initiatives (fostered by multi-level governance settings) enable regions to develop new capacities and innovative solutions with regards to regional development. It also highlights the changing character of the 'puzzle parts', which form the bigger picture of regional development in small and medium-sized industrial towns and regions in Europe. The puzzle is constantly re-arranged by local/regional, as well as national and European influences in combination with processes of structural change, capacities and networks, funding opportunities and policy aims, all wrapped upon in complex multi-level governance settings across various sectors.

Additionally, the PhD sheds light on the role of utilising endogenous place-based potentials as a way to create alternative development paths for such regions, by also taking into account multi-level governance arrangements and European funding. Research here shows that utilising these potentials can address the need to reconfigure the traditional industrial bases and self-understanding of these places. They can also help to create new, future-orientated strategies, which build on traditional development paths. Their application has been fostered by the European Union mainly via its cohesion policies which suffer from a certain space-blindness in their general aims, as well with regard to their implementation through multilevel governance schemes. A holistic or integrated approach on how to deal or help (old) industrialised regions is largely absent. This is a major obstacle to the development of tailor-made solutions for such places.

Theory-wise, this PhD underlines the dynamic character of the (uneven) geographies of capitalism with reference to small and medium-sized (old) industrial towns and regions. The development paths of such places often lead from being drivers of national (sometimes even global) economic and social developments, to being reduced to all kind of problematic social and economic aspects. These dynamic development processes in (old) industrial regions are all-consuming: they affect socio-economic composition, as well as the concrete, natural and geographic outlook of places. This work also highlights how processes of global capitalism restructure in industrial towns and regions are dependent on specific, place-based circumstances. It is therefore important to note that the character and outcomes of crises can lead to very different development paths for regions. As a consequence, this PhD can state as a result, while theories of uneven development correctly highlight the global aspect of crises creation and their all-consuming effect on the local and regional level, it may underestimate the importance of local

specifics and multi-level governance frameworks which shape individual crises and their local and regional outcomes. Here, by reflecting on the 'new regionalism' paradigm, the PhD emphasises that interactions of regional actors, and how they can create enabling environments which provide benefits to regional development as a consequence of shared social and institutional assets such as tacit knowledge, local conventions, and trust. The results of this work thereby confirm the increased importance of 'the region' in shaping development processes, as many instruments of European cohesion policy target regional capacities and implementations. Nevertheless, the European system is rather based on a 'space-blind', top-down, pre-structured funding system, which is embedded in a complex multi-level governance system. This poses important theoretical and policy questions for regions in which capacities (for whatever reason) are so low that mutual benefits between actors and institutions are only weakly established - something that affects many small and medium-sized (old) industrial towns and regions. This PhD argues that the paradigm of 'new regionalism' attaches a rather optimistic outlook to the regional level and its capacities to boost regional development, while tending to underestimate the impact of crisis, as well as the general framework conditions into which such regions are incorporated.

Research-wise, the results of this PhD raise important questions on how to conceptualise and maintain long-term perspectives on regional development in the focus regions under European cohesion policies. Besides the overall question of how to address the needs of such regions better via the cohesion policy, on local and regional level especially the (long-term) involvement of local stakeholders, is an important aspect, to which little research has, thus far, occurred. There is also a lack of knowledge pertaining to questions of regional development in the context of small and medium-sized industrial towns and regions, especially as in-depth case studies are often missing. This is a problem in so far as these places have important economic and social functions but have seldom featured in any specific policy contexts. This might explain why their inhabitants perceive, whether rightly or wrongly, their localities to be 'places that do not matter'; a perception that must be confronted at both local, and European level, both from a cohesion policy view, as well as from a democratic, participatory perspective, if the European Union aims for more democratic legitimacy and acceptance among its citizens.

Zusammenfassung

Am Ende des 20. Jahrhunderts hat die verarbeitende Industrie weltweit aufgrund von Automatisierung, Anpassung an globalisierte Produktionsmuster und Öffnung der Märkte in ehemals staatlich-geführten Volkswirtschaften erneut tiefgreifende Transformationsprozesse durchlaufen. Dies deutet auf einen ausgeprägten Wandel in den Industriegesellschaften Europas hin und hatte auch tiefgreifende Auswirkungen auf viele (Alt-)Industriestädte und -regionen des Kontinents. Diese Transformationen haben an solchen Orten bereits bestehende Trends, wie die stetigen Verluste von Arbeitsplätzen im verarbeitenden Gewerbe, verstärkt und vielfältige soziale Probleme, wie Abwanderung und den Verlust sozialer Funktionen, verfestigt. Viele dieser Veränderungen in (alt-)industrialisierten Städten und Regionen waren in den letzten Jahrzehnten in der Tat dramatisch. Allerdings haben die anhaltenden Verschiebungen, in einem nun gemeinsamen europäischen Markt und einer zunehmend globalisierten Welt, ein komplexes räumliches Muster des verarbeitenden Gewerbes geschaffen. Hier zeichnen verschiedene Trends aus fortschreitender Deindustrialisierung, wettbewerbsfähiger Kernindustrien und Re-Industrialisierungsprozessen, ein geographisch stark diversifiziertes Bild der Produktionsstandorte in ganz Europa. Vor diesem Hintergrund diskutiert diese Dissertation die regionale Entwicklung in (Alt-) Industrieregionen, die überwiegend von kleinen und mittleren Städten geprägt sind und abseits von grossen Ballungsräumen liegen. Ein besonderer Schwerpunkt der Arbeit liegt auf der Nutzung unterschiedlicher Entwicklungspotentiale, die sich aus der industriellen Vergangenheit und Gegenwart ableiten, sowie auf der Betrachtung des (Mehrebenen-)Governance-Settings, in dem diese regionalen Entwicklungsprozesse stattfinden.

Diese Doktorarbeit ist fest mit einer Reihe von EU-finanzierten Projekten verbunden, die über einen Zeitraum von 10 Jahren durchgeführt wurden. Während die Projekte selbst jeweils unterschiedliche Forschungsschwerpunkte hatten, befassten sie sich alle mit dem übergreifenden Thema der Regionalentwicklung in (alt-)industrialisierten, überwiegend durch Klein- und Mittelstädte geprägten Regionen Mitteleuropas. Diese Projekte bilden das Grundgerüst der vorliegenden Dissertation. Dabei folgte die Forschungsagenda lose einem "Aktionsforschungsansatz", der auf einer engen Zusammenarbeit zwischen Forschung und regionalen Akteuren aufgebaut war. Dieser Ansatz beinhaltete die gemeinsame Entwicklung von Projektdesigns und -ergebnissen sowie eine enge Zusammenarbeit zwischen den Partnern bei der Erfüllung der Projektaufgaben auf der Grundlage eines intensiven Wissenstransfers. Zu den angewandten Forschungsmethoden dieser Doktorabeit gehören sowohl qualitative als auch quantitative Elemente wie Datenanalyse, Interviews mit Akteuren, Benchmarking usw.

Aus den Projekt-Kontexten heraus wurden 5 Artikel publiziert, die diese Doktorarbeit strukturieren und die im Ergebnisteil vorgestellt werden. Alle Artikel befassen sich mit verschiedenen Aspekten der Regionalentwicklung anhand von mitteleuropäischen Fallstudien und wurden alle zwischen 2011 und 2020 veröffentlicht. Die Artikel spiegeln dabei auch die Verlagerung des Schwerpunkts des Autors im Thema wider: von einzelnen Fallstudien und ihrem institutionellen Rahmen im regionalen und nationalen

Zusammenhang, hin zu einem besseren Verständnis regionaler endogener Potenziale und schließlich zur Betrachtung der europäischen Kohäsionspolitik als Ganzes.

Die Innovation dieser Doktorarbeit liegt in der Fokussierung Industrieregionen, die überwiegend durch kleine und mittelgroße Städte gekennzeichnet sind und abseits von grossen Ballungsräumen liegen. Diese Räume haben in den letzten drei bis vier Jahrzehnten in der Diskussion um Strukturwandel und Regionalentwicklung keine herausragende Rolle gespielt. Vielmehr standen, sowohl in der Politik als auch in der Wissenschaft, Metropol- oder Agglomerationsregionen als Wachstumsregionen im Mittelpunkt der Betrachtung. Diese Schwerpunktsetzung hat damit eine Vielzahl von Räumen aus den Augen verloren. Es ist daher besonders wichtig, dass die hier vorgelegte Analyse auf eine Reihe verschiedener Fallstudien aus ganz Mitteleuropa zurückgreifen kann und damit eine bestehende Forschungslücke schließt. Um die zugrunde liegende Dynamik der regionalen Entwicklung in solchen (Alt-)Industriestädten und -regionen besser verstehen zu können, stützt sich diese Dissertation auf einige für diesen Kontext wichtige theoretische Konzepte, wie z.B. Theorien der ungleichmäßigen Entwicklung, des ‚neuen Regionalismus': Danben werden auch verbundenen Konzepte der endogenen, ortsgebundenen Entwicklungspotentiale und der Mehrebenen-Governance im europäischen Kontext miteinbezogen.

In ihren Ergebnissen zeigt die Dissertation entlang der in den Beiträgen diskutierten Fallstudienregionen auf, wie die Fokusregionen von Prozessen des Strukturwandels betroffen sind und bildet die Herausforderungen zur Schaffung neuer Entwicklungspfade ab. Sie verdeutlicht, dass die Veränderungsprozesse allumfassend sein können und eine Reihe von wirtschaftlichen, sozialen und ökologischen Elementen verbinden, welche die ohnehin administrativ wenig leistungsfähigen Regionen oft überfordern. In diesem Zusammenhang zeigt die Arbeit, dass lokale Initiativen, oft durch (selektive) Mehrebenen-Governance-Settings gefördert, Städte und Regionen in die Lage versetzen, neue Kapazitäten und innovative Lösungen für die regionale Entwicklung auf der Grundlage spezifischer, ortsbezogener Potenziale zu entwickeln. Sie zeigt auch den sich verändernden Charakter der "Puzzleteile" auf, welche die Elemente der regionalen Entwicklung in kleinen und mittleren Industriestädten und -regionen in Europa darstellen. Das Puzzle wird durch lokale/regionale, sowie nationale und europäische Einflüsse in einer komplexen Kombination von Prozessen des Strukturwandels, Kapazitäten und Netzwerken, Finanzierungsmöglichkeiten und politischen Zielen, die alle in ein sektorübergreifendes Mehrebenen-Governance-Settings eingebunden sind, ständig neu arrangiert.

Darüber hinaus beleuchtet die Dissertation die Rolle der Nutzung endogener, ortsgebundener Potentiale als Weg zur Schaffung alternativer Entwicklungspfade für diese Regionen. Dabei zeigt die vorlegte Arbeit, dass die Nutzung dieser Potenziale der Notwendigkeit gerecht werden kann, die traditionell-industrielle Basis und das Selbstverständnis dieser Orte mit neuen, kreativen und zukunftsorientierten Strategien zu gestalten. Ihre Nutzung wurde von der Europäischen Union vor allem durch die Kohäsionspolitik gefördert, die allerdings unter einer gewissen “Raumblindheit“ leidet. Dies gilt sowohl für ihre allgemeinen Ziele, als auch für ihrer Umsetzung in ihren vertikalen Multi-Level-Governance-Strukturen. Ein ganzheitlicher oder integrierter Ansatz, wie mit kleinen und mittleren Industriestädten und -regionen umzugehen ist, fehlt. Dies ist ein großes Hindernis für die Entwicklung maßgeschneiderter Lösungen für solche Orte.

Theoretisch kann diese Doktorarbeit den dynamischen Charakter der (ungleichen) Geographie des Kapitalismus am Beispiel kleiner und mittlerer (alt-)industrieller Städte und Regionen unterstreichen. Die Entwicklungspfade von diesen Orten führen oft von Status als Motor nationaler (manchmal sogar globaler) wirtschaftlicher und sozialer Entwicklung, hin zu einer Reduktion auf eine Reihe von problematischen sozialen und wirtschaftlichen Aspekte. Diese dynamischen Entwicklungsprozesse in (alt) industriellen Regionen sind allumfassend: Sie wirken sich auf die sozio-ökonomische Zusammensetzung, sowie auch auf die konkreten, natürlichen Gegebenheiten der Orte aus.

Auf der anderen Seite unterstreicht diese Dissertation auch die Tatsache, dass die Art und Weise, wie Prozesse des globalen Kapitalismus Industriestädte und -regionen umstrukturieren, von spezifischen, ortsbezogenen Umständen abhängig ist. Es ist daher wichtig zu beachten, dass Krisen in den Schwerpunktregionen zu sehr unterschiedlichen Entwicklungspfaden führen können. Daher kann diese Dissertation als Ergebnis feststellen, dass Theorien ungleicher Entwicklung zwar den globalen Aspekt der Krisenentstehung und ihre allumfassenden Auswirkungen auf die lokale und regionale Ebene richtig herausstellen, dass sie jedoch den spezifischen Charakter, lokale Besonderheiten und Mehrebenen-Rahmenbedingungen, welche die Krise und ihre lokalen und regionalen Folgen prägen, unterschätzen können. Durch Einbeziehung des Paradigma des "neuen Regionalismus", betont die Dissertation hingegen, dass die Interaktion regionaler Akteure günstige Rahmenbedingungen schaffen kann. Hier wird regionalen Entwicklung als Folge gemeinsamer sozialen und institutionellen Vorteile - z.B. stillschweigendes Wissen, lokale Konventionen und Vertrauen - befördert. Die Ergebnisse dieser Doktorarbeit bestätigen damit die zunehmende Bedeutung der Region in territoralen Entwicklungsprozessen, da viele Instrumente der europäischen Kohäsionspolitik auf regionale Kapazitäten und Umsetzungen abzielen. Dennoch basiert das europäische Kohäsionssystem eher auf einem "raumblinden", von oben nach unten vorstrukturierten Finanzierungsrahmen, welches in ein komplexes Mehrebenen-Governance-System eingebettet ist. Dies wirft wichtige theoretische und politische Fragen für solche Regionen auf, in denen die Kapazitäten (aus welchen Gründen auch immer) so gering sind, dass ein gegenseitiger Nutzen zwischen Akteuren und Institutionen nur schwach ausgeprägt ist - etwas, das viele kleine und mittlere (alt-)industrielle Städte und Regionen betrifft. Dabei argumentiert die Dissertation, dass das Paradigma des "neuen Regionalismus" einen eher optimistischen Ausblick auf die regionale Ebene und ihre Kapazitäten zur Förderung der regionalen Entwicklung mit sich bringt, während die Auswirkungen der Krise sowie die allgemeinen Rahmenbedingungen, in die solche Regionen eingebunden sind, tendenziell unterschätzt werden.

Aus wissenschaftlicher Sicht werfen die Ergebnisse dieser Dissertation wichtige Fragen auf, wie langfristige Perspektiven für die regionale Entwicklung in kleinen und mittleren (Alt-) Industrieräumen im Rahmen der europäischen Kohäsionspolitik konzeptualisiert und geschaffen werden können. Dies gilt insbesondere im Hinblick auf die dauerhafte Einbeziehung lokaler Akteure, ein Aspekt, für den bisher wenig Forschungserfahrung gesammelt wurde. Es besteht nach wie vor ein anhaltendes Wissensdefizit zu Fragen der Regionalentwicklung im Kontext von kleinen und mittleren Industriestädten und -regionen, zumal vertiefte Fallstudien häufig fehlen. Dies ist insofern ein Problem, als das diese Orte zwar eine wichtige wirtschaftliche und soziale Funktion haben (was auch von der Europäischen Kommission hervorgehoben wird), aber nur selten in einem spezifischen politischen Kontext vorkommen. Dies könnte

erklären (oder zumindest dazu beitragen), dass die Bewohner solcher Orte (zu Recht oder zu Unrecht) sich selbst als "Orte, die keine Rolle spielen" wahrnehmen, eine Wahrnehmung, die sowohl auf lokaler als auch auf europäischer Ebene bekämpft werden muss, sowohl aus kohäsionspolitischer Sicht, als auch aus einer demokratischen, partizipatorischen Perspektive.

Foreword

Time thickens, coagulates, clots;
what lies at your feet is its sediment

Simon Armitage, Killing time

It took more than ten years to finalise this PhD, from the first project assignment in Dresden to a shared office at the University of Graz, which now lies empty because of the on-going COVID crisis.

Ten years is a long time, with a lot of people coming to and leaving my closer professional and social sphere. To many of those people, I am highly indebted for keeping me (more or less) on tracks with this work, despite the obvious misgivings I may have had about this specific topic at the time being. There is not enough space to thank everyone in person here, but those I have in mind, will know that they are addressed. I am convinced they are satisfied that their patience and goodwill have paid off like this - You all owe me a drink now.

Nevertheless, there are some people that were so essential in bringing this whole project about that some names actually do have to be spelled out:

So, a first round of thanks goes to Prof. Dr. Frank Othengrafen for his willingness to put the whole thing on his table in the first place and to patiently read and comment the text, as well as sorting a load of organisational things for me. I am highly indebted to him and his efforts.

Further thanks go to my co-commission chair at the IUP, Prof. Dr. Rainer Danielzyk and the additional examiners PD Dr. Sylvia Herrmann (IUP) and Prof. Dipl.-Ing. Univ. Jörg Schröder (IES), also for taking interest in my work. I know there are many other things on the academic agenda; therefore I am even more grateful for their time and work.

In addition to these pivotal people at the Leibniz University Hannover, I would like to thank my former colleagues at the Leibniz Institute of Ecological Urban and Regional Development (IOER) in Dresden, here especially Dr. Peter Wirth and Dr. Gerd Lintz for hiring me in the first place back in 2009, thereby laying the true foundation stone for this work. Dr. Wirth's constant encouragement, his role as co-author in some of the articles featured in this PhD and his overall professional wisdom make him a true, but secret co-author of this work.

When talking about colleagues, my gratitude also goes to the Department of Geography and Regional Science at the University of Graz and my co-workers there; and here especially to Ass.-Prof. Dr. Wolfgang Fischer, for being the boss, but allowing for all academic, and other necessary liberties. No question, without these trademarks of his, this work would be still going no-where.

And finally, even more praise goes to the other co-author in the articles displayed and discussed in this PhD, Ass.-Prof. Dr. Naja Marot. First, for being a great researcher and then (even more important) for being my favourite partner in crime across the continent.

Last, but not least, this work is dedicated to my family backing me up all the way; with special thought to my dad, which has not lived to see this work's completion. He would have not cared much about it, but proud he would have been nevertheless.

Additionally, my praise goes to the good people across Europe who have in professionally supported this work by participating in the named research projects and welcomed me wherever I went. I hope this journey will continue.

…and to Jan, for whatever he might find it useful for….

This work was part written in the towns of Hamburg, Bellinzona, Geneva, Dresden, Graz and Trbovlje. All these places and its people have in one way or the other contributed to this work.

1. Introduction

This corpus of research is connected to a series of EU-funded projects, conducted across a 10 year timeframe. From the bulk of literature produced during that period, five articles were chosen for this PhD which, it is hoped, captures the author's best efforts to understand regional development in small- and medium sized (old) industrial towns and regions viewed from a multi-level governance framework perspective. The articles also reflect the author's shifting focus when tackling the subject: moving from single case-studies and their institutional setting in regional and national frameworks, to a better understanding of place-based, endogenous potentials, and finally to European policy advice on cohesion policies as a whole. By doing so, this work also traces a wide arc of interconnected issues whilst remaining close to the initial question of how to understand and conceptualise structural change in (old) industrial regions in Europe.

There is an ever growing amount of literature about the reasons and outcomes of structural change in (old) industrial regions globally. Many perspectives have been applied to this phenomenon, including, but not limited to: tourism (Hospers, 2002), class relations (Sadler & Thompson (2002) and economic geography (Hassink et al, 2019). This PhD mainly rests on literature and theories from the field of regional studies and economic geography, which are discussed in Chapter 3 of this work. Much of the latest work in the field focuses on Asia and the re-structuring of heavy industrialised places there (e.g. Hu & Hassink, 2017; Hu & Yang, 2019). These regions are now increasingly falling victim to the same processes that befell their European and American counterparts 40 years ago, namely world-market competition, (failed) adaptation to technical innovation, and problems of path dependency ('lock-in', see Grabher, 1993).

Despite knowing much more about reasons, factors, and trajectories of structural change in many (old) industrial regions, the Asian examples, as well as the continuous restructuring occurring within European industrial regions seem to be deeply intrinsic to the ways in which capitalism is evolving at an increasingly globalised scale. This '*see-saw pattern*' (Smith, 2001, p. 15962) of capitalism is also characterised as '*the hallmark of the geographies of capitalism'* (Smith, 2001, p. 15958). This basic understanding of capitalist dynamics and their impact on both the socio-economic and natural environments of places is one of the underlying notions of this work and is further reflected upon via the notion of *uneven development theories* in Chapter 3.

Against this background, the reason for this body of work is an existing research gap, which is only gradually being tackled, namely a focus of research and policy-making on urban growth regions (see e.g. Rauhut & Humer, 2020). The novelty of this PhD lies in the focus of research on (old) industrial regions, predominately characterised by small and medium-sized towns[1], situated outside major agglomeration

[1] The articles in Chapter 4 use both the notions of *industrial towns and regions*, according to the nature of the case studies featured. In literature, the notion and focus of towns is more prevalent though the regional connotation catches much better the importance of these towns for their hinterland in terms both of workplaces and services. As a result, it is the preferred term in this body of work. This category includes settlements with populations

regions. The research is further defined in Chapter Two and the research gap is also further elaborated upon.

As shown in Chapter Three, the 'spatial turn' in social science, has put the 'region' firmly on the policy and research map. As Hudson notes, (2007, p. 1150) *'the region has become seen as a – even the – key territorial unit in an era of (neo) liberal globalisation […,] linked to a variety of measures to devolve responsibility for regional socio-economic development and well-being to the regional level*'. Connected to new regionalism is the concept of endogenous, place-based development potentials, which now form an important basis of European cohesion policies. Cohesion policies, which play an important role in places that often see only minor external investment, is presently being refined by the concept of smart specialisation. Overall, the region has become a focal point for creating sustainable and resilient regional development pathways. Nevertheless, the 'new regionalism' has often managed to evade the uneasy reality of 'hinterland' regions with sluggish growth patterns and marked by outmigration. Rather research has concentrated on (metropolitan) growth regions, deriving from (in-) famous '*one size fit all solutions'* (Tödtling & Trippl, 2005). These are, in turn, often heralded as the way to realise a golden regional development path and thereby offered to other regions and their stakeholders for adaption.

Rather than looking at exemplary success stories of regional development, this body of work sheds light on the nitty-gritty business of fostering development in regions that do not usually have big planning departments, are beyond accessing extra government funds, and "off the radar" of capitals and other national stakeholders. It is here where regional development is shaped by few stakeholders, often situated in LEADER or Regional Development Agencies, or municipal and local company offices. It is here where regional development is played out against the often very complex setting of small and medium sized towns with their very different histories, trajectories and functions - interconnected by their industrial pasts, presents and futures. Within this framework, many creative and innovative solutions have been generated at local level usually based upon endogenous potentials. To map and (at least partly) understand how regional development is shaped in such places forms a major motivation for this PhD work. The (political) importance of exactly such places has been recently highlighted by other authors (Rodríguez-Pose, 2018) and received wide interest even outside academia (e.g. Bershidsky, 2018).

Having laid out the motivations for writing this PhD, there is a need to briefly comment upon the scope of the work. Based on applied research projects, which incorporated partner regions from Central Europe, the focus is old industrial regions, characterised by small and medium-sized towns. The practical case-studies in the results section (Chapter4) are derived from a Central European perspective. At the same time, both the projects and the articles address a wider scope by referencing practices and examples from all over Europe, as well as formulating policy advice which targets European institutions and regions alike. Thereby, the lessons learned from the Central European case studies were transferred to the European level, thus potentially bringing benefit to other regions outside the immediate spatial Central European context (e.g. Görmar et al., 2019).

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ranging from 5,000 to 100,000 inhabitants. According to the Commission of the European Communities (2011), 56% of Europe's population live in small or medium sized towns.

As noted, small- and medium-sized industrial towns and regions are the focus of this research. They are specifically referred to in this PhD as *(old) industrialised towns and regions*. While many other descriptions and characterisations exist for the same (e.g. post-industrial, old industrial, industrial…), this PhD applies this specific term as its focus is on the transformation processes that these places have gone through and are often still undergoing. Such regions have experienced a relative decline in the role of industries (mostly in regard to jobs, not necessarily in regard to productivity or value creation). They might be still regarded industrial (in comparison to other regions, as by job provided in the industrial sector), but in comparison to their own past, they are definitely less so. Thereby they are characterised as *(old) industrial towns and regions* in this PhD.

And finally, having outlined the motivation, specific scope, content, research questions of this PhD, it is maybe equally important to state what this PhD is not aiming to provide. The focus of this work is mainly on deriving (evidence-based) lessons learnt from a (transnational) comparison of case-studies for local, regional, national and European policies. The text is in a lesser degree concerned with theory building as such. While the text is reflecting and contributing to existing theories via its applied research, it will not build a theoretical superstructure on its own right. It reflects thereby the research agenda of the projects in which the articles were embedded.

Moreover, the topic as such evades to a certain degree meta-theories, as especially small and medium-sized (old) industrial towns and regions are rich in their variety and their differing characters, functions and trajectories. Their development is played out against a complex set of 'puzzle-parts', differing from place to place. While many pieces are the same across the regions (and the results in Chapter 4, and the conclusion in Chapter 5 highlight some of these pieces), their fit and combination with other pieces on the board is in each place rather unique. Therefore, this work is devoted to identify and understand some of these puzzle-parts relevant for regional development of such places. This does not mean this work has identified all of them or has put them completely in the 'right' order.

Given these introductory comments, this PhD will discuss the following core questions, derived from a deeper reflection in Chapter 2. The work will provide answers to these questions utilising the results in Chapter 4 and the reflection provided in Chapter 5:

[1] What are the development challenges commonly associated with European (old) industrialised regions which are predominantly characterised by small and medium-sized towns?

[2] What kind of endogenous potentials for development are present in these regions, and how are they identified and utilised by local and regional stakeholders?

[3] What roles do multi-level governance arrangements play in identifying and utilising such development potentials at both local and regional levels?

[4] What policy recommendations can be drawn from these aspects, and how do they translate into European cohesion policies?

To answer these research questions, this thesis is structured as follows: After this introduction, Chapter Two explores the methodological approaches used for writing the articles, and elaborates upon underlying research questions and research techniques used. Thereafter, Chapter Three sets the theoretical background for the articles, and highlights the major research strands for this PhD, setting the frame for the result section in Chapter 4.

Chapter Five discusses and reflects upon the core questions and results from Chapter 4, as well as reflecting with the overall results on theories discussed in Chapter 3, as well as providing an additional and outlook for further research. The appendix contains the complete versions of the 5 articles.

2. Methodology

This chapter outlines methodological frameworks used in this research. The chapter first briefly highlights the different project studies from which the 5 articles that form the primary base of this work were developed (section 2.1). Thereafter, the specific research aims and research questions addressed by this PhD are developed in Section 2.2. In the third part of this chapter, the overall research design is discussed, while the final part, Section 2.4, provides an overview of research instruments applied for the different articles.

2.1. Research framework

This PhD dissertation is connected to a series of EU-funded projects, conducted across a ten year time period (2009-2019). While the projects themselves each had different research foci, they all dealt with the broader topic of regional development in (old) industrialised regions in Central Europe that are predominantly comprised of small and medium-sized towns. Generally speaking, the projects form the underlying framework of this PhD.

The framing projects were all co-financed by the European Union via the transnational INTERREG programme (i.e. CENTRAL EUROPE). The author worked in all three projects with the academic lead institutions (ReSource: Leibniz Institute of Ecological, Urban and Regional Development (IOER), Dresden, Germany; SHIFT-X and InduCult2.0: University of Graz, Department of Geography and Regional Science, Austria). He was responsible for conceptualising and managing academic research within all three projects. In the latter two projects he was also involved in outlining the academic research focus in the application phase, as well as managing the overall project structures alongside the responsible project lead partner; the District of Zwickau (Germany). This gave the author a precious insight into the interplay and importance of such projects for the regions and how regional development works across Europe as a whole.

The focus area of the projects is the programme area of INTERREG Central Europe, from which also the case-studies in Chapter 4 are derived (see Figure 1). Nevertheless, both the projects and the articles address a wider scope, namely by referencing practices from all over Europe, as well as formulating general lessons learned for similar European regions and their policies. Therefore, practical case-studies of the analysis are mainly derived from a Central European perspective, while the policy advice generated targets clearly all European institutions and regions from in this policy field.

Figure 1: Cooperation area INTERREG CENTRAL (2013-2000)

Source: www.interreg-central.eu

Table 1 displays the projects connected to the separate articles, and highlights the main research foci, partners and funding details, as well as further information sources.

Table 1: Interconnected research project - overview

Project name	Run time	Main research focus	Partnership	Funding source	Additional information
ReSource	2009-2012	Utilisation of post-mining potentials in small and medium-sized towns	3 academic and 7 regional partners	INTERREG B, Central	https://keep.eu/projects/5545/
SHIFT-X	2012-2014	Cultural heritage as a promoter of economic and social transition of old-industrial regions	2 academic and 6 regional partners	INTERREG B, Central	https://keep.eu/projects/5592/ http://www.shiftx.eu/
InduCult2.0	2016-2019	Industrial heritage, cultural resources of current industries and creative pioneer	2 academic and 8 regional partners	INTERREG B, Central	https://keep.eu/projects/5592/ https://www.interreg-central.eu/Content.Node/InduCult2.0.html

Source: own design

The aim of all three of these cooperation projects was to support local and regional development initiatives based on knowledge exchange between regional partners and academic stakeholders. The collaborations focussed mostly on regional actors such as municipalities, districts administrations, and regional development agencies. The role of academic partners was two-fold: to provide knowledge-based, external input to the project partnerships, and to derive academic knowledge from the results of the partnerships' actions. Thereby the accompanying research, on which the results in this dissertation are based, required a specific kind of research design as discussed in more detail in Section 2.3. But first, Section 2.2 develops and discusses the underlying research questions of this PhD.

2.2. Research Aims and Objectives

This sub-chapter will highlight the general research background of this PhD, arguing both the relevance and focus of the research (section 2.2.1). It will introduce the different aspects of the research, connecting them to each other and thus formulating four interconnected research questions in section 2.2.2.

2.2.1. Research background

Manufacturing industries worldwide have once more undergone deep changes at the end of the 20th century. Main drivers of this development are technical innovation (e.g. automation) and changing political framework conditions (e.g. globalised production patterns and opening of markets of former state-led economies). Literature has highlighted some of the outcomes of these processes on industrial societies worldwide (e.g. Bell 1976, Castells 1996). These trends have also had profound repercussions on many (old) industrial towns and regions in Europe. Here, these processes have increased the already existing trends of job losses in the manufacturing sector, triggering manifold social problems, such as outmigration and the loss of social functions – all elements being well documented in the academic literature (e.g. Cooke 1995; Heim 1997; Hudson 2005). While many of the changes in (old) industrialised regions throughout the last decades have been dramatic, the on-going changes have created a complex spatial pattern of manufacturing. Here different trends of continuing de-industrialisation, competitive core industries and re-industrialisation create a highly diversified picture of manufacturing places across Europe (e.g. Hardy, 2014; Budokowski & Sniegocki 2017, Bramanti, 2019). Chapter 3 will provide a more comprehensive theory-based picture of the academic discourse.

Box 1: Structural change

In economic geography, the notion of structural change describes a shift or change in the basic ways a market or economy functions or operates, often brought on by major economic developments (such as technological shifts, division of labour, capital-labour-relation, resource-depletion, and so on), or by changing political framework conditions. Outcomes of structural change can affect countries, markets, or industrial sectors. Structural change is, by its nature, a mirror of a dynamic capitalist system, with its '*dialectical relationship between society and space and between economic, social and political change and territorial development change*' (Dunford & Perrons, 1995, p. 177).

A typical example of structural change in Western societies is the crisis of Fordism which occurred in the 1980s and early 1990s and has been discussed in a wide range of literature (e.g. Jessop, 1995; Goodwin & Painter, 1996).

Existent research on the topic of (old) industrial regions has predominantly focused on major cities and their restructuring efforts, such as the much-discussed examples from the northeast of the UK, the Wallonie in Belgium, and the German Ruhr Valley (see, amongst others, Shaw, 2002; Hudson, 2005). Whereas these regions' transformation efforts have been well documented and have received worldwide attention and political backing, regions that are comprised of predominantly small and medium-sized industrial towns outside agglomeration areas have attracted little research interest in the last decades (see, for example, Luukkonen, 2010; Atkinson, 2017, Hoekestra, 2017). This marks a significant gap in the research field, because smaller industrial towns are typically hit hardest by factory closures; these areas are often mono-industrial, and are often overwhelmed by rapidly evolving processes of change which overtax their existing small administrations (Lintz & Wirth, 2009). The outcomes of these developments are often severe socio-economic problems, such as unemployment, outmigration ('brain-drain') and general loss of infrastructure and services (Erickcek & McKinney, 2006; Knox & Meyer, 2013; Wirth et al., 2012, Marot 2015). Despite these facts, such places are nevertheless often relatively resilient in times of economic crisis (Bole et al., 2020). The political repercussions of neglect have been recently discussed in academia by, amongst others, Rodriguez-Pose (2018).

Box 2: Small and medium-sized industrial towns and regions

In the context of this work, the articles in Chapter 4 address both (old) industrial small and medium-sized towns, as well as (old) industrial regions, characterised by small and medium-sized towns. The latter notion takes better into account the regional importance of such towns by providing important services and workplaces and is therefore mainly used in this PhD. The case studies here usually follow the definition of the Commission of the European Communities (2011), by categorizing settlements between 5,000 to 100,000 inhabitants as small and medium-sized. This includes 56% of the overall population of Europe (CEC, 2011). These places are often considered in existent literature to be facing specific development challenges, such as structural economic changes in their industrial sectors which result in unemployment, outmigration, as well as loss of services and infrastructures and so on. Articles 3 and 5 in Chapter 4 both provide a closer inspection of the character and challenges of such places in terms of their development. In the literature these places are also often discussed under the heading of 'periphery' (e.g. Leick & Lang, 2019).

One aim of this PhD is to close this existing research gap by providing case study-based examples and theory-based evidence which addresses this research field. The PhD comes at a time when the topic has seen some new research-based inputs. Recent policy documents, such as the Territorial Agenda2020, have explicitly highlighted the importance of polycentric spatial development in Europe, underlining the role of small and medium-sized towns in fulfilling the goals of the Europe 2020 agenda and cohesion policies. Additionally, some (mainly European) studies have now started to once more investigate the topic of peripheral regions (ESPON, 2013a; Servillo et al., 2017), while other research has focused on industrial towns' and regions' economic development (Meili & Mayer, 2017; Kaufmann and Wittwer, 2019; Görmar & Harfst, 2019) or their role in regional settlement networks and big town-small town relationships (Korzeniak, 2014). In addition, issues pertaining to entrepreneurship and economic development in small and medium-sized towns (Vonnahme & Lang, 2017; Kinossian, 2017; Carvalho & Vale, 2018) have recently been addressed more prominently. The most thorough coverage of the topic was provided by the ESPON research project TOWN (Small and Medium-Sized Towns, ESPON, 2013a), and the recently finished JPI 'Bright Future' project (Hoekestra et al., 2017).

This PhD research specifically aims to narrow the gap in existing academic knowledge on structural change and its effects by focussing on (old) industrial towns and regions in Central Europe. It does so with a specific focus on the industrial background of these places. This is an especially important aspect as existing research in the field often tends to highlight either the diversity or singular aspects of small and medium-sized industrial towns. In doing so, it sometimes neglects the specific aspects that exist across towns and regions with a predominantly industrial background. This can, in some cases, lead to an underestimation of the challenges (old) industrial regions comprised of predominantly small and medium-size towns, face with regard to their economic, social and environmental futures (Eckart et al., 2003; Wirth et al., 2012). It may also lead as to misconceptions regarding their specific development potentials (see Articles 3 and 5 in Chapter 4). The specific challenges which (old) industrial towns and regions face demand closer inspection of their assets and needs so that they may escape pre-defined 'one-size-fits all solutions', especially when these places are situated outside major agglomeration regions. As highlighted by Görmar et al. (2019), there is an urgent need for creative concepts, new strategies, and sound investigation of the feasibility of supporting such (old) industrial regions in their attempts to catch up in terms of competitiveness and move towards more innovative and sustainable development options. This would in turn help to fulfil the European Union's goal for a more balanced territorial development in Europe (EU, 2011). Some of these approaches are portrayed and discussed within the articles in Chapter 4, as well as within the final reflection as is contained within Chapter 5.

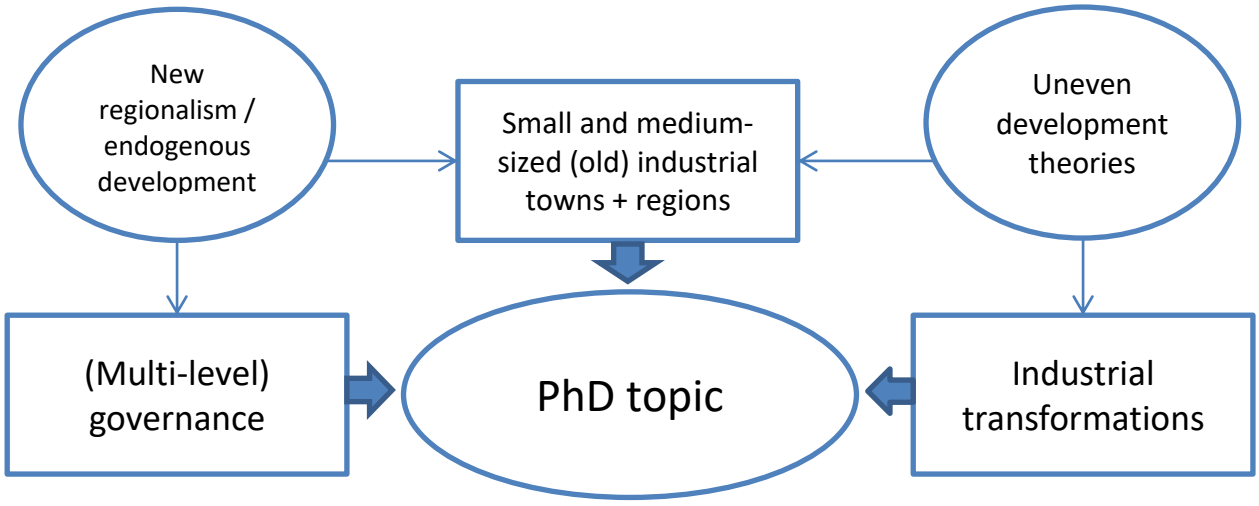
The success or failure of such structural transformation processes are often strongly linked to the actions of local and regional actors and their ability to realize chances or potentials in such restructuring processes (Harfst & Marot, 2013). Therefore it is necessary to develop a conceptual approach which supports the efforts of affected local authorities and regional initiatives. This dissertation reflects on the experiences of various European projects where the author has worked along actors in (old) industrial regions supporting their search for new development options. The aim of the research was to stimulate the regional and transnational learning process in order to enable local actors to develop project actions

that strengthen development capacities by using existing, endogenous development potentials in innovative ways (Harfst et al. 2012).

