Transactions of the Association of European Schools of Planning • 10 (2026)
doi: 10.24306/TrAESOP.2026.01.007

VARIA
SPATIALISING STRATEGIES FOR SHRINKAGE IN MEDIUM-SIZED SHRINKING CITIES: THE ROLE OF URBAN PLANNING

Ruiying Liu[1]

Acknowledgement

This research is part of the Re-City ITN Project, which has received funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant, agreement No. 813803. My sincere thanks go to Prof. Dr. habil. Thorsten Wiechmann, Dr. Marco Bontje, and the anonymous reviewers for their valuable feedback.

Abstract

While the need for shrinking cities to adapt their infrastructure to smaller populations is widely recognised, there is still a lack of understanding as to how such policies translate into spatial strategies. Different approaches for urban spaces as well as coordinative strategies at the city scale remain to be clarified from the perspective of urban planning. To understand the spatialisation of strategies for shrinkage, this study investigates two medium-sized cities and identifies their strategies with spatial characteristics at different scales. The findings show local factors that are key to the spatialisation of strategies for shrinkage and how localised growth and shrinkage are leveraged for long-term development. It follows, that urban planning can play a unique role in managing urban shrinkage through its competences in terms of spatialisation and spatial visions.

Keywords:

Shrinking cities; spatial strategic planning; revitalisation.

1 Research Group of Spatial Planning and Planning Theory, Department of Spatial Planning, TU Dortmund University, Dortmund, Germany. Email: ryliu2001@gmail.com

Ruiying Liu received her PhD degree through her research as part of the Re-City ITN programme at the Department of Spatial Planning of TU Dortmund. Her research focus is strategic planning in shrinking cities.

1. Introduction

Population shrinkage has implications for infrastructural efficiency, social stability, and economic development through its impacts on infrastructure supply and labour markets (Moss, 2008, Hackworth, 2014, Kabisch et al., 2018, González-Leonardo et al., 2021). Shrinking cities research has revealed the inefficiency of growth-oriented policies (Sousa and Pinho, 2015, Hirt and Beauregard, 2019, Wiechmann and Bontje, 2015); identified alternative socio-ecological approaches to urban development (Herrmann et al., 2016, Murtagh, 2016, Matyushkina et al., 2023); and examined instruments to adapt urban infrastructure to shrinkage (Wiechmann and Pallagst, 2012, Bernt, 2009). Compared to studies of 'urban shrinkage' as a geographical phenomenon, 'shrinking cities' evokes a holistic, integrative, and place-based conceptualisation of urban development (e.g. Bernt et al., 2014; Haase et al., 2014; Pallagst et al., 2017) that draws attention to the challenges of local policy-making.

An under-researched aspect of local policymaking for shrinking cities is spatial planning. While the need for shrinking cities to adapt their infrastructure to smaller populations has been recognised, there is still a lack of understanding as to how such policies translate into spatial strategies for heterogeneous territories. Shrinking cities do not shrink evenly across their territories (Wiechmann, 2008b, Couch et al., 2011, Moss, 2008). Areas of shrinkage and areas of growth can co-exist under overall trends of shrinkage (Silverman, 2018, Slach et al., 2019). Where do planners counter shrinkage, and where do they adapt to shrinkage? Where do they 'restore' spaces and where do they fundamentally re-imagine them? Finally, in view of other essential goals for urban development, such as revitalisation and regeneration (Sousa and Pinho, 2015, Bernt, 2009), the question arises as to how they are integrated, next to objectives of shrinkage and growth, into actual spatial transformation.

The importance of the spatial dimension has been highlighted in many studies. Unsteered shrinkage can lead to sporadic erosion of urban fabric (Daniel, 2010). Centralisation policies might not apply to car-dependent cities (Wiersma et al., 2017), or may have negative impacts on social sustainability (Kirkpatrick, 2015). The degrowth alternatives to traditional use-intensifying development, given their conflicts with urban development capital, only work in specific contexts (Hackworth, 2018). Addressing shrinkage in one area affects its neighbouring areas, and may accelerate their decline (Strauß, 2012), or bring the benefits associated with renewed infrastructure (Slach et al., 2020, Tighe and Ganning, 2016, Ehrenfeucht and Nelson, 2020). New ecological functions generated in the shrinkage process also need to be integrated at multiple levels to be effective (Herrmann et al., 2016). However, despite the attention to the spatial dimension, there is still a research gap with regard to theorisation between the empirical results and utilising them for strategic spatial planning.