While local and regional levels are the focus of this research, it is obvious that development in such regions is strongly connected to multi-level governance processes which involve both national and European agencies alike – providing incentives and funding through various financial programmes. The general structures of such multi-level governance systems have been discussed elsewhere (Jeffery, 2015; Pinder, 2017), as well as a providing concrete link between local and EU policy-making (Harfst et al., 2019). This aspect is elaborated upon further in Chapter 3.

It follows, that the overall research interest of this PhD is derived from the specific development needs of small and medium-sized (old) industrial towns and regions in Europe, their specific development potentials, and the (multi-level) governance arrangements that shape the utilisation of such potentials and influence the specific development of such towns and regions (Figure 2). In turn, 4 interconnected research questions are addressed by this work as highlighted in the following section.

Figure 2: Interconnected research topics in this research



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2.2.2. Research questions

The overall aim of this dissertation is to broaden academic discourses on European (old) industrial regions that are predominantly characterised by small- and medium sized towns, being situated outside major agglomeration regions. As these regions have been rather underrepresented in political and academic regional development discourses until recently (see previous section); as Atkinson (2017, p. 3) states their neglect *'in favour of an emphasis on large cities which are seen as the motors of Europe's economic growth and competitiveness which has come to increasingly dominate the European policy agenda on spatial and territorial development'*. Thereby this PhD thesis aims at broadening the

understanding for different locally-led development strategies and accompanying policy options in these regions (Gros-Baltharzard & Talandier, 2020).

Therefore, the research aims to provide a better understanding of the development challenges and options such regions face via practical case-studies. It also maps out new strategies and creative concepts that some of these regions have developed to master structural changes and transformations. The work thereby contributes also to improve policies towards a more sustainable development path for such places and fostering regional learning processes by looking for success factors in such regional development processes.

The four primary research questions addressed by this thesis are:

[1] What are the development challenges commonly associated with European (old) industrialised regions which are predominantly characterised by small and medium-sized towns?

[2] What kind of endogenous potentials for development are present in these regions, and how are they identified and utilised by local and regional stakeholders?

[3] What roles do multi-level governance arrangements play in identifying and utilising such development potentials at both local and regional levels?

[4] What policy recommendations can be drawn from these aspects, and how do they translate into European cohesion policies?

The five articles in Chapter 4 address the individual research questions to different degrees as summarised in Table 2.

Table 2: Research questions and corresponding articles

Research question	Corresponding article focus
[1] Challenges	1,2,3,4,5
[2] Endogenous potentials	1,2,3,4,5
[3] Multi-level governance	1,3,5
[4] EU cohesion policy	3,5

Source: own design

Within these articles, the author of this PhD is, besides one, the leading contributor (first author).This means that he was in charge of overall conceptualising the idea and the structure for each article, the theoretical background and literature review, the direction and argument within the texts, monitoring and facilitating the overall work process between co-author(s). As a first author, he was also in charge of selecting the journal for publishing and the overall content-wise production of the article across all chapters. He was also leading contributor to all parts of the text, incorporating arguments and contributions by the co-authors. Additionally, references, editing and revisions of the text were

predominantly his responsibility, as well as correspondence with publishers. For Article 2, where the author was co-author (second author), he provided a case-study example and contributed substantially to the theory, discussion, and conclusion parts of the paper. Therefore, the author was in all cases (besides Article 4, where the author was the sole writer) significantly involved in contributing to the articles content-wise. In case of being second author, he contributed the same tasks to the articles' production except for final technical editing and correspondence with the publisher (see Table 3).

Table 3: Overview of articles in result section Chapter 4

Article no	Title, publication details	Author's status	Contribution
1	Harfst, J., Wirth, P. (2011) 'Structural change in former mining regions – Problems, potentials and capacities in multi-level-governance systems', *Procedia – Social and Behavioral Sciences* 14, 167-176	First author	Development of main idea, structure and argument, leading contributor to all chapters, coordination of contributions by co-authors, in charge of editing process and revisions
2	Marot, N., Harfst, J. (2012) 'Post-mining potentials and redevelopment of former mining regions in Central Europe – Case studies from Germany and Slovenia', *Acta Geographica Slovenica,* 52(1), p. 99–119	Second author	Co-creator of main idea and structure and argument, contributor to all chapters, sole provider of one case-study chapter
3	Harfst, J., Wirth, P. (2014) 'The Significance of Endogenous Potentials in Regions Characterized by Small and Medium Sized Towns: Considerations against the Background of the Territorial Agenda 2020', *Raumforschung und Raumordnung,* 72, p. 463–475	First author	Development of main idea, structure and argument, leading contributor to all chapters, coordination of contributions by co-authors, in charge of editing process and revisions
4	Harfst, J. (2015) 'Utilizing the past: Valorising post-mining potential in Central Europe', *The Extractive Industries and Society,* 2 (2), p. 217-224	Sole author	Development of main idea, structure and argument, leading contributor to all chapters, coordination of contributions by co-authors, in charge of editing process and revisions
5	Harfst, J., Wirth, P., Marot, N. (2020) Utilizing endogenous potentials through EU cohesion policy: examples from Central Europe *European Planning Studies,* 28 (11), p. 2193-2212	First author	Development of main idea, structure and argument, leading contributor to all chapters, coordination of contributions by co-authors, in charge of editing process and revisions

Source: own design

2.3. Research design

All articles in this volume are based on research conducted during successive INTERREG projects which built on close interaction between research and regional, applied knowledge (see 2.1.). Thereby, the research agenda was one which loosely followed an 'action research approach' (e.g. Greenwood & Levin, 2007, Craig, 2009). It incorporated the author, as a research partner, in practical tasks with regional actors and also enabled him to reflect on the overall aims and activities of the project. This section discusses and reflects upon the 'action research approach' in general (section 2.3.1), as well as on the applied research methodology within the projects (2.3.2).

2.3.1. On the 'Action Research approach'

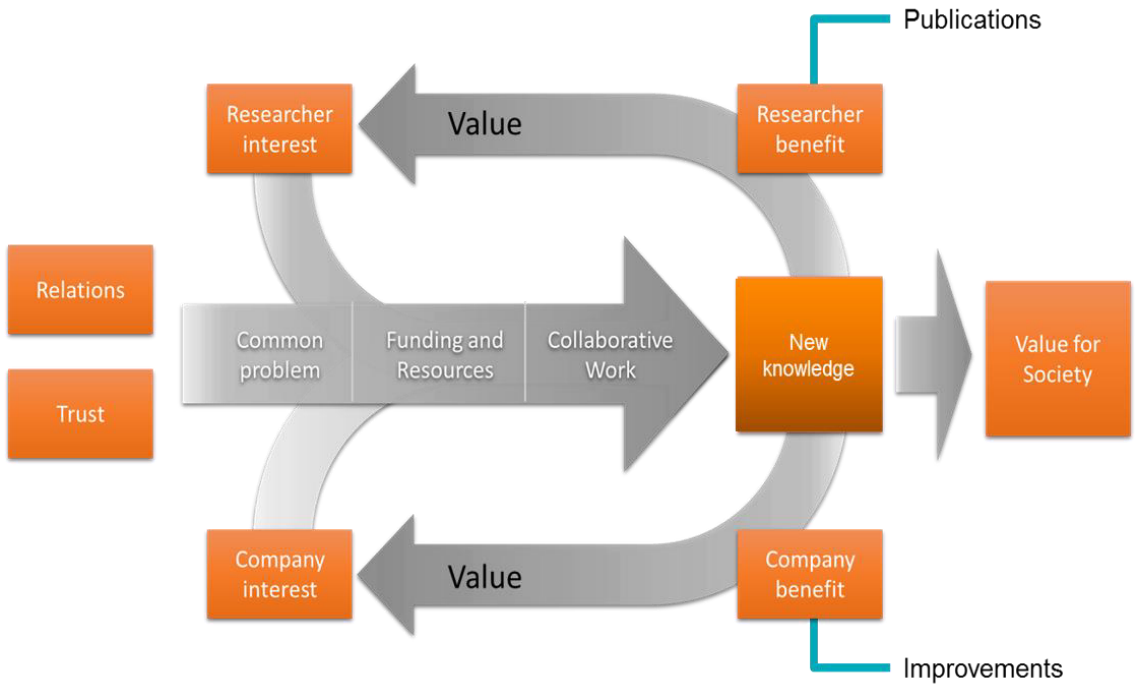
The underlying research for this PhD was party based on 'action research approach' which is a research method that originated in the United States, where Kurt Lewin has been identified as the main instigator of the concept (Adelman, 1993). Other influences came from Latin America via neo-Marxist and critical theory (Kemmis et al., 2015), which sought to enable people to be critical and act in relation to social injustice (McPhee et al., 2019). The approach has gained wide acceptance and usage in educational science, and community development, as well as within industrial organisations over the last three decades.

Greenwood and Levin (2007) define action research as a '*social research carried out by a team that encompasses a professional action researcher and the members of an organization, community, or network ("stakeholders") who are seeking to improve the participants' situation*' (p.3). An important aspect of action research is the joint approach in which researchers and stakeholders jointly examine, learn, and take action on the problem which they have defined. Action research thereby '*rests on the belief and experience that all people-professional action researchers included-accumulate, organize, and use complex knowledge continuously in everyday life… democratizing the relationship between the professional researcher and the local interested parties'* (Greenwood & Levin, p. 4). This co-creation approach yields various impacts for both research and stakeholders alike (for a more detailed discussion see Sannö et al., 2019).

As action research carries a strong normative (democratic) impetus, it especially aims to close the gap between research that is both practically relevant and scientifically rigorous, and their societal impact; a continuous challenge for scholars and universities (Bartunek & Rynes, 2014; Coughlan et al., 2016). Action research is maybe the most established, but by far not the only, practice-oriented method of research that has been developed over the last decades (see McPhee et al., 2019).

Summarising the different action research models, it can be noted that the approach generally consists of 4 interrelated steps: (1) The formulation of a common problem, involving both academic and stakeholder perspectives; (2) Planning action, obtaining resources, securing participation; (3) Collaborative acting and (4) Observing and creating new knowledge (see Figure 3).

Figure 3: Example of an action research implementation model



Source: Sannö et al., 2019

As two different sets of actors involved; academic and (non-academic) stakeholders, conducting a co-creational process is not easy. Both parties work to different timescales, objectives, reward systems, and perceptions, and they understand each other's practices differently (Garousi et al., 2016; Coughlan et al., 2016). Existent research has pointed out that awareness and certain skills from participating organizations are needed, and that assessing the impacts of this co-creation needs to be better understood (Sannö et al., 2019).

While the close cooperation of academics and stakeholders may contribute to a better understanding of important processes and also provide more valid data, the method has drawn criticism. This is mainly due to its 'fuzzy' research methodology and the wide-spread application of the term to various research methods (see e.g. Tripp, 2005, Walter, 2009), which raise basic research issues such as setting hypothesis and the application of suitable research methods (i.e. qualitative vs. quantitative). Added to this, there are issues pertaining to the validity of the subsequent research results due to the involvement of researchers in practical activities which risks the results being laden with subjectivity (Kock, 2004). Additional criticism focuses on the role of the researcher being placed inside an organisation (in terms of power relations, see Noffke & Somekh, 2005) and the general set-up of the research process which can be rather time-exhaustive and complex due to the necessary feedback loops that must be incorporated. Additionally, impacts of research – a major desired outcome of the method – are hard to pin-point and measure (Sannö et al., 2019).

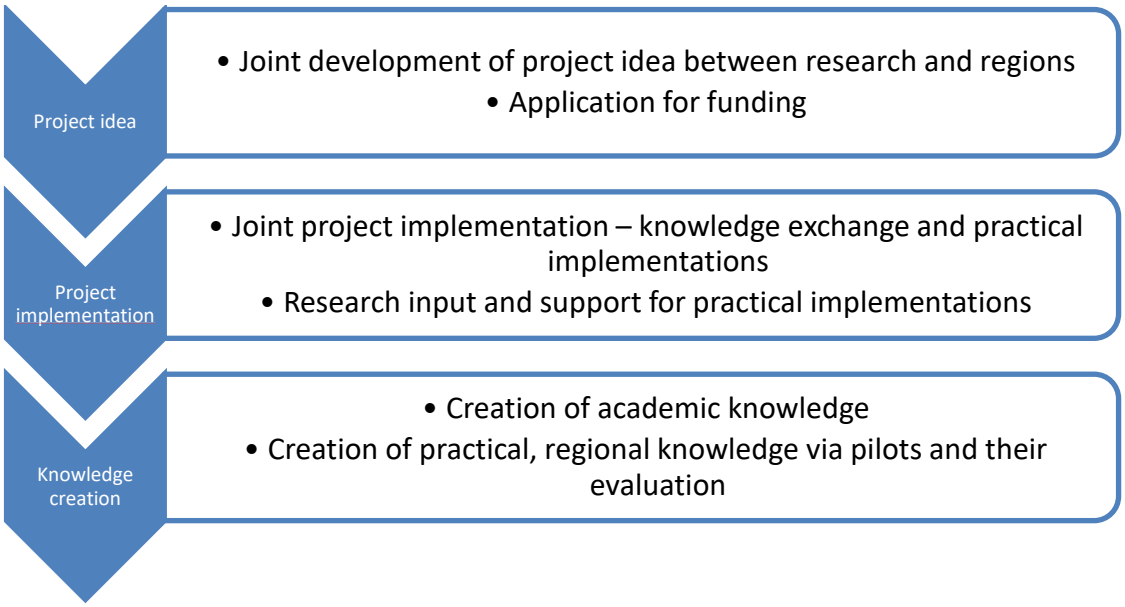
2.3.2. Reflection on the applied methods in the projects and articles

The research conducted for the articles in this PhD fulfils the combination of all three elements of action research as given by Greenwood & Levin (2007, p. 3) namely: '*action, research, and participation*'. The combination of researchers and regional stakeholders working on a joint topic was aiming for results that generate knowledge and improve the ability and capacity of the involved stakeholders to create a more sustainable and just environment in regards to regional development.

Across the three projects, the thematic foci were jointly developed between the project partners and actions were jointly conducted albeit in clearly separated roles. The generation of knowledge represented the main task of the research within the projects, while regional partners were focused on practical implementations. The focus of investigation for research partners thereby lay primarily in the identification and assessment of regional development potentials as well as the conditions of the regional frameworks (actors and interplays of change) which finally determine overall development processes. Researchers where not directly embedded in regional institutions, but acted as facilitators for knowledge exchange - a marked difference to many of the action research concepts outlined above.

Overall, the research process included three different steps (see Figure 4): (1) A joint idea development phase, where regional and academic partners mapped out and developed their shared interests and ideas, incorporating additional partners and submitted proposals for funding. (2) An implementation phase, where the partnerships implemented their accepted projects via co-creative approaches, sharing knowledge and preparing implementations. Here, the role of research was to 'frame' the topic for regional stakeholders by providing academic input via literature, policy and data research, and often provided, via workshops, daily exchange for project implementation. The aim in each case was to provide joint platforms for collaboration, knowledge exchange and joint implementations within the projects. (3) The final step was knowledge creation, where both academic and regional partners reflected (jointly or separately) on implementations and their impacts, sparking new insights and interests (Figure 4).

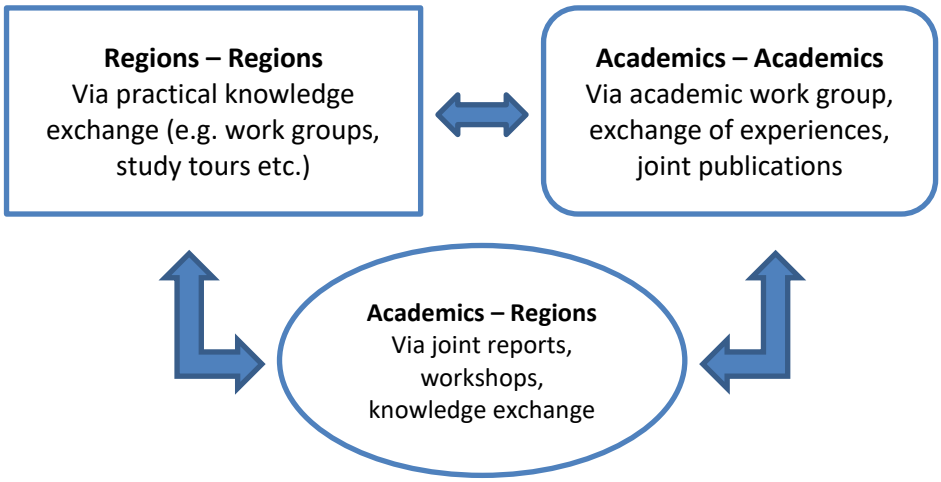
Figure 4: Methodological steps in the applied action research approach



Source: own design

By incorporating researchers alongside regional partners in the projects, another level of knowledge exchange within the projects' setups was added. Regions were not only able to exchange practical experiences with each other, but academic partners were also able to compare research findings between them. For example, in the ReSource project the research consortium included 6 different academic institutions from different countries with each covering at least one of the 7 regions involved in the project. This approach led to both knowledge exchange and creation on various levels and for different audiences (see Figure 5).

Figure 5: Levels of knowledge creation in transnational projects



Source: Harfst & Osebik, 2015

Despite yielding truly valuable insights, the application of this approach also revealed some of the pitfalls of action research which have already been outlined herein (see also Harfst & Osebik, 2014). For a start, bringing together different regional actors and researchers from various countries and backgrounds presented a big challenge. Different levels of industrial transformation processes in the regions, as well as varying national framework conditions (financial support, legal situation, political awareness etc.) have made the transferability of results on a regional level somewhat problematic. Additionally, even research-wise, the approach and understanding of regional development issues has often differed between involved research institutions.

Within the projects, the involvement of 'real' local experts posed a constant challenge, as regular regional representatives within project meetings were often from administration and therefore not involved in practical 'hands-on' knowledge, which the collaboration was supposed to transfer. To ensure this exchange, additional efforts with regards to time and money had to be made in order to get the 'right' people together. By doing so, new organisational problems appeared, including language barriers, issues of local pride, and mental reservations with regard to making use of each other´s experiences. While research and regional partners sometimes found it difficult to speak the same 'language', the author's experiences from the projects showed that good partnerships needs trust and will to cooperate effectively. In some cases, regional actors tended to present their home regions in an overtly positive light, before really discussing any problems in depth.

For involved researchers, one of the biggest challenges was to obtain good insights into the regions they were working with. As noted, academic partners strongly depend on information provided by, and the experience of, regional partners and vice versa, so an atmosphere of mutual trust is vital. Speaking the same 'language', as well as making regional partners understand what researchers can contribute, is a very important social task. Additionally, some regions have already established deep organisational networks and knowledge-bases, so further outside interference by researchers is sometimes seen as unnecessary or even unwanted. The often tight and exclusive organisational structures in regions make it difficult for researchers to investigate the interplay and real importance of actors. The latter factor is of particular importance in (old) industrial regions – especially in regions with predominantly small- and medium-sized towns – where often strong and tightly-knit networks exist (Grabher, 1993).

Overall, applying elements of a research action approach was an ambitious task that did not simply involve joining different partners in one project. It is an approach which requires specific social and learning skills by everybody involved. Nevertheless such cooperation offers the potential of opening new dimensions of knowledge exchange and learning for all involved. Partnerships do not only provide regions with new concepts and pilot investments, but also have impacts that reach beyond the contents of individual projects by spreading their results to scientific communities, as well as to policy makers via the processes of making strategic recommendations and organising conferences and networking events.

Overall, the chosen project-based approach offered an important 'glimpse into the realities' of how regional development is conducted. It offered a better understanding of actors, their actions and motives over a longer time. It thereby provided a unique opportunity for investigation; rarely matched by other means of research. This is in part because other methods in this field often lack the important

level of trust as well as the background information required; often only acquired by working closely together over a certain amount of time. Nevertheless, as the 'action research approach' is not free of risks and inherent flaws, and these need be taken in consideration and mitigated by the research agenda.

2.4. Research Tools

Action research is known for its openness with regards to research methods and approaches, and often mixes qualitative and quantitative research elements depending on the specific tasks set for the research being conducted (Greenwood & Levin, 2007). This research reality was reflected in the research tools used for the articles presented in this PhD. Researchers worked closely with regional partners on a practical day-to-day basis by, for instance, compiling information and benchmarks for reports and regional concepts (i.e. on European 'good practice' examples), moderating local workshops, and providing additional knowledge to the projects by inviting outside experts from their own networks. Besides these formal project activities, the partnerships encouraged bilateral meetings and visits from partners in order to ensure that lasting network connections were made that would remain the projects' run-times.

This close cooperation gave researchers unique access to regional stakeholders and their approaches and world-views regarding regional development. It was easier to place certain actions, initiatives and strategies according to the importance given to them by local stakeholders. This approach was deepened as some of the regions where partner in consecutive projects and the long-term cooperation established an additional level of mutual trust between academic and regional partners.

In addition to the 'embedded approach', the research was backed-up by traditional, mostly qualitative research methods, such as literature reviews, data, and policy-paper analysis. These elements mainly focussed on obtaining regional information on the specific project's topic (e.g. statistical data on regional development, information on history and present day industrial activities, structural change and consequences), policy papers (e.g. regional strategies, leitbilder, development master plans, European strategies and white papers etc.), as well as the identification of regional development potentials and their valorisations (often via an analysis of funding schemes such as LEADER or projects conducted via regional development agencies). Next to these regional background data, all projects conducted an extensive literature researches which sought to frame the industrial transformation processes at local and regional levels via bigger trends in national and European societies. In so doing, they predominantly focused on economic transformations and (according to the specific research questions) brownfield development, the utilisation of industrial heritage, industry4.0, and so on. An important aspect was also the identification of 'good practice' examples on valorisation of potentials from other European regions. Two projects saw additional evaluation and benchmarking activities as part of their research: In ReSource, the academic partnership benchmarked 'good practice' cases across Europe (for more on the

method in detail see Wirth et. al., 2012), while in InduCult2.0, the academic partners reflected and evaluated some of the project outputs jointly with their regional partners.

Overall, a special challenge lay in compiling the necessary data across transnational environments and with regards to NUTS3 level regions. This was a proven constant challenge in all projects; a firm statistical analysis across different regions proved unfeasible in most cases.

Additionally, semi-structured interviews with actors outside the immediate project's context were an important element. These interviews were conducted with various stakeholders from different policy levels, such as mayors, regional development and tourism agencies, project developers, and state ministries, as well as local businesses The aim was to check the interviewees' views on the specific regional potentials and challenges, as well as project activities. In total, across all projects, around 20 such interviews in different regions were conducted by the author. The interviews were usually recorded and later transcribed, albeit no specific discourse analysis was performed, as this was not seen as necessary given the research goals. Numerous additional interviews were also performed by other research partners in their regions, often with similar interview questions, to guarantee comparability. Figure 6 presents an example outtake from one such interview questionnaire.

In addition to the more formal interviews, knowledge creation also relied on informal talks with regional stakeholders in project meetings, workshops, and other related project activities. These informal activities considerably widened understanding of regional development aspects in the regions. Another important aspect of the research was site-visits (companies, reclamations sites, co-working spaces and so on). These often focused on specific project-related questions, including presentations and discussions with practitioners.

Figure 6: Example of interview questionnaire

Inhaltliche Leitfragen zu dem Interview in der ReSource-Region Mansfeld-Südharz

1. **Potentiale und ihre Bedeutung für die Region**
   - Allgemeine Potentiale des Landkreises MSH (Stärken/Schwächen)
   - Potentiale aus dem Bergbauerbe
     - Welche Bedeutung haben Potentiale aus dem Bergbauerbe für die Regionalentwicklung?
     - Werde diese hinreichend erkannt und genutzt? Warum? Warum nicht?

2. **Strategien der Regionalentwicklung**
   - Gibt es eine strategische Vision, Planung oder Instrumente zur Regionalentwicklung in MSH (nein, …) Warum nicht?
   - Berücksichtigt diese Planung die bestehenden Potentiale hinreichend?
     - Gibt es bestimmte Leuchtturmprojekte?
   - Berücksichtigt diese Planung die bestehenden Potentiale des Bergbauerbes hinreichend?
     - Welches sind die wichtigsten Projekte?

3. **Akteure/Netzwerke**
   - Wer sind die wichtigsten Akteure in der Regionalentwicklung?
     - Wichtige Netzwerke und Institutionen oder Veranstaltungen, wo diese Akteure sich treffen (formell/informell)
     - Welche Rolle spielt LEADER? Gibt es eine feste Gruppe oder Netzwerk, welches Projektideen einbringt? Wenn ja, wer? Ist dieses Netzwerk formell oder informell?
     - Ein Netzwerk haben wir bereits kennengelernt, welches sich auf den ehemaligen Bergbau in der Region bezieht. Welche weiteren Netzwerke gibt es in der Region? Welche Interessen haben diese, welche Gemeinsamkeiten gibt es?
     - Welche Rolle spielt die lokale Wirtschaft in diesem Prozess?

4. **Abschlussfragen - Einschätzungen**
   - Welche Stärken sehen Sie im Bezug auf die Regionalentwicklung in MSH?
   - Welche Probleme sehen Sie im Bezug auf die Regionalentwicklung in MSH?
     - Gibt es Konflikte oder andere Probleme? (Eisleben versus Sangerhausen, Kreisgebietsreform etc.)
   - Welche Veränderungen würden Sie sich wünschen?

Source: ReSource project

From a research perspective, one of the main aims of applying these methods was to develop a better understanding of the relevant regional stakeholder networks, their policy instruments, and aims. The detailed approaches varied throughout the three projects; nevertheless the mix of elements remained the same. For the research articles, in some cases additional interviews were conducted, as well as an ex-ante analysis of certain regional actions (see Table 4).

Table 4: Overview of applied research methods

Project	ReSource	SHIFT-X	InduCult2.0
Role of the author's institution	Academic lead partner of 6 academic PPs	Academic lead partner of 2 academic PPs	Academic lead partner of 2 academic PPs
Directly researched case study regions by author	Mansfeld-Südharz (GER), Zwickau (GER)	Welzow (GER), Zwickau (GER), Steirische Eisenstrasse (AUT)	Steirische Eisenstrasse (AUT), MAS (CZ), Sisak (CRO), Kranj (SLO)
Qualitative elements	moderation of regional + transnational stakeholder WS; interviews with regional stakeholders; on-site visits; literature review; policy analysis; SWOT; benchmarking	moderation of regional + transnational stakeholder WS; on-site visits; literature review; policy analysis; benchmarking	moderation of regional + transnational stakeholder WS; interviews with regional stakeholders; ; on-site visits; literature review; policy analysis; benchmarking
Quantitative elements	Data analysis (e.g. employment, GDP, demographic development etc.)	Data analysis (e.g. employment, GDP, demographic development etc.)	Data analysis (e.g. employment, GDP, demographic development etc.)
Related article in Chapter 4	Article 1, 2	Article 3, 4	Article 5

Source: own design

3. Theoretical framework

This chapter presents the theoretical background for the result sections in Chapter 4. It therefore establishes an academic 'grounding' for the conducted research in terms of its scope and focus. The main aim of the chapter is to frame the different articles with regards to how they relate to wider academic discourses on regional development, (old) industrial regions, and endogenous potentials.

This chapter is structured as follows: Section 3.1 reflects more generally on the theories of uneven development with a special focus on the development of (old) industrialised regions in Europe, as well as their rise and decline. In so doing it mirrors academic discussion in Europe that has taken place over the last four decades. Specifically, it refers to the changes from a rather stable, 'Fordist' economic system, to range of uneven development patterns in European (and Western) 'post-Fordist' societies. These changes have led to some new, spatially pronounced development patterns, which in turn form the background of academic discussions centred on (old) industrialised regions and their development.

Having tracked these discussions, Section 3.2., introduces the (still) prevailing view of regional development in such regions that centres on notions of 'new regionalism' and the 'spatial turn' in the social sciences. It reflects on changes in academic discourse, away from structuralist conceptions towards more place-based approaches which consider 'the region' as a driving force of development processes as captured in concepts such as 'industrial districts' or 'learning regions'. In this context, especially larger industrialised regions have attracted great research interest which have sought to identify regionally-based factors that contribute to or explain their decline and economic re-emergence, e.g. via notions of 'lock-in' and 'path dependency'.

Building on this, Section 3.3 sheds more detailed light on discussions and policies centred on 'place-based, endogenous potentials'. These potentials build on the view that each region possesses endogenous potentials for economic and social development, tied to certain natural, cultural, socio-economic and institutional resources. These in turn need to be identified and valorised by local and regional actors in order to improve socio-economic development. Additionally, the section further conceptualises the utilisation of endogenous potentials in regional development strategies of (old) industrial regions and towns, by highlighting their status within the multi-level government arrangements of the European Union. This also provides the framework for the results in Chapter 4, as well as the final discussion and lessons learned addressed in Chapter 5.

3.1. Uneven development and (old) industrial regions

3.1.1. The character of uneven capitalist development

Academic discourse on the uneven development of spatial patterns of wealth creation is probably as old as Geography itself. Many of the pivotal texts of modern day Geography, such as the classics of location theory (i.e. Weber, Christaller etc.), try to explain the distribution and character of industries, the motion

of centralisation, and through so doing the spatial setting of industry, trade and services, as well as interconnected wealth creation.

Economic theories usually breakdown determinants for regional growth by factors such as capital, labour, and technical innovation which shape (more or less acknowledged) certain regional disparities. Such disparities are either set to diminish in the long-run (neoclassical approach) or need to be actively tackled via (top-down) policy interventions (neo-Keynesian approach). Both approaches are, in their orthodox outsets, rather 'space-blind' and tend to see such disparities as reversible. That said, the 'spatial turn' (as discussed in Section 3.2.) has challenged some of these views via the works of 'new economic geography' (see Capello & Njikamp, 2019).

Nevertheless, as a theory of its own right, the analysis of uneven (regional) development is deeply connected to the Marxist school of thought. It combines geographic knowledge with political analysis of capitalist society (see among others Mandel, 1969; Aglietta, 1979). Its underlying assumptions are that regional disparities are not only an inherent factor of capitalism itself, but also deeply space-bound. It finds its tracing in many different spatial phenomena and academic discourses, such as urbanisation and gentrification; core-periphery relations at the global scale; and regional development disparities at a national scale (see, for further, Smith, 2008). In Geography, the work of David Harvey since the beginning of the 1980s has been especially ground-breaking with regard to fostering a deeper awareness of the connections of space and capitalist society, and with regard to the power-relations that exist between the core and the periphery (Harvey, 2001).

This PhD follows the basic assumption of Smith that '*uneven development is the process by which the social relations of capitalist societies are translated into spatial forms, […] the hallmark of the geography of capitalism'* (2001, p. 15958). It thereby assumes that regional development is played out against a background of diverging power-relations at multi-scalar levels, limiting or enlarging local and regional development opportunities in a dynamic system. The work thereby supports Hudson's assessment (2007, p. 1158) that '*instead of deterministic inevitability, the emphasis should be placed firmly upon political choice and the political possibilities offered by recognition of multiple paths and developmental trajectories and modalities of power, upon the potential for context-dependent and sensitive policies…to future developmen*t'.

For (old) industrial regions the dynamic character of this geography of capitalism is especially relevant, as these places were once upon a time drivers of national (sometimes even global) economic and social development and innovation, but have now lost this function, and have often been reduced to all kind of problematic social and economic aspects. They often face the backend of a '*see-saw pattern whereby development of an area is often followed by its underdevelopment, which in turn establishes the conditions for redevelopment*' (Smith, 2001, p. 15962).

For this PhD work, it is especially important to note that these dynamic development processes in old industrial regions are all-consuming: they affect socio-economic composition, as well as the natural outlook and geography of the given places (Smith, 2008).

3.1.2. (Old) industrial towns and regions in Europe

As pointed out, (old) industrial regions are often staggering examples of these seesaw patterns (Hudson, 2005), a process facing industrial regions world-wide (Cooke, 1995). The exact definition of (old) industrial regions is nevertheless somewhat blurred, differing across the academic board (see Birch et al. 2010; Koutsky et. al. 2011). For this PhD work the definition of (old) industrial towns and regions is broadly applied to places that were at the forefront of capitalist development in the period from 1840 to the 1920s, or have been substantially developed in Eastern-bloc Europe after the Second World War.

Regarding their historic development, one common aspect in the development of many small and medium-sized industrial towns is a phase of rapid growth, interconnected to their industrial heyday, which – especially in Central and Eastern Europe sometimes entails the actual foundation of the town itself (e.g. Tychy in Poland or Eisenhüttenstadt in Germany). This rapid growth or planned realisation brought a range of additional social functions and infrastructures to these places alongside an often over-emphasised reliance on one industrial sector, to which all other activities were secondary. While these places were often nationally acclaimed and symbolically elevated as 'energy regions' (Lausitz) or the 'bread-loaf of Austria' (Erzberg), these mono-structural places often had weak connections to their hinterlands and lacked economic diversification, making them extremely vulnerable to processes of structural change in their core industries. In the literature these processes are widely covered under the terms of 'lock-in', 'adaptability' and 'resilience' (see in detail Articles 3 and 5 in Chapter 4).

In their development trajectories, generally speaking, such regions faced problems with the rise of Fordist mass consumption sectors after the Second World War. After the key period of economic crisis in the 1970s, changes towards a post-Fordist economy followed, which - in Europe and OECD countries in general - increasingly focused on high-tech manufacturing and services. These trends not only diminished the economic role of many industrial towns and regions, but saw increased foreign competition in traditional industries (e.g. Jessop, 2001). This resulted in many (old) industrialised regions in a process of long term adaptation and crisis (e.g. Hudson, 2005).

A variety of literature has addressed the outcomes of these structural changes in such (old) industrialized regions around the world (e.g. Ache, 2000; Hassink & Shin, 2005a). Western Europe has seen waves of de-industrialization across various sectors, especially in the textile, shipbuilding, steel and mining industries since the 1970s (Baeten et al., 1999; Cho & Porter, 1986; Hudson, 1998), while in Central and Eastern European countries heavy industries shrank in the 1990s after the fall of the Eastern bloc (Eckart, 2003; Müller et al., 2005; Lux, 2009). Despite these processes taking place under different framework conditions, the situations in the affected regions were quite similar: declining economic roles, rising unemployment, shrinking tax bases, and outmigration - especially of the skilled labour force. However, not only the economic and social future of these places was affected; the processes of industrial closure and restructuring were also often accompanied by the discovery of risky environmental legacies at former production sites (Robb, 1994; Bridge, 2004). Industries such as mining and steel industries often left behind heavily altered landscapes, which, especially in Central and Eastern European countries, have often not been remediated because of funding problems or unclear ownership issues (see Article 1).

Overall, there is a tendency in academic literature and public narratives to depict the (post-) industrial futures of these (old) industrialised regions as entailing decay, disinvestment, and black, polluted industrial wastelands. In the context of this PhD it is important to point out that while structural change, especially in smaller or medium-sized industrial towns and regions often entails all these negative features, functioning industry also remains (often highly competitive) as do other important functions (Kwiatek-Sołtys et al., 2014; Bole et al., 2020). It is therefore important to stress that while the situation in many such places and regions is often difficult, there are capacities and resources in place that can help such places to overcome the 'doom and gloom' features; an aspect that is further elaborated upon in the articles within Chapter 4.

Overall, the discussion on regional development comes among a bigger change in the academic discussion, which now marks the field of regional studies and economic development for the past 30 years or so. The following section will reflect on this change, as it forms – next to the theory of uneven development – the second theoretical background of this PhD.

3.2. 'New regionalism' and the 'spatial-turn' in regional development

3.2.1. 'New regionalism' and interconnected research strands

The so-called 'new regionalism' paradigm in economic geography and regional studies is concerned with the role of social conditions within regions and how regional performance and development are shaped (Amin & Thrift, 1994; Morgan 1997; Storper, 1997). From a theoretical perspective, according to Hudson (2007, p. 1150) *'the region has become seen as a – even the – key territorial unit in an era of (neo) liberal globalisation […,] linked to a variety of measures to devolve responsibility for regional socio-economic development and well-being to the regional level*'. This perspective stands in contrast to 'classical' regionalism theories, which mainly stem from the field of international relations. Here the nation state is the centre-piece of observation, notably being set against emerging regionalisms building on ethnical, language, or historical divisions within nation states after the Second World War (Tomaney, 2017).

In putting the 'region' centre, the new regionalism also revived the status of geography in social sciences as the spatial constitution of economies and societies was recognised as a critical issue in the core disciplines of economics, politics, and sociology, as well as in more applied areas of the social sciences such as business studies (Hudson, 2007).

The approach emphasises the interaction between regional actors, and how this leads to collective and endogenous cultures which constitute the socioeconomic basis for regional economic performance (Amin, 1999). Thus regional economies and institutions are seen as more than a collection of individual firms and agencies each with their own sets of internal rules and behaviours. Instead, they are viewed as enabling environments which provide benefits to regional development as a consequence of shared social and institutional assets –such as tacit knowledge, local conventions and trust – that are particular to specific places (e.g. Birch et al., 2010). This has led to a variety of research approaches in regional studies and economic geography. Within regional studies such regional interlinks were analysed with

regard to their impact on planning (Healy, 1998), governance arrangements, and innovation policies (e.g. 'institutional thickness', 'learning regions'; Morgan 1997). In connection to the latter, the relationship between various governance levels and actors is especially highlighted (e.g. Swyngedouw et. al, 1997; Macleod & Jones, 2007), and has triggered a range of literature on changing multi-level governance systems, complex, multi-scalar decision-making, and the incorporation of new actors in decision-making (Ostrom, 1990; Hooghe & Marks, 2001).

Additionally, economic geography has explored how social interaction influences regional economic development in the form of 'economic clusters' and 'regional innovation systems' (Boschma & Kloosterman, 2005; Asheim et al., 2011). Researchers have devoted considerable space to developing a better understanding of how such regions change, mainly along related evolutionary concepts of 'path dependency' and 'lock-in' (Hassink 2005b), as well as conceptions of 'adaption', 'adaptability' and 'economic resilience' (Simmie & Martin, 2010). Generally, authors emphasize the high relevance of institutional contexts, social capital, and cultural traditions to a region's development, along with other sources of path dependence (Görmar & Harfst, 2019).

In the context of this PhD, the analysis is mostly conducted along the regional studies-related aspects of governance and actors, as in accordance with the overall research questions (see Chapter 2). In Chapter 4, the articles predominantly ask about structures and processes of regional decision-making, the involved actors, and the composition of actors at different times and across different governance levels. Nevertheless, aspects of economic geography and strategic spatial planning are also addressed, as these aspects form an important background of many decision-making processes, and provide actors with a certain set of world-views and problem definitions; thereby heavily influencing regional and local agenda setting.

3.2.2. Critique and policy implications

All these research strands within the 'new regionalism' bridge the gap of the already discussed uneven development theories by firmly placing the region in the centre of shaping economic development and well-being. In this way, 'new regionalism' can be seen as the direct consequence of the predominant academic discourses of the 1960s and 1970s on structuralism, global systems, and interdependencies (e.g. system theory), where nation-state and global interdependencies predominantly shape the economic and social futures of places (e.g. Wallerstein, 1980). From this perspective comes some of the most pointed criticism of the 'spatial turn' in social science - namely its over-reliance on regional and local contexts against the background of a globally organised and expanding capitalist system (Lovering, 1999; Hudson, 1999; Harrison, 2006). A strong point of criticism is a neglect of links to other scales of activity, particularly in terms of how regions are embedded in national and European policy frameworks, as well as global economic networks is viewed critically (e.g. MacLeod, 2001). In a more fundamental critique, some authors point out that many works of 'new regionalism' share an underlying (neo) liberal view of regional development. This is done by viewing regions as mere 'competitive' elements and focussing mainly on growth creation whilst ascribing the failure of development solely to the regions themselves (e.g. Kitson et al. 2004; Bristow, 2005; Hadjimichalis & Hudson, 2013).

Despite this critique, 'new regionalism' has proved to be highly influential in policy making in Europe and across the Western world. Birch et al. (2010, p. 16) note *'that, while traditional regional policy was associated with convergence between regions in the 1960s and 1970s, this stalled from the late 1970s … [and] gave way to the neo-liberal emphasis on national and regional competitiveness'.* While this policy shift has been unevenly implemented across Europe and has seen different results (Birch et al., 2010), it is evident that the 'region' is now core to many regional development strategies across Europe and, therefore, marks a general shift-towards 'place-based' development approaches (Barca et al., 2012; Bentley & Pugalis, 2014).

This shift has been expressed through a range of policies at regional, national, and European levels that have targeted innovation and technology transfer, with research and policy-making having sought to analyse and strengthen growth regions (Servillo et al., 2012; Kinossian, 2017). While academic interest in (technological) innovation is seen as a (more and more important) driver of neoclassical growth models, the way to understand innovation and space has only evolved since the early 1980s through inputs from various research fields (see in detail Moulaert & Sekia, 2003). Here the focus has shifted from sites and site–specific milieus of innovation (e.g. technological parks and concepts of 'industrial regions'), to a more complex understanding of jointly 'learning regions' (Morgan, 2017), which highlight cross-sectoral linkages, as 'regional innovation systems'. Against this backdrop of concepts and literature, today's regional development policies are shaped across Europe (see also Articles 3 and 5 of this work) with a focus on providing actual linkages between different institutions and stakeholders (the 'quadruple helix'), as these are seen as a major precondition for innovation and regional competitiveness.

This is also traceable through the European Union's policy aims over the past decade as laid down, for example, in the Europe2020 goals (European Commission, 2010). Here, the discussion of regional development has shifted more and more towards the mobilisation of (so far) untapped regional potentials and synergies for growth (EU, 2011). Such growth potentials are to be firmly identified and exploited at the regional level through EU-funded smart specialization approaches and regional innovation systems (Foray et al. 2011; Asheim & Grillitsch, 2015). How to conceptualise and understand such endogenous growth potentials is discussed in the next section.

3.3. Endogenous, place-based potentials

The notion of endogenous growth potentials has gained increased attention from academics and practitioners in the field of regional development. In the past two decades, this trend has been heightened by the continuing financial crisis, austerity, and sluggish growth patterns across Europe. Such factors have made regional development strategies based on foreign direct investment riskier than in the past.

In Chapter 4, Articles 3 and 5 discuss the notion of endogenous potentials with a focus on (old) industrial regions, with predominantly small and medium-sized towns) in more detail. Consequently, this chapter

only provides a brief, but broad overview. One sub-section will introduce the terminology of endogenous, place-based potentials, while and another sub-section provides an insight on the European multi-level framework in which the utilisation of such potentials is set in.

3.3.1. Defining endogenous potentials

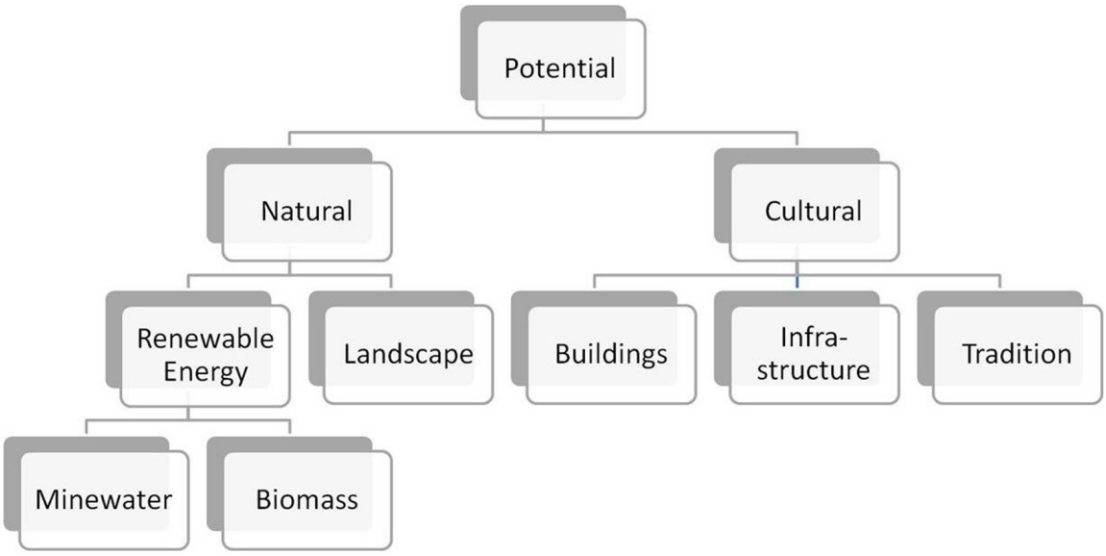
Two broad perspectives on endogenous potentials can be identified within existent academic discourses (Martin & Sunley, 1998; Stough, Stimson & Nijkamp, 2011). The first appears in the field of economic geography, where endogenous potentials are applied to the analysis of unbalanced growth and development patterns at different spatial levels (Dunford & Smith, 2000; Petrakos et al., 2005). The second perspective appears in the field of applied regional sciences and regional development. In the latter, endogenous potentials such as institutions, capacities of actors, cultures and economic links within regional or local contexts explain the specifics of diverging regional development and growth patterns. This understanding represents the broader shift in regional development theories towards more place-centred strategies in the context of the long-evolving debate of the 'new regionalism' paradigm in economic geography (Macleod & Jones, 2007; Bentley & Pugalis, 2014), as mapped out in the previous section of this chapter.

The term 'endogenous potential' is not a 'stand-alone' term, but has been discussed under different expressions in literature, with not only the terminology, but also general research approaches differing (Article 5). Tóth (2014) and Camagni & Capello (2013) both operate with the term 'territorial capital', while a range of other authors have utilised the notion of 'placed-based' or 'territorial' potentials. The latter terminology has been adopted by authors such as Barca (2009) and Damsgaard (2009) as well as the European Union (ESPON 2013b; Servillo et al., 2012). This approach is also chosen for the articles in this PhD. It indicates that these regional assets may not be initially recognized as useful by stakeholders despite the fact that they can be pro-actively turned into capital. Methodologically, the approaches share the same basic understanding of what such place-based potentials or capitals are, but they differ with regard to the qualitative or quantitative methods that are applied (e.g. Lacquement & Chevalier, 2016).

Additionally, the conceptualisation and categorisation of endogenous potentials and their elements differ. Early studies on the topic (such as Damsgaard et al., 2009) often distinguished between 'tangible' and 'intangible' potentials. Here 'tangible' potentials described concrete material legacies, or resources of human activity in settlements and landscapes, as well as natural resources in the form of landscapes (e.g. for tourism) or mineral deposits (e.g. for extraction industries). The second, immaterial type of potential relates to experiences, skills, knowledge, and other competences, as well as cultural and social aspects of human existence, including institutions (see also Harfst et al. 2018). These non-material potentials are moreover a linkage between the people and the regional cultural values, as well as traditions that shape the lives of the given region's inhabitants. While this binary view is still very much in use (see Figure 7), but there are also new conceptions which focus on the functional connections that exist between different forms of potentials (e.g. De Rubertis et al., 2020).

Figure 7: Two examples for conceptualisation of endogenous potentials

a) In post-mining regions



b) For general potentials in their functional connection

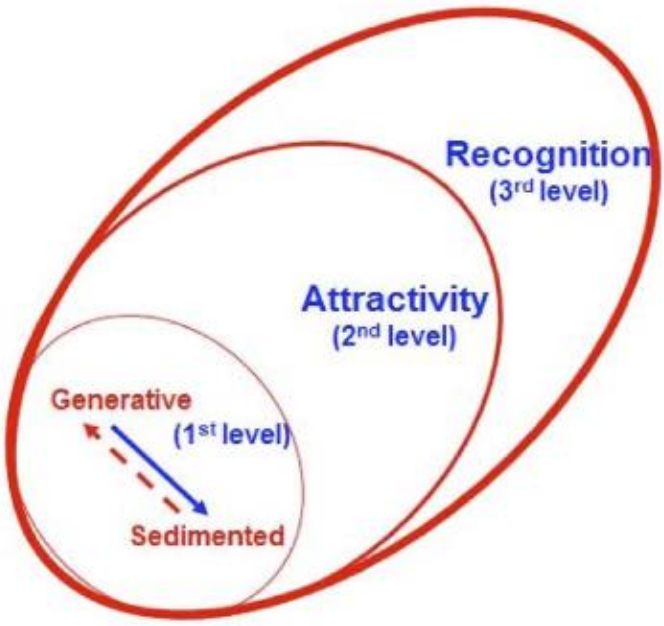


Figure 1. Levels of TC. Source: authors' elaboration.

Source: a) Wirth et al., 2012); b) De Rubertis et al., 2020

3.3.2. Endogenous potentials, their policy framework and implementation

Europe has embarked in the last two decades on far-reaching processes of integration, which have resulted, in many areas, in the creation of multi-level governance systems combining local, regional, national and European levels (Follesdal, 2000). As a result, regional development and cohesion policies have also been reshaped towards a complex European multilevel governance system (Hooghe, 1996; Benz & Eberlein, 1999), which has taken shape in the last two decades (e.g. Christiansen, 1997; Ansell, 2000; Bache, 2008). According to national policy traditions these multilevel systems can take different shapes (e.g. Jeffery, 1997; Scharpf, 2010), and can bring about different types of multi-level governance systems in the context of regional development (Hooghe & Marks, 2001). The multi-governance settings addressed in this PhD include both vertical connections between EU, nation states, districts and municipalities (as being mainly discussed in this section), as well as horizontal systems on regional level which usually include institutions and actors across different administrative borders (as in LEADER organisations, regional development agencies etc.). The latter governance arrangements form the background of the analysis provided in Chapter 4 (see Stephenson, 2013; Danson et al., 2018).

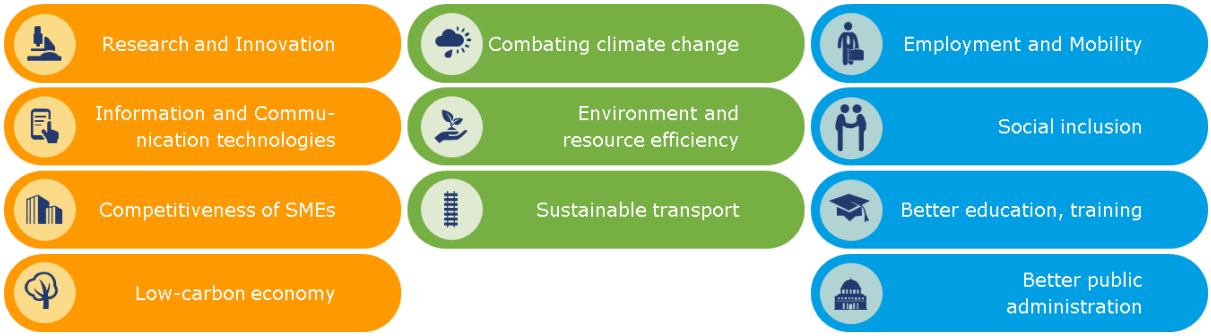
The general problems and challenges of such systems have been widely discussed in the literature that addresses issues of interplay, fit, scale and path dependency (see Young 2002), while a range of authors have discussed the European cohesion policy system in greater detail (e.g. Dąbrowski et al. 2014), where differences often centre around different policy traditions, power-relations and policy aims (Gualin, 2003). The utilisation of place-based potentials is, today, an element within these European cohesion policies, thereby being subjected and shaped by these processes.

Endogenous potentials play a prominent role in EU strategy papers, and in particular in the Territorial Agenda 2020 (EU, 2011). This document builds on the objectives of the Europe 2020 strategy (European Commission, 2010), which set out concrete development goals for the European Union and its member states in terms of employment, research, climate change, education, and poverty reduction. The Territorial Agenda 2020 assumes that these objectives can be achieved if 'territorial dimensions' are taken into account (EU, 2011, p. 2). The objectives of the EU – territorial and social cohesion and competitiveness – can only be reached if states, regions, and cities (including small and medium-sized cities) contribute to the European objectives (EU, 2011, p. 3, paragraph 8). This requires local and regional development strategies based on 'territorial potential' (EU, 2011, p. 3, paragraphs 11 and 28). For cities and regions, it is important to break down the general requirements and to determine the individual potentials of individual places more precisely.

The 'Territorial Agenda 2020' provides the strategic frame for the use of endogenous potentials, while the practical translation towards their utilisation can be traced in many sub-policies of the European Union's cohesion policy, e.g. several INTERREG programmes or the EU Commission's Smart Specialisation Initiatives, such as S3. The entailing multi-level governance arrangements in regard to agenda setting between EU Commission and regions pre-defines which potentials can be funded via the current cohesion policies (incorporating the European Regional Development Fund, European Social Fund and Cohesion Fund) (for further details see Harfst et al. 2019).

Analysing policy arrangements around endogenous potentials needs to take into account the vertical multi-level governance setting between European, national and regional/local actors. In the outgoing programming period 2012-2020, the European cohesion policy (incorporating the European Regional Development Fund, European Social Fund and Cohesion Fund) has been streamlined according to the Europe2020 development goals (e.g. Garretsen et al., 2013; McCann, 2015). Given the history and assessment of this approach (Mendez, 2013; Avdikos and Chardas, 2016; Marques and Morgan, 2018), it is safe to say that the alignment towards the EU2020 goals led to a narrowing of thematic choices for the programmes, especially because of the strict monitoring, and goal fulfilment procedures. Overall, the EU2020 goals were broken down into 11 thematic fields of action (Figure 7), which were then split across the different funding mechanisms[2].

Figure 8: Thematic fields of action according to the EU2020 goals



Source: www.ec.europa.eu/regional_policy/en/policy/cooperation/european-territorial/

According to these overall pre-selected themes, national cooperation agreements were developed which assessed national needs and action fields. The operational programmes at national/regional levels were then drafted following these cooperation agreements. These documents are the nodal points between the Commission's targets and regional and local needs.

Given this approach from the top level of the policy-making hierarchy, regional and local initiatives utilising specific potentials (as well as addressing specific problems) are limited, as the agenda-setting process has been structured in a top-down manner with the thematic focus being narrowed in advance. For instance, topics such as demographic change cannot be addressed directly by the stipulated priorities. Nevertheless, when drafting the Operational Programmes there is a wide consultation process which involves various actors from different administrational governance levels. Here, regional and local

[2]Investment from the ERDF will support all 11 objectives, but 1-4 are the main priorities for investment; main priorities for the ESF are 8-11, though the Fund also supports 1-4; the Cohesion Fund supports objectives 4-7 and 11 (http://ec.europa.eu/regional_policy/en/policy/how/priorities)

priorities can be taken into account – thereby re-opening and supplementing the agenda-making process for a lower (horizontal) governance level. However, this assumes that regional and local actors are already aware of their endogenous potentials. Accordingly, it is of special interest to consider how the regional and local policy levels act on the identification and utilisation of endogenous potentials through horizontal governance, a feature which is discussed across all the articles in the following chapter. In the context of this PhD it is important to state, that how endogenous potentials are identified and used largely depends not only on the preferences, perceptions, and capacities of local and regional actors, but also on the frameworks of European and national policies which can contribute to the construction of spatial constellations and challenges (Danielzyk, 2012). In regard to European Union funding it is important to note that while endogenous potentials play an important underlying role in cohesion policies, the agenda-setting process between the EU and regions with regard to deciding important potentials has been top-down structured and the thematic focus has been narrowed in accordance with the Europe2020 goals (Harfst et al., 2019).

4. Results - Article abstracts and summaries

This chapter will display the abstract and summaries of the 5 articles forming the result section of this PhD. The full text articles are provided in the Appendix to this dissertation. The texts have been all published in international, peer-reviewed journals with impact factor in the course of the last 10 years. Further details about the background of the research and methodology have been already provided in Chapter 2.

The articles are arranged in their chronological order, mainly following the author's train of thoughts across a decade dealing with regional development in non-metropolitan, (old) industrialised regions, predominantly characterised by small and medium-sized towns. In the following a short overview over the interconnection and main results of the articles will be provided. It aims to enable the reader of this PhD to gain a better understanding of the results in connection to the overall topic of this work. All articles are built around case-studies from Central Europe, emphasising different aspects connected to the topic of regional development in such regions (an overview is provided in Table 5).

Article 1 and 2 both deal with case-studies from (post-) mining regions in Germany (Article 1) and a transnational comparison between post-mining regions from Slovenia and Germany (Article 2). Both articles discuss along several case studies (Germany: Mansfeld-Südharz, Lausitz, Zwickau; Slovenia: Zasavje) the identification and utilisation of (post-) mining potentials in the respective regions. In regard to this, they also offer reflection on the existing endogenous potentials concept and schemes by applying them to post-mining potentials concept.

Main results from these two articles address research questions 1, 2 and 3 in the context of this PhD. The texts bring about an in-depth analysis of the (vertical and horizontal) multi-level governance arrangement in connection to post-mining development, economic transformation and reclamation process in Eastern Germany in Article 1, as well as the comparative aspects of the identification and utilisation of (post-) mining potentials across Central Europe as argued in Article 2. Both texts also deliver a comprehensive and close-up insight into the challenges of structural change in the case-study regions. Both contributions raise the question about how to foster regional capacitates to create new, locally-led development options. They also critically discuss vertical governance arrangement and their problems in post-mining transformations (Article 1), while Article 2 mainly underlines the importance of horizontal governance arrangements via the inclusion of various stakeholders from different sectors in such processes (Article 2).

Table 5: Overview articles, research questions and main results

Article no	Title, publication details	Connected to research question	Main results
1	Harfst, J., Wirth, P. (2011) 'Structural change in former mining regions – Problems, potentials and capacities in multi-level-governance systems' *Procedia – Social and Behavioral Sciences* 14, 167-176	1,2,3	• Examination of (post-) mining challenges and transitions • Analysis of multi-level governance setting in (post-) mining regions • Discussing vertical governance arrangements in the transformation process
2	Marot, N., Harfst, J. (2012) 'Post-mining potentials and redevelopment of former mining regions in Central Europe – Case studies from Germany and Slovenia' *Acta Geographica Slovenica,* 52(1), p. 99–119	1,2,3	• Examination of (post-) mining challenges and transition process • Transnational comparison of the identification and utilisation of (post-) mining potentials • Discussing horizontal governance arrangements in the transformation process
3	Harfst, J., Wirth, P. (2014) 'The Significance of Endogenous Potentials in Regions Characterized by Small and Medium Sized Towns: Considerations against the Background of the Territorial Agenda 2020' *Raumforschung und Raumordnung,* 72, p. 463–475	1,2,3,4	• Explores link between cohesion policies and place-based potentials • Critique of EU Cohesion policies in regard to case-study regions' needs • Underlining crucial role of endogenous potentials in the case-studies
4	Harfst, J. (2015) 'Utilizing the past: Valorising post-mining potential in Central Europe' *The Extractive Industries and Society,* 2 (2), p. 217-224	1,2	• Examination of (post-) industrial development needs in the transformation process • Matching of development needs and benefits from the valorisation of place-based potentials
5	Harfst, J., Wirth, P., Marot, N. (2020) Utilizing endogenous potentials through EU cohesion policy: examples from Central Europe *European Planning Studies,* 28 (11), p. 2193-2212	1,2,3,4	• Refining existing models on the use of endogenous potentials • Providing policy recommendations for the EU Cohesion polices and case-study regions

Source: own design

Article 4 provides a wide-ranging overview on the utilisation of post-mining and post-industrial potentials with examples from Austria, Germany and Slovenia. The text is only to a lesser degree focused on single case studies, but explores the connection between different development needs of (old) industrialised regions and the utilisation of industry-based potentials. It analyses benefits of valorising these potentials under aspects of social cohesion, identity and outward image, as well as tourism and other economic impacts.

The main results of this article address research questions 1 and 2 of this PhD. The analysis provides a more generalised picture of post-mining and post-industrial problems and challenges, and then critically discussing how the utilisation of place-based potentials addresses these specific development needs. In its main argument the text highlights the different aspects of utilising industry-based potentials for regional development, especially in regard to their social, economic and networking functions.

Articles 3 +5 both provide a change in perspective in so far as the main level of analysis moves from single case studies towards European cohesion policies. The articles are backed-up by 4 different case studies (Austria: Steirische Eisenstrasse, Germany: Mansfeld-Südharz and Zwickau region, and Slovenia: Zasavje). Building on the main results from the articles before, both texts here ask for policy lessons learnt for EU cohesion policies, as well as contributing conceptually to the academic debate on endogenous potentials.

In its results Article 3 shows the link between endogenous potentials and European Cohesion polices, stating key documents and funding instruments. It tracks the translation of these policies into local and regional policies via two case studies. From this the text derives a comprehensive critique of EU Cohesion policies in regard to the focus regions in the article and this PhD. In its main result it assigns the utilisation of place-based potentials a crucial role in regional development for such regions, mainly via their catalysing, identification and symbolic functions. As an overall conclusion, the text highlights the neglect of these (‘soft’) functions in Cohesion policies and their goals, which are instead targeting ‘hard’ factors such as growth and jobs.

Article 5 stands in the same context, albeit providing a more conceptional review on the topic of endogenous potentials. Via the two in-depth cases studies, it highlights different governance approaches on for utilising potentials, which nevertheless lead to similar results. The text also systematically displays different valorisation options for these potentials across the regions and time. It analyses in detail the horizontal governance arrangements and their changes. In its main results, it refines the existing model of endogenous potentials, as well posing critical question in regard to EU Cohesion policies in regard to the focus regions. Here the text makes some recommendation for better, place sensitive solutions for future Cohesion polices on European level, arguing for a more space-sensitive approach, which takes into account structural disadvantages of certain regions.

4.1. Article 1

Structural change in former mining regions – Problems, potentials, and capacities in multi-level-governance systems

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Published in: Procedia – Social and Behavioral Science (2011), 14, 167-176

Abstract

The paper discusses remediation and regeneration processes in former mining regions in Eastern Germany. The research focuses on the multi-level governance system the environmental rehabilitation processes were set in. The paper discusses certain difficulties of the system, which can be characterized as problems of interplay, fit, scale and path dependency (Young). Results highlight the importance of enhancing regional capacities in order to allow actors in former post-mining regions to find better solutions for sustainable regional development

Summary

The focus in this paper is on the nature and problems of the specific multi-level governance system established in Eastern German mining regions after reunification in 1990, highlighting the structures set up to manage remediation. Research examines changes in the multi-level governance and looks for ways to foster regional capacities so as to allow former mining regions to develop new, sustainable perspectives (as described by Ostrom 1990).

The paper considers the general question of how to deal with the mining legacies by addressing the rehabilitation of environmental damage and adaptation of economic structures. It does so by giving an overview of structural changes in European mining regions and the political responses that have been adopted to tackle these processes, as well as analysing the specific situation in the Eastern German mining industry after reunification and the political approaches adopted towards environmental legacy and rehabilitation issues. It discusses the successes and problems of these policies, especially with regard to the multi-level governance system introduced, and addresses problems of interplay, fit, scale and path dependency (Young 2002). The conclusion reflects on these findings and draws lessons for other systematic approaches, stressing the importance of building local capacities in multi-level governance processes.

Overall, the paper shows that problems with changes in mining industries and their environmental legacies can be found across Europe. While in most Western European countries restructuring mainly

took place under specifically Fordist conditions in the 1970s and 1980s (i.e., state intervention, agreement on long term —phasing-out scenarios), most Eastern European countries underwent a rapid and radical reorganization of this sector in the 1990s. The problems in Eastern Germany exemplify many of the challenges faced by mining regions all over Europe. But the chosen solution of large-scale, long-term rehabilitation by the state is unique in Europe. The Eastern German example thus provides a useful insight into issues of regional environmental governance and local capacity building in mining regions. The case study teaches us the following: Intensive state support is needed to master environmental rehabilitation issues on a large scale when the polluter-pays-principle does not work. There is no alternative to such state involvement particularly in densely populated areas. The case of Eastern German mining rehabilitation also shows the uneven spread of such arrangements, and how some mining regions benefitted from the rehabilitation funds whilst others were forgotten.

Without the empowerment of affected municipalities to master their futures, the established multi-level governance system can be described as a process where —*'place matters, but scale decides'* (Swyngedouw 1997, 144) and thereby reflects the unequal power relations that exist between the different scales. Although all of the affected areas are less favoured regions which lack resources and possessed multiple problems, some were able to use the rehabilitation process and create new options for development. This suggests that there are different capacities at a local level for influencing governance systems in the local interest. This places local and regional capacity building at the centre of the focus of the research: How are some places able to raise their capacities to use existing potentials and policy options to create new development options? The research points towards the importance of actors and networks, while important levers in capacity building can be regional identities (mining past), shared problems (administrative cooperation), or the availability of funding sources and projects (EU funding, such as INTERREG) (see also Bieker & Othengrafen 2005; Healey 1998).

4.2. Article 2

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

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Published in: Acta Geographica Slovenica (2012), 52(1), 99–119

Abstract

The 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 of potentials often include renewable energies (biomass, geothermal energy), or tourism (museums). Discussing two case study regions, the article presents similarities and differences in the approaches utilised with regard to embracing potentials, and compares the 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 ways by which to explore new development options for affected regions.

Summary

The paper discusses the role of post-mining potentials in regional transformation processes in Slovenia and Germany. 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 focuses on the similarities and differences in approaches adopted within the two areas as well as their differing utilisations of post-mining potentials. Special attention was given to the overall framework conditions that influence the usage of potentials.

The analysis highlighted the often very complex and difficult situation of many European mining regions at the end of excavation activities. Such places tend to be especially impacted by a lack of economic alternatives and spare resources for future regional development efforts (Lintz et al. 2005). These challenges also apply 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 shows that both regions pursued the realisation of similar cultural and natural post-mining potentials with differing intensities. This corresponds to observations elsewhere which stated that whilst potentials are distributed evenly across mining regions, their realisation varies as a result of differences in elements (e.g. the size of the redevelopment area, the type of mining, financial resources available,

and so on.) (Marot & Cerni-Mali 2012; Scholz & Schwartze 2010). Utilisations are mainly found in the fields of tourism and renewable energies. Tourism potentials seem to be easily established 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 hampered by the existence of a significantly damaged environment, which needs decades to recover from ecological damage. Both regions have clearly reviewed their mining legacies 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 potential to establish new options for development in those regions which does not deny their past. Thus, the utilisation of post-mining potentials can be an especially important pathway in the development of such regions, especially where other development options are lacking. Although the utilisations of cultural and natural potentials often have often only limited effects on local job creation, the utilisation of natural potentials for energy production opens up possibilities for such regions to connect with the innovative economic sector; a sector that is, however, often lacking in such 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 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, whilst also overcoming any local and regional conflicts of interest that may exist between an area’s various actors regarding the utilisation of post-mining sites.

4.3. Article 3

The Significance of Endogenous Potentials in Regions Characterized by Small and Medium Sized Towns: Considerations against the Background of the Territorial Agenda 2020

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Published in: Raumforschung und Raumordnung (2014), 72, 463–475

Abstract

Small and medium-sized towns are often the losers in times of economic crisis, as their internal innovation and growth potentials are low. Such places are especially reliant on external investment and public funding, a fact which has aggravated the economic, social and demographic repercussions of the current financial crisis. Against this background this paper discusses the role that endogenous growth potentials—also highlighted in the EU's Territorial Agenda 2020—can play in stabilizing such regions. The argument rests on two case-studies in old industrial regions where the strategic utilization of such potentials by local actors is analysed and their overall influence on regional development discussed. By linking these examples to discussions from the 1980s and 1990s on endogenous potentials, the paper points out that today the primary consideration is not the direct economic impact of potentials but the role of endogenous potentials in triggering regional development processes (catalysing function), highlighting regional uniqueness (identification function) and strengthening regional self-confidence (symbolic function).

Summary

The two examples discussed here and the experiences gained from the underlying projects ultimately illustrate that endogenous potential in small and medium-sized industrial towns and regions continues to be an important development factor. These potentials are also important because external development impulses in the form of private or public investments are weak in the regions considered. Even where such impulses do exist, they often have little impact on innovation and employment. This contribution thus underlines the assessment of Tödtling/Trippl (2004: 2) that the reality in structurally weak areas is different from what the 'good examples' of research suggest with regard to agglomeration areas.

The use of endogenous potentials, as described in this article, shows a number of positive effects and opportunities: The tourist exploitation of industrial heritage contributes to a certain degree of added value, as does the use of land and buildings for new development purposes. Nevertheless, whether the laborious and sometimes time-consuming development of such potentials is worthwhile in regional

economic terms is questioned. In addressing this question not only the direct economic effects must be considered. It is much more important to include indirect effects which are often linked to the non-material potentials of regional development. As our case studies show, adopted knowledge, identity, and traditions are very important factors in endogenous development.

Even if the background of the observations made here are small and medium-sized industrial towns and regions, conclusions can be drawn which go beyond the type of problem investigated herein. In other words, they are valid for other areas with structural problems. Firstly, it becomes clear that endogenous potentials have a great diversity, which must first be determined for each region in order to be able to put them to good use. Secondly, how endogenous potentials are used and whether synergies are created depends on respective actors. Thirdly and finally, political framework conditions play a major role; they can have a promoting or inhibiting effect with regard to the use of endogenous potentials.

Overall, the approach outlined here represents an expansion of previous concepts of endogenous development. Whereas in the past the focus was on material aspects of growth, value creation, and job creation, now endogenous potentials can be interpreted more comprehensively on the basis of the findings presented here. They now can comprehensively be expanded to include a number of functions: With the help of the knowledge preserved by the relevant actors (e.g. former industrial workers) and its dissemination via the relevant networks, new ideas are communicated, the interest of politics and business is aroused and regional development processes are initiated (catalyst function). Equally important are the identification function of such measures and the uniqueness of individual regions (unique selling propositions) which underpin the self-image of the regions affected by structural change. Furthermore, the use of endogenous potential also has a symbolic function. It signals the performance and motivation of the people in the regions and increases self-esteem.

In view of the Territorial Agenda of the EU which attaches great importance to territorial potentials in terms of growth, employment and climate change, this extended approach to place-based potential seems sensible. As these functions are 'soft' categories that are difficult to measure, development objectives and criteria need to be reconsidered. Focusing the programmes solely on growth and jobs, as has often been observed in recent years, would be too narrow a view.

4.4. Article 4

Utilizing the past: Valorising post-mining potential in Central Europe

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Published in: The Extractive Industries and Society (2015), 2 (2), 217-224

Abstract

Once cradles of industrialization and centres of wealth creation, many 'old industrialized' regions worldwide presently face crises. Nevertheless, they are also places that have searched for innovative spaces and practices in order to overcome the economic, social and environmental outcomes of structural changes. In recent decades, many European centres of old industries (e.g., mining and steel production) have been rendered unprofitable through various processes. These changes have had a profound impact on such regions: complete closures and substantial downsizing of production sites have triggered difficult processes of de-industrialization, unemployment, and outmigration. Additionally, negative connotations and images of the industrial past and the (post-) industrial present hamper development efforts. Regions characterized by small and medium-sized towns have been negatively affected. This paper discusses approaches and challenges connected to difficult transformation processes by using examples of three Central European mining regions and their ways towards more sustainable regional development. The paper asks specifically about approaches that include potentials related to the industrial past that can be reutilized in different ways, thereby opening new development perspectives. The focus is on the opportunities and problems that exist with regard to addressing post-industrial potential.

Summary

This paper explores the changing dynamics of some mining regions predominantly characterized by small and medium-sized towns. It shows that old industrialized regions possess a range of different potentials which are capable of contributing positively to transformation processes.

One important and positive aspect that can be cited is the changes in inward and outward perceptions. With the traditional 'black' image of old industrialized regions having been identified as impediments to regional development, the productive reuse of mined out lands offers the opportunity to project different images of these areas; dispelling negative stereotypes. Some of these efforts can be drawn upon to construct a more 'green' image of these 'black' places. Moreover, the 'rough' image of these regions can be skilfully used to promote specific ''adventurous'' leisure activities. These efforts can paint a picture that can be communicated and marketed to the outside world whilst also providing a vital link

between the past and the future for the regions' inhabitants. Preserving these industrial legacies, which in their heyday formed an often important part of people's self-reference, can be seen as important anchor points for changing societies and may connect the memories of older generations with the futures of younger generations. This could potentially play a role in mitigating future problems of outmigration and lack of investment.

However, changing perceptions among local residents are more difficult to assess and require more scientific research, especially upon the psychological and social impacts of, for example, long-term migration patterns. Although industrial heritage objects are preserved or used for their cultural value or educational purposes, all of the cases examined show that that their use is also strategically embedded in identifying and promoting new economic development (such as tourism) in the regions in which they are located. Here, old industrial legacies can serve as important backdrops in order to create more sustainable economic opportunities by providing an interesting interplay between old and new uses. Other options, such as renewable energies, appear to be more difficult to realize on a larger scale, mostly due to more complex framework conditions.

Having illustrated the different aspects of use and value, one might ask if the 'erase all traces' approach preferred by other municipalities and regions is a truly worthwhile option to explore. One can also argue that state funding to remediate former industrial and mining sites would appear to be important preconditions for any post-mining application because only state funding will allow regions to actively explore possibilities for alternative economic futures. However, despite the efforts described here, the structural deficits in the regions discussed largely remain. Although tourism might be an option for some regions, it cannot replace the workplaces lost through industrial restructuring. Nor can it fully compensate for a lack of, for instance, tourism infrastructure such as the existence of hotels. . Therefore, it remains to be seen if these efforts can have a larger impact on the general development of these regions over the long term. It can be said, however, that these new uses do improve outward and inward images and can equip regional stakeholders and decision makers with new organizational skills and capacities; preconditions for mastering the challenges that these areas face.

4.5. Article 5

Utilizing endogenous potentials through the EU's cohesion policies – Examples from Central Europe

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Published in: *European Planning Studies*, 28 (11), 2193-2212

Abstract

The Barca Report of 2009 firmly placed endogenous potentials on the European Union's policy agenda. Now, as the current EU programming period 2014–2020 draws to a close, this article examines how such potentials are being shaped and applied at local and regional levels. We reflect upon lessons learned from this approach, and through so doing contribute to the debate on the next European Union's cohesion programming period from 2020 onwards. The analysis deals with the valorization of place-based development potentials in case study regions, and highlights the challenges that exist in the current development of such regions. Examples are given of the utilization of endogenous potentials, and we consider lessons learned from this locally-led, place-based development approach and how they can be applied to the wider framework of European cohesion policy. The focus is on (old) industrial regions characterized by small- and medium-sized towns outside major agglomerations. The authors conclude that it is insufficient to merely consider the direct economic effects of endogenous development potentials. Instead, a more comprehensive perspective is required, one that pays greater attention to other functions of endogenous approaches, specifically their catalyst, identity, and symbolic functions.

Summary

The article focuses on the situation of non-agglomeration, (old) industrial regions in Europe, often situated beyond main political and academic hubs. Towns and regions of this type are often characterized as 'lagging behind' larger metropolitan regions that have managed to transform towards knowledge-based services, the smart governance of resources, and updated industries. Accordingly, the paper investigates the role played by endogenous development potentials in underperforming regions; as such potentials are at the core of the current European Union's cohesion policy 2014–2020.

The article confirms the general observation that the reality of development in non-agglomeration regions is more complex and difficult than 'good practice' examples often suggest. This can be attributed to a unique mixture of place-specific regional development factors. In the investigated case studies, the legacy of former industries has played a decisive role in determining their development conditions and

has also provided diverse potentials for place making such as the post-mining landscape, the built heritage, brownfields, local customs and knowledge, and so on.

While the focus in this article is on (old) industrial regions with small and medium-sized towns, we draw three general conclusions for other areas facing structural problems: Firstly, from the great variety of endogenous potentials, regions must first identify and prioritize the potentials to valorise. Secondly, local actors are primarily responsible for choosing ways of utilizing potentials and exploring synergies with other existing regional activities. Thirdly, the political framework conditions both at local, as well as on European level, play an important role in either promoting or hampering the use of endogenous potentials.

The investigation highlights the overall importance of endogenous potentials at local and regional level by means of the European Union's 2014–2020 regional policy agenda. We shed light on the multi-level governance arrangements built around the identification and utilization of such potentials to show how this policy agenda filters through to lower policy levels. The case studies show the importance of such aspects for regional development - especially in (old) industrialized regions.

Our discussion also (at least in part) reveals an evolution in the way potentials are identified and valorised over time, shifting in focus from project-based interventions and tangible remains such as buildings and landscapes, towards more strategic embedding and intangible elements such as skills, product innovation, and networks. These shifts correspond to the European Union's innovation agenda. However, we also shown the difficulty in applying complex concepts of regional development such as smart specialization to smaller regions due to their limited human and governance capacities.

Our discussion shows that the regional influence of endogenous potentials is much wider-ranging that solely their *direct* economic impact. It is important to consider their *indirect* effects. In this regard, factors such as inherited knowledge, identity, and tradition can serve to enable endogenous development. Here we make a strong argument for extending previous concepts of endogenous development which mainly focused on the material aspects of growth and job creation. Based on our findings, endogenous potentials should instead be interpreted more comprehensively to extend the range of likely impacts.

The strict focus on growth and jobs in the recent programming period of EU-funded measures is too narrow to capture the full picture of endogenous development. An important aspect in this regard is the improvement of local/regional capacities to act. This could mean providing additional support to regions lagging behind by establishing creative units that could guide integrated processes of renewal together with relevant regional actors and external knowledge. Additionally, providing (as in past cohesion policies) separate funds for such regions could be an option.