Against this background, this research addressed the following questions through a qualitative, comparative case study: (1) How does urban planning in shrinking cities spatialise strategies for shrinkage? (2) How do spatial strategies leverage growth and shrinkage to achieve planning goals? (3) What is the (unique) role of urban planning in making spatial strategies?

2. Literature review

2.1. Shrinking city planning

The challenges of urban shrinkage are rooted, first, in the supply of public services and infrastructure, where the mismatch between a smaller population and the established pattern of infrastructure threatens the financial viability of the infrastructure (Moss, 2008), which could trigger a downward spiral in which shrinkage and the declining quality of infrastructure reinforce each other (Haase et al., 2014, Hartt, 2018). The second source of challenges is the structural change of the local population due to the selective nature of outmigration, which eventually leads to a 'brain drain' for the economy as well as demographic and social vulnerability — in other words, an increasing percentage of elderly and lower-income groups (Strohmeier and Bader, 2004, González and Vigar, 2010). Policy responses that offer more, cheaper infrastructure and land, or launch 'flagship projects' to attract businesses and residents often prove counterproductive (Pallagst et al., 2017, Hartt and Warkentin, 2017, Hospers, 2014). 'Smart' approaches to manage shrinkage are downsizing, consolidating existing infrastructure, and substituting with other less resource-intensive forms of service supply (Pallagst and Wiechmann, 2004, Herrmann et al., 2016, Murtagh, 2016).

The form of urban development under shrinkage should not be taken for granted. Certain transformations of local spaces aimed at dealing with shrinkage may lead to gentrification or long-term burdens for public finances (Rink et al., 2012, Fol, 2012, Montgomery, 2015, Slach et al., 2019). Innovative forms of development could achieve sustainable ecological and social advancements that are needed in a global context of sustainability transition (Herrmann et al., 2016, Reverda et al., 2018, Hirt and Beauregard, 2019). Yet these new forms of development cannot replace existing forms of development overnight (Hackworth, 2018). It follows, that the form of development needs to be strategically considered within the existing socio-spatial dynamics of urban development.

In view of this, spatial planning as a multi-scale instrument is important for shrinking cities to steer the transformations of local spaces as well as the transformation of the overall urban spatial structure. For example, a sole focus on prime sites for economic development may have negative impacts on other areas and social groups (Kirkpatrick, 2015, Berglund, 2020). When uncoordinated, the improvement of some areas might destabilise other less attractive areas (Strauß, 2012). The redevelopment of one area could also, however, benefit surrounding shrinking areas through new infrastructure if the connections between them are strengthened (Tighe and Ganning, 2016). It follows, that there is a need to discuss local transformations in the context of coordinative strategies to establish more balanced approaches.

2.2. Strategic spatial planning and strategy-making

To address spatial planning in a context of shrinkage, one needs to understand 'spatial strategies'. What sets strategic planning aside from day-to-day planning work is that it selectively addresses the key issues that have a long-term impact (Sorkin, 1984, Friedmann, 2004, Albrechts and Balducci, 2013). To approach these decisions, the planning process considers the latest internal and external factors, and systematically evaluates the situation as well as reframing perspectives (Albrechts, 2004). True strategic planning brings about a 'paradigm change' by critically questioning conventional paths and assumptions (Healey, 1997). Spatial strategies are:

- Based on relational conceptualisation of space. Space is conceptualised as socio-spatial relations rather than as objects defined by physical dimensions and density (Healey, 2004). The experienced qualities of urban environment are as important to planning as physically measurable attributes.
- Not rigid blueprints. They allow for flexibility and social co-production (Albrechts and Balducci, 2013). The products of strategic planning — goals, visions, (metaphorical) concepts, images, and so on — mobilise and fix the attention of diverse actors and provide 'frames of reference' and 'justifications for coherent actions' (ibid.).
- Action-oriented. Strategies bridge the gap between an abstract framework and the actual actions, including the creation of institutional instruments and strategic projects, the results of which showcase the intended changes to convince actors (Albrechts and Balducci, 2013). It is therefore essential to find 'effective connections between political authorities and implementation actors' (ibid.).
- The result of social processes. Strategies integrating participants' values, agendas, knowledge, and resources, enable the integration of investments and agendas to avoid fragmented urban development (Healey, 1997, Albrechts et al., 2003). Through this approach public interest can also be directly involved (Albrechts, 2006).
- Innovative and transformative. Not only can strategic planning be used to create change by traditional planning actors, it can also be used by new actors to contest mainstream visions (Kunzmann, 2013, Albrechts, 2015).

However, strategic planning is not the only avenue for making (spatial) strategies. In practice, strategies of large organisations come from different actors and streams of decisions over time, without ever being centrally integrated into a coherent framework (Mintzberg, 1994). In other words, the strategies of a group of actors are actions from different levels, sectors, public and private domains and so on, which are guided by shared fundamental goals; and these strategies should be understood as emergent patterns (Wiechmann, 2008a). This conceptualisation of strategy broadens the scope for the study of strategies beyond the articulated official strategies that are made within a given arena and for a given time frame.

3. Research method

A qualitative case study method was used to answer the primary research question: how does urban planning in shrinking cities spatialise strategies for shrinkage? This question was further broken down into two objectives: first, describing their strategic rationales and their spatial characteristics and second, identifying the local factors that are key to their spatialisation.

For each case, the strategies for shrinkage were analysed at two scales. At the scale of the city, coordinative spatial approaches and high-priority strategic projects were identified. The scale of the neighbourhood was examined to describe how these approaches/projects had been realised. Both scales were examined to account for the 'emergent patterns' of strategies (Wiechmann, 2008a). To focus the analysis, not all neighbourhoods of the city were analysed in-depth. Here the second research question, how spatial strategies leverage growth and shrinkage to achieve planning goals, regarding localised growth and shrinkage led to the selection of two focus areas in which the most obvious population dynamics were observed, namely the city centre and a large housing estate on the city's outskirts.

The reasons to compare two cases was two-fold: first, whether the description of spatiality works for various strategies across different cases, and secondly, what local factors are key to the spatialisation of strategies. The fundamental variables of the selected cases should be aligned, so that the comparison can effectively isolate the variable of interest (Gerring, 2016). Given this, two cases with similar spatial structures and internal population trends, but contrasting severity of shrinkage were selected to show various strategies for different situations of shrinkage. The research was conducted with the awareness of the two case studies' other differences in, for example, national planning systems and local actor constellations; these were balanced with a holistic, context-sensitive approach (Yin, 2017). Through this, the factors that were relevant for spatial planning were identified. The case selection did not consider large cities, or cities in polycentric metropolitan areas because their spatial structures are too complex for qualitative comparison. Another important criterion for the purpose of this study was the willingness of local administration to acknowledge and plan for shrinkage, since the acceptance of shrinkage is considered a critical factor for carefully considered, informed strategy-making in shrinking cities (Pallagst et al., 2017). The cases selected here were cities with long-lasting shrinkage, where policy-learning cycles have shaped a pattern of strategy-making, in which shrinkage is accepted as the outset of urban development.

The cases of Den Helder (The Netherlands) and Zwickau (Germany) were chosen. Both cities have long experience of planning under shrinkage, with a relatively 'synchronised' timeline: they have undergone steady shrinkage since before the 1980s, and it became more pronounced after the end of the Cold War in the 1990s. The cities started to address the issue with city-wide policies from around the year 2000 and established their latest spatial frameworks in the early 2010s. They have similar spatial structures, in which the city centres have grown and the outskirts have shrunk. Finally, the two cities exhibit contrasting paces of shrinkage.