5. Discussion and reflection

This final chapter of this PhD comprises two sections. The first discusses the main findings of the five articles noted in Chapter 4. The discussion is arranged so as to address the main research questions defined in Chapter 2. The second section is a reflection on the overall results. It draws some conclusions on the theoretical framework presented in Chapter 3 and provides recommendations for further research based on the general topic addressed herein.

5.1 Discussion

This body of work has presented and discussed alongside five articles questions of regional development in (old) industrial regions that are predominantly characterised by small and medium-sized towns in Central Europe. In Chapter 2, four core research questions were outlined which are discussed in the following section by relating the results in Chapter Four to the individual questions (see Table 6).

Table 6: Research questions and corresponding articles – overview

Research question	Corresponding article focus
[1] Challenges of small and medium-sized industrial towns and regions	1,2,3,4,5
[2] Utilisation of endogenous potentials for regional development	1,2,3,4,5
[3] Multi-level governance arrangements in the use of these potentials	1,3,5
[4] Recommendations for EU cohesion policy	3,5

Source: own design

[1] What are the development challenges commonly associated with European (old) industrialised regions which are predominantly characterised by small and medium-sized towns?

All five articles in this PhD demonstrate the different characteristics of structural change in (old) industrial regions across Central Europe. Along with the portrait of four different case-studies given in the articles, the great variety that exists between (old) industrial places in terms of their historic, present-day and future development paths was glimpsed. Some case-study regions have retained their industrial character (e.g. the Austrian example of Styrian Iron Route), while in some regions parts of (old) industries have survived alongside the addition of new economic branches thereby creating a rather successful new economic structure (e.g. in the German Zwickau-Chemnitz example). Other places have lost almost the totality of their 'industrial backbone', with the result that the economic composition and function of these places has been changed completely (e.g. the Slovenian Zasavje region).

Nevertheless, in the (still on-going) regional transformation processes mapped out in the articles, the challenges faced by these different regions remain basically the same – a period of sustained economic crisis, often coupled with severe ecological problems (e.g. un-remediated brownfields with severe pollution, dilapidated buildings, unclear property and reclamation responsibilities), which have triggered high unemployment and in turn led to persistent outmigration. In some case-study regions outmigration is permanent (as both in the Eastern German regions and the Austrian case), while for example the Slovenian case show sharp rises in daily commuting out of the region, but with rather stable population numbers. Overall, these processes have been especially pronounced in areas where there was a mono-structural economy that, when negatively impacted, plunged the whole regions into crisis because those economic branches that existed alongside the mono-industry were not strong enough to buffer the economic and social fall-out. These aspects are traceable across all regions discussed in Chapter 4.

Such crises have resulted not only in economic, ecological and social problems, but also had severe repercussions for local governance; loss of direction and reduced access to, and activity with, national and regional policy networks. Here both vertical and horizontal governance problems form a constant challenge in the transition: Especially the Eastern German and Slovenian cases show the problems of transforming from a state-led to a market-oriented system, rendering many established political and economic network-relations useless. In these cases new institutions and administrational settings in regional development (and beyond) were created, causing needs additional for adaption by stakeholders. Additionally, the growing role of EU Cohesion policies demanded further capacities to accustom to EU frameworks and to identify and utilise the opportunities offered. These aspects required a major mind-shift from all actors in all regions involved, especially as stakeholders in such regions often come from very hierarchically organised industrial structures, where, on many levels, a culture of pro-activeness is/was not fostered.

There is also an important 'mental' change that is traceable. Here, internal regional (self-) perceptions have shifted from being 'national economic powerhouses' to regions of 'crisis and decay'. This has placed the identities of affected populations under question, and has often had highly demoralising effect, as unfavourable images attributed from the outside prevail (see Article 4). A longing for a 'golden past' and nostalgia for better days can be identified, which can be a major development hurdle in creating new visions and development paths for such regions. Additionally, effects like outmigration can lead to a loss of functions (esp. connected to the closure of higher or specialised education units as well as closure or centralisation of public services), which diminish the regional role of these places further, as the example from Mansfeld-Südharz (GER) underlines (see here especially Articles 1 and 2).

Results in Chapter 4, as well as the literature (see Chapters 2 and 3), map out similar problems, albeit with specific regional configurations. These are mainly dependent upon individual, local situations. Overall, the challenges can be summarized as:

- A need to search for new economic opportunities
- A need to raise (new) institutional and network capacities
- A need to build (new) focal points for identity and perspectives for inhabitants
- A need to create more positive outside images

- A need to rehabilitate degraded areas and post-industrial landscapes

These aspects highlight the multitude of challenges which are played out at different territorial levels. Nevertheless, all appear relatively the same point on the time-line - thereby often overtaxing local actors and stakeholders. This underlines how all-consuming the crisis of structural change actually is - especially in such regions outside agglomerations. The results from this PhD also emphasize the long-term and persistent impact that such structural crises can have on industrial towns and regions (see Article 1 and 2).

Tackling these challenges is a major task for (old) industrial regions and should not be underestimated, as the impacts of structural change and its challenges are long-term, affecting both regional networks as well as individuals in a mainly negative manner by altering their world-views and expectations. Both politics and research should not misjudge the impact of such processes when developing policies and research agendas in and for such places. There is a tendency in both fields, as already discussed in Chapter 2, to simplify such regions and their development problems with a focus that is either a 'one-size-fits-all' solution or one that does not take sufficiently into account the often complex character of change. Additionally, opportunities and potentials for regional development, which are also present across all these regions, are also often ignored. This can, in turn, re-produce a simplistic picture of 'doom and gloom', which represents only a part of the overall picture of the regional development of such places.

[2] What kind of endogenous potentials for development are present in these regions, and how are they identified and utilised by local and regional stakeholders?

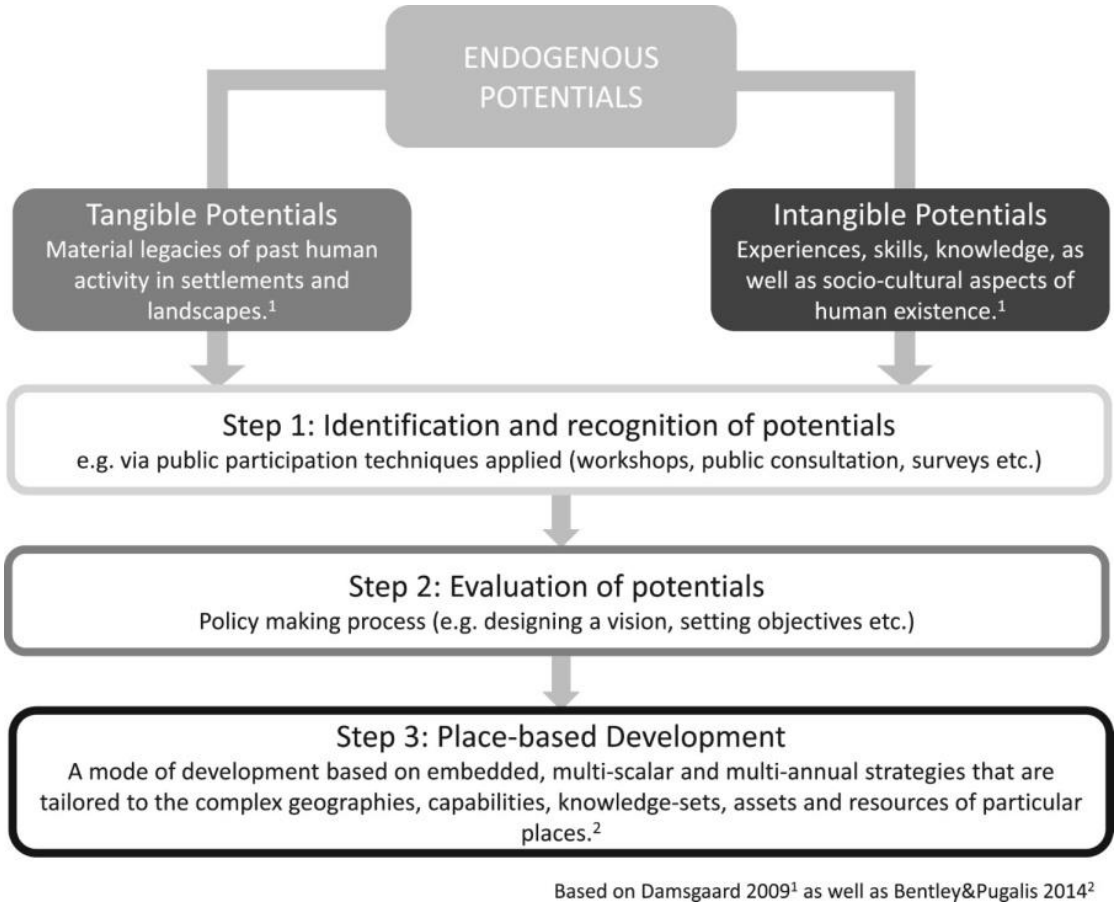
Question 1 highlighted the many persistent challenges which (old) industrial regions face. Question 2 asks about the opportunities and place-based potentials which these places may identify and utilise to improve their regional development prospects.

Here, the results shine a light on the wide range of potentials available to (old) industrial towns and regions. The focus of the articles was mainly on the assets of industrial production and its legacies. These assets are often used, as they are the main feature of these places, the aspect that most defines them in regard to their outward and inward perception. In none of the cases was an 'erase-all-traces' approach - which would try to break completely with the elements of the former industrial development path - found. Rather, in absence of other opportunities, the industrial past was seen as a key element for re-structuring through elements such as remaining companies, know-how and institutions, positive traditions and world views, as well as (historic) buildings, monuments and sites. Additionally, features such as the valorisation of previously un-used natural potentials, for example nature sites, alternative energy forms, and so on can play a role. Here, especially the German examples from Saxony illustrate the innovative potentials in the field of energy production. Article 4 gave, in this regard, a comprehensive overview of possible utilisations from various case-study regions. Overall, the results show that utilisation of such potentials can yield important innovative, and locally-led solutions and creative

strategies, instead of stakeholders merely simply trying to copy 'success-models' handed from the top-down.

An important factor when utilising these potentials is the networking and regional learning aspect; both depend on the given combination of new and old actors working within a (horizontal) governance model – often based on or around LEADER (examples from Austria and Mansfeld-Südharz) or regional development agencies/district administrations (Slovenia and Zwickau examples). To come up with creative and sustainable solutions that have a meaningful impact on regional development, the creation of long-term visions and strategies which incorporate a range of actors is important. Articles 3 and 5 highlight in this regard LEADER strategies and regional development strategies as important instruments. These documents, often discussed within a broader consultation process of stakeholders, also help with the selection and prioritisation of the potentials available. This in turn creates the necessary synergies with already existing activities in the regions. Overall, this analysis helped in the devising of a better schematic approach on how to deal with the utilisation of place-based potentials in Article 5 (as depicted in Figure 9), which is a major contribution of this work for the conceptualisation of this research topic.

Figure 9: Utilisation of endogenous development potentials



Source: Article 5

Overall, the general utilisation of areas' industrial past and present as endogenous, place-based development potential was a persistent factor across all regions discussed in Chapter 4. Content-wise, their utilisation often directly addressed a range of the regional development challenges that the areas faced - as discussed in research question [1]. The articles all discuss to a different degree, how regional and local stakeholders were trying to utilise their industrial pasts as stepping stones to the future. Taking advantage of these elements can serve many different aims including: facilitating economic growth, fostering tourism, and improving infrastructure, as well as with regards to educational purposes, and strengthening local identities (see esp. Article 2+4). This is achieved by incorporating the legacies into future development plans rather than demolishing and denying them outright. Nevertheless, the choice of which specific endogenous potentials are used in which town or region is often made as a consequence of very specific local situations and the horizontal governance settings. It also depends highly on available funding opportunities; usually provided through a (vertical) multi-level governance system.

[3] What roles do multi-level governance arrangements play in identifying and utilising such development potentials at both local and regional levels?

The results from Chapter 4 highlight the importance of both vertical and horizontal multi-level governance arrangements for the transition process of many (old) industrial towns and regions. These relations are often dynamic and changing, especially when viewed from a long-term perspective (see especially Articles 3+5). As this PhD has shown, the role of the European Union and its cohesion policies have had a lasting impact on the development aspects of many (old) industrialised regions, mainly by providing important funding opportunities and enabling knowledge exchange and know-how transfer. Nevertheless, the specific modes of multi-level governance systems differ widely according to local conditions and general (country-specific) government frameworks and characteristics (in detail Articles 1 and 2). This is in accordance with the theoretic assumptions made in Chapter 3, where problems of (vertical) multi-level governance and practical implementations at the EU level were both highlighted, especially its complex nature and the need for extra local capacities in order to benefit from the system.

With regard to the *general challenges* facing the focus regions, one can state, that in all cases, the regions have received – to varying degrees – direct national state support in order to overcome their structural crises. These interventions have differed across time, as the 1980s saw more direct economic policy interventions (for example, the nationalisation of companies, and state-led re-location strategies), while from the 1990s onwards more indirect interventions (e.g. tax breaks for new companies, education programmes, loan schemes, and so on) prevailed. When direct state support was granted from the 1990s onwards, it was often focussed on the reclamation of brownfield sites (as in the post-mining examples discussed in Article 1). Overall, a holistic, space-specific approach to mitigate the crises from a European or national level could be found in none of the examples discussed in Chapter 4. The last specifically and spatially targeted programmes in support of (old) industrial regions on EU-level ran out in 1999 (programmes RESIDER +RECHAR, see Articles 3+5).

There has also been a clear shift from national to European (co-)funding initiatives as the main driver in the field regional development. Here, funding instruments such as LEADER and INTERREG, along the structural funds became an important element of local regional development funding in many towns and regions in the last decades (see articles 2+5). This has clearly enabled exchange of knowledge, and the creation of new ideas and approaches (e.g. 'smart specialisation') as well as providing access to new funding (albeit often on a competitive basis). But in turn, it has also added to the level of complexity, as aims and needs are formulated on and across different policy levels (see especially Articles 1 and 3). Here the texts also point to the fact that local actors are often 'overwhelmed' by the even changing nature of concepts and approaches on EU level, which need to be taken into account to successfully compete for funding. The issue of missing capacities in many of the focus regions; a pre-condition to gaining access to these funding opportunities, is addressed in Articles 3 and 5.

The same can be argued with regard to the *utilisation of endogenous development potentials* via (vertical) multi-level governance arrangements. This approach laid at the heart of European cohesion policies in the last EU programming period (2013-2020). This resulted in a lot of new ideas and inputs into local development and in many cases raised local and regional capacities to act, both via a strong impetus on knowledge transfer and cooperation, as well as a strict monitoring of results. But as discussed in Chapter 3, the rather top-down character of agenda-making in EU cohesion policies left some of the topics relevant to small and medium-sized industrial towns and regions rather weakly addressed; depriving them of funding and implementation opportunities. This underlines the unequal power-relations that exist in multi-level governance arrangements and the important role of capacities; needed at local and regional levels ensure that policy-agendas are shaped more to their specific needs (see Articles 3+5).

[4] What policy recommendations can be drawn from these aspects, and how do they translate into European cohesion policies?

Discussed in research questions [1-3] were the specific challenges of (old) industrial regions characterised by small and medium-sized towns, as well as the role of endogenous potentials and the background of prevailing multi-level governance arrangements. This question aims directly at providing specific policy advice and lessons to be learned for European cohesion policy, as a main element for local and regional development policies.

Through Articles 3 and 5 research question [2] discussed in detail how the utilisation of endogenous potentials often directly address the regional development challenges in (old) industrial regions as discussed in question [1]. The result was that the utilisation of (industry-based) endogenous potentials in such places is common though dependent on specific local situations. These utilisations can yield important results, especially with regard to joint learning and new stakeholder involvement, as well as leading to more strategic approaches to regional development as a whole (horizontal governance). Research question [3] then highlighted that (vertical) multi-level governance arrangement at the EU-level have fostered this use of potentials and capacity building via Cohesion funding, especially in the last

programme period, albeit not in a targeted manner that would especially address the focus regions of this PhD. The role-out of this programme was rather space-blind and regions need to proactively work on translating these complex policy agendas in their favour - a hard task for regions that are already struggling with limited capacities and a multitude of other development challenges. One policy lesson to be drawn from this PhD would be to re-think the complexity and top-down character of agenda setting in the current EU multi-level governance arrangement by shifting some agenda-setting powers back to the regions in order to tackle specific development needs (as in the case of LEADER-strategies). Additionally, the complexity of funding processes clearly favours regions that already have capacities (both financially and administrational), a fact that runs directly contrary to the aims of cohesion policies itself. More efforts and human capacity building is needed to activate such regions that regularly miss-out on ERDF funding. Both aspects thereby urging a re-think of the competitive practise and agenda-setting of many ERDF programmes (see Articles 3 and 5).

Additionally, it is noteworthy (and discussed in detail via Articles 3 and +5) that the utilisation of place-based potentials often has only small-scale, *direct* economic impacts, which leads to a certain misunderstanding regarding their real impacts at European level. While their impact on the broader aims of EU cohesion policies in the 2013-2020 period (jobs, growth, social cohesion) might be indeed limited, their *indirect* effects with regard to capacity building and sparking locally-led innovation processes cannot be underestimated. Via their ascribed *catalyst*, *identity* and *symbolic functions*, the utilisation of such place-based potentials can be seen as a pre-condition, for other, more economically valuable, regional development impacts triggered by improving capacities and innovation.

Articles 3+ 5 argue that such a view on *indirect* or *soft* factors of regional development is rather underrepresented in European strategies, which focus mainly on *hard* targets such as employment, growth indicators and social cohesion. It is therefore critical to incorporate these soft factors more firmly into European development aims, as the improvement of the local/regional capacity to act is a pre-condition for the fulfilment of hard factors. This would require a revision of the goals and aims of European cohesion polices, as well as a re-drawing or re-balancing of monitoring instruments.

5. 2 Reflection & Conclusion

Overall, this body of work has discussed regional development in (old) European industrialised regions marked by small and medium-sized towns. This field of study is rather neglected in regional studies, as research has focused in the last three decades more on urban agglomeration and growth regions. It is therefore especially important that the analysis provided here can draw on a range of different case studies from across Central Europe, and in so doing, close an existing research gap.

The work has shown how (old) industrial towns and regions outside agglomerations are actually affected by processes of structural change. In so doing it has discussed the challenges they face in creating new development paths. It highlights the fact that, especially in the kind of focus regions with which this thesis is concerned, the processes of change can be all-consuming, and envelop a range of economic,

social and ecological elements. It also shows that especially local initiatives fostered by (selective) multi-level governance settings enable (old) industrial regions to develop new capacities and innovative solutions for regional development based on their own specific place-based potentials.

In so far as the work can reflect on some of the theoretical presumptions made in the first chapters:

5.2.1. On uneven development

First, the results of this PhD underline the dynamic character of the geography of capitalism alongside the example of (old) industrial regions. Though these places were once upon a time drivers of national (sometimes even global) economic and social development, as well as innovation, they have now often been reduced to 'problem areas' with regard to their social and economic aspects, and facing the back-end of a '*see-saw pattern*' of spatially uneven capitalist development (Smith, 2001, p. 15962). This work's results clearly show that these dynamic development processes in (old) industrial regions are all-consuming: they affect socio-economic composition, as well as the natural outlook and geography of places (Smith, 2008).

Secondly, this PhD has also highlighted the fact that while intrinsic processes of change in capitalism can create severe problems and challenges in such places, there also are capacities and resources in place that can help them to overcome their 'doom and gloom' features. How processes of global capitalism restructure industrial regions is dependent on specific place-based circumstances, as the path development of the case-study regions in this PhD clearly underlines (see esp. Article 1). It is therefore important to note that structural crises in the focus regions can lead to very different development paths and that small and medium-sized (old) industrial towns and regions can also be relatively resilient in times of economic crisis (Bole et al., 2020).

In this regard, results from this PhD can state that while theories of uneven development correctly highlight the global aspect of crisis creation and its all-consuming effect on the local and regional level, they may underestimate the character of local specifics and multi-level framework conditions which shape crises and their outcomes at a local and regional scale. Here the PhD highlights a variety of aspects that help to better understand the different development paths of regions, through notions such as local actors' networks, utilisations of endogenous potentials or EU cohesion policies.

5.2.2. On new regionalism

Having this said, a reflection on the second theoretical background to this PhD, the 'new regionalism', comes into question. Here the approach emphasises the interactions that occur between regional actors, and how these lead to collective and endogenous cultures which constitute the socio-economic basis for regional economic performance (Amin, 1999). They become predominantly viewed as enabling environments which provide benefits to regional development as a consequence of shared social and institutional assets – e.g. tacit knowledge, local conventions and trust. So, the 'region' has become the central action ground for creating sustainable and resilient regional development. Nevertheless, what a region - in its geographical size and composition is or preferably should be - remains in this context already rather blurry.

However, against the results in this PhD, an increased importance of the region in development processes can be confirmed, as many instruments of European cohesion policy target regional capacities and implementation on local and regional level. Especially in the 2013-2020 programming period, the regions have been at the heart of many EU development processes and strategies. Nevertheless, it is important to note that towns and regions are far from free to develop their own specific priorities within these policies, but must rely on a 'space-blind', top-down, pre-structured funding system, which is embedded in a complex multi-level governance system. Given these framework conditions, the responsibility for regional development at the local level is rather curtailed, a fact seldom acknowledged in the literature. Additionally, while new funding opportunities do arise for regions, the 'new regionalism' approach has little to say about such regions in which capacities (for whatever reason) are so low that mutual benefits between actors and institutions are only weakly established – a problem, which affects many small and medium-sized (old) industrial towns and regions.

Generally speaking, the 'new regionalism' paradigm seems to provide a rather optimistic outlook with regard to the regional level and its capacity to boost regional development, while underestimating the impact of crises, as well as the general framework conditions in which such regions reside. Here obviously more attention needs to be paid to the specific settings prevailing in non-growth regions, asking for a new understanding of the dynamics and short-comings of such regions, also from a more conceptional point of view.

5.2.3. On endogenous potentials

Additionally, the PhD has shed light on the role of utilising endogenous, place-based potentials as a way to create alternative development paths for such regions, often through (horizontal) multi-level governance arrangements backed by European funding. It has also made contribution to improve existing concepts via Figure 9.

In the focus regions of this PhD these potentials are often, but not exclusively, connected to the industrial past and present. Thereby they address the need to reconfigure the traditional, industrial base and self-understanding of these places, and build on traditional development paths. As research here has underlined, these approaches can help to foster innovation and new creative solutions, as well as building new capacities and strategies for regions. Their application has been supported by the European Union mainly via its cohesion policies, which suffer from a certain space-blindness, both with regard to their general aims and their implementation through (vertical) multilevel governance schemes. A holistic or integrated approach dealing or helping small and medium-sized (old) industrial towns and regions is rather absent. This is a major obstacle to the development of tailor-made solutions for such places. Here again, one needs to state that the capacity for identifying and utilizing potentials through a complex multi-level governance scheme might overtax some towns and regions from the outset. This is especially true for evermore complex schemes and approaches addressing place-based potentials, such as 'quadruple helix' and 'smart specialisation'. From the outset, these need regional stakeholders to possess certain infrastructures and administrational capacities - often not available in the regions discussed in this PhD.

This result calls into question the existing support structures on EU-level, which seem to disadvantage some regions with structural problems already from the outset. Here cohesion policies might need to take a fresh look at how to reconfigure policies in a more space-relevant way, in order to find suitable solutions for regions outside agglomeration areas dealing with structural problems.

5.2.4. Outlook

In an unexpected twist, one of the main recommendations made in this PhD – a more stable funding regime for regions in transition on European level - has been met (somewhat) by the new cohesion policy outline drafted by the European Commission for the programming period 2021-2027. As part of the European 'Green Deal' proposal, the 'Just Transition Platform' will target especially (former) coal and carbon-intensive regions with a proposed €40billion to master their transition to cleaner energy (EU Commission, 2020). It will also partly address knowledge transfer and simplified procedures for obtaining funds – albeit not as core priorities.

This will be the first spatially targeted, industry-related Commission initiative since 1999. It represents, therefore, an interesting change of heart by the commission and is an acknowledgement of the persistent structural problems that many of these (old) industrialised regions face. It might also be the first step towards more spatially focused policies in general – albeit the selection of the regions and provided budget remains debateable, as some regions have already received substantial funding in the past. In addition, the combination of restructuring with forward-looking technologies is interesting, even though it does not really take into account local strengths, infrastructures and settings, or the sustainability of infrastructures set to be created. It therefore remains to be seen as to what kind of regional development impacts the funds will have, or if they will only give research an additional opportunity to broaden knowledge on more 'top-down'-led regional development projects.

Overall, this new development shows the always changing character of the 'puzzle parts', which constitute elements of the regional development (old) industrial towns predominantly characterised by small and medium-sized towns in Europe. The puzzle is being constantly re-arranged by local and regional as well as by national and European influences. These elements include processes of structural change, capacities and networks, funding opportunities and policy aims, all wrapped in a complex multi-level governance setting, both arranged vertically and horizontally. Some of the puzzle pieces have been discussed at length within this PhD; others (such as the role of local and regional leadership, as well as the role of additional potentials outside the industrial context) have been only briefly touched upon.

Research-wise, one of the most interesting questions from the author's view remains the role of (horizontal) local and regional governance networks in the processes of regional development, especially in small and medium-sized (old) industrial regions. How can such regions, from a long-term perspective, successfully keep up innovative networks centred around regional development issues, when the interests, capacities and resources of the single network actors in such processes are clearly limited? This requires a long-term research focus on regional development to better understand local and regional dynamics in stakeholder networks, their composition, and aims. This is an especially valid question with regard to local companies and their views and contributions to regional development aspects, a view-

point that has so far hardly been addressed in the context of small and medium-sized industrial towns and regions.

Overall, there is still a lack of knowledge and understanding on the questions of regional development in the context of such (old) industrial places, especially as in-depth, long-term case studies are often missing. This is a problem in so far as these places have an important economic and social function, but do seldom feature in any specific policy context. This might explain (or at least contribute) to the fact that the inhabitants of such places (rightly or wrongly) perceive themselves as being ‘places that do not matter’, a perception that must be rigorously contested at both local and European level not o only from a cohesion policy angle , but also from a democratic, participatory perspective.

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Regional Environmental Governance: Interdisciplinary Approaches, Theoretical Issues, Comparative Designs

Structural change in former mining regions – Problems, potentials and capacities in multi-level-governance systems

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Abstract

The paper discusses remediation and regeneration processes in former mining regions in Eastern Germany. Research focuses on the multi-level governance system in which the environmental rehabilitation processes were set in. The paper discusses certain difficulties of the system, which can be characterized as problems of interplay, fit, scale and path dependency (Young). Results highlight the importance of enhancing regional capacities, in order to allow actors in former mining regions to find appropriate rehabilitation solutions and to connect them with new development approaches.

Keywords: Structural change; Environmental problems; Multi-level governance; Capacity building; Regional development.

1. Introduction

Most discussions on regional environmental governance focus mainly on cases concerning certain natural landscape features or specific *ecoregions*, such as mountains, river catchment areas, and seas. Specific, often transnational governance arrangements are entrusted with managing the shared problems of such environmental systems. Typical examples are agreements on water and river systems (water commissions, the European Union Water Framework Directive, agreements on mountain ranges such as the Alpine and Carpathian Convention)(Balsiger & VanDeveer 2010). This paper sheds a different light on the discussion of regional environmental governance systems. It considers the example of governance arrangements for dealing with the difficult environmental legacy of the mining industry in Central and Eastern Europe. This example is based not on a

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unifying landscape feature but on problems stemming from industrial labour, which have had a profound environmental and social impact on many Central and Eastern European regions.

The focus is on the nature and problems of the specific multi-level governance system established in Eastern German mining regions after reunification in 1990, highlighting the structures set up to manage remediation. Research examines changes in such multi-level governance and looks for ways to foster regional capacities allowing former mining regions to develop new, sustainable perspectives (as described by Ostrom 1990). This paper considers the general question of dealing with the mining legacy by addressing the rehabilitation of environmental damage and adaptation of economic structures. The second chapter gives an overview of structural changes in European mining regions and the political responses adopted to tackle these processes. The specific situation in the Eastern German mining industry after reunification and the political approach towards its environmental legacy and rehabilitation issues are then examined. Chapter four focuses on the successes and problems of these policies, especially with regard to the multi-level governance system introduced, addressing problems of interplay, fit, scale and path dependency (Young 2002). The conclusion reflects on these findings and draws lessons for other systematic approaches, stressing the importance of building local capacities in multi-level governance processes.

2. Structural change in European mining regions

Mining is a part of the European history. In the development of the European nations mining has often been an important development factor. Raw materials such as copper, iron, silver, salt, coal, and uranium provided the basis for technical, as well as social progress at different stages along this path. Probably the most important and impressive innovation in mining was the mass exploitation of coal, which was closely associated with the technical revolution and industrialisation in the 19th century. There is still a great deal of mining going on in Europe. Although this paper does not set out to review these activities, we wish to stress the unbroken importance of solid energy feedstock mining. No less than 226 areas in Europe were affected by this type of mining in Europe. In 121 sites mineral excavation continues, while elsewhere operations have ceased entirely - generally since 1990 (see also table 1). This suggests that rehabilitation and development have played an important role in most of the regions under consideration. Differences are especially apparent with regard to the various raw materials: In most cases mining continues in brown coal/lignite areas, while nearly all uranium mines in Europe have closed down in recent years.

Table 1: Coal and Uranium mining areas in Europe (Wirth & Lintz 2007)

Raw Material / Number of areas	Hard Coal	Brown Coal/Lignite	Uranium	Total
in operation	30	84	7	121
closed	26	23	56	105
Total	56	107	63	226

These changes have had a profound impact on European mining regions and towns, which had been shaped by these industries over decades if not centuries. The end of mineral exploitation often meant de-industrialisation, high unemployment and out-migration. Such regions often face a difficult environmental legacy stemming from mining and related industries in the form of persistent pollution of water, soil and air. Overall, such regions and their inhabitants face enormous challenges to their economic, social and environmental future. Owing to the lack of economic alternatives, the organisational, financial and conceptual resources of such regions are generally regarded as extremely sparse (Lintz & Wirth 2009).

The combinations of multiple problems on this level often overtax local and regional decision makers. In many cases this requires national or European resources to cope with the outcomes of restructuring. In the past, the

European Union in combination with national governments has tackled specific structural problems in mining regions through programmes like RECHAR and RESIDER[2]. Regions such Wallonia in Belgium, the English Midlands and the German Ruhr District have benefited from this external support and have been able to develop alternatives for the declining mining sector. Nevertheless such direct, sectoral policy approaches for weaker regions have lost in importance since the late 1990s. Mining regions now face severe competition from other underdeveloped regions (such as rural areas) for support from the Europeans funds (e. g. ERDF).

The regional scientific and especially planning literature offers broad discussion of change in former mining regions. Numerous empirical studies describe the problems and the solutions adopted in Western European mining regions (e.g. Hesse 1988; Cooke 1995; Baeten et al. 1999). Theoretical concepts have emerged in the scientific literature to describe and explain such structural change in Austria, Belgium, Germany, France, Great Britain, Norway and Spain (e.g. Steiner 2003).

The framework conditions we find today in Central and Eastern European countries are completely different. Structural changes in most mining industries in Western Europe occurred already in the 1970 and 1980s. This took place under a specifically Fordist mode of cooperative production involving often substantial political trade-offs and long term phasing out scenarios for the affected areas (e.g. Baeten et al. 1999 for Belgium; Hassink 1993 or Wissen 2000 for the Rhine-Ruhr area). In contrast, the former Eastern Bloc states experienced a period of radical transformation after the political upheaval of 1989 and 1990. Here the tempo of change was extremely high and existing economic structures were not able to cope with a free market economy in a globalised world. Individual industrial sectors accordingly shrank radically (Gorzelak 1998 and 2002; Müller et al. 2004). While a great deal of knowledge is available about the general transformation process and policy-making in Central and Eastern European countries, the interplay of actors, strategy building, and institutional framework conditions involved in internal rehabilitation and development processes in mining regions have rarely been investigated (e.g. Eckart 2003; Geißler 2005; Rumpel & Waack 2004).

The structural problems described were also to be found in the mining regions of the former German Democratic Republic (GDR). Here, under new framework conditions, often characterised as a post-Fordist environment with general up and down scaling of governance (Brenner 2004), the multiple problems of the Eastern German mining regions after unification 1990 and their magnitude called for swift intervention. As the former mining companies were unable to solve the various problems of rehabilitation, the situation triggered a comprehensive, state-led rehabilitation process unique in Europe. It was based on national government funding, initiating a specific, multi-level governance process that was task-specific, rather flexible in design, and without authoritative co-ordination (as described by Hooghe & Marks 2001).

3. Rehabilitation of Eastern German Mining regions

One of the major political aims of economic policy in the former German Democratic Republic was to secure sufficient supplies of energy and raw material to make the state independent of imports. This made the energy and raw material production sectors especially important for the country. With few other fossil fuel reserves on hand, energy production depended mainly on the extraction of brown coal. Around 70% of the GDRs energy output rested on this source by 1990. In the late 1980s the GDR was accordingly the world's biggest brown coal producer with an output of 300million tons per year. The coal was mined mainly in the districts of Halle-Leipzig and Lusatia in open-cast workings (BMU 2009; von Bismarck 2004). Another mining sector of strategic importance was the extraction of uranium ore from deposits in Saxony and Thuringia. The most important sites were Ronneburg, Schlema, and Johanngeorgenstadt. After processing the ore was exported to the USSR. The deposits made the GDR the 3rd biggest uranium ore producer in the world (BMWi 2009).

Figure 1 shows the principal mining regions in Eastern Germany. Apart from the lignite and uranium mining areas, copper ore deposits in the Mansfeld district were especially important. The hard coal mining region around Zwickau had already ceased production due to unprofitability in the late 1970s.

[2] The programmes supported the restructuring of coal and steel regions from 1989 to 1999

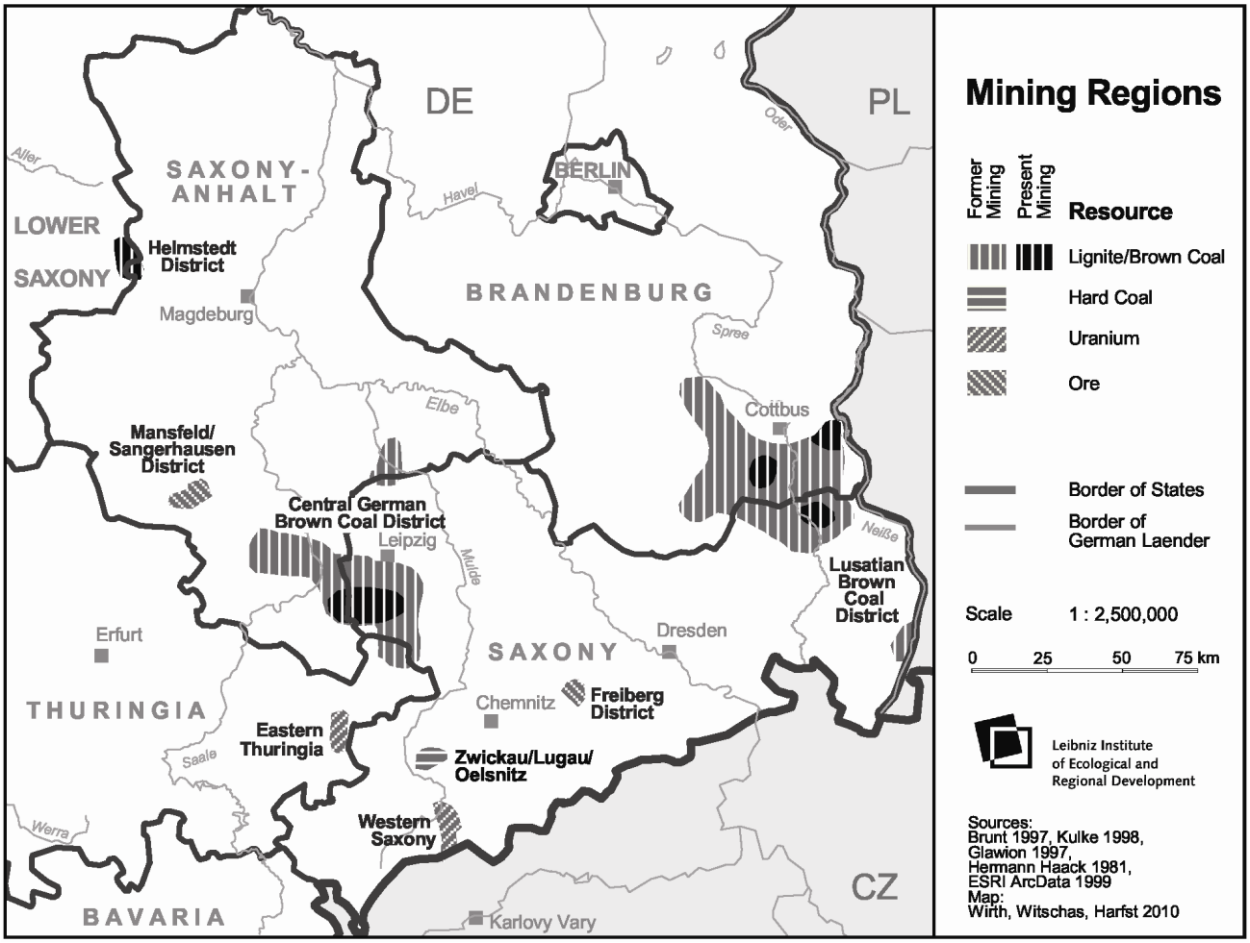

Figure 1: Mining regions in Eastern Germany

3.1. Environmental damage and structural changes after 1990

Although the rehabilitation of mining landscapes was required by GDR law, a huge remediation backlog accumulated. This was due to the overall importance of the productive mining sector, which demanded the rapid and highly industrialised expansion of mining activities and a general lack of funds for remediation. These deficits resulted in huge, abandoned brown coal pits ("lunar landscapes"), radioactive pollution in the uranium mining areas and the contamination of air, water and soil by mining industries, such as power and coking plants, as well as carbon chemistries (Wirth & Lintz 2006).

The situation in Eastern German mining regions differed from that in many other former COMECON states, in that they experienced no significant phasing out period in the 1990s. With currency reform and reunification in 1990, Eastern German mining industries became almost worthless over-night due to the general lack of productivity and high costs. In this situation most of the facilities and formerly state-owned mining companies were unable to compete on the national, let alone world market and were subsequently eliminated from competition. As a result, ore mining in Mansfeld, as well as uranium mining in the Ore Mountains, were shut down immediately after reunification. Of the 39 open-cast brown coal pits existing in 1990, only 7 were still active in 2009 (EURACOAL 2008), shedding most jobs through rationalisation. Most of the related mining industries collapsed with the end of mining.

The whole restructuring of the Eastern German mining regions therefore resulted in massive deindustrialisation of the regions and a subsequent loss of jobs. For many of these mono-structured regions, this posed enormous

challenges. The social and economic outcomes of the transformation threatened the very existence of entire regions. Without jobs and perspectives for the future, many of these areas experienced a severe outmigration of young and skilled labour, triggering a downward spiral of job losses, outmigration and decline in unprecedented dimensions. In the former "Energy region" around Cottbus many of the "GDR development towns" such as Hoyerswerda, which were boosted in the 1950s and 1960s to house workers from the lignite industry, saw dramatic population losses (Pfeiffer et al. 2000). Additionally to these developments the mining communities also faced the hazardous legacy of unmediated mining sites, which often posed a danger to human health and environment in densely populated areas.

3.2. Rehabilitation – The institutional setting

The German Federal Mining Act (as well as the Federal Soil Protection Act, applicable for most of the mining related industries) is, like legislation in all developed countries, based on the "polluter pays" principle, which holds the polluter liable for all damages and rehabilitation costs. Nevertheless, in the case of Eastern German mining, most mining operators were out of business or unable to afford remediation. The basis for state intervention was the reunification treaty and the German Constitution. Both documents stipulate the aim of equal (economic and social, as well as environmental) living conditions across the whole nation state (Unification Treaty, 1990; German Constitution §3 (3) § 143 (3), 2009).

After 1990 there were two main cases in the process of state-led rehabilitation in Eastern Germany. One was the rehabilitation of uranium mining sites in Saxony and Thuringia. The German state took over the responsibilities of the former joint venture between the GDR and the USSR for uranium mining in several areas, mainly in Eastern Thuringia and Western Saxony (figure 1). The first act of the new owner was to close down all mines, with the German state taking over the ensuing rehabilitation obligations. The Federal Government founded the Wismut Ltd. (Wismut Act, 1991) to organise rehabilitation under the premise that costs and ecological benefits be kept in balance. A total of € 5.3 billion had been spent by 2009, with around 80% of projects being completed. In total € 6.4 billion have been earmarked for the whole process, which is supposed to run until 2020 (BMWi 2009).

The second case of state involvement was in the lignite mining industry. In 1992 an organisational rearrangement saw active mining separated from closed down mining facilities and sites in the two biggest lignite mining areas (Halle-Leipzig and Lausitz/Lusatia region). The Lausitz and Central-German Mining Administration Company (LMBV) took over all decommissioned mines and property. The company is based on agreements between the federal government and the governments of the four affected states (Saxony, Saxony-Anhalt, Thuringia, Brandenburg). The LMBV assumed responsibility for former mining lands and is in charge of planning and implementing remediation. Under regional planning law, the company is to rehabilitate former mining land and to sell it off to potential investors or municipalities. In total the state enterprise committed a sum of € 9.2billion to rehabilitation, of which the federal government assumes 75%, while the rest is co-financed by the four affected states (BMU 2009).

Both cases constitute specific institutional systems involving all major levels of the German executive system through the creation of rehabilitation companies. The German government takes the main share of rehabilitation costs in funding the two state-owned rehabilitation companies. In the case of the lignite mining regions, the affected states also provide a share of rehabilitation. Both rehabilitation companies WISMUT and LMBV, act under state planning law and consult regional and local planning authorities about local remediation. As local municipalities are responsible for the planning framework for rehabilitated land, they have an opportunity to set their own development agenda. Nevertheless the use of Federal money binds rehabilitation to strict spending rules, so that the whole process focuses predominantly on site remediation and only to a lesser degree on local development issues. This also explains why sites are remediated under this even if there is no immediate after-use for the rehabilitated areas (Wirth & Lintz 2006).

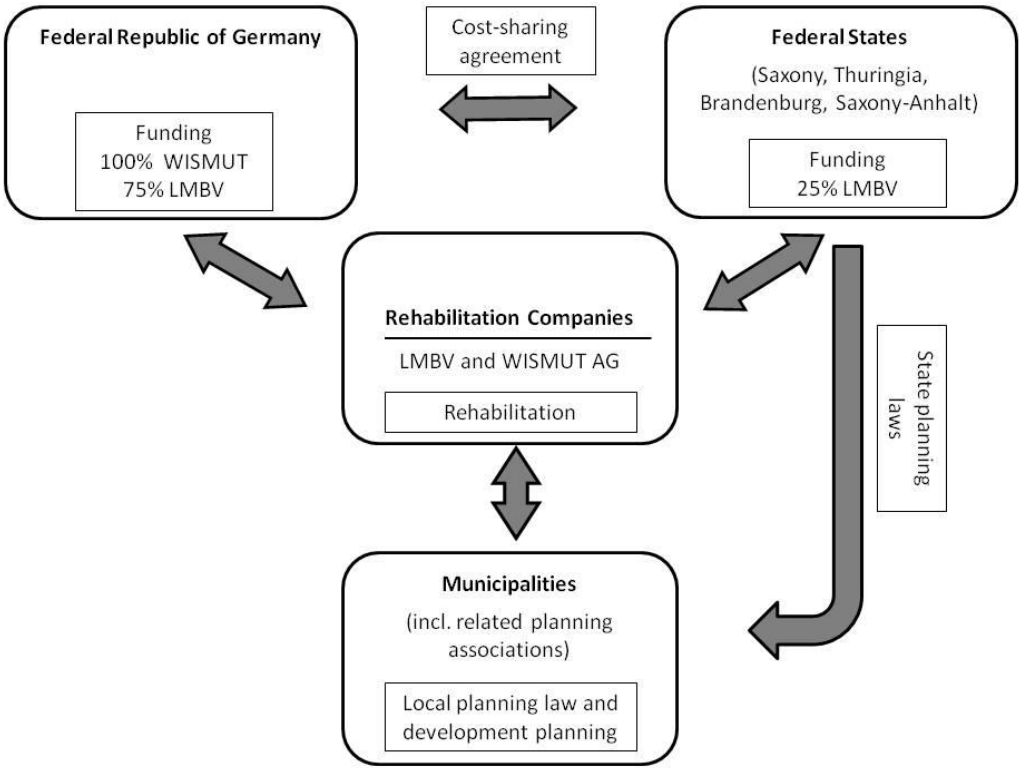

Figure 2: Main actors in the multi-level-governance system for Eastern German mining regions

4. Successes and problems of the multi-level-governance system in Eastern German mining regions

To cope with the environmental problems stemming from the former mining activities, two multi-level governance systems were established based on a model of cost-sharing between federal and state governments to cover the extremely high costs of uranium and lignite mining site rehabilitation. An impressive € 16 billion has been committed to the task. Since the start of rehabilitation, alone 120,000 ha of lignite brown field sites had to be dealt with. The remediation process focuses closely on rehabilitating land and on the imminent dangers to human livelihood. In this process countless sites had to be checked for possible contamination and new technical solutions found for the often unprecedented rehabilitation measures, especially regarding uranium mining (BMU 2009; von Bismarck 2004). The result is a complex system of multi-level governance set up to cope with the enormous rehabilitation tasks in Eastern German mining regions. The process has some impressive success stories to tell in rehabilitating and developing former mining regions. One such example is the transformation of Bad Schlema, once the site of uranium extraction, into a spa resort, while the establishment of a regional event venue in Gräfenhainichen in the lignite district of Halle-Leipzig is generally regarded as another positive case (Lintz & Wirth 2009). But the established governance system of federal government, states and regional/local actors also shows typical difficulties of such structures, identified by the academic literature as problems of interplay, fit, scale and path dependency (Young 2002; Folke et al. 2007; Gailing & Röhring 2008).

4.1. Problems of interplay

Research usually identifies problems of interplay as arising between different levels of policy making. It describes mismatches between these levels (vertical linkages, i.e. between national and local policy), as well as problems of interlinking actors on the same policy level (i.e. regional-regional) to establish a common position on certain problems or opportunities (horizontal linkages) (Young 2002; Moss 2007).

In the multi-level governance system established to cope with the outcomes of Eastern German mining industries, such problems of vertical interplay are particularly evident. A general problem was the use of federal government funding for rehabilitation purposes. The aim of this funding has been explicitly to rehabilitate – in the strict sense – former mining land. This led to a paradoxical situation: while rehabilitation companies produced "top class" post-mining landscapes in a technical understanding of the term, there was little incentive for further regional development. Wismut Ltd. and LMBV are both bound by tight rules on spending federal money, which, among other things, hampered the elaboration of integrated development strategies on regional and local level especially in the 1990s.

Associated with this issue are horizontal problems of interplay. In many cases local actors – particularly in small towns – are unable to initiate a powerful process involving key local actors to shape their own future. Strategic planning is often lacking and it is not surprising that local authorities are impotent in the face of vast, strong, and rich state companies. Successful examples such as Bad Schlema and Gräfenhainichen have been the exception. While this is due partly to the restrictive funding practice in rehabilitation, it also indicates a lack of local capacities for generating common development goals to influence the process in the local interest.

4.2. Problems of fit

These issues of interplay are also mirrored by those of fit, the spatial fit of problems, institutions and measures, which are often defined by administrative borders, sectoral policy agendas and informal constructions of space/regions (Young 2002; Folke et al. 2007).

In the case of the rehabilitation of Eastern Germany's mining regions, federal funding is not available for all areas. Other mining areas, such as the old hard coal mining district Zwickau or the ore mining region around Mansfeld are not involved in the state financed programmes, though there are also mining sites that have not or not sufficiently been rehabilitated. These regions are mainly left to cope with unfavourable conditions for economic development and persistent environmental dangers (i.e., polluted brown field sites and ground water; insecure dump sites; unclear status of ground water level) on their own[3]. Another aspect of spatial fit is that mining regions and according development and rehabilitation issues have to be established across existing administrative borders, on the municipal, district and state levels. This complicates the elaboration of common visions and agreements on the future development of the regions. For example the Lausitzer Seenland project, which aims to establish a touristic lake region in Lusatia, involves 2 states, 3 districts and 10 municipalities, a setting of actors with different problem perceptions, heterogeneous interests, and – in the case of the two German states Brandenburg and Sachsen – different legal conditions, particularly in regional planning.

4.3. Problems of scale

Problems of scale involve differences in perception/policy aims between different scales in multi-level governance systems (Young 2002; Gailing & Röhring 2008).

In the Eastern German case there are clear differences in what various levels of the multi-level system seek to achieve with funding. There was a general agreement on the rehabilitation approach, with the state funding of measures seen as a "gift" to local authorities. But after the full economic and social consequences of mine closure became apparent, additional demands were made on the local level concerning the development of local economies and structures following rehabilitation. But with the enormous sums already earmarked for rehabilitation, both central and state government were reluctant to allocate new funds for the areas. Nevertheless, cooperation between rehabilitation companies and municipalities on local development aims has improved in recent years, as the example of the Lausitzer Seenland (Lusatian Lake District) shows (Lintz & Wirth, forthcoming).

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[3] In some regions the rehabilitation of heavily contaminated mega-sites ("Ökologische Großprojekte") was paid in a 75%-25% cost-sharing agreement between Federal and State governments.

4.4. Problems of path dependency

Problems of path dependency describe the difficulties of the inherited development path of regions, which can hamper future regional development options (negative returns, lock in etc.) (Gailing & Röhring 2008).

In the case of Eastern German mining regions, this problem has not occurred in the true sense as the complete breakdown of the mono-structured industries was a fact, without a realistic alternative. Problems in the sense of path dependency in this case could be best described as conflicting strategic development options between "erasing all traces" and "building on potentials" (Dale 2002). In many cases, the rehabilitation approaches in Eastern Germany favoured a technical "erasing all traces" option, which was often combined with the touristic after-use of the new landscapes (for example water-filled pit sites from the lignite mining as leisure and recreation areas – Südraum Leipzig, Lausitzer Seenland). Other development options included using the industrial past as an element for development, such as the establishment of "energy landscapes" with a focus on renewable energies or even the use of the last intact remains of the industrial heyday, such as the remaining active brown-coal pits and power plants as an element for further industrialisation (e.g., in the Cottbus area). These different development options often have potentially conflicting policy implications for regional development.

5. What can we learn? – Building local and regional capacities for action

As the paper has shown, problems with changes in mining industries and their environmental legacy can be found across Europe. While in most Western European countries restructuring mainly took place under specifically Fordist conditions in the 1970s and 1980s (i.e., state intervention, agreement on long term "phasing-out" scenarios), most Eastern European countries underwent a rapid and radical reorganization of this sector in the 1990s. The problems in Eastern Germany exemplify many of the challenges faced by mining regions all over Europe. But the chosen solution of large-scale, long-term rehabilitation by the state is unique in Europe. The approach is closely associated with the specific political and economic circumstances in Germany after reunification in the 1990s: the economic crisis after the collapse of the industrial basis in the former GDR, mass unemployment and a dramatic environmental situation in large parts of the territory. The huge gap in living conditions between the Eastern part of Germany and the "old" Federal Republic made it possible to launch these state-led rehabilitation programmes.

In response to this situation, a particular multi-level governance system has been established for the affected areas involving national and state government, as well as regional and local communities. Considering the main aim of this state-led system, the rehabilitation of former mining land, the arrangement can be considered a success story, as it tackled many of the acute problems and risks that remained after the end of active mining. The environmental situation was improved step by step and many former miners found employment as "rehabilitators". Nevertheless, the approach has faced certain difficulties, which can be attributed to the very nature of a multi-level governance system. Rehabilitation at large did not focus on the most important development problem: changes in the local economy. By focusing on the technical requirements of rehabilitation, the system failed to take adequate account of the needs of local/regional communities in mastering structural change by drawing up their own development agendas. Generally speaking, the overall process did not empower municipalities and regions to build their own capacities for mastering change (on capacity building see Amin 1999).

These problems led to changes in the rehabilitation and development concept in the late 1990s, especially in lignite mining regions. In addition to the rehabilitation budget, a special budget was made available for regional development measures[4]. Since then this money has largely been used for improving the tourist infrastructure (marinas, landing places, beaches). In the Lusatian Lake District most of the money was used to build navigable canals between the new lakes. This means that the nature of the system has changed in the last ten years: it has now become a more integrated system of local development and mining site rehabilitation.

The Eastern German example thus provides useful insight into issues of regional environmental governance and local capacity building in mining regions. The case study teaches us the following:

- Intensive state support is needed to master environmental rehabilitation issues on this large scale when the "polluter-pays-principle" does not work. There is no alternative to such state involvement particularly in densely

[4] Called "§4 measures" because they are set in this paragraph of the respective administrative agreement.

populated areas. The case of Eastern German mining rehabilitation also shows the uneven spread of such arrangements with some mining regions benefitting from the rehabilitation funds and others being "forgotten" by the large scale programmes.

- The state led rehabilitation approach meets the needs of local authorities in questions of rehabilitation but does not explicitly cover the aspects of regional development in areas with multiple environmental, economic and social problems. Especially in the 1990s, rehabilitation companies focused on technical solutions for site remediation and did not take adequate account of the broader interests of the municipalities affected. Since 2000 this approach has shifted in some regions towards greater coordination between rehabilitation and development activities, integrated development and planning processes involving various local and regional actors working together regional development options with the rehabilitation companies (i.e., Lausitzer Seenland, see Lintz & Wirth, forthcoming). Without the empowerment of affected municipalities to master their future, the established multi-level governance system can be described as a process where "place matters, but scale decides" (Swyngedouw 1997, 144) and thereby reflects unequal power relations between the different scales[5].
- Although all of the affected areas are less favoured regions lacking resources and with multiple problems, some were able to use the rehabilitation process and create new options for development. This suggests that there are different capacities at the local level for influencing the governance system in the local interest. This places local and regional capacity building in the focus of research: How are some places able to raise their capacities to use existing potentials and policy options to create new development options? Research points towards the importance of actors and networks, while important levers in capacity building can be regional identities ("mining past"), shared problems ("administrative cooperation"), or the availability of funding sources and projects (EU funding, such as INTERREG) (see also Bieker & Othengrafen 2005; Healey 1998).

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[5] The research underlines therefore Swyngedouw statement that "scale is not socially or politically neutral, but embodies and expresses power relationships" (1997, 140)

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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

Naja Marot, Jörn Harfst

CHRISTOPH BIEBERSTEIN, IOER

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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Contents:

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 20th century (Gorzelak 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 change*«. 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).

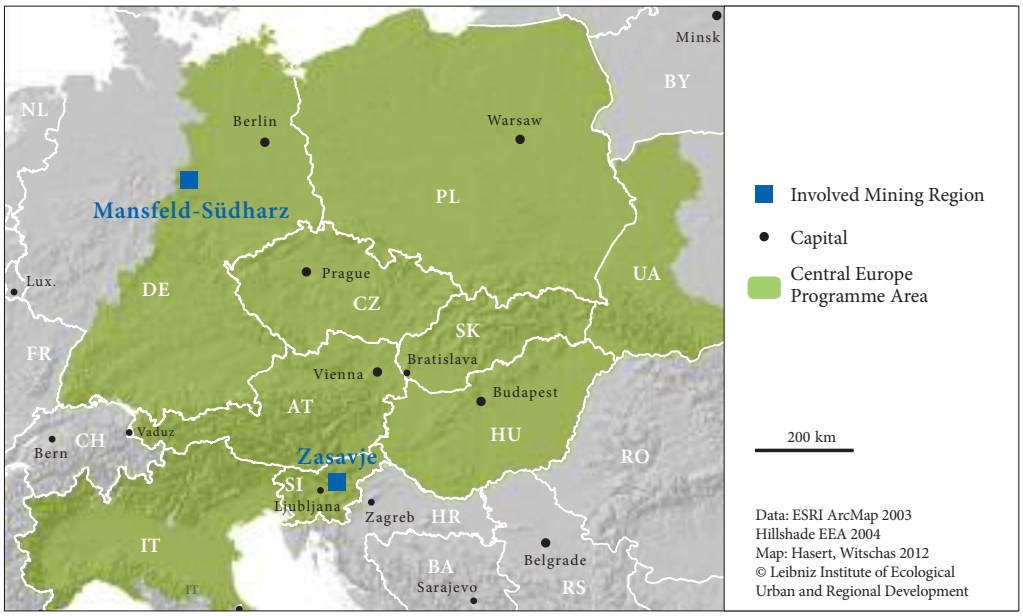

Figure 1: Location of the two regions (Source: IOER 2012).

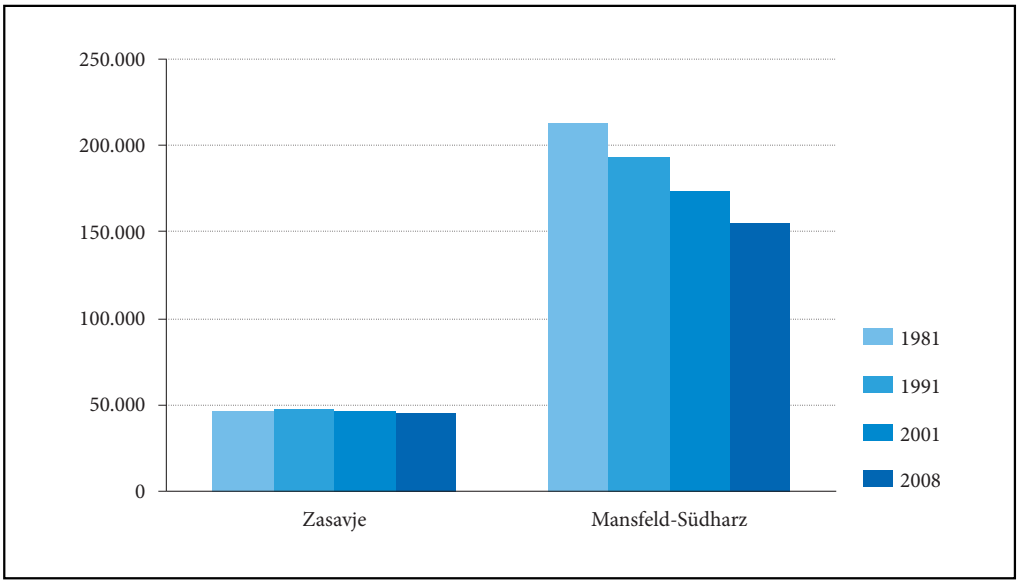

Figure 2: Comparison of the population developments in the two regions. (Harfst et al. 2010 based on national statistics; SORS 2011).

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.

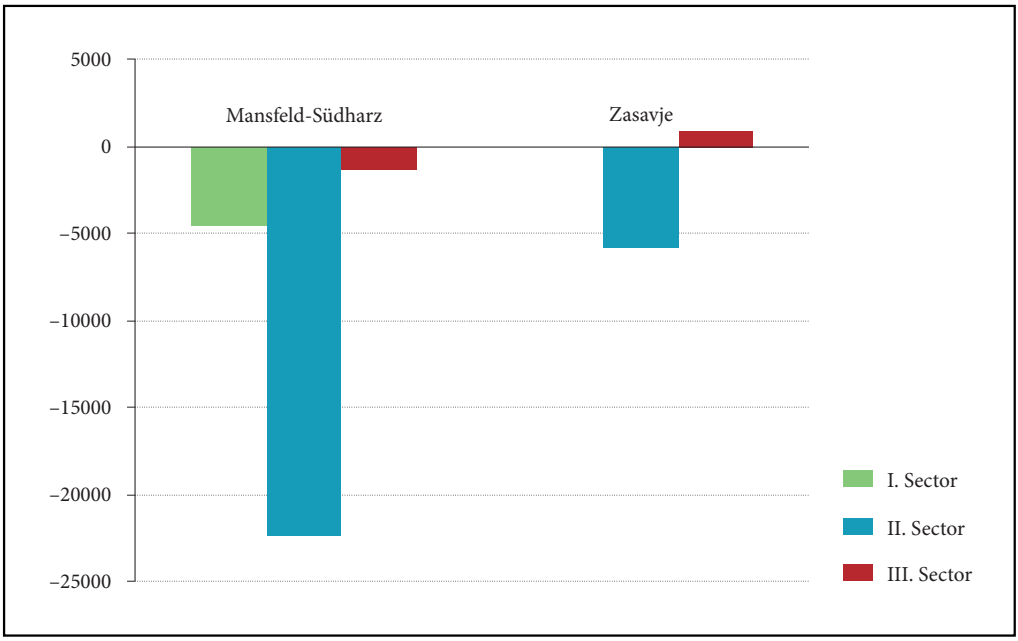

Figure 3: Change in jobs, by sector (total), 1991/1996 – 2007/2008 (Wirth et al. 2012; AJPES 2009).

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^3 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 20th 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 (Klančišar 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; Klančišar 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 (Klančišar 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; Klančišar 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 Biomass and geothermal energy potentials Pilot studies and projects for the use of renewable energy Potentially attractive tourism location Specific knowledge of mining engineering For the Slovenian region: Regional development programme and programme of measures for mine closure For the German region: post-mining landscape including cone-shaped slag heaps as a landmark and identification symbol	No comprehensive renewal and rehabilitation strategy, Lack of leadership Rivalry between municipalities Population and job loss No higher academic infrastructure in the district Peripheral location to national growth poles Minor use of natural potentials Polluted soil and vegetation Land rehabilitation process only partially concluded
OPPORTUNITIES	THREATS
Increased domestic tourism Increasing raw material and energy prices, diversification and decentralization of the energy market New development areas, available after rehabilitation	On-going population loss and economic decline Subsidy decrease at the state and EU levels 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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WISSENSCHAFTLICHER BEITRAG

Zur Bedeutung endogener Potenziale in klein- und mittelstädtisch geprägten Regionen – Überlegungen vor dem Hintergrund der Territorialen Agenda 2020

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Zusammenfassung Klein- und mittelstädtisch geprägte Regionen zählen in Zeiten der ökonomischen und fiskalischen Krise häufig zu den Verlierern der Gesamtentwicklung, zumal dort Innovationen und Impulse aus den Regionen heraus eher gering sind. Da solche Räume in besonderem Maße auf externe Investitionen oder die öffentliche Hand angewiesen sind, machen sich die sozialen, ökonomischen und demographischen Auswirkungen der Krise hier besonders gravierend bemerkbar. Vor diesem Hintergrund wird in diesem Aufsatz gefragt, welchen Beitrag endogene Potenziale – wie sie in den neusten Programmen der Europäischen Union (EU) zur Territorialen Entwicklung thematisiert werden – zur Stabilisierung dieser Regionen leisten können. Anhand zweier Altindustrieregionen, die abseits der großen Zentren liegen, werden die Inwertsetzung regionaler Potenziale, die damit verbundenen Entwicklungsstrategien sowie die Rolle der involvierten Akteure beleuchtet. Dabei wird an die ältere Diskussion um die Bedeutung von endogenen Faktoren in der Regionalentwicklung aus den 1980er und 1990er Jahren angeknüpft und diese an der heutigen Situation gespiegelt. Allerdings sind die Erwartungen heute weniger auf direkte ökonomische Effekte ausgerichtet. Die Rolle endogener Potenziale wird vielmehr darin gesehen, regionale Entwicklungsprozesse anzustoßen (Katalysatorfunktion), Alleinstellungsmerkmale zu betonen (Identifikationsfunktion) und das Selbstwertgefühl der Regionen zu stärken (symbolische Funktion).

Schlüsselwörter Regionalentwicklung · Endogene Potenziale · Klein- und Mittelstädte · Territoriale Agenda 2020 · Strukturwandel

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The Significance of Endogenous Potentials in Regions Characterized by Small and Medium Sized Towns: Considerations Against the Background of the Territorial Agenda 2020

Abstract Small and medium-sized towns are often the losers in times of economic crisis, as their internal innovation and growth potentials are low. Such places are especially reliant on external investment and public funding, a fact which aggravates the economic, social and demographic repercussions of the current crisis. Against this background this paper discusses the role that endogenous growth potentials—also highlighted in the EU's Territorial Agenda 2020—might play in stabilizing such regions. The argument rests on two case-studies in old industrial regions, where the strategic utilization of such potentials by local actors is analysed and their overall influence on regional development discussed. By linking these examples to discussions from the 1980s and 1990s on endogenous potentials, the paper points out that today the primary consideration is not the direct economic impact of potentials. Instead the focus is on the role of endogenous potentials in triggering regional development processes (catalyzing function), highlighting regional uniqueness (identification function) and strengthening regional self-confidence (symbolic function).

Keywords Regional development · Endogenous potentials · Small and medium-sized towns · Territorial Agenda 2020 · Structural change

1 Sinkende Wahrnehmung der Probleme klein- und mittelstädtisch geprägter Regionen

Die wirtschaftliche Entwicklung von klein- und mittelstädtisch geprägten Regionen in Europa hat in den letzten Dekaden beträchtlich an Bedeutung in politischen und wissenschaftlichen Diskursen verloren. Auch Debatten zur Entwicklung des ländlichen Raums, wie auch zur Regenerierung von peripheren Altindustrieräumen sind in den letzten Jahren eher in den Hintergrund gerückt (Luukkonen 2010). Stattdessen haben sich Forschung und Politik eher mit der Analyse und Stärkung wirtschaftlich prosperierender Agglomerationsräume befasst. Dieser Trend wird sowohl in der wirtschaftsgeographischen Forschung (Clustertheorien, Milieuansätze, intelligente Spezialisierungen (*smart specialisation*)) als auch bei der Ausrichtung nationaler wie europäischer Regionalentwicklungsinstrumente deutlich (Maillat 1998; Ansell 2000; Moulaert/Sekia 2003; Farole/Rodríguez-Pose/Storper 2011; Foray/David/Hall 2011). Die momentan vorherrschende fiskalische Krisensituation der öffentlichen Hand und die schwache gesamtwirtschaftliche Lage in Europa haben diesen Trend hin zu einer Stärkung vorhandener Wachstumspole noch einmal akzentuiert. Dabei zählen gerade Regionen mit strukturellen Schwächen in dieser schwierigen Situation häufig zu den Verlierern der Gesamtentwicklung, zumal dort wirtschaftliche Innovationen und Impulse aus der Region heraus eher gering sind (Eckart/Ehrke/Krähe et al. 2003). Da solche Räume in besonderem Maße auf externe Investitionen oder die öffentliche Hand angewiesen sind, machen sich die sozialen, ökonomischen und demographischen Auswirkungen der Krise hier besonders gravierend bemerkbar.

Vor diesem Hintergrund widmet sich der Beitrag der Frage, welche Rolle die Entwicklung endogener Potenziale – wie sie auch in den neusten Programmen der Europäischen Union (EU) zur Territorialen Entwicklung thematisiert werden (z. B. Territoriale Agenda 2020) – bei der Stabilisierung solcher Regionen leisten kann (EU 2011). Mit dem Begriff der „territorialen Potenziale“, der die Erinnerung an ältere Debatten über endogene Potenziale weckt, scheint eine erneute Reflexion über dieses Thema nötig (Damsgaard/Lindqvist/Roto et al. 2009; Nordregio 2012). Deshalb geht dieser Beitrag anhand von klein- und mittelstädtisch geprägten Bergbaugebieten auf die Nutzung regionaler Potenziale, die damit verbundenen Entwicklungsstrategien sowie die Rolle der involvierten Akteure ein und diskutiert die Relevanz solcher Ansätze. Bergbauregionen wurden hierbei als Subkategorie von Altindustrieregionen ausgewählt, welche insgesamt als Raumtyp mit speziellen Problemlagen gelten können.

Der Artikel knüpft an die Diskussion um die Bedeutung von endogenen Faktoren in der Regionalentwicklung aus den 1980er und 1990er Jahren an und spiegelt sie an der heutigen Situation. Den Hintergrund der Analyse bilden insbesondere Förderinstrumente der Europäischen Union aus den LEADER- und EFRE-Programmen, die inzwischen für viele der hier betrachteten Regionen zu einem entscheidenden Faktor der Regionalentwicklung geworden sind. Die vorgestellten Forschungsergebnisse sind im Rahmen der Projekte „ReSource“ (2009–2012) und „SHIFT-X“ (2012–2014) entstanden, welche durch den Europäischen Fonds für Regionale Entwicklung (EFRE, INTERREG IV B, Programmraum Mitteleuropa) gefördert wurden. Die Autoren haben diese Projekte wissenschaftlich begleitet.[1] Hierbei wurden in einem internationalen Forschungsverbund Fallbeispiele aus Deutschland, Österreich, Ungarn, Slowenien, der Tschechischen Republik und Polen mithilfe eines parallelen Forschungsdesigns analysiert. Die in diesem Beitrag näher betrachteten Regionen Mansfeld-Südharz (Deutschland) und Steirische Eisenstraße (Österreich) wurden von den Autoren selbst begleitet und tiefergehend untersucht (Wirth/Černič-Mali/Fischer 2012).

Im folgenden Kapitel wird der Stand der wissenschaftlichen Forschung zu Nutzung und Charakter endogener Potenziale umrissen und unter besonderer Berücksichtigung von klein- und mittelstädtischen Regionen analysiert. Im dritten Kapitel erfolgt die Analyse der beiden Fallbeispiele in Bezug auf die Nutzung solcher Potenziale für die Regionalentwicklung. Daran anknüpfend (Kap. 4) werden die Beispiele auch im Hinblick auf die Zielstellungen der Territorialen Agenda 2020 diskutiert. Im abschließenden Kap. 5 wird die heutige Bedeutung von endogenen Potenzialen in der Regionalentwicklung bilanziert.

2 Forschungsstand

2.1 Zur Rolle endogener Faktoren in der Regionalentwicklung

Die Bedeutung endogener Potenziale bzw. Faktoren der Raumentwicklung wird, insbesondere im anglo-amerikanischen Sprachraum, aus zwei unterschiedlichen Blickwinkeln betrachtet (Martin/Sunley 1998; Stough/Stimson/Nijkamp 2011). Zum einen ist die Diskussion um endogene Wachstumspotenziale aus wirtschaftsgeographischer Sicht mit Fragestellungen ungleicher Leistungs- und Wachstumstendenzen auf nationaler und regionaler Ebene verknüpft (Dunford/Smith 2000; Petrakos/Rodríguez-Pose/Rovo-

[1] Vgl. www.resource-ce.eu und www.shiftx.eu (11.07.2014).

lis 2005). Dabei bezieht sich der endogene Faktor auf die Frage nach den Antriebskräften von Wachstum (Technologien, Forschung, Arbeitskräfte/Humankapital), welche in der neoklassischen ökonomischen Sichtweise außerhalb der Betrachtung stehen (exogene Faktoren), nun aber als innerhalb der Wachstumsgleichung stehende endogene Faktoren angesehen werden (Myrdal 1957; Romer 1994; Maier/Tödtling/Trippl 2006).

Zum anderen ergeben sich aus der angewandten Regionalforschung und der Raumentwicklung, oftmals ausgehend von regulationstheoretischen Überlegungen, Fragen nach regional und lokal spezifischen endogenen Wachstumsvoraussetzungen. Dabei spielen Schlagworte wie „industrial districts“, „cluster“, „institutional thickness“ und „learning regions“ (u. a. Amin/Thrift 1996; Morgan 1997; Porter 2000; vgl. zusammenfassend Perlik 2001; Moulaert/Sekia 2003) eine bedeutende Rolle. In diesen Konzepten wird lokalen Faktoren wie Institutionen, Kapazitäten, Kulturen, aber auch besonderen wirtschaftlichen Verflechtungen eine Bedeutung in Bezug auf lokales Wachstum zugewiesen. Im deutschen Sprachraum findet sich darüber hinaus eine Betonung von Identifikation, kleinräumiger Vernetzung und lokalen/regionalen Wirtschaftskreisläufen (Hahne 1985; Heintel 1996), die als „Alternative“ zu einer Regionalpolitik „von oben“ (Schätzl 2001: 157; Hahne 1985: 17) oder auch als „Selbstorganisation“ von Regionen im Prozess der Globalisierung (Heintel 1996: 7) bezeichnet werden.

Die vorliegende Arbeit orientiert sich am letztgenannten, in der Regionalforschung und Raumentwicklung etablierten Ansatz. Endogene Potenziale werden als spezifische, mitunter ortsabhängige Reserven zur Generierung von lokaler oder regionaler Beschäftigung und Wertschöpfung, die bisher untergenutzt waren oder brachlagen, aber zur regionalen Weiterentwicklung und Profilbildung beitragen können, verstanden. Derartige untergenutzte Ressourcen gelte es zu aktivieren. Weil sie in komplexen Volkswirtschaften mit zentralisierter Macht- und Entscheidungskompetenz oft übersehen würden, erfordere ihre Aktivierung auch die stärker eigenbestimmte Steuerung regionaler Prozesse (Hahne 1985: 48 ff.). Eine solche „eigenständige Regionalentwicklung“ sei insofern auch eine Reaktion auf den Wunsch nach mehr „regionaler Mit- und Selbstbestimmung“ (Gerhardter/Gruber 2001: 16).

Die Analyse solcher Faktoren hat nicht nur in der wissenschaftlichen Diskussion Interesse geweckt, sondern auch die Regionalentwicklungspolitik in Europa während der letzten Dekaden maßgeblich geprägt. In Anlehnung an als besonders erfolgreich interpretierte Beste-Praxis--Ansätze, wie beispielsweise die nordöstlichen und mittelitalienischen Industriedistrikte („Drittes Italien“) oder das „Silicon Valley“ stehen nun auf regionaler, nationaler und auch europäischer Ebene Aspekte wie der Innovations- und Technologietransfer im Fokus der Politik. Als neuere Entwicklung findet insbesondere auf europäischer Ebene, z. B. über die Wachstumsstrategie Europe 2020 (European Commission 2012), eine Fokussierung auf *smart specialisation* und regionale Innovationssysteme statt, bei der regionale Wachstums- und Innovationspotenziale verstärkt identifiziert und genutzt werden sollen (Foray/David/Hall 2011; Asheim/Lawton-Smith/Oughton 2011).

Allerdings haben die meisten dieser Referenzstudien erfolgreiche (Stadt-)Regionen im Fokus ihrer Betrachtung. Meist geht es um die Frage, welche Industrien sich wo und warum konzentrieren, welche Verbindungen und Netzwerke sie bilden und wie Wissen in solche Regionen diffundiert. Dabei weisen Tödtling/Trippl (2004: 2) zurecht darauf hin, dass solche ‚Patent‘-Rezepte oftmals undifferenziert auf unterschiedliche Regionen angewandt werden: „The specific strengths and weaknesses of regions in terms of their industries, knowledge institutions, innovation potential and problems are frequently not sufficiently taken into account“. Andere Autoren verweisen auch auf die stärkere Innovationsfähigkeit in Agglomerationen im Gegensatz zu ländlichen, peripheren und dünn besiedelten Räumen (z. B. Cooke 1995; Simmie 2003).

2.2 Zu den Herausforderungen klein- und mittelstädtisch geprägter Regionen

In diesem Beitrag stehen gerade solche Regionen im Vordergrund, die sich nicht als dynamische Entwicklungsräume charakterisieren lassen, sondern eher geringe Wachstumsraten, demographische Schrumpfungs- und Alterungstendenzen sowie häufig auch eine geringe Leistungsfähigkeit kommunaler Verwaltungen aufweisen (vgl. Isaksen 2001; Wirth/Černič-Mali/Fischer 2012). Klein- und mittelstädtisch geprägte Räume gehören nicht *per se* zu dieser Kategorie. In Deutschland konnten sich in den letzten Jahren auch Regionen wirtschaftlich sehr erfolgreich in Szene setzen, die nicht über großstädtische Zentren verfügen und teilweise sogar weit abseits dieser liegen. Zu denken ist dabei an das Emsland, die Bodenseeregion und Teile der Ostseeküste, in denen sich Gewerbe und Dienstleistungen in den letzten Jahren gut entwickelt haben (vgl. Wirth/Bose 2007: 4). Die vergleichende Betrachtung weist aber auch auf Räume hin, die durch im Niedergang befindliche Industriezweige wie Bergbau und Textilindustrie geprägt sind, in denen alternative Entwicklungsansätze schwach sind und die infolge dessen in den letzten Jahrzehnten gravierend an Bedeutung verloren haben. Folgen sind eine Peripherisierung der betreffenden Regionen und ihre zunehmende Abhängigkeit von staatlicher Förderung (vgl. Berndt/Liebmann 2013).

Der hier gemeinte Typus klein- und mittelstädtisch geprägter Regionen steht vor großen ökonomischen Herausforderungen und bildet den Fokus dieser Studie. Die externe

Nachfrage nach Produkten und Dienstleistungen ist in solchen Räumen häufig schwach (Collits 2008) und etliche Arbeiten dokumentieren ihren allgemeinen wirtschaftlichen Bedeutungsverlust (z. B. Courtney/Errington 2000). Andersson/Karlsson (2004: 21) und benennen die Schwächen in der ökonomischen Innovationsfähigkeit solcher Regionen: Mangel an starken *Clustern* aus kleinen und mittleren Unternehmen sowie Forschungseinrichtungen, Mangel an qualifiziertem Personal und eine geringe Zahl an Unternehmensgründungen. Neben den ökonomischen Schwächen weisen die Regionen auch strukturelle Defiziten auf: z. B. schlechte Erreichbarkeit und mangelnde Ausstattung mit Funktionen der Daseinsvorsorge (Lintz/Wirth 2009: 78). Ungeachtet dessen nehmen Klein- und Mittelstädte in peripheren, ländlichen Räumen wichtige Dienstleistungs- und Verwaltungsfunktionen für das Umland wahr und sind damit ein wichtiges Element in einer polyzentrischen Raumentwicklung (Courtney/Mayfield/Tranter et al. 2007; Burdack/Kriszan 2013). Zunehmend sind solche Räume von demographischen Veränderungen betroffen. Wie in anderen Industrieländern auch ergeben sich starke Disparitäten zwischen wachsenden urbanen Räumen und schrumpfenden bzw. rasch alternden peripheren Regionen (vgl. z. B. Schlömer/Spangenberg 2009).

Auch die Kapazitäten der lokalen Akteure aus Politik, Verwaltungen, Wirtschaft und Zivilgesellschaft sind in regionalen Umstrukturierungsprozessen von Bedeutung (Harfst/Marot 2013). Obwohl auf der einen Seite für solche Räume oft ein intensiverer und stabilerer Kontakt zwischen Akteuren und damit eine flexiblere und schnellere Handlungsmöglichkeit konstatiert wird (Rüdiger 2004), stehen auf der anderen Seite eher geringe personelle Ressourcen zur Verfügung, die die Übernahme zusätzlicher Aufgaben limitieren (Lintz/Wirth 2009: 78 f.). Letztlich geht es darum, inwieweit es gelingt, die Interessen der Akteure auszutarieren und politische Entscheidungen zu treffen. Diese Voraussetzung für die Inwertsetzung endogener Potenziale ist sehr unterschiedlich ausgeprägt. Sie reicht von relativ stabilen öffentlich-privaten Wachstumskoalitionen bis hin zu fragmentierten Ansätzen, die auf Einzelinitiativen und Einzelprojekte setzen und wenig miteinander vernetzt sind (Berndt 2013).

Die europäische Strukturpolitik sieht die Städte als Schlüsselfaktor für die Steigerung der Wettbewerbsfähigkeit der Europäischen Union. Lernen, Innovation, wirtschaftliches Wachstum und Arbeitsplatzschaffung werden vor allem an prosperierende Großstädte und die so genannten Metropolregionen geknüpft (z. B. Kujath 2012: 217). Auch in Deutschland werden Metropolregionen raumordnungspolitisch als Motoren der wirtschaftlichen, sozialen und kulturellen Entwicklung mit internationaler Bedeutung und Erreichbarkeit interpretiert (Danielzyk 2012: 27). Den klein- und mittelstädtisch geprägten Regionen wird dagegen meist nur eine geringe Bedeutung in Bezug auf die Wachstumsziele zugebilligt. Dort geht es eher um die Sicherung der Daseinsvorsorge und die Verbesserung der Lebensbedingungen (Danielzyk 2012: 30).

2.3 Zur Wiederentdeckung endogener Potenziale in der europäischen Regionalpolitik

Im Ergebnis der jüngsten Finanz- und Wirtschaftskrise (seit 2007) ist deutlich geworden, dass eine starke Abhängigkeit von globalen Märkten beträchtliche Risiken für die Entwicklung der betroffenen Regionen bedeuten kann. Insofern verwundert es nicht, dass gebietseigenen territorialen oder regionalen Potenzialen wieder mehr Bedeutung beigemessen wird, wenn es darum geht, die Wettbewerbsfähigkeit von Regionen zu sichern oder zu steigern (Damsgaard/Lindqvist/Roto et al. 2009). Auch in den Strategiepapieren der EU spielen diese wieder eine Rolle, in erster Linie in der Territorialen Agenda 2020 (EU 2011). Diese knüpft an die Ziele der Europa-2020-Strategie an (European Commission 2012), in der konkrete Entwicklungsziele für die Europäische Union und ihre Mitgliedsstaaten hinsichtlich Beschäftigung, Forschung, Klimaschutz, Bildung und Armutsbekämpfung verankert sind. Die Territoriale Agenda 2020 geht davon aus, dass diese Ziele nur erreicht werden können, wenn ihre „territoriale Dimension“ berücksichtigt wird (EU 2011: 2). Die Ziele der EU – territoriale und soziale Kohäsion sowie Wettbewerbsfähigkeit – seien nur zu erreichen, wenn die Staaten, Regionen und Städte (einschließlich der Klein- und Mittelstädte) einen Beitrag zu den europäischen Zielen leisten (EU 2011: 3, Absatz 8). Dies erfordere lokale und regionale Entwicklungsstrategien, die auf den „territorialen Potenzialen“ aufbauen (EU 2011: 3, Absatz 11 und 28). Herausforderungen seien unter anderem die wirtschaftliche Stabilität gegenüber externen Schocks, die Auswirkungen demographischer Veränderungen (Schrumpfung, Wachstum, Alterung) und des Klimawandels, die Nutzung regenerativer Energien und die Erhaltung des Natur-, Landschafts- und Kulturerbes. Um diese Aufgaben zu lösen, seien „die Potenziale des jeweiligen Territoriums zu heben“ (EU 2011: 7).

Für die Städte und Regionen kommt es also darauf an, diese allgemeinen Anforderungen herunterzubrechen und ihre Potenziale genauer zu bestimmen. Damsgaard/Lindqvist/Roto et al. (2009) verwenden einen Ansatz, der zwischen „greifbaren“ Gütern sowie „nicht greifbaren“ Gütern unterscheidet. Daran knüpft der vorliegende Beitrag an, unterscheidet aus pragmatischen Gründen aber zwischen materiellen und nicht-materiellen Potenzialen (vgl. Abb. 1). Bei ersteren geht es um konkrete Hinterlassenschaften früherer menschlicher Tätigkeit in den Siedlungen und Landschaften. Letztere beziehen sich auf Erfahrungen, Fähigkeiten und Kompetenzen sowie kulturelle und soziale Aspekte menschlicher Existenz.

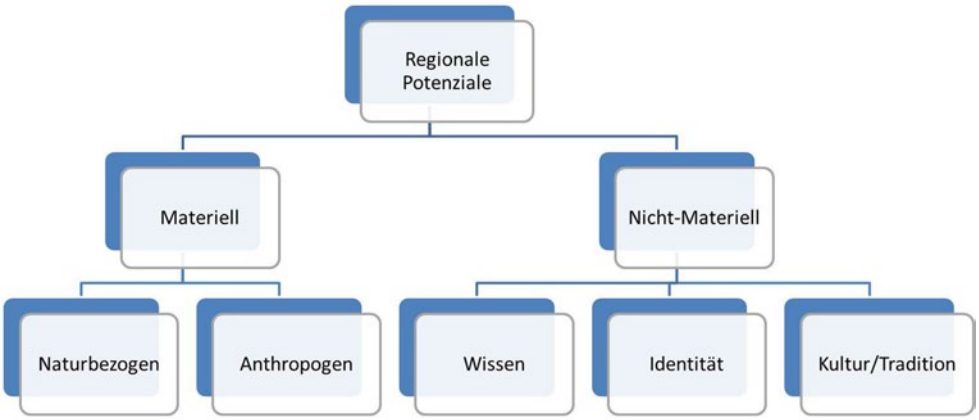

Abb. 1 Systematisierung regionaler Potenziale (Quelle: verändert nach Wirth/Černič-Mali/Fischer (2012: 21))

Dieses grobe Raster lässt sich weiter untergliedern, die materiellen Potenziale in naturbezogene und anthropogene Potenziale (vgl. Abb. 1). Andere Autoren verwenden hier ähnliche Konzepte, z. B. Jolliffe/Conlin (2011: 244), bei denen über „natural and human-made attractions" im Tourismus gesprochen wird, sowie Jones/Munday (2001: 585), die „natural and built resources" unterscheiden. Bezogen auf die hier adressierten Altindustrieregionen wäre zum einen an Bergbauhalden, wassergefüllte Restlöcher und andere Landschaftsveränderungen zu denken. Auf der anderen Seite geht es um Gebäude, Anlagen und Infrastrukturen, die der Industrieepoche entstammen. Es ist aber auch möglich, dass ganz andere Anknüpfungspunkte gesucht werden, die nicht mit der industriellen Vergangenheit verknüpft sind. Ob und wie diese Potenziale in Wert gesetzt werden, hängt maßgeblich von den Präferenzen, Wahrnehmungen und Kapazitäten lokaler und regionaler Akteure ab, aber auch von Rahmensetzungen der europäischen und nationalen Politik, die zur Konstruktion von räumlichen Konstellationen und Herausforderungen beitragen können (vgl. Danielzyk 2012).

Schwieriger erscheint es, die nicht greifbaren Potenziale zu operationalisieren. Die Herausforderung besteht darin, das Besondere, das Spezifische, das Bedeutsame in den Städten und Regionen zu entdecken oder aufzuwerten und in den Kontext lokaler bzw. regionaler Entwicklung zu stellen. Diese nicht-materiellen Potenziale sind konkretes Wissen, aber auch innere Verbundenheit der Menschen mit der industriellen Vergangenheit (Identität) und kulturelle Werte und Traditionen, die das Leben der Menschen in der Region prägen (vgl. Abb. 1).

Unter Nutzung dieses Ansatzes soll nachfolgend skizziert werden, wie ehemalige Bergbauregionen spezifische endogene Potenziale des Bergbaus nutzen können, um positive Impulse für die Entwicklung nach dem Ende des Bergbaus zu erzeugen. Dabei geht es weniger darum, den ‚Problemtyp' Altindustrieregion zu charakterisieren, als zu zeigen, welche Chancen der Potenzialansatz in solchen strukturschwachen Räumen bietet und wo seine Grenzen liegen. Dabei stehen folgende Forschungsfragen im Mittelpunkt: 1) Welche endogenen Potenziale werden durch welche Akteure in den betrachteten Altindustrieregionen genutzt? 2) Welche Bedeutung ist endogenen Potenzialen heute (im Vergleich zu früheren Ansätzen) im Rahmen der Entwicklung klein- und mittelstädtisch geprägter Regionen beizumessen? 3) Welche Schlussfolgerungen ergeben sich daraus für die Territoriale Agenda 2020?

3 Fallstudien

Zur Beantwortung der Fragen werden in diesem Kapitel zwei Fallstudien aus den Projekten ReSource und SHIFT-X genauer beschrieben. Gegenstand der Betrachtung sind die Regionen Mansfeld-Südharz (Deutschland) und Steirische Eisenstraße (Österreich). Im Vergleich der neun Regionen, die im Rahmen der Projekte insgesamt betrachtet wurden, sind diese beiden hier ausgewählten bei der Nutzung regionaler Potenziale bereits weit vorangeschritten. Außerdem repräsentieren sie ein breites Spektrum endogener Entwicklungsansätze, sowohl aus inhaltlicher als auch aus prozessualer Sicht. Insofern lassen sich Chancen und Probleme endogener Entwicklungsansätze an diesen Beispielen gut verdeutlichen und im Hinblick auf die Territoriale Agenda 2020 interpretieren.

3.1 Die Region Mansfeld-Südharz

Der Landkreis Mansfeld-Südharz liegt im Süden des deutschen Bundeslandes Sachsen-Anhalt (vgl. Abb. 2) im Übergangsbereich von Mittelgebirge und Tiefland. Er hat etwa 150.000 Einwohner (2009), die sich auf 84 Gemeinden mit einer Fläche von 1.450 km^2 verteilen. Die größten Städte sind Sangerhausen (29.200 Einwohner), Lutherstadt Eisleben (25.300) und Hettstedt (15.000; alle 2011). Der Landkreis wurde im Zuge der Kreisgebietsreform in Sachsen-Anhalt 2007 mit Sangerhausen als Kreisstadt gebildet.[2]

[2] Alle Angaben aus http://www.statistik.sachsen-anhalt.de (11.07.2014).

Abb. 2 Lage der Fallbeispiele

Die Region hat durch ihren jahrhundertelangen Kupferabbau einen Ruf als Bergbaugebiet erlangt, der 1990 mit der deutschen Wiedervereinigung aufgrund fehlender Wirtschaftlichkeit abrupt endete (vgl. auch Sommer/Liebmann 2013: 110 ff.). Das Mansfeld-Kombinat mit Sitz in Eisleben, das den Bergbau betrieb, war der größte Arbeitgeber weit und breit mit zuletzt rund 8.000 Beschäftigten unmittelbar im Berg- und Hüttenwesen. Außerdem ist die Region weltweit durch den Kirchenreformator Martin Luther (1483–1546) bekannt, der in Eisleben geboren und gestorben ist. Die Luther-Gedenkstätten gehören heute zu den bevorzugten touristischen Zielen in Mansfeld-Südharz. Obwohl sich die Region im Herzen Deutschlands befindet, profitiert sie nur wenig von den benachbarten großstädtischen Zentren, insbesondere Halle/Leipzig und Göttingen. Auch die nach der Wiedervereinigung gebauten Bundesautobahnen A38 und A71, die die Region kreuzen, ändern daran nichts (Harfst/Wirth 2012: 53).

Die Schließung des Bergbaus hat in der Region Mansfeld-Südharz einen gravierenden wirtschaftlichen Strukturwandel mit zahlreichen negativen Folgen ausgelöst. Während 1990 noch 45 % der Erwerbstätigen in Industrie und Bergbau beschäftigt waren, sind dies heute nur 25 %. Die Anzahl der Arbeitsplätze in der Industrie ist von 34.600 auf 12.300 zurückgegangen, das entspricht einem Verlust von 64 %! Heute beruht die Wirtschaftskraft der Region auf einer Reihe mittelständischer Unternehmen verschiedener Branchen (Nichteisenmetallurgie, Braunkohlenbergbau, Fahrzeug- und Lebensmittelindustrie). Symbolisch für den Bedeutungsverlust der Region als Wirtschafts- und Bildungsstandort war die Schließung der Ingenieurschule Eisleben 1994. Die Arbeitslosenquote betrug 2007 noch 19,0 % und lag damit weit über dem deutschen Durchschnitt (8,1 %). Die Quote ist zwar bis 2012 auf 14,2 % gesunken. Ursache ist aber weniger die Entstehung neuer Arbeitsplätze als die sinkende Nachfrage aufgrund der Abwanderung von Arbeitskräften (Harfst/Wirth 2012: 54 f.).

Schon seit den 1970er Jahren geht die Bevölkerungszahl in Mansfeld-Südharz zurück, nachdem ein großer Teil der Kupferlagerstätte ausgebeutet war und Arbeitskräfte gezielt in andere Schwerpunkträume der Wirtschaft der DDR gelenkt wurden. Durch die Abwanderungswelle nach der deutschen Wiedervereinigung, die Schließung des Kupferbergbaus und den Arbeitsplatzabbau in anderen Branchen wurde dieser Prozess weiter beschleunigt. Zwischen 1990 und 2007 ist die Einwohnerzahl um über 20 % gesunken. Bis 2025 wird ein weiterer Rückgang um 27 % erwartet. Demographisch zählt die Region zu den am stärksten schrumpfenden Gebieten in Deutschland. Damit verbunden ist ein spürbarer Alterungsprozess der Bevölkerung (Harfst/Wirth 2012: 53 f.).

Wenn im Folgenden von endogenen Potenzialen der Region Mansfeld-Südharz gesprochen wird, so handelt es sich hier explizit um jene Chancen, die sich aus dem Bergbau und den damit verbundenen Strukturen ergeben haben. Das sind erstens Optionen zur Reaktivierung des Kupferbaus, zweitens der Industrietourismus und drittens die Erschließung von Grubenwasser als Energiequelle. Da der Bergbau im Sangerhäuser Revier 1990 eingestellt worden war, bevor die Lagerstätte vollständig ausgebeutet werden konnte, stellt sich die Frage, unter welchen Marktbedingungen der Abbau der Restlagerstätte möglich wäre. Zur Klärung der Frage wurde ein Teilgebiet anhand alter Mengenbilanzierungen untersucht und neu bewertet. Aus regionalwirtschaftlicher Sicht ging es um die Schaffung von etwa 2.000 Arbeitsplätzen mit einer Perspektive von etwa 20 Jahren. Die Untersuchung ergab, dass das Vorhaben zu gegenwärtigen Marktpreisen nicht wirtschaftlich betrieben werden kann (Koch 2012). Hier handelt es sich also um ein Potenzial, das erst zukünftig Bedeutung erlangen kann, falls die Rohstoffpreise international ansteigen.

Für die Gegenwart wesentlich attraktiver ist die Entwicklung von Artefakten des Bergbaus für den Tourismus. Hierbei geht es der Region darum, vorhandene touristische Attraktionen des Industrietourismus aufzuwerten und mit den kulturlandschaftlichen Attraktionen (Harz, Kyffhäuser, Süßer See) sowie den kulturellen Sehenswürdigkeiten zu verbinden (Luther-Erbe, Rosarium Sangerhausen, Kloster Helfta). Im Fokus stehen dabei zahlreiche Projekte wie das Mansfeld-Museum in Hettstedt als technisches Museum des Kupferbergbaus, die historische Bergbau-Eisenbahn von Klostermannsfeld nach Hettstedt, das Schaubergwerk Röhrig-Schacht bei Sangerhausen sowie die Entwicklung einer touristischen Bergbauroute von Sangerhausen nach Eisleben, der so genannten Kupfertour. Seit den 1990er Jahren

waren diese Vorhaben verfolgt und unter Nutzung verschiedener Förderprogramme (LEADER, Ziel 3) vorangetrieben worden (Harfst/Wirth 2012: 59).

In den letzten Jahren erlangte auch das dritte Potenzial, die Grubenwasser-Geothermie, Bedeutung. Während in anderen deutschen Altbergbaugebieten (Nordrhein-Westfalen, Sachsen) seit etwa 2000 schon Pilotanlagen für die energetische Nutzung von Grubenwasser entstanden waren, hatte es in Sachsen-Anhalt noch keine Versuche gegeben. Im Rahmen des ReSource-Projektes wurden deshalb 18 Grubenwasserfundorte des Mansfelder Reviers nach technischen und wirtschaftlichen Kriterien auf ihre Eignung zur Energiegewinnung untersucht (Koch 2012). Drei wurden als besonders aussichtsreich eingestuft. Einer davon ist der schon erwähnte Röhrig-Schacht. Da die Stadt Sangerhausen als Eigentümer des Schaubergwerkes ohnehin vorhatte, die obertägigen Anlagen baulich und energetisch zu sanieren, wurde die Entscheidung getroffen, die Gebäude mit Grubenwasser zu beheizen. Hierbei spielt eine entscheidende Rolle, dass es Sangerhausen nach der politischen Wende relativ gut gelungen war, eine „enge und vertrauensvolle informelle Zusammenarbeit der Akteure“ aufzubauen (Sommer/Liebmann 2013: 122). Mit der Stadtentwicklungsgesellschaft verfügt Sangerhausen über einen Akteur, der die Kapazitäten besitzt, um auch größere Projekte initiieren und steuern zu können. Das Vorhaben soll bis 2014 realisiert werden. Es wird aus Mitteln des EU-Programms LEADER kofinanziert (Koch 2012).

Interessanterweise erfolgt die Umsetzung von Projekten, die auf die Erschließung der genannten Potenziale abzielen, im Landkreis Mansfeld-Südharz überwiegend über die Strukturen und Förderinstrumente der ländlichen Entwicklung. Die Koordination erfolgt durch die „Mansfeld EUREGIO. Gesellschaft für Regionalentwicklung e. V.“, eine kleine Gruppe von Akteuren, die sich in den letzten 20 Jahren eine beachtliche Kompetenz bei der Durchführung von nationalen und europäischen Projekten erworben hat. Vorsitzender der LEADER-Arbeitsgruppe Mansfeld-Südharz ist ein ehemaliger Direktor des Mansfeld-Kombinates, der gleichzeitig die Schnittstelle zum Bildungswerk der Unternehmerverbände Sachsen-Anhalt e. V. bildet, das sich in der Region intensiv engagiert. Die LEADER-Aktionsgruppe vereint wiederum Kompetenzen aus Politik, Verwaltung, Zivilgesellschaft und Wirtschaft. In dieses Netzwerk sind auch gesellschaftliche Gruppen wie der „Verein Mansfelder Berg- und Hüttenleute e.V.“ eingebunden, der sich sowohl der Pflege, Erforschung und Verbreitung der bergbaulichen Geschichte und Traditionen des Mansfelder Landes widmet als auch in Entwicklungsprojekte einbringt. Im Verhältnis zu diesen informellen Strukturen der Regionalentwicklung wirken die Konzepte und Strategien der Kreisverwaltung eher bescheiden. Es fällt auf, dass es kein einheitliches Kreisentwicklungskonzept gibt und dass die Standortentwicklungsgesellschaft, die sich im Landkreis um die Akquise von Investoren, die Vermarktung der Gewerbe- und Industriegebiete sowie die Pflege von Kontakten zu den ansässigen Wirtschaftsunternehmen kümmern soll, nach jahrelangen Kompetenzstreitigkeiten erst 2012 zustande kam (Harfst/Wirth 2012: 57 f.).

3.2 Die Region Steirische Eisenstraße[3]

Steirische Eisenstraße ist die Bezeichnung für eine Regionalvereinigung (Verein Steirische Eisenstraße e. V.), wie auch für eine der offiziellen LEADER-Regionen im Land Steiermark in Österreich (vgl. Abb. 2). Obwohl in ihrer räumlichen Ausdehnung ungleich, decken beide Organisationen Teile des ehemaligen Schwerindustrie- und Bergbauareals im Nordosten der Steiermark (Mur-Mürz-Furche) ab. Dieser Beitrag nutzt die Ausdehnung der LEADER-Region als Referenzgebiet.

Administrativ zählt die Region zu den Bezirken Leoben (93 % der Fläche) und Liezen. Die Steirische Eisenstraße ist Teil der Obersteiermark und umfasst den Obersteirischen Zentralraum (industriell geprägter Bereich um die Stadt Leoben) sowie die randlichen Gebiete Erzberg, Aflenzer Land und Tragösser Tal, Palten- und Liesingtal, Eisenwurzen und Gesäuse. Während der nördliche, stark alpin geprägte Teil mit dem Zentrum Eisenerz schwer erreichbar ist, ist der Obersteirische Zentralraum verkehrlich gut erschlossen (Autobahnen A9 und S6 sowie wichtige Nord-Südbahn-Anbindungen) und an das überregionale Zentrum Graz angebunden (vgl. Lichtenberger 1997; Zimmermann/Janschitz 2004).

Die Region ist schon sehr lange vom Bergbau geprägt. Seit der Bronzezeit sind Kupfer- und Salzabbau belegt, ab dem 11. Jahrhundert wurde der Raum zu einem Zentrum der präindustriellen Eisenproduktion in Europa. Mit der Industrialisierung ab Mitte des 19. Jahrhunderts wurde die Region an das überregionale Verkehrsnetz angeschlossen und entwickelte sich zu einem nationalen Eisenabbau- (Erzberg) und Eisenverarbeitungszentrum (Leoben-Donawitz), dessen Hochzeiten die Weltkriege und die 1970er Jahre waren (Sperl 1984; Osebik 2012). Ab den 1960er Jahren begann der Bedeutungsrückgang der Eisenproduktion aufgrund von Entwicklungen auf dem Weltmarkt (Lichtenberger 1997). Die Produktion konnte nur aufgrund ständiger Modernisierung der Abbaumethoden, der Konzentration auf hochwertige Stahlprodukte und dramatischer Einschnitte bei den Beschäftigtenzahlen aufrechterhalten werden (Osebik 2012). 2010 arbeiteten noch rund 200 Menschen an der Abbaustelle am Erzberg, wo jährlich rund zwei Millionen

[3] Alle statistischen Angaben in diesem Abschnitt stammen, soweit nicht anders bezeichnet, vom Statistischen Landesamt Steiermark/Österreich.

Tonnen Erz gefördert wurden. Die Einstellung des Erzabbaus wird im Zeitraum 2020–2040 erwartet (Osebik 2012). Im VOEST Alpine Stahlwerk Leoben-Donawitz waren 2012 rund 1.300 Menschen beschäftigt.[4]

Die Steirische Eisenstraße verfügt mit der Bezirkshauptstadt Leoben (2012: 24.000 Einwohner) über ein regionales Oberzentrum mit guter Infrastrukturausstattung. Ein wichtiger Standortfaktor ist die Montanuniversität Leoben (2012: rund 3.000 Studierende), die sich überwiegend mit Bergbau- und Materialtechnik beschäftigt. Der Gesamtraum verfügt über eine Reihe von Betrieben des produzierenden Gewerbes (z. B. Maschinen-Service Erzberg GmbH, VOEST Alpine Bahnsysteme GmbH & Co. KG, Austria Technologie und Systemtechnik AG), auch wenn sich die Wirtschaftsstruktur insbesondere im Raum um Leoben inzwischen deutlich diversifiziert hat. Die Beschäftigungsdaten von 2006 zeigen, dass der Anteil der Arbeitsplätze im produzierenden Gewerbe noch über dem nationalen Durchschnitt lag, sich aber im Vergleich zu 1981 deutlich verkleinert hat (49,9 % 1981; 31,8 % 2006). Die Arbeitslosenrate lag über dem österreichischen Durchschnitt (Bezirk Leoben 2010: 7,3 %; Österreich 2010: 6,9 %). Auch die demographische Entwicklung ist als schwierig zu bewerten: Die gesamte Region verliert in den letzten Jahren stark an Bevölkerung (Bezirk Leoben 1981–2012: −32 %), wobei insbesondere der Nordteil des Raumes rund um Eisenerz stark betroffen ist (Gemeinde Eisenerz 1981–2012: −49 %).

Die Region ist mit ihrer industriellen Prägung von nationalem Rang. Aufgrund ihrer Industriearbeiterschaft und sozialer Auseinandersetzungen im Laufe der Zeit gilt die Eisenstraße noch immer als sozialdemokratisch geprägte Region, die auch von besonderer Bedeutung für die Sozialdemokratische Partei Österreichs (SPÖ) ist. Dazu ist die Silhouette des Erzberges ein nationales Symbol für den österreichischen Wiederaufbau nach dem Zweiten Weltkrieg (Sandgruber 1995: 533). So ist auch zu erklären, dass die Region seit dem Beginn des Strukturwandels in den 1970er Jahren stark von verschiedenen Regionalentwicklungsprogrammen der österreichischen Bundesregierung profitierte (Gerhardter/Gruber 2001; Zimmermann/Janschitz 2004).

Trotz der schwierigen Ausgangslage ist die Steirische Eisenstraße heute durch ein enges, effektives Netzwerk geprägt, welches verschiedene Gruppen in der Region überspannt. Sowohl private Akteure, Firmen, Vereine, die Universität als auch politische Repräsentanten stehen in einer engen Verbindung, insbesondere über den Verein Steirische Eisenstraße, wie auch über das damit verbundene LEADER-Management. Die starke Verflechtung der Kernakteure, die stabile politische Konstellation, die Verwurzelung der Beteiligten in eher monostrukturierten Industrien, die Abhängigkeit von Subventionen in der Vergangenheit sowie der starke Bergbaubezug machen das Netzwerk jedoch eher exklusiv und erschweren neuen Akteuren den Zugang. Dieser Mangel wird durch die Abwanderungstendenzen junger, gut gebildeter Menschen noch verstärkt (Osebik 2012: 84).

In der Entwicklungsstrategie der Region spielt das Bergbauerbe eine wichtige Rolle, da es positiv besetzt ist. Viele der lokalen Traditionen sind mit Elementen des Bergbaulebens verbunden. Daher bildet der Bezug zum Bergbau einen wichtigen Teil in der touristischen Strategie des Raumes. Die Zuständigkeit für die Inwertsetzung von kulturellen Potenzialen liegt überwiegend in der Hand des Vereins Steirische Eisenstraße. Hier werden in Verbindung mit dem LEADER-Management nicht nur strategische Fragen behandelt, sondern der Verein kümmert sich auch um die Organisation von Veranstaltungen, das Fundraising und die Erstellung von touristischen Angebotspaketen.

Die Entwicklungsstrategie der LEADER-Region (2007–2013) benennt für den Raum unterschiedliche Schwerpunkte: Während *High-tech*-Industrien weiterhin eine Bedeutung in den traditionellen Zentren haben sollen (Raum Erzberg und Leoben), soll vor allem außerhalb der Zentren die touristische Attraktivität erhöht werden. Die Region kann dabei auf ein breites montanbezogenes Erbe zurückgreifen: Zum einen stellt die Abbau-Silhouette des Erzbergs an sich eine wichtige ‚Landmarke' dar. Daneben gibt es eine Reihe von historischen Ortskernen sowie intakte Fertigungsanlagen aus den Zeiten der vorindustriellen Produktion (z. B. Hammerhäuser und Hochöfen). Neben diesem materiellen Erbe gibt es auch viele traditionelle Bräuche, welche direkt auf den Bergbau zurückgehen und auch heute noch in der Region gepflegt werden. So stellen gerade die St.-Barbara-Feiern einen gesellschaftlichen Höhepunkt in der Region dar (Zimmermann/Janschitz 2004; Ortner 2009; Osebik 2012: 87).

Die kulturelle Attraktivität des Bergbauerbes wird bewusst genutzt und dessen Verwertung organisatorisch gebündelt. Auch hier spielte der Verein Steirische Eisenstraße eine maßgebliche Rolle. Aus den Infrastrukturen der 1997 durchgeführten Landesausstellung „Made in Styria" konnte die Stadt Leoben zudem ein kulturelles Profil entwickeln, das nationale Ausstrahlung besitzt. Mit politischer Unterstützung der Bundesregierung entstand eine Kunsthalle, die durch ihre jährlichen Sonderausstellungen in ganz Österreich bekannt ist. Daneben wurde 2002 ein regionaler Museumsverbund gegründet, der 15 lokale Museen in der Region umfasst. In diesem Kooperationsverbund ist es gelungen die einzelnen Einrichtungen auf bestimmte thematische Schwerpunkte auszurichten und gemeinsame Veranstaltungen zu realisieren. Dadurch konnten die einzelnen Museen in ihrem Profil geschärft werden und von der Zugkraft der Leobener Einrichtungen profitieren. Der Museumsverbund ist somit zu einem wesentlichen touristischen

[4] http://www.voestalpine.com/lehre/lehre-bei-uns/standorte-oesterreich/voestalpine-stahl-donawitz/ (11.07.2014).

Aspekt der Region geworden, der gerade die Bergbautraditionen und Technikgeschichte des Bergbaus repräsentiert.

Daneben hat die Region in den letzten Jahren auch versucht, alternative Programme mit der eher traditionellen Bergbauaktivität zu verbinden. Das „Abenteuer Erzberg" bietet Führungen durch den aktiven Bergbau am Erzberg an, das seit 2012 stattfindende „Rostfest" versucht, alternative Subkultur in den Ort Erzberg zu bringen. Das jährlich stattfindende Motocross-Event „Erzbergrodeo" hat mehr als 45.000 Besucher und ist mit 1.500 Startern eines der weltweit größten Events dieser Art. Daneben existieren eine Reihe von sportbezogenen Angeboten wie Klettersteige, Wanderwege, Langlaufloipen und Skigebiete.

Insgesamt betrachtet ist die Region jedoch eine schwierige Tourismusdestination: Das industrielle Image, ein Mangel an tourismusbezogenen Dienstleistungen und Investitionen sowie unterschiedliche Interessen der großen Grundstücksbesitzer (unter anderem der Bergbauunternehmen) hemmen die Entwicklung in diese Richtung. Zudem ist die Konkurrenz auf dem heimischen Tourismusmarkt enorm (Pizzera/Osebik 2012: 224).

4 Diskussion

Fasst man die Befunde der Fallstudien in Bezug auf die erste Forschungsfrage zusammen, so zeigt sich, dass in der Region Mansfeld-Südharz vor allem energetische und landschaftliche Potenziale sowie Artefakte des Bergbaus in Wert gesetzt werden. Dabei spielen Aspekte der regionalen Identität, des Tourismus und der Standortentwicklung für die Wirtschaft eine Rolle. Die Reaktivierung des Bergbaus durch Nutzung noch nicht ausgebeuteter Lagerstätten ist eine vage Zukunftsoption, der zurzeit keine strategische Bedeutung beigemessen wird. Die Potenziale, die aus dem Industrieerbe resultieren, werden mit kulturlandschaftlichen Attraktionen sowie mit kulturellen Sehenswürdigkeiten wie dem Luther-Erbe kombiniert. Institutionell stützt sich die Region auf ein Netzwerk von Akteuren, das kommunale, zivilgesellschaftliche und private Initiativen vereint. Es ist konzeptionell und organisatorisch gut aufgestellt und arbeitet projektbezogen. Allerdings fehlt es sowohl an einer Gesamtstrategie für die Region als auch an einer entschlossenen Steuerung der Regionalentwicklung durch die politisch-administrativen Akteure.

In der Region Steirische Eisenstraße werden vor allem die kulturell-touristischen Möglichkeiten des Bergbaus genutzt. Die Geschichte und die Traditionen des Bergbaus spielen in der Region symbolisch weiterhin eine große Rolle, auch wenn der Eisenerzabbau und die Eisenverarbeitung ihre Dominanz – vor allem hinsichtlich der Beschäftigungseffekte – verloren haben. Allgemein wird das industrielle Erbe positiv bewertet und auf verschiedene Weise genutzt, um die Region touristisch aufzuwerten. Hier spielen die Vielzahl von Museen, aber auch traditionelle Veranstaltungen (z. B. Barbarafeiern) eine große Rolle. Die Region kann auf ein stabiles und durchsetzungsstarkes Netzwerk zurückgreifen, das Akteure aus vielen Bereichen umfasst, welches jedoch einen eher engen und exklusiven Charakter hat. Darüber hinaus konnte die Region in der Vergangenheit auf starke staatliche Unterstützung bei der Bewältigung des Strukturwandels zählen.

Es wird also eine breite Palette von materiellen und nichtmateriellen Potenzialen genutzt, die aus der industriellen Vergangenheit resultieren und deshalb in ihrem Charakter sehr spezifisch sind. Diese werden vielfach mit nicht-bergbaulichen Potenzialen verknüpft und sind Bestandteil regionaler Konzepte und Strategien. Die Fallbeispiele zeigen auch, dass die Identifizierung und Nutzung solcher endogener Potenziale kein Selbstläufer ist. Es bedarf der Zusammenarbeit staatlicher, privater und zivilgesellschaftlicher Akteure in den Regionen, die Strategien entwickeln, politische Entscheidungen vorbereiten und treffen sowie Mittel akquirieren, um eine Inwertsetzung zu ermöglichen. Da Fördermittel begrenzt sind, gibt es einen harten Wettbewerb zwischen den Regionen um deren Einwerbung. Gelingt dies nicht, so scheitert die Nutzung solcher Potenziale bereits im Ansatz.

In beiden hier diskutierten Regionen hat die Nutzung endogener Potenziale eine große Bedeutung erlangt, auch weil ökonomische Alternativen und die externe Nachfrage nach Produkten und Dienstleistungen der Regionen schwach sind und der finanzielle Handlungsspielraum stark eingeschränkt ist. Dass eine Inwertsetzung industrieller Potenziale auch in anderen Altindustrieregionen eine nicht zu unterschätzende Rolle spielen kann, belegen die Beispiele aus weiteren Ländern und Regionen, die in den Projekten ReSource und SHIFT-X untersucht worden sind. Sie unterstreichen die Vielfalt von Möglichkeiten bei der Nutzung von Potenzialen des Bergbau- und Industrieerbes.

Betrachtet man die materiellen Potenziale in den Fallbeispielen genauer (vgl. Abb. 1), so ist ohne Weiteres erkennbar, dass klassische Ansätze der kulturell-touristischen Inwertsetzung von Hinterlassenschaften des Bergbaus einen breiten Raum einnehmen, wie man sie in ähnlicher Weise in den endogenen Entwicklungskonzepten der 1980er und 1990er Jahre findet. Viele Gebäude und Anlagen der Industrieepoche werden als kulturelles Erbe und als touristische Attraktion in Wert gesetzt. Häufig werden auch die hinterlassenen Infrastrukturen als Potenzial interpretiert. Dazu zählen unter anderem soziale Infrastrukturen wie die großen Kulturhäuser, die in den postkommunistischen Ländern noch immer das Stadtbild vieler kleiner und mittlerer Industriestädte bestimmen, für die heutige Nachfrage aber völlig überdimensioniert und für eine Umnutzung schlecht geeignet sind.

Noch nicht so große Erfahrungen gibt es mit den so genannten naturbezogenen Potenzialen (vgl. Abb. 1). Damit sind jene Hinterlassenschaften des Bergbaus gemeint, die bei der Metamorphose der ursprünglichen Kulturlandschaft zur Bergbaufolgelandschaft entstanden sind. Zu denken ist hierbei unter anderem an die neuen Seenlandschaften in den ehemaligen ostdeutschen und tschechischen Braunkohlegebieten. Innovativ sind die Potenziale bezüglich der Erzeugung regenerativer Energien, die erst seit einigen Jahren in Wert gesetzt werden. Im Fallbeispiel Mansfeld-Südharz ist das die Grubenwasser-Geothermie. In anderen ehemaligen Bergbaugebieten werden Versuche mit dem Biomasseanbau auf Abbauland und Projekte für untertägige Pumpspeicherwerke entwickelt, die für Einzelstandorte durchaus von Relevanz sein können. Hier wird in den Regionen eine wichtige Schnittstelle zu übergeordneten Zielen wie Klimaschutz und Energiewende gesehen.

Unter den nicht-materiellen Potenzialen gibt es einige, die für die zukünftige Regionalentwicklung von Bedeutung sein können. In den Analysen hat immer wieder das Wissen von Bergleuten eine Rolle gespielt, etwa bei der Grubenwassernutzung in Mansfeld-Südharz. Auch die Netzwerkkontakte einzelner Akteure, die zum Teil weit zurückreichen, können von Bedeutung sein, wie beide hier beschriebenen Fälle zeigen. Neben diesen fachlichen Kompetenzen spielen auch Traditionen und Identitäten eine große Rolle. Sie sind nach dem Ende des Bergbaus ein soziales Bindeglied, werden nachfolgenden Generationen vermittelt (Museen) und bilden die Brücke zur touristischen Nutzung des industriellen Erbes.

Zusätzlich zur Inwertsetzungsfunktion, die schon in den ‚alten' Ansätzen zu finden ist, weisen die modernen Konzepte zur Nutzung endogener Potenziale, die hier am Beispiel von klein- und mittelstädtisch geprägten Altindustrieregionen betrachtet werden, jedoch auch einige neue Aspekte auf. So bilden Initiativen zur Nachnutzung von industriellen Relikten den Ausgangspunkt für regionale Entwicklungskonzepte und -strategien, die weit über den Entstehungszusammenhang hinausgehen können. Einzelne endogene Potenziale wirken so als Katalysator für die Stadt- und Regionalentwicklung, wie das Beispiel der touristischen Entwicklung um den Steirischen Erzberg zeigt, die längst das Format ‚Bergbau' überwunden hat und zu einer facettenreichen Marke geworden ist. Damit kann auch die identitätsstiftende Wirkung der Industriegeschichte verbunden sein, die sich in Namen wie „Eisenstraße" oder „Kupfertour", aber auch in der Verwendung von Bergbausymbolen oder Bräuchen manifestiert. Die Inwertsetzung bergbaubezogener Potenziale führt also dazu, dass sich eine Region von anderen abhebt. Schließlich hat die Nachnutzung solcher Potenziale auch eine symbolische Funktion, die sich in der Heimatverbundenheit der Menschen, in ihrem Stolz und letztlich im Image der Region widerspiegelt.

In Bezug auf die zentralen Zielstellungen der Territorialen Agenda 2020 muss jedoch festgestellt werden, dass diese in Regionen des hier betrachteten Typs kaum erreicht werden. Die Entwicklung von wirkmächtigen Strukturen, welche die regionale Wettbewerbsfähigkeit nachhaltig stärken und die soziale Inklusion in den Regionen fördern, sind in den hier diskutierten Beispielen kaum zu beobachten – schon gar nicht in Form von Wachstums- und Arbeitsplatzeffekten, wie in der übergeordneten Europa-2020-Strategie eingefordert. Den Regionen fehlen schlichtweg die Mittel, um in diesem Bereich größere Investitionen zu tätigen und damit nachhaltige Entwicklungsperspektiven zu schaffen, zumal man außer der LEADER-Finanzierung oftmals nur Mittel zur Verfügung hat, welche im Wettbewerbsverfahren und über kürzere Zeiträume vergeben werden (z. B. Dreijahreszeitraum in INTERREG B). Dennoch bleibt im Hinblick auf die hier diskutierten Fallbeispiele festzuhalten, dass die Identifizierung und Nutzung solcher Potenziale durchaus einen Beitrag zu verschiedenen Zielstellungen der Territorialen Agenda 2020 leisten kann. So finden sich in den Beispielen positive lokale Strategieansätze in Bezug auf den Klimaschutz und die Entwicklung der Kulturlandschaft, wie sie in der Territorialen Agenda 2020 eingefordert werden (EU 2011: Absatz 8 und 28). Darüber hinaus tragen solche Projektideen auch nachhaltig zur Netzwerk- und Kapazitätsbildung in den Regionen bei und leisten damit einen wichtigen Beitrag für längerfristig angelegte Regionalentwicklungsstrategien.

5 Fazit

Die beiden hier diskutierten Beispiele und die Erfahrungen aus den zugrunde liegenden Projekten belegen insgesamt, dass endogene Potenziale in klein- und mittelstädtisch geprägten Räumen des hier diskutierten Typs von Altindustrieregionen nach wie vor einen wichtigen Entwicklungsfaktor bilden. Wie schon eingangs hervorgehoben, sind diese Potenziale auch deshalb von Bedeutung, weil externe Entwicklungsimpulse in Form von privaten oder öffentlichen Investitionen in den hier betrachteten Regionen schwach sind. Gibt es dennoch solche Impulse, so erzielen diese oftmals nur eine geringe Innovations- und Beschäftigungswirkung. Für keine der betrachteten Regionen zeichnet sich derzeit eine breitere Entwicklung in Richtung von *High-Tech*-Branchen im Verbund mit Innovations- und Forschungsexzellenz ab, und das trotz großer regionalpolitischer Maßnahmen, insbesondere im österreichischen Beispiel. Dies bedeutet nicht, dass es an den jeweiligen Standorten keine innovativen Unternehmen gibt, aber wirkmächtige Cluster aus Forschung und Unternehmen wurden bisher nicht etabliert. Damit unterstreicht dieser Beitrag die Einschätzung von Tödtling/Trippl (2004: 2), dass offenbar

die Realität in strukturschwachen Räumen anders ist, als es die „guten Beispiele“ der Forschung im Hinblick auf Agglomerationsräume suggerieren.

Die Nutzung endogener Potenziale, wie sie in diesem Beitrag beschrieben wird, zeigt eine Reihe von positiven Effekten und Chancen: Die touristische Verwertung des Industrieerbes trägt ebenso zu einer gewissen Wertschöpfung bei wie die Nutzung von Flächen und Gebäuden für neue Verwertungszwecke. Kleinere Unternehmen sind in einigen Regionen aus den ehemaligen Industriekomplexen hervorgegangen und behaupten sich am Markt. Ein Fokus auf regional angepasste, regenerative Energieformen wie z. B. die Grubenwasser-Geothermie, erbringt nicht nur Wertschöpfung, sondern trägt auch zum Klimaschutz bei. Ungeachtet dieser positiven Effekte durch Inwertsetzung materieller Hinterlassenschaften des industriellen Erbes wird aber auch deutlich, dass es sich hier um ergänzende, nicht um strukturprägende Einnahme- und Beschäftigungsquellen mit begrenzten Wirkungen handelt. Nicht zu verkennen ist ebenso, dass manche Projekte noch experimentellen Charakter haben und sich einer breiten Vermarktung dadurch entziehen, dass ihre Umsetzung an ganz konkrete technische, wirtschaftliche und geologische Faktoren gekoppelt ist, die einzigartig sind (z. B. die Verfügbarkeit von Grubenwasser in ausreichender Menge, mit ausreichender Temperatur und in hinreichender Nähe zu einem interessierten Nutzer).

Diesbezüglich muss hinterfragt werden, ob sich die mühsame und mitunter zeitaufwendige Erschließung solcher Potenziale regionalwirtschaftlich überhaupt lohnt. Bei der Beantwortung dieser Frage dürfen allerdings nicht nur die direkten ökonomischen Effekte berücksichtigt werden. Vielmehr kommt es darauf an, auch indirekte Effekte, die häufig mit den nicht-materiellen Potenzialen der Regionalentwicklung verbunden sind, einzubeziehen. Wie unsere Fallstudien belegen, sind übernommenes Wissen, Identität und Traditionen sehr wichtige Faktoren endogener Entwicklung.

Auch wenn der Hintergrund der hier angestellten Betrachtungen klein- und mittelstädtisch geprägte Altindustrieregionen sind, so lassen sich doch Schlussfolgerungen ziehen, die über den untersuchten Problemtyp hinausgehen und für andere Räume mit strukturellen Problemen ebenfalls Gültigkeit besitzen dürften. Erstens wird deutlich, dass endogene Potenziale eine große Vielfalt besitzen, die für jede Region zunächst zu bestimmen ist, um sie in Wert setzen zu können. Zweitens hängt es von den jeweiligen Akteuren ab, wie die Nutzung endogener Potenziale erfolgt und ob dabei Synergien entstehen. Drittens schließlich spielen die politischen Rahmenbedingungen eine große Rolle, die in Bezug auf die Nutzung endogener Potenziale fördernd oder hemmend wirken können.

Insgesamt stellt der hier skizzierte Ansatz eine Erweiterung von bisherigen Konzepten endogener Entwicklung dar. Standen in der Vergangenheit materielle Aspekte des Wachstums, der Wertschöpfung und der Arbeitsplatzschaffung im Vordergrund, können endogene Potenziale aufgrund der hier dargestellten Befunde umfassender interpretiert und um eine Reihe von Funktionen erweitert werden: Mit Hilfe des durch die relevanten Akteure (z. B. ehemalige Industriearbeiter) bewahrten Wissens und dessen Verbreitung über die entsprechenden Netzwerke werden Ideen kommuniziert, das Interesse von Politik und Wirtschaft geweckt und regionale Entwicklungsprozesse angestoßen (Katalysatorfunktion). Ebenso wichtig erscheint die Identifikationsfunktion solcher Maßnahmen, welche die Einzigartigkeit der Region betonen (Alleinstellungsmerkmale) und das Selbstverständnis der vom Strukturwandel betroffenen Regionen untermauern. Darüber hinaus hat die Nutzung von endogenen Potenzialen auch eine symbolische Funktion. Sie signalisiert die Leistungsfähigkeit und Leistungsbereitschaft der Menschen in den Regionen und steigert das Selbstwertgefühl.

Im Hinblick auf die Territoriale Agenda der EU, die den territorialen Potenzialen im Hinblick auf Wachstum, Beschäftigung und Klimawandel große Bedeutung zuspricht, erscheint ein auf diese Weise erweiterter Potenzialansatz sinnvoll. Da es sich bei den genannten Funktionen um ‚weiche‘ Kategorien handelt, die schwer messbar sind, müssen Zielkriterien der Entwicklung überdacht werden. Eine Ausrichtung der Programme allein auf Wachstum und Arbeitsplätze (*growth and jobs*), wie in den letzten Jahren häufig zu konstatieren, wäre zu kurz gegriffen.

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Original Article

Utilizing the past: Valorizing post-mining potential in Central Europe

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ABSTRACT

Once cradles of industrialization and centers of wealth creation, many "old industrialized" regions worldwide are currently faced with crises. Nevertheless, they are also places that have searched for innovative spaces and practices in order to overcome the economic, social and environmental outcomes of structural changes.

In recent decades, many European centers of old industries (e.g., mining and steel production) have been rendered unprofitable through various processes. These changes have had a profound impact on such regions: complete closures and substantial downsizing of production sites have triggered difficult processes of de-industrialization, unemployment and outmigration. Additionally, negative connotations and images of the industrial past and the (post-) industrial present hamper development efforts. Regions characterized by small and medium-sized towns have been negatively affected.

This paper discusses approaches and challenges to overcome the difficult transformation processes using the examples of three Central European mining regions, highlighting their ways towards more sustainable futures. The paper asks specifically about approaches that include potential related to the industrial past that can be reutilized in different ways, opening new development perspectives. The focus is on the opportunities and problems in addressing this post-industrial potential.

1. Introduction

Uneven development in late capitalist society has various spatial consequences. One of the most analyzed and researched subjects in regional sciences—but nevertheless persistent forms—has been the appearance of regions whose previous growth paths have been interrupted and that now face uncertain futures regarding their economic and social development. These "old industrialized" regions in Europe and elsewhere have long been at the forefront of crises and the search for innovative spaces and practices in order to overcome the economic, social and environmental outcomes of structural changes (Cooke, 1995; Müller et al., 2005; Koutsky et al., 2011).

In recent decades, many traditional European centers of old industries (e.g., mining and steel production) have been rendered unprofitable through various processes, such as transforming from state-led to market economies and the increasing competition on world markets. These changes have had a profound impact on many of these regions, which were once the cradle of industrialization and centers of national wealth creation. Here, the complete closure or substantial downsizing of industries has triggered difficult processes of de-industrialization, causing high unemployment and outmigration.

These processes not only affected larger European steel and mining regions such as the German Ruhr valley and the northeast of England but also had a profound impact on places outside of such agglomeration areas. In particular, regions characterized by small and medium-sized towns often have to face the full extent of the multidimensional challenges necessary to transform from industrial pasts to (post-)industrial futures. Here, a lack of economic alternatives coupled with missing organizational, financial and conceptual capacities often overtaxes local and regional decision makers (Wirth and Lintz, 2007; Harfst et al., 2012a,b; Harfst and Marot, 2013). The effects of structural change can therefore have a devastating impact on the communities affected (e.g., Neil et al., 1992; Anderson, 2014).

This paper discusses approaches and challenges to overcoming the difficult transformation processes of old industrialized regions in Central Europe using the examples of three mining regions, namely, the Austrian ore mining and steel processing region Steirische Eisenstrasse; the Slovenian mining and industrial region of Zasavje; and the German brown-coal mining region of Lusatia. This contribution will focus on examples from regions that are predominantly characterized by small and medium-sized towns

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because here, the problems of change and the opportunities for new development are especially difficult to obtain, due to the limited capacities (know-how, administrative and financial resources) these territorial units possess (Harfst and Marot, 2013). The paper asks specifically about approaches that include potential related to the industrial past that can be reutilized in different, sometimes innovative, ways. Another focus lies in the policy responses and the impacts that utilizing post-mining potential can have in such regions.

In the following section, a short introduction is provided on the challenges mining regions in Central Europe face, along with a description of the potential from the earlier industrial production that might play a role in the transformation process. Additionally, the problems of structural change and the responding policy frameworks will be highlighted. In the third section, three examples from Central European mining regions will be used to illustrate the assumptions made in the second section. The fourth section will discuss the examples and ask what possibilities and limits the utilization of post-mining potential might offer. Finally, a conclusion is presented.

The background for this article is formed by research carried out for the ReSource (www.resource-ce.eu) and SHIFT-X projects (www.shiftx.eu), both Objective 3 'Territorial cooperation' projects (Central Europe), co-funded by the European Regional Development Fund (ERDF) from 2009 to 2014. Both projects explored the transformation of old industrial regions in Central Europe, providing unique insight into the processes of regional development across various European countries. The author was involved in both projects with the academic partner institutions.

2. Challenges and opportunities in Central European mining regions

2.1. Structural change in European mining regions

A variety of literature has addressed the outcomes of structural change in old industrialized regions around the world (e.g., Cooke, 1995; Ache, 2000; Hassink and Shin, 2005). Western Europe has seen waves of de-industrialization across various sectors, especially in the textile, shipbuilding, steel and mining industries, since the 1970s (Baeten et al., 1999; Cho and Porter, 1986; Hudson, 1998), while in Central and Eastern European countries, heavy industries shrank beginning in the 1990s after the fall of the Eastern bloc (Gorzelak, 1998; Eckart, 2003; Müller et al., 2005; Lux, 2009). Despite the processes that took place under different framework conditions, the situations in the affected regions have been quite similar: declining economic roles, unemployment, shrinking tax bases and outmigration, especially of the skilled labor force. However, not only do the economic and social futures of these places often look bleak; their processes of closure are accompanied by the discovery of risky environmental legacies at former production sites (Robb, 1994; Bridge, 2004). Additionally, mining industries often leave heavily altered landscapes, which, especially in Central and Eastern European states, often are not remediated because of funding problems or unclear ownership issues (Harfst and Wirth, 2011). Overall, the (post-) industrial futures of these places are often perceived as entailing decay, disinvestment and black and polluted industrial wastelands, from the viewpoints of the inhabitants and the outside world. These images have been identified as additional impediments to the economic development of these places (Joly, 2003; Sucháček, 2009; Benneworth et al., 2009).

Research on this topic has so far focused mainly on major cities and their restructuring efforts, such as the much-discussed examples from the northeast of the UK and the German Ruhr Valley (Hudson, 2005; Shaw, 2002). Whereas these regions' transformation efforts are well documented and have received worldwide attention and political backing, regions with predominantly small and medium-sized towns have been curiously overlooked (Vaishar et al., 2012). This marks a significant gap in the research field because smaller industrial towns are typically hit the hardest by factory closures; these areas are often mono-industrial—that is, depending on one company or sector—as well as being overwhelmed by the rapidly evolving processes of change that overtax existing small administrations (Lintz and Wirth, 2009).

Mining regions in Central Europe have a long tradition; in many places, first production existed centuries before the beginning of industrialization on the continent in the 1840s. Many mining regions, even when located outside the larger agglomerations, became densely populated places, functioning as centers of regional wealth creation and also the locations for many connected industries (steel, chemicals, etc.), creating in some places a tightly interlinked industrial agglomerate that was entwined with the mining. Additionally, especially in the former socialist countries, these towns provided important social infrastructure for the region as a whole (e.g., hospitals, cultural facilities, etc.) (Sucháček and Petersen, 2010; Vaishar et al., 2012).

Despite the already volatile character of the extraction industry in general, many Central European mining regions have been hit hard by these above-named developments (Wirth et al., 2012). Mine closures have become widespread across the continent since the 1990s, sparking scrutiny discussion on the entire composition of regional infrastructure and wealth creation in affected regions. Places with a strong sense of pride and self-awareness were plunged into crisis as the reference points of local identities crumbled away (Strangleman, 2001). The regions experienced rapid transitions from being national wealth creators to depending on subsidies and the influx of other state funds.

With these complex structures in place, simply abandoning the towns, as in other cases, is an unviable option. Therefore, regenerating former mining regions has become an important policy issue in many European countries, which have embarked on a variety of state-led regeneration efforts. Whereas the 1980s and 1990s still saw rather large funding programs for affected regions—whether from the European Union (e.g., the RESIDER and RECHAR programs) or from other nation states (i.e., the Polish Mining Act 1993 and the Mining Closure Act of Slovenia in 1995)—the focus since the beginning of the 2000s has shifted away from exclusive support of these regions. Today, rather small-scale measures distributed on a competitive basis via the European Regional Development Fund (ERDF) or rural development funds (LEADER) are the main instruments that provide financial support for the affected regions. In this context, these regions rely increasingly on their own capacities and potential to master structural adjustment, something that is especially scarce in regions outside of any agglomerations (Harfst and Wirth, 2011; Marot and Harfst, 2012) (Table 1).

2.2. Defining post-mining potential

One method of addressing the structural changes in the affected regions has been an "erase-all-traces" approach that would eliminate all reminiscences of the industrial history in question, fostering a process of collective "forgetting" about the industrial past in some places (Jonsen-Verbeke, 1999). Alternatively, affected regions have sought to actively utilize their industrial pasts as stepping stones into the future. Some of these examples have been well-documented in recent literature, which has explored different potential scenarios and utilization (see e.g., Kilper and Wood, 1995; Kirkwood, 2001; Pearman, 2009; IBA-Fürst-Pückler-Land, 2010; Harfst et al., 2012a,b; Lenartowicz and Ostrega, 2012). These

Table 1
Impediments to development in old industrialized regions (Harfst, 2014).

Dimension	Features
Economic	Mono-structures, value creation below national average
Social	High unemployment rates, low education backgrounds
Environmental	Environmental damage, altered landscapes
Demographic	Shrinkage, outmigration, high percentages of elderly people
Image	"Black" image
Additional factors in regions with small and medium sized towns	Declining economic and functional importance Low organizational capacities Low political attention

refer to buildings, various infrastructure, industrial products, skills, traditions and human knowledge. As defined by Wirth et al. (2012, p. 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 change". Similar terms were used by Jolliffe and Conlin (2011, p. 244), as well as Jones and Munday (2001, p. 585), who focused on "natural and built resources". In addition, EU policies such as the Territorial Agenda (EU Ministers of Spatial Planning and Territorial Development, 2011) and Europe 2020 (European Commission, 2010) have recently highlighted the role of such territorial potential (Damsgaard et al., 2009). Thus, EU programs provide funding for utilizing potential, making it more relevant for regional policy makers.

Some of these elements are generally preserved in the form of museums or exhibitions, but many other uses are possible, ranging from event locations to art installations and tourism products. This research approach distinguishes between natural and cultural potential. The former is defined as degraded fields or land, woodlands, geothermal water or other natural elements that have been modified by mining and that are now present in the post-mining landscape. After rehabilitation, these landscapes can be used for recreational purposes, such as hiking, cycling or as 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 stockpiling heat for electric power production. The latter include architectonical or technological heritages, infrastructure, production facilities and housing, in short, anything that is human-made and most commonly presented in museums or turned into concert and conferences venues. Such non-material potential as mining events, mining traditions and mining identity is also considered part of this category. Some examples will be highlighted in the following section (Fig. 1).

Taking advantage of these elements can serve many different aims, including facilitating economic growth, fostering tourism, and improving infrastructure as well as for educational purposes or strengthening local identities. This is achieved by incorporating the legacies into future development plans rather than demolishing and denying them outright. Additional examples are listed in a "good practice" databank hosted by the ERDF-funded ReSource project (2009–2012) (www.resource-ce.eu) (see also Marot and Černič-Mali, 2012).

The discussion that follows highlights some examples from across Central Europe where industrial remains have been used to create new uses in old spaces, establishing new utilizations on brownfield sites and other industrial legacies. This part and the following discussion will focus on the questions: What were landscapes used for? What kind of impacts were achieved and what kind of problems surfaced in the process?

3. Examples

As indicated, the background of this paper is the ERDF-funded projects ReSource and SHIFT-X. Both have employed post-industrial heritages to promote the economic and social transformation of old industrialized regions in Central Europe. The projects have covered, in total, nine regional and six academic partners,

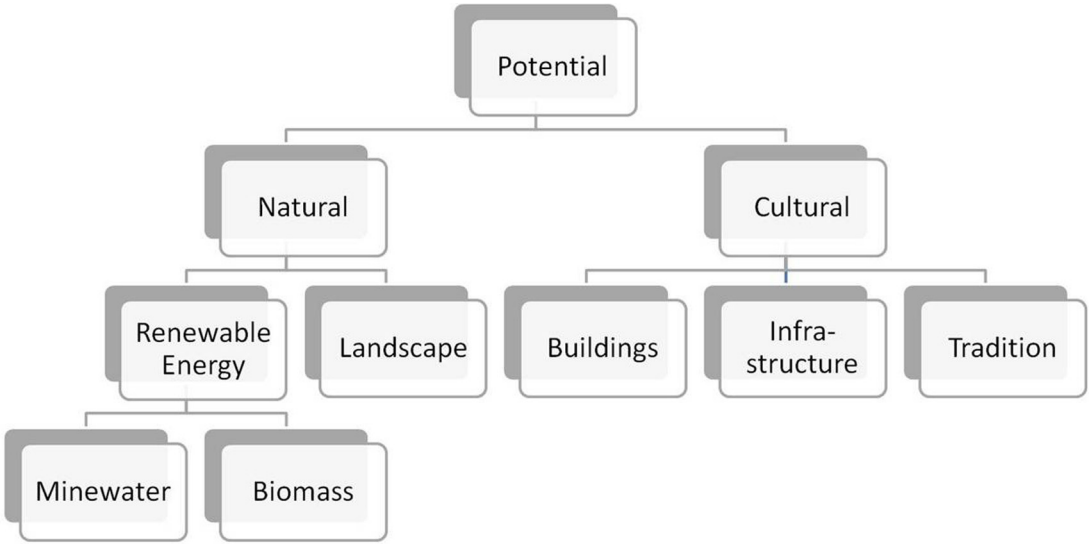

Fig. 1. Post-mining potentials in old industrialized regions.
Source: Wirth et al. (2012).

who worked together to identify and utilize industrial potential, addressing issues such as governance, strategy development, heritage management, tourism offers, heritage products, and regional marketing. Academic partners were included based on a "action research"-oriented agenda (Howells, 2002; Greenwood and Levin, 2007) that involved universities in the execution of project tasks, but also allowed to reflect on the overall management and on single examples (Osebik and Harfst, 2011). The projects offered the participating academic institutions unique insight into the development challenges facing old industrialized regions in Central Europe. The following three examples are derived from some of the regions covered by the projects. These were chosen to illustrate the range of different utilizations possible, along with the problems encountered. The text will not extensively cover all of the framework conditions in the regions or all possible potential; rather, it is thought to give a more illustrated understanding of the issues laid out above.

3.1. Sports, heritage and events: Erzberg (Austria)

The Eisenerz region is a part of the Bundesland Steiermark (Styria) in southeastern Austria. The area has been the location of mining and ore and coal processing since the 11th century. From the 19th century onwards, it was part of one of Austria's industrial centers, namely, the Mur-Mürz-Furche (Ortner, 2009). Although ore mining and steel processing are still ongoing, the industrial production around the Erzberg mine site has lost its importance owing to rationalization processes and a considerable downsizing of the workforce (Moser, 2011). In this rather peripheral and Alpine region, the effects on the communities have been severe—persistent, above-average unemployment rates and an especially pronounced population loss because of outmigration have been constant problems in recent decades. These factors persist despite the fact that the region has profited from various state-led regeneration programs in the past that aimed at strengthening regional infrastructure in the fields of culture and industry alike (Zimmermann and Janschitz, 2004). The closest town to the Erzberg mining site, Eisenerz, lost nearly 50% of its inhabitants between 1981 and 2008, and in 2012, the population numbered approximately 4800 inhabitants (Statistik Steiermark 2012).

Being situated in a mountainous, alpine setting, the region has suffered from its peripheral location and a rather negative image grounded in the industrial downturn and outmigration. Although the area is set in attractive alpine scenery, tourism in the region is rather weak, especially because basic infrastructure such as hotels is underdeveloped and the region faces fierce competition on the Austrian tourism market. The area today is still more associated with being the heart of Austrian industry than being a holiday destination (Osebik, 2012).

Nevertheless, the region has managed to incorporate some of its (industrial-) landscape features into marketing a new regional image and widening local economic activities (Fischer and Stranz, 2011). One central aspect of these efforts is an annual motocross event that has taken place in the region since 1995. The Erzberg-Rodeo is located in the active open cast iron ore mining site. Against this spectacular scenery, 1800 participants from 38 nations competed in various events in 2013, with approximately 50,000 spectators following the event at the site (see Plate 1). The event is also transmitted live via the internet and television. It is the largest event of this kind in Europe and has developed into an important regional economic and marketing factor (www.erzbergrodeo.at).

Local stakeholders, such as the regional LEADER management "Verein Steirische Eisenstrasse e.V.", have realized the potential of the event for the wider region and have included this feature in their regional strategies. One strand of the regional development efforts, as laid down in the LEADER strategy 2007–2013, includes the element of "adventure sports", tapping into the image of the event and fitting it into the area's mining history. Other activities in this field include climbing and rafting, as well as other outdoor sport offers (Pizzera and Osebik, 2012). In addition to this, the area's mining heritage has also been established as an additional element in the strategy. The region has a total of 13 local museums under one organizational roof, allowing for nationwide marketing activities and specializations for each museum, increasing the attractiveness for visitors (Fischer, 2014). Another event that in particular aims to attract young people to the region is the "Rostfest", an alternative music and urban arts summer festival held in the mining town of Eisenerz (www.rostfest.at).

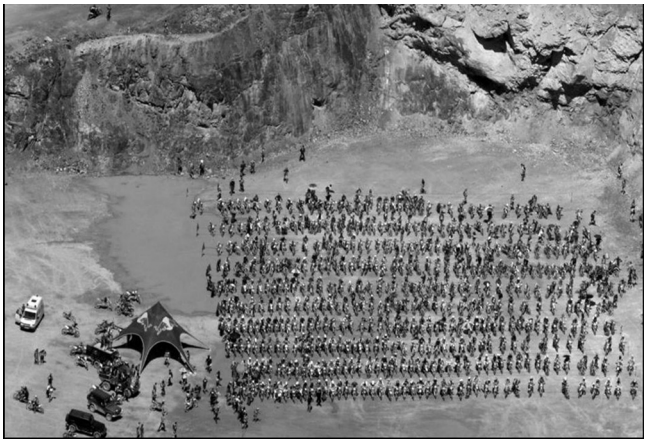

Plate 1. Erzberg-Rodeo.
Source: Steirische Eisenstrasse.

3.2. Utilizing skills and traditions: Zasavje Region (Slovenia)

The Zasavje region in central Slovenia is one of twelve Slovenian development areas that have no administrative power but are in charge of delivering regional development programs. The region covers the former coal-mining towns of Zagorje ob Savi, Trbovlje and Hrastnik and had approximately 45,000 inhabitants in 2012 (Marot and Harfst, 2012). Since 1755, brown coal mining has taken place in the area, with the establishment of accompanying industries such as metal processing, energy production, chemical industries, and glass production, all of which have marked the region as heavily industrialized since the turn of the 20th century (Marot and Černič-Mali, 2012). The region's decline corresponds with the announcement of mine closures in the early 1990s, which saw job losses and the demise of a range of interconnected industries. Nevertheless, two separate laws, one which targeted at the Zagorje and Kanižarica mines and another comprehensive one which targeted the Trbovlje and Hrastnik mines, ensured continuous state support for the region, mainly focusing on remediating former mining sites. Small-scale mining continues today, with the final end of production being envisaged for 2020 (Marot and Černič-Mali, 2012).

Regarding its potential post-mining uses, the region can—as in the Austrian case—rely on attractive surroundings that are suitable for a range of recreational activities and for tourism development. The area has two landscape parks and various Natura 2000 spots, with the deeply carved Sava river valley being an interesting landscape feature that allows for a wide range of outdoor activities such as rafting, hiking and mountain biking. Additionally, remediated areas have been used to create attractive landscapes, such as the Europark recreational area in Zagorje ob Savi, which also partly enhances the qualities of the urban area.

Accordingly, the Zasavje region has begun to create a tourism image in order to promote the region on the local tourism market. This is an ambitious project given that the region was especially famous for its extensive pollution in the years of industrial production and its present, rather low-key, state of basic touristic infrastructure such as hotels. Nevertheless, with the "V tri krasne" (www.v3krasne.si) ERDF-sponsored project, the Regional Development Agency has begun to establish tourism routes, improve visitor information and create festivals centered on regional products such as food and art (see Plates 2 and 3). Within this strategy, the mining past plays an important role: Previously industrial buildings are used as backdrops for artistic performances; there are plans to upgrade the local mining museum; and traditional mining customs and food specialties are being used to establish a unique trademark in the Slovenian context. Still-existing industries (e.g., glass manufacturing in Hrastnik) are incorporated into the strategy and have upgraded their facilities (i.e., by improving visitor's offers at the existing glass factory).

Additionally, the region has attempted to utilize its natural potential. Tests were conducted to establish biomass crops on former mining sites, but the surface available for such enterprises was deemed too small. Additionally, the region has attempted to use geothermal water from the mine shafts for energy production. A pilot site was established in Zagorje ob Savi, but the long-term contracts oblige the municipality to continue using fossil fuels (Marot and Černič-Mali, 2012).

3.3. Creating landmarks and lakelands: Lusatia (Germany)

Lusatia is an Eastern German region on the border between the states of Saxonia and Brandenburg. The area, with its rather dispersed settlement structure, is known for the extensive open-cast brown-coal mining that took place in the German Democratic Republic, which was officially declared the "energy region" of the GDR (Wirth and Lintz, 2006). After 1990, Lusatia's role in the field of mining and energy production was significantly reduced following the closure of most of the mines and connected industries (Harfst and Wirth, 2011). Because of these economic changes, the region has experienced persistently high unemployment rates and heavy population losses caused by outmigration of the last 20 years. Today, the region is marked by a developing "lakeland", where the former open-cast mines are being filled with water, in the process creating 21 lakes that will present new regional development options, particularly in the field of tourism. The region still profits substantially from federal funding for converting the former Eastern German brown coal industries, and it received a major development boost by hosting an International Bauausstellung (IBA) between 2000 and 2010, which provided a major influx of ideas and attention to the region (www.iba-see.de). The IBA managed to incorporate some of the remains from the industrial heyday into new uses (IBA-Fürst-Pückler-Land, 2010), creating museums and infrastructure that give the region a new image and offering considerably more visitors' attractions. Additionally, the operating mining company supports many tourism-related services (e.g., offering tours through the still running open-cast mines). Although the region has not had much of an image since 1990—apart from a rather beaten-down industrial hinterland with devastated and altered landscapes—the federal funding, the establishment of the lakeland and the IBA's ideas, have created a more positive image in which the industrial heritage (and sometimes ongoing present) plays a positive part in the new perception of the region (Lintz et al., 2012).

Three iconic structures reflect the new attitude: A viewing tower at the lakeland's center in Senftenberg, called the Rusty Nail has become an iconic image of the new, developing landscape (see Plates 4 and 5). The former wastewater treatment plant in Plessa ("the Bio-Towers") and the F60 conveyor bridge in Lichterfeld ("the lying Eiffel Tower"), both form impressive "living monuments" from the industrial era that have been preserved for new tourism uses which mark the region's development in the last 20 years (Harfst et al., 2012a,b).

Plate 2. Tourism fair from the Zasavje region.
Source: V3krasne.

Plate 3. Industrial tourism offers from the Zasavje region.
Source: V3krasne.

Plate 4. The landmark Rusty Nail.
Source: IOER.

4. Discussion

The examples presented underscore the wide variety of possible utilizations capable of connecting the industrial past to the present and the future. The cases examined here also illustrate the various elements that can be used from the past, ranging from events in the background of industrial landscapes as in Austria to the creation of new landmarks from industrial infrastructure in Lusatia to the valorization of traditional food and crafts in Slovenia.

All three examples show the different impacts of using these potentials: Whereas in Austria, a globally broadcasted event was created—that attracted 50,000 visitors to a rather remote area in only one week—the visitor numbers in Slovenia and Germany are substantially smaller. However, the latter two examples are available during the whole of the year, which offers more consistent effects. The German example in particular highlights the importance of arts and esthetics in reusing (post-) industrial landscapes and infrastructure and shows how innovative these are. The Slovenian case aims at establishing coherent, small-scale visitor offerings that build on various elements of the region's industrial history and present.

Plate 5. F60 museum.
Source: IOER.

All three examples show that combining heritage elements with other leisure activities appears to be especially fruitful. Correspondingly, most uses focus on tourism development as a new economic activity, and this is valid in all three cases: a new tourism image is pursued in order to find alternatives after industry closures. Natural potential (e.g., in the form of energy production) has been tested comprehensively only in the Slovenian case but without being utilized to their full potential. This might indicate that the tourism-related measures are more easily funded, whereas renewables appear to depend more on other framework conditions such as national energy policies.

Both the German and Austrian cases have established landmarks that stand symbolically for the region and which are both partly connected to the industrial past, reflecting an image change. This corresponds to the fact that all three examples—each in its own way—undertook measures to change the inward and outward perceptions of the regions and altering persisting stereotypes of the places. Especially in the Austrian case but also partly in the German case, the potential has been strategically used to create new, more dynamic and younger regional images, especially to the outside world. Here, the efforts have been "officially" enshrined in either LEADER planning or in the IBA's organizational structure. The Slovenian example is for now not particularly strategically embedded and thus relies more on small-scale measures. Here, attracting new businesses and fostering entrepreneurship play larger roles in the regional development strategies.

In addition, all of these examples highlight the importance of outside funding. Whereas in the Slovenian and German examples, the regions were able to use—to different degrees—state funds in order to remediate mining damages for development purposes, the Austrian example profited strongly from the involvement of the still existing mining sector, which not only runs some of the visitor tours through the still-active mine but also is willing to invest in new visitor offerings around the mining site. In addition, in the German example, the mine operator is cooperating with companies that offer tours through the mining landscape. Even in the Slovenian example, the still operating industries have established visitor offerings that support the region's general tourism agenda.

All of these uses provide a dynamic element that offers (economic) opportunities not by outright denying the industrial past but by retaining it and using it for future development. This is already a positive aspect for the regions in focus because they are more often trapped in a negative spiral of unemployment, disinvestment and outmigration. Nevertheless, the real economic and social impacts of these measures remain difficult to quantify. In all three examples discussed here, the direct effects on jobs and growth must be seen as rather limited.

5. Conclusion

This paper has explored the changing dynamics of some mining regions predominantly characterized by small and medium-sized towns. The article has shown that old industrialized regions possess a range of different potential capable of contributing positively to the transformation process.

One important and positive aspect that can be cited is the changes in inward and outward perceptions. With the traditional "black" image of the old industrialized regions having been identified as impediments to regional development, the productive reuse of mined out lands offers the opportunity to project different images of these areas in the process dispelling some of the negative

stereotypes. Some of these efforts can be drawn upon to construct a more "green" image of these "black" places. Moreover, the "rough" image of these regions can be skillfully used to promote specific "adventurous" leisure activities. These efforts would go a long way toward painting a picture that can be communicated and marketed to the outside world as well as provide a vital link between the past and the future for the regions' inhabitants. Preserving these industrial legacies, which in their heyday formed an often important part of people's self-reference, can be seen as important anchor points in a changing society, points that connect the memories of older generations with the younger ones' futures. This could potentially play a role in mitigating future problems of outmigration and lack of investment. However, the changing perceptions among local residents are more difficult to assess and require more scientific research, specifically work which considers the psychological and social impacts of, for example, long-term migration patterns.

Although industrial heritage objects are preserved or used for their cultural value or educational purposes, all of the cases examined show that that their use is also strategically embedded in identifying and promoting new economic development in the regions in which they are located, namely, by focusing mostly on tourism. Here, old industrial legacies can serve as important backdrops in order to create more sustainable economic opportunities by providing an interesting interplay between old and new uses. Other options, such as renewable energies, appear to be more difficult to realize on a larger scale, mostly owing to the more complex framework conditions.

Having illustrated the different aspects of use and value, one might ask if the "erase all traces" approach preferred by other municipalities and regions is a truly worthwhile option to explore. One can also argue that state funding to remediate former industrial and mining sites, and to develop these regions in the future, would appear to be important preconditions for any post-mining application because only such state funding will allow regions to actively explore possibilities for alternative economic futures.

However, despite the efforts described here, the structural deficits in the regions discussed largely remain. Although tourism might be an option for some regions, it cannot replace the workplaces lost with the industrial restructuring, especially given that many of the old industrial regions are ill-equipped to make a larger impact on the highly competitive tourism markets given their frequently underdeveloped infrastructure in existence such as hotels. Therefore, it remains to be seen if these efforts have a larger impact on the general development of these regions over the long term. It can be said, however, that these new uses do improve outward and inward images and can equip regional stakeholders and decision makers with new organizational skills and capacities, which is a precondition for mastering the challenges these areas face.

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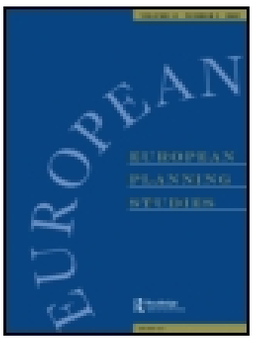

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Utilizing endogenous potentials through EU cohesion policy: examples from Central Europe

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ABSTRACT

The Barca Report of 2009 firmly placed endogenous potentials on the European Union policy agenda. Now, as the current EU programming period 2014–2020 draws to a close, this article examines how such potentials are being shaped and applied at the local and regional levels. We reflect upon lessons learned from this approach, thereby contributing to the debate on the next European Union's cohesion programming period from 2020 onwards. The analysis deals with the valorization of place-based development potentials in case study regions, highlighting challenges in the current development of such regions. Examples are given of the utilization of endogenous potentials, and we consider lessons learned from this locally-led, place-based development approach for the wider framework of European cohesion policy. The focus is on (old) industrial regions, characterized by small- and medium-sized towns outside major agglomerations. The authors conclude that it is insufficient to merely consider the direct economic effects of endogenous development potentials. Instead, a more comprehensive perspective is required, one that pays greater attention to other functions of endogenous approaches, specifically their catalyst, identity and symbolic functions.

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EU cohesion policy; placed-based development; endogenous potentials; Central Europe; regional development; (old) industrial regions

1. Introduction

The Barca Report to the European Union (Barca, 2009) firmly placed the utilization of endogenous potentials on the EU agenda. Implemented through various policies related to territorial development (e.g. the EU's Territorial Agenda), this utilization still serves as the underlying logic of the current cohesion policy (Mendez, 2013). Endogenous territorial potentials can be divided into *tangible assets*, such as natural and human resources, and *intangible assets*, such as organization, culture, social issues and governance (Damsgaard, Lindquvist, Roto, & Sterling, 2009). Against the backdrop of the ongoing financial and economic crisis, which began in 2008, a strong dependency on foreign direct investments has proven a risky development strategy for many regions. Therefore, it is

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unsurprising that many actors involved in regional development have shown a growing interest in reviewing their territorial potentials.

The article focuses on the situation of non-agglomeration, (old) industrial regions in Europe, often situated in the periphery outside the main political and academic hubs. Towns and regions of this type are often characterized as 'lagging behind' larger metropolitan regions that have managed to transform towards knowledge-based services, smart governance of resources and updated industries. Many such 'lagging' regions are undergoing a process of decline and shrinkage (ESPON, 2006), specifically suffering from demographic changes such as outmigration, the loss of younger residents, social erosion, a lack of skilled workforce, as well as economic decline in terms of job losses and industrial restructuring. In consequence, many afflicted areas have become '*chronic patients of regional policy, constantly in need of care but not getting well*' (Wirth et al., 2016, p. 63), a problem which in recent years has created new political challenges (Rodríguez-Pose, 2018). Such structural weaknesses tend to persist in a negative regional cumulative causation cycle (Myrdal, 1957) due to a lack of economic innovation and growth impulses (Morgan, 2013).

Accordingly, the paper investigates the role played by endogenous development potentials in underperforming regions, as such potentials are at the core of the current European Union's cohesion policy 2014–2020 (e.g. Harfst, Wirth, & Simić, 2019; Marques & Morgan, 2018). The article discusses the following questions: (1) Which mechanisms underlay the use of endogenous potentials towards a place-based development approach; (2) Which valorizations can be particularly observed in (old) industrial regions characterized by small- and medium-sized towns; and (3) Is there evidence that the European Union's regional policy (positively) influences the valorization of endogenous potentials at local/regional level?

In the following section, we give an overview of academic research on endogenous potentials, analyzing these with special reference to small and medium-sized towns. Building on these findings, we then address the valorization of such potentials in two case studies, highlighting current regional challenges and providing examples of the identification and utilization of endogenous potentials (Section 3). Subsequently, examples are discussed with regard to the valorization of endogenous potentials, applied policy instruments and outcomes. In our conclusion, we reflect on the current significance of endogenous potentials in regional development and provide some recommendations for the European Union's upcoming programming period for 2020 + .

2. Endogenous potentials and the development of small- and medium-sized towns

Before using the rather fuzzy expression 'endogenous potential' in the context of regional development, it is useful to briefly consider previous definitions and applications of the term. In this section we thus briefly discuss academic concepts linked to endogenous potentials before analyzing their role in European cohesion policy. In addition, we then discuss the state of development in our focus regions, namely small and medium-sized towns.

2.1. Endogenous potentials revisited

Two broad perspectives on endogenous potentials can be identified within academic discourse (Martin & Sunley, 1998; Stough, Stimson, & Nijkamp, 2011). The first appears in

the field of economic geography, where endogenous potentials are applied to the analysis of unbalanced growth and development patterns at different spatial levels (Dunford & Smith, 2000; Petrakos, Rodríguez-Pose, & Rovolis, 2005). The second perspective appears in the field of applied regional sciences and regional development, which forms the background to this article. In this understanding, endogenous potentials such as institutions, capacities of actors, cultures and economic links within the regional or local context explain the specifics of diverging regional development and growth patterns. This understanding can be said to represent the broader shift in regional development theories towards more place-centred strategies in the context of the long-evolving debate on a 'new regionalism' paradigm in economic geography (cf. Bentley & Pugalis, 2014; Macleod & Jones, 2007).

Clearly, the fact that endogenous potentials are discussed under different names and from different research viewpoints gives the whole approach a certain 'fuzziness' regarding terminology. Tóth (2014) traces the term 'territorial capital' back to policy-related documents issued at the turn of the new millennium; Camagni and Capello (2013) then conceptualized this term from a rather quantitative perspective, with some authors subsequently adopting the terminology (e.g. Fratesi & Perucca, 2018; Jona, 2015). Other authors prefer the somewhat broader notion of 'placed-based' or 'territorial potentials', indicating (more correctly, in our view) that these regional assets may not initially be recognized and realized as useful, and have in fact to be *pro-actively* turned into a capital. This terminology has been adopted by authors such as Barca and Damsgaard as well as the European Union (e.g. ESPON, 2013a; Servillo, Atkinson, & Russo, 2012). Methodologically, while all approaches share the same basic understanding of what such place-based potentials or capitals are, they differ in regard to the applied qualitative or quantitative methods, these largely depending on the research focus (Lacquement & Chevalier, 2016; Tóth, 2017).

Here we follow Damsgaard et al. (2009) in distinguishing between *tangible* and *intangible* potentials (ESPON, 2013a) (see Figure 1). Tangible potentials refer to the concrete, material legacies of human activity in settlements and landscapes. In (old) industrial regions addressed here, these might include mine dumps, old factory buildings, unused transport infrastructure and other features of post-industrial land- and townscapes. In contrast, intangible potentials refer to individual experiences, skills, knowledge and other competences, as well as cultural and social aspects of human existence present in the regions. These non-material potentials serve to anchor local people to their industrial heritage (identity) and cultural values, as well as maintaining traditions that shape the lives of the region's inhabitants. Intangible potentials also include actor relations such as governance networks and capacities. Obviously, it is generally harder to operationalize immaterial factors for place-based development. Only a few real-world projects outside the tourist sector have attempted to exploit such potentials (Harfst & Simić, 2017), whereas there are many instances of old industrial sites being converted to new purposes (e.g. Overmann & Mieg, 2014).

Whether and how these potentials are valorized and turned into place-based development strategies largely depends on the preferences, perceptions and capacities of local and regional actors as well as on the frameworks of European and national policies that can contribute to the construction of spatial constellations and challenges (Harfst et al., 2019). In general, the challenge in utilizing endogenous potentials is, first, to discover or enhance the specific (often unique) and meaningful potentials in cities and regions;

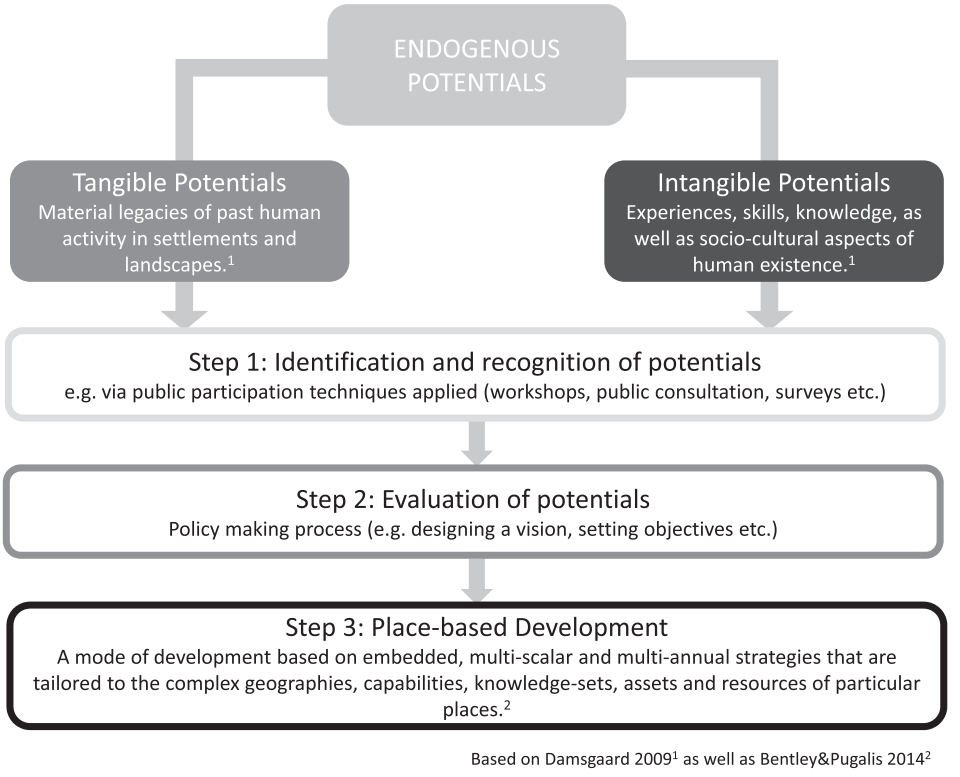

Figure 1. Endogenous potentials and place-based development (own graphic based on Bentley & Pugalis, 2014; Damsgaard et al., 2009).

and, second, to place them in the context of local or regional development. It should also be noted that the utilization of placed-based potentials is obviously more important in regions with low capabilities and opportunities to valorize external growth incentives.

2.2. Endogenous potentials and their role in European regional development policies

Alongside the academic discussion on endogenous potentials, the topic has also had significant ramifications in European regional development policies over the past few decades. Policies at regional, national and European level have targeted innovation and technology transfer. Research and policy-making in this area has aimed to analyze and strengthen growing regions (Kinossian, 2017; Servillo et al., 2012), with a wide body of academic literature confirming this interest (e.g. Lazzeroni, Bellini, Cortesi, & Loffredo, 2013; Moulaert & Sekia, 2003). Reflecting a new orientation in regional development policies at European level (European Commission, 2010), the focus has turned to smart specialization and regional innovation systems, so that growth and innovation potentials are being identified and exploited at the regional level (Asheim & Grillitsch, 2015; Foray, David, & Hall, 2011). However, most previous reference studies have only investigated successful (urban) regions (Martin, 2015; for a fundamental criticism see Hadjimichalis

& Hudson, 2014). In this context, Tödtling and Trippl (2004, p. 2) rightly point out that such 'one size fits all' solutions are often broadly applied to different regions; meaning that the '*specific strengths and weaknesses of regions in terms of their industries, knowledge institutions, innovation potential and problems are frequently not taken into account*'.

Endogenous potentials are now deeply embedded in EU strategies, in particular in the Territorial Agenda 2020 (European Commission, 2011), which builds on the objectives of the Europe 2020 strategy (European Commission, 2010) regarding employment, research, climate change, education and poverty reduction. The Territorial Agenda 2020 assumes that these objectives only can be achieved if their 'territorial dimension' is taken into account (European Commission, 2011, p. 2). This requires local and regional development strategies based on 'territorial potentials' (ibid., 2011, p. 3, paragraphs 11 and 28). For cities and regions, it is thus important to break down the general requirements and to determine their potentials more precisely, a step mainly done via the cohesion policy's Operational Programmes (e.g. Harfst et al., 2019).

The approach now shapes multi-level governance settings at the European, national and regional/local levels also via many sub-policies, e.g. INTERREG programmes or the EU Commission's Smart Specialisation Initiatives, such as the S3 platform, which seem highly relevant especially for those regions considered in this article (e.g. Avdikos & Chardas, 2016; Marques & Morgan, 2018; McCann, 2015).

2.3. Endogenous potentials and the development of small- and medium-sized towns

Around 56% of Europe's urban population live in small or medium-sized towns, here understood as settlements with a population ranging from 5,000 to 100,000 inhabitants (Commission of the European Communities, 2011). Such towns are hugely diverse, reflecting their historic development, differing economic structures and social composition (Knox & Mayer, 2013). They generally provide a range of important functions, serving as local hubs for surrounding areas, supplying jobs and services as well as fostering social interaction and regional identities (e.g. Kwiatek-Sołtys, Mainet, Wiedermann, & Édouard, 2014; van Leeuwen, 2010).

The development of peripheral European regions characterized by small and medium-sized towns has attracted little research interest in past decades (e.g. Atkinson, 2017; Luukkonen, 2010). At the same time, recent policy documents such as the Territorial Agenda have explicitly highlighted the importance of a polycentric spatial development in Europe, underlining the role of small and medium-sized towns in fulfilling the goal of the Europe 2020 programme and cohesion policies. Some studies have now started to investigate the topic for peripheral regions (ESPON, 2013b; Servillo, Atkinson, & Hamdouch, 2017), while others have highlighted economic aspects of entrepreneurship and economic development in small and medium-sized towns (Carvalho & Vale, 2018; Kinossian, 2017; Vonnahme & Lang, 2017).

In order to address these gaps in research and policy-making, especially in the context of the EU's cohesion policy, this article focuses on regions located outside agglomerations and which are suffering from sluggish development, specifically low growth rates, demographic shrinkage and ageing populations. As pointed out by Hoekstra, David, and Donner-Amnell (2017), while such regions often have (or had) a core industrial activity,

they are now undergoing major economic transformations, causing them to fall behind agglomerations with their stronger innovative potential (e.g. Cooke, 1995; Erickcek & McKinney, 2006; Simmie, 2003). The various problems afflicting such areas include weak external demand for products and services, a general loss of economic importance, a lack of economic innovation capacity (i.e. strong clusters of small and medium companies and research institutions) as well as a poorly skilled workforce and a small number of start-ups (Andersson & Karlsson, 2004), resulting in a so-called 'regional innovation paradox' (Healy, 2016). (Old) industrial towns, in particular, frequently face an additional barrier to development in the form of environmental problems such as polluted soil, as well as extensive degraded areas and brownfields (Thornton, Franz, Edwards, Pahlen, & Nathanail, 2007).

In the following, the authors present two case studies which investigate the use of specific endogenous potentials of (old) industrialized regions in order to generate positive momentum for development after a long process of structural change. Hereby the aim is to identify the opportunities and limits of utilizing endogenous potentials with a special focus on policy-setting rather than characterizing the 'problem type' of these regions as such.

3. Case studies

In this section we discuss two case studies from Central Europe drawn from the authors' previous research work. Both are former mining and heavy industrial hubs, currently undergoing processes of structural transformation. These two were selected from a pool of potential case studies as they encompass a broad spectrum of endogenous development approaches in terms of contents as well as procedures. For the purposes of illustration, we provide insights from interviews with stakeholders, either conducted in 2018 or drawn from existing sources such regional media, data and document analysis, as well as previous work conducted by the authors (Marot, 2015; Marot & Cernic Mali, 2012; Marot & Harfst, 2012). The analysis takes particular account of EU funding instruments under the LEADER initiative and European Regional Development Fund programmes such as INTERREG.[1] Such instruments have become key factors in the development of many regions. The presented research results were developed in the framework of various projects, mostly funded over the past decade by ERDF (INTERREG Central and Alpine Space).

3.1. Case study: the Zasavje region of Slovenia

3.1.1. Introduction to the region

With an area of only 485 km^2, Zasavje is the smallest region in Slovenia and also the second smallest in terms of population (56,962 residents) (Statistical Office of The Republic of Slovenia, 2019b). Previously the region had a dynamic economy based on coal mining and related industries (e.g. chemicals, glass production, electro-technology, etc.). In recent decades Zasavje has faced many challenges, in particular the closure of its mines (between 1995 and 2012), the political and economic changes following Slovenian independence, and the recent economic crisis of 2008. The most critical problems today are the high unemployment rate (which hit a peak of 18% in 2014), population loss (falling 8% from 2008 to 2018; Statistical Office of The Republic of Slovenia, 2019a),

environmental damage (soil erosion and pollution, destroyed woodlands, rock slides), as well as general economic restructuring and the need to create an overall vision for future development after the demise of heavy industry (Černič Mali, Klančišar, & Marot, 2009).

The region was among the first in Slovenia to benefit from EU assistance via the Phare Programme in 1994. This support helped establish a Regional Development Agency, a key institution that steered regional development for the next 15 years. The institutional framework was set up by the state by means of the Promotion of Balanced Regional Development Act (2011). According to this act, the regional council is a decision-making body which, together with the state authorities, confirms the regional development programme (the main policy document in the region) and supervises the work of the agency. The members of the regional council are a mixed group of representatives from the business sector, the municipal administration, the public sector (health, social care, education) and civil society. Apart from this legally-anchored institutional framework, there exist several other institutions that function as active stakeholders in the utilization of potentials (NGOs, cultural institutions, private companies).

3.1.2. The identification and evaluation of endogenous potentials

To face the challenge of restructuring, various endogenous potentials were evaluated as important, depending on the period of transformation. In the first development phase immediately following the mine closures, most of the state funds secured for activities related to the end of mining were allocated towards restoring degraded post-mining landscapes and improving human resources. The major instrument to valorize endogenous potentials was (and still is) the regional development programme, a 7-year strategic and implementation document which defines the vision, development objectives and measures for implementation. The preparation of the document is obligatory and demanded by the state in order to create a basis for the absorption of European cohesion and national funds. The first programme for 2007–2013 (Regional Development Centre, 2007) was drawn up with the help of thematic work groups to take account of human resources, environmental and spatial planning as well as economic factors; however, there was little public participation. In contrast, the preparatory process for the second programme for 2014–2020 (Regional Development Agency Zasavje, 2015) was opened up from the outset: The general public as well as all other interested institutions and companies were invited to contribute project ideas and initiatives. An additional novelty of the current programme is that it demands a vertical and horizontal integration of funding and actors, a feature that accords with the territorially-based approach promoted by the EU.

Analysis of these two regional development programmes shows that the first programme does not specify as many endogenous potentials (viewed as strengths) as the second programme. While a similar number of tangible and intangible potentials are mentioned, mining structures and landscapes are identified as regional weaknesses rather than potentials. The greater emphasis on endogenous potentials in the current period can be attributed to the region's need to align itself with the national smart specialization strategy, which is also a direct influence of EU policy (Governmental Office for the Development and Cohesion Policy, 2017). This has encouraged regional stakeholders to reflect on how they could best prosper and identify which sources could be valorized for this purpose. Specifically, companies involved in the 3E sector (i.e electro-technologies, electronics and energy production) along with local skills and knowledge are viewed as

globally competitive (and thus good potentials), followed by the endogenous potentials of glass production, new materials, the chemical industry and tourism.

The evaluation of the previous development programmes gives a clear overview of how potentials have been valorized as well as the challenges facing the region. The global crisis was mentioned as a major factor forcing the region to rethink its priorities and identify ways to implement projects targeting endogenous potentials. In addition, various stakeholders have claimed that a change of values was required to successfully shift to a new development path away from heavy industry. To realize this, actions aimed at changing the regional identity were supported by rebranding measures changing the perception of a dirty, industrialized region to a 'green place', thereby promoting the region as a tourist destination. In general, improvements to the natural environment and land quality were prosecuted first, as these were demanded by mining law. Subsequently, activities were implemented to exploit the cultural heritage, progressing from traditional museum-based exhibitions to more innovative activities such as cultural festivals and even unique events on the national and macro-regional level, aimed at attracting a wider audience. Less attention has been placed on industrial culture and knowledge; instead, efforts have focused on establishing technologically-advanced activities unrelated to the heavy industrial processes of the past (RRA Zasavje, 2018). Further, the region's previous reliance on the energy sector has gone into decline. Early attempts to foster the production of renewable energy have been unsuccessful due to a lack of scale: As Zasavje is too small for either biomass fields or solar parks, only a few isolated micro-scale generative units have been established in the region (Marot, 2012). Today, the most underused endogenous potentials are still the creativity, skills and knowledge of the local workforce. These could be valorized by, for example, fostering entrepreneurship. On the other hand, significant progress has been made in restoring the environment and post-mining landscapes, while some urban areas have been upgraded.

3.1.3. Valorization of endogenous potentials and place-based development

The valorization of Zasavje's potentials is supported by three main funding channels: The EU Cohesion Policy, national incentives which target either mining areas or regions lagging behind, and local initiatives. In comparison to other Slovenian regions, Zasavje is only moderately active in the INTERREG funding scheme: In 2018 the region co-operated in five INTERREG-funded projects. More positively, the projects in which Zasavje is involved do target endogenous potentials, as for example the latest cross-border project 'Inspiration' aims to exploit the cultural value of industrial heritage.

Although several funding incentives have been established to utilize endogenous potentials, various studies as well as the interviews conducted with the main decision-makers have revealed the insufficient know-how and human capacity in Zasavje to absorb all these funds, exacerbated by the low entrepreneurial drive to create new companies (Marot, 2012; Marot & Harfst, 2012). Specifically, young unemployed people seem reluctant to found their own companies (Marot, 2015). As a result, Zasavje region 'exports' the majority of its workforce to other regions of Slovenia, as in 2017 52% of the working population (approx. 23,000 people) commuted to other areas – the highest percentage of all Slovenian regions (Statistical Office of the Republic of Slovenia, 2018).

Regarding the opinions of local and regional decision-makers, interviews conducted with the three mayors (Gabrič, 2018; Jerič, 2017; Švagan, 2018) and the director of the

regional development agency (Špitalar, 2016) reveal a shift in their perception of where responsibility lies for regional development and prosperity. Unlike 10 years previously, the decision-makers now understand that state support only provides limited benefits to local communities. In contrast, development initiatives originating at the local level and business ideas co-created in a multi-actor local environment in a bottom-up manner can boost the regional economy over the long term. Today all municipalities seek close cooperation with local entrepreneurs and investors.

Over the last ten years there has also been a sea change in stakeholders' perception of the industrial past and the related development path. A study conducted in 2004 (Marot, 2005) showed that the focus of local people regarding jobs and future opportunities was still highly invested in the mining past. Yet today the mayors of the two municipalities -where mining activities ceased first- have been able to shift strategic objectives from mine-related economic activities to other alternative economic futures.

3.2. Case study: Oelsnitz region in Germany's Ore Mountains (Erzgebirge)

3.2.1. Introduction to the study area

The town of Oelsnitz is situated in eastern Germany, 25 kilometres west of the city of Chemnitz. With about 11,000 inhabitants (2017), the town is functionally connected to the larger Chemnitz conurbation, a thriving economic area home to medium-sized companies and a large variety of industries. The biggest local economic player in the conurbation is the Volkswagen Company, employing a workforce of about 10,000 in its Zwickau car plant (Volkswagen Sachsen, 2019). The town of Oelsnitz looks back on a long tradition of coal mining, the legacy of which is being utilized as an endogenous potential for regional development and as a component of place-making.

Until the 1970s, the Zwickau-Lugau-Oelsnitz district was the coal-mining hub of Saxony. From the nineteenth century, the coal industry also provided the impetus for the rapid industrial development of the cities of Chemnitz and Zwickau, making this zone a Central European hub of textile production, manufacturing and the car industry (Kowalke, 2000). The end of coal mining in the 1970s was a decisive turning point, leading to an intensive process of regional transformation. In the *first phase* of transformation, under the central planning system of the German Democratic Republic, the economic thrust was shifted towards re-industrialization: In Oelsnitz alone, 4,800 jobs were newly created in 18 industrial operations, largely in the fields of electrical engineering and construction (Stemmler & Vogel, 1997). In the *second phase*, following German unification, there was a drastic change of direction when jobs were lost across all industrial branches. The socio-economic policy now aimed to establish a new economic basis in fields such as metal processing and electrical engineering by promoting small and medium-sized enterprises, thereby creating new jobs. At the same time, and despite political action at all levels, the population in the wider region declined from 200,000 to about 154,000 in the period 1990–2017 as a result of outmigration and low birth rates.

3.2.2. The identification and evaluation of endogenous potentials

In 2003 nine former coal-mining municipalities from the region submitted a 'Charter of Demands' to the Saxon Ministry of the Interior, which is responsible for spatial planning and development in Saxony. Two years later the municipalities decided to collaborate

closer in the utilization of their coal-mining legacies, adopting a common Regional Development Concept (RDC), encompassing all former coal-mining sites. Four fields of joint action were defined as follows: (1) brownfield development; (2) tourism; (3) open spaces; and (4) demographic change and infrastructure.

The mining heritage has become a decisive factor in the realization of these general development aims. Retrospectively, we can identify four groups of endogenous potentials. As these are most visible in Oelsnitz, the following detailed description focuses on this town:

The first potential is the *post-mining landscape*, which includes spoil tips, areas of surface subsidence as well as underground mine water. These are challenging to manage in view of the various hazards they present such as unstable underground, landslides and rising mine water. As a result of the above-mentioned RDC, the Saxon government has been involved in measures since 2007 to rehabilitate former mining areas in the Operational Programme of the European Regional Development Fund (ERDF) (Sächsisches Oberbergamt, 2016). Among other utilizations of endogenous potentials, a state-of-the-art visitor tower was erected on the highest spoil tip in the town. Attempts to use biomass from tips as well as the burning of coal gob for energy production have proved unsuccessful.

A second development path has been the *reuse of brownfields* left by the coal industry. In fact, the GDR authorities already redeveloped several collieries for new purposes. After 1990 new industrial or commercial areas emerged on the former mining sites (IR^2). The most extensive reutilization project has been the town council's decision to locate the Saxon Horticultural Exhibition of 2015 on Oelsnitz's old coal railway terminal (IR). More than 400,000 people visited the exhibition during its 6-month duration, and today the area is used as a municipal park (Sächsisches Oberbergamt, 2016).

A third approach is related to *heritage protection and development*. One example of this is the transformation of the Miners' Cultural Centre, erected in 1956, into a leisure and concert venue. Oelsnitz's flagship project to exploit its industrial heritage is the Saxon Museum of Mining, housed in a former mining building. The museum, which opened in 1986, commemorates the history of hard coal mining in Saxony (Stemmler & Vogel, 1997) and today is a heritage site of regional importance (IR). The museum is also an educational centre for diverse users, offering various educational tours for schools (Bergbaumuseum Oelsnitz, 2018).

The museum staff can also be viewed as a primary factor in the *maintenance of miners' traditions*, the fourth group of endogenous potentials. For example, the staff members undertake voluntary work to organize various events such as mining parades and groups wearing traditional work clothes. Further, about 20 voluntary tour guides have been trained since 2015, initially to assist at the Horticultural Exhibition, and later extending their activities to mining history, industrial culture and the post-mining landscape (IR).

3.2.3. Valorization of endogenous potentials and place-based development

Our analysis reveals the strategic factors behind the valorization of the named potentials. One pathway has been the municipal collaboration with regional and state authorities, resulting in the allocation of considerable state and EU funding for rehabilitation and to prepare for investments. Cooperation with academic institutions has also pinpointed solutions for risk reduction in dealing with the physical legacy of mining.

Another factor in the valorization of potentials has been the previously mentioned strategic regional cooperation. This non-statutory, inter-communal coalition created a regional development concept, and has been recognized by the Saxon government as the coordinative unit for ERDF support in the former mining district. Since the end of the 1990s, Oelsnitz and neighbouring communities have also been involved in European development projects in the framework of the INTERREG programme, namely REVI, READY, ReSource, SHIFT-X, VODAMIN (FLOEZ Association, 2018). This EU cooperation has not only led to an intensive exchange of experiences with other mining towns in Germany and elsewhere, but also to the funding of small projects and follow-up activities. Last but not least, the town council's promotion of various festivals, in particular, the Horticultural Exhibition in 2015, has been key to ensuring the involvement of the local population in the process (IR).

All these initiatives and activities can be described as a mixture of urban development, risk management, heritage preservation and the maintenance of traditions. One particular force in local policy-making was the mayor of Oelsnitz from 1990 to 2015. He was esteemed as a charismatic leader, standing for a pro-active handling of local affairs, harmonizing the political parties in the town, establishing strategic alliances with state authorities and launching high-profile projects and events (IR). By initiating the first regional mining conference in 1990, he helped encourage an understanding of the (physical and social) mining legacy as not merely a burden on urban development but also a driver for urban renewal.

Furthermore, the mayor could inspire a network of actors, in particular a group of elderly mining engineers. This group had good connections into politics, science and academia, providing important network connections for the wider region and its challenges. These actors did secure funding and academic expertise. Another group lobbied for the continued existence of the Mining Museum, strongly fostered the maintenance of mining traditions (intangible potential) and supported several activities of heritage protection and the preservation of local traditions (IR).

Despite this apparent 'success story' (IR), the process has not been without conflicts and setbacks. Some locals say that municipal policy in Oelsnitz neglected for too long the preservation and exploitation of the local tradition of mining (IR). Despite some investment, the town centre can be described as rather unattractive (IR). The suggestion of the local government to use mine water for health purposes has been described as naive, in particular after an initial chemical analysis showed no health-giving properties (IR). Furthermore, regional cooperation initiatives are clearly focused on the acquisition and distribution of public funds rather than on creating a common development strategy; hence, there is little involvement of local initiatives outside the 'inner circle'.

Notwithstanding such uncertainties and a changing political emphasis, reliability has become a trademark of the town, with the next highlight already in preparation: In 2020 the Saxon State Exhibition – an irregular exhibition examining various topics of Saxon history – will open at seven different locations across Saxony under the title 'Industry, Culture & Man'. One of these locations will be the Mining Museum in Oelsnitz.

4. Discussion

The case studies presented above confirm the general assumption that (old) industrial regions in Central Europe often face the combined challenges of poor economic

development, negative demographic trends and loss of functions, especially when situated outside agglomeration areas. These challenges persist even if many core industries are still active or have been replaced with other branches, as in the German case discussed above. The Slovenian case highlights the general difficulty of establishing dynamic and innovative growth clusters, even when there are innovative companies in the region.

The two case studies also provide some answers to the initial guiding questions of this article, namely the valorization of endogenous potentials, as well as the influence of European regional policy in these approaches. The analysis highlights the utilization of both types of potentials by means of European funds across both regions. As a first result, we are unable to pinpoint one single model that can be successfully employed to valorize endogenous potentials. Rather, the two regions have made use of highly disparate governance systems to identify and develop their potentials (albeit drawing from similar funding programmes). The Slovenian case is deeply embedded in a strategic top-down system, spanning a multi-level governance setting that absorbs EU and national funding in order to shape regional/local strategies and implementations. In contrast, the approach in the German case study was far more incremental. Initially there was no coherent strategy at regional level; instead, a common strategy was developed from the bottom up in a step-by-step process by means of a non-statutory inter-communal cooperation initiative, which focused on practical solutions through several core projects. The region has been transformed significantly through the initiative of one municipality, creating a regional bandwagon effect which eventually impacted the district level.

The selected cases both show how the approach to use potentials has shifted over time, closely reflecting the perceptions and ideas of major decision-makers as well as the changing framework conditions on EU level. In Slovenia, we can particularly identify a change in the mode of governance. At first the region and local communities relied heavily on national interventions in their early strategic programmes; it was only later that they began to apply for EU funds. Today their approach is far more shaped and integrated at the local level: While national support is still important, ideas and development concepts are now generated locally, with additional regional actors. In the German case, the strong influence of a charismatic leader along with a small 'inner circle' led to a focus on tangible potentials.

Considering the types of potentials used, in both regions we find material and immaterial factors addressed over time. Interestingly, a common evolution can be traced in the two case studies: In a first stage, utilization often focused on landscape elements, the upgrading of urban spaces and environmental remediation (including the risk management of industrial remains and brownfields). Later approaches viewed the industrial remains more as a strategic potential and a starting point for industrial diversification and entrepreneurship.

The Slovenian case also makes direct and sustained reference to European initiatives such as the S3 Smart Specialisation Platform, identifying core clusters and broadening the actor base in order to streamline the utilization of endogenous potentials according to a quadruple helix model. In practice, however, this strategic orientation has not been realized in the form of concrete interventions. In the German case study, personal networks and relationships were the primary drivers at the beginning of the renewal process with technical and engineering projects dominating the activities over a longer period.

Similarities can be identified in the two regions' utilization of their cultural heritage. The types of valorization can be divided into two groups, distinguished by the form of heritage or by the approach. By 'approach' we mean the traditional, museum-type of

Table 1. Types of valorization.

Valorization type	Targeted potential	Examples from SLOVENIA	Examples from GERMANY
Recreation area	Landscape	– Europark in Zagorje (playground, training area, community herbal garden, barbecue area) – Recreational area Neža (one part designed as a park, one part still undeveloped as green area but used by locals for walking, riding and cycling)	– Deutschlandschacht spoil tip including visitor tower, hiking trails and art installations – Municipal park on the site of the former coal railway terminal with playgrounds, skate arena and graduation tower
Tourism products, attractions	Technical heritage, non-material heritage, traditions	– Museum of Zasavje regional (museum with a permanent exhibition on the historic and economic development of the region) – 4. Dritl (virtual-multimedia exhibition on mining) – Mining museum Zagorje (local museum on mining)	– Saxon Museum of Mining (with original shaft frame from the 1920s) – Oelsnitz leisure and concert centre (former Miners' Cultural Centre)
Festivals	Non-material heritage, traditions, regional identity	– 'Rdeči revirji' – annual regional festival of music, food, multimedia, art and literature – Painters' colony in Izlake – Hï – Zasavje festival – Summer of Magnificence (launched in 2018; outdoor music festival) – Zasavje Noisefest (festival of experimental sound and noise; launched in 2014) – Speculum Artium – Trbovlje New Media Festival (launched in 2008) – Jamathlon (sporting event combining cycling and running through a mine) – Biennale of industrial art, 2018 – Information-interpretative Centre on famous, successful people from the region	– Day of the Saxons 2010 – an annual festival in Saxony – Saxon Horticultural Exhibition 2015 – a 3-annual event in Saxony – Saxon State Exhibition planned for 2020 – 'Industry, Culture & Man' with one highlight in Oelsnitz – Annual miners' parades, including the presentation of traditional work clothes and miners' brass orchestra
Industrial production	Knowledge, buildings	– The glass factory in Hrastnik is the only traditional industrial sector still working; it is developing new, modern products, also branching out and supporting artists and new ideas – Machinery production supported by highly skilled electro-technical and software/ hardware companies	– Automotive cluster in the wider region based on traditional car manufacturing – Medium-sized enterprises in the fields of metal processing and electrical engineering
Energy production	Landscape, geothermal mining water	– Testing field for biomass energy (abandoned as too small-scale) – Photovoltaics on the former management complex of the mine and some other technical buildings – Feasibility study for the use of geothermal water for community heating	– Feasibility study on the use of wood from spoil tips – Feasibility study on the energy recovery of dump fires

representation in the form of exhibitions (more advanced options envisage interaction with the visitors) as well as more modern elements rooted in creative industries, focussing on intangible potentials connected to the creation of new products based on past traditions and production processes, the organization of festivals around new topics, or new media. These initiatives, which are shaped by local knowledge and creativeness, do not primarily aim at job creation but rather the preservation of local culture and identity (see Table 1).

Ongoing EU funding opportunities to exploit endogenous potentials have obviously changed the perception of local resources from burdens to strategic development potentials in both cases. The focus has evolved from crisis intervention to a strategic approach that utilizes various (post-) industrial potentials. In the Slovenian case, we can see that regional stakeholders are coordinated within an actor's network-based innovation system, as advocated by the European Union. The process became over time a wider network of stakeholders, more receptive to joint development of projects and better at applying for diverse funding sources. Clearly, the EU's funding instruments have directly influenced the understanding and shaping of regional development.

In the German case, this direct link to EU funding was little explored in the 1990s, when the region's primary aim was to gain national funding. However, since around 2000, EU funding has also risen in importance in this case study through participation in the INTERREG programme; in 2007 it became fundamental through the framework of EU Operational Programmes. The regional actor's network was also poorly institutionalized in the initial development phase, a situation that has slowly changed since 2000.

5. Conclusion

In this article we confirm the general observation that the reality of development in non-agglomeration regions is more complex and difficult than 'good practice' examples often suggest. This can be attributed to a unique mixture of place-specific regional development factors. In the investigated case studies, the legacy of former industries has played a decisive role in determining the development conditions and providing diverse potentials for place making such as the post-mining landscape, the built heritage, brownfields, local customs and knowledge, etc.

While the focus in this article has been on (old) industrial regions with small and medium-sized towns, we can draw three general conclusions for other areas facing structural problems: Firstly, from the great variety of endogenous potentials, regions must first identify and prioritize the potentials to valorize. Secondly, local actors are primarily responsible for choosing ways of utilizing potentials and exploring synergies with other existing regional activities. And thirdly, the political framework conditions both on local, as well as on European level play an important role in either promoting or hampering the use of endogenous potentials.

The investigation highlights the overall importance of endogenous potentials at local and regional level by means of the European Union's 2014–2020 regional policy agenda. We have shed light on the multi-level governance arrangements built around the identification and utilization of such potentials to show how this policy agenda filters through lower policy levels. The case studies show the importance of such aspects for regional development, especially in (old) industrialized regions. Here the European regional policy agenda has clearly had an impact by providing funding instruments,

triggering local and regional action within these policies, enabling investments and capacity building.

Our discussion has also (at least in part) revealed an evolution in the way potentials are identified and valorized over time, shifting in focus from project-based interventions and tangible remains such as buildings and landscapes towards more strategic embedding and intangible elements such as skills, product innovation and networks. These shifts correspond to the European Union's innovation agenda. However, we have also shown the difficulty in applying complex concepts of regional development such as smart specialization to smaller regions due to their limited human and governance capacities.

In this respect, it must be questioned whether the laborious and time-consuming development of such potentials is worthwhile, either from the perspective of the affected regions or from the EU. The 'hard' aims of the European programme agenda, i.e. economic growth, job creation and social cohesion, are scarcely met by the utilization of endogenous potentials. Yet instead of negatively assessing this fact, perhaps it would be better to ask: Are we posing the right questions when our aim is rather to boost the development of structurally weak regions in general?

Our discussion has shown that the regional influence of endogenous potentials is much wider-ranging that solely their *direct* economic impact. It is important to consider their *indirect* effects. In this regard, factors such as inherited knowledge, identity and tradition can serve to enable endogenous development.

Here we make a strong argument for extending previous concepts of endogenous development, which have mainly focused on material aspects of growth and job creation. Based on our findings, endogenous potentials should rather be interpreted more comprehensively to extend the range of likely impacts. This will help certain regions to establish new networks and attract funding, which are just those pre-conditions required for economic growth and higher employment. With the help of relevant stakeholders such as former industrial workers, knowledge can be created and disseminated via corresponding networks. These ideas can spark the interest of politicians and entrepreneurs, who in turn will trigger new development processes in what we call a 'catalyst function'. In particular, the impact on 'identity' seems to be important: The utilization of endogenous potentials highlights the uniqueness of a region (unique selling propositions) to outsiders, as well improving its self-image, which is often negatively impacted by structural change. In addition, the use of such potentials can also have a 'symbolic function' by signalling the efficiency and willingness of regional stakeholders to act, attracting outside attention and improving internal self-esteem and trust in regional networks.

As discussed in a previous paper (Harfst & Wirth, 2014), these three wider impacts of endogenous potentials, namely their *catalyst*, *identity* and *symbolic* functions, should be introduced into the European Union's policy agendas and aims. This will entail a revision of basic target criteria for development to take account of such 'soft' categories, which are difficult to measure. The strict focus on growth and jobs in the recent programming period of EU-funded measures is too narrow to capture the full picture of endogenous development. An important aspect in this regard is the improvement of local/regional capacity to act. This could mean to support regions lagging behind by establishing creative units guiding an integrated process of renewal together with relevant regional actors and external knowledge or to provide (as in past cohesion policies) separate funds for such regions. Such solutions are required in the next funding period if the EU aims to provide effective

assistance at the regional level, especially in the case of (old-) industrial regions discussed here.

Notes

1. LEADER supports rural development projects initiated at the local level aimed at revitalizing rural areas and creating jobs, while INTERREG aims to stimulate cooperation between regions in different member states.
2. IR = Interview Result.

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