Table 1 Basic statistics of the two cities

	Population (2020)	**Population change (2010–2020)**
Zwickau [1]	88,690	**City** absolute: 94,340 to 88,690; relative: -0.6% p.a. **Centre** absolute: 3,280 to 3,474[3]; relative: 1.0 % p.a. **Outskirts** (peripheral, detached settlements excluded) absolute: 29.338 to 25,485[4]; relative: -1.3 % p.a.
Den Helder [2]	56,305	**City** absolute: 57,403 to 56,305; relative: -0.2% p.a. **Centre** absolute: 1,175 to 1,405; relative: 2.0% p.a. **Outskirts** (peripheral, detached settlements excluded) absolute: 22,230 to 21,705; relative: -0.2% p.a.
[1] Unless otherwise specified, Statistisches Landesamt Sachsen; [2] unless otherwise specified, the Dutch Central Bureau of Statistics (CBS); [3] statistics only available for 2010–2016, from the city (Statistische Information 2010-1and 2016-1); [4] statistics only available for 2009–2019, from the city's 2021 update to the housing downsizing plan.		

Data was collected from late 2019 to early 2022. First, official statistic portals and regional planning documents were used to understand the demographic and socio-economic contexts of local planning. Secondly, 30 local documents including planning frameworks and sectorial plans relevant to the quality of the urban environment were analysed (Appendix 1), complemented by publications, news articles and official statistics on specific areas. The document analysis focused on the spatial strategies for shrinkage and the transformations of focus areas. Specifically, the analysis first identified the policies aimed at (1) addressing the results of shrinkage and (2) proactively addressing the demographic challenges in the future. Then the spatial aspects of these policies were analysed. In addition to this conceptual level, the transformations of the focus areas were examined to reveal their effects. In parallel to the document analysis, 21 actor interviews were conducted with public planners, representatives of housing corporations, and civic actors (for further details see Appendix 1). The interviews were intended to (1) guide the search for and interpretation of the textual data, and (2) find out about actors' perceptions of urban development under shrinkage. Their perceptions were used to aid reflection on the findings. The interviews were first recorded and then transcribed so that they could be analysed as texts. Consent of the interviewees was obtained using consent forms that clarified the objectives of this project, the use of their data, and participants' rights. Finally, field trips lasting one-and-a-half weeks were conducted for Den Helder in October 2021 and for Zwickau in July 2021; both focused on the selected areas to observe the local conditions and the effects of their respective spatial transformations.

4. Case studies

4.1. The case of Zwickau, Germany

4.1.1. City-level policies

Zwickau is home to both a car manufacturing industry — with Volkswagen being the local leader — and an applied sciences university. A decade of drastic shrinkage that was driven by the outmigration of young people took place after German Reunification in the 1990s. Currently, urban shrinkage has slowed down because of in-migration from the city's hinterland. However, the previous loss of a young generation has now manifested itself in the form of negative natural balance, which indicates a further sustained shrinkage process.

In the 2013 integrated plan of development 'INSEK' (Stadt Zwickau, 2013), the city-level spatial strategy takes a differentiated approach to three types of areas (Figure 1): (1) 'restructuring' areas, in which spatial and functional changes are on the agenda due to severe shrinkage; (2) 'consolidating-worth' areas, in which only physical improvements but no functional changes are necessary because of a milder level of shrinkage; and (3) 'consolidated' areas, in which the need for intervention is limited because the population is stable or even increasing. The approach originated from the 2006 urban spatial plan 'SEKo', when there was a city-wide vacancy of 18.8 percent that mainly affected the properties of local housing corporations. In response to this, the city and the housing corporations drew up the plan in 2006, based on vacancy and population growth trends, and later updated it in 2013. This plan was necessary for the application for state subsidies and thus represented more of an agreed allocation of resources than a future vision. The swift downsizing and restructuring paid off: by 2019, the city-wide vacancy rate had was 12.1 %.

The 2016 housing report drew attention to the extremely low stock renewal rate: 0.03 per cent per year; normally, 1 per cent per year is necessary in order to replenish the existing stock over the span of a century. Besides consistent downsizing, diversification and qualitative development of the housing stock was recommended, including measures such as modern floor plans, senior-friendliness, and energy efficiency. The report also highlighted vacancies and signs of blight in the inner city that had arisen from traffic pollution. It recommended partial building downsizing because population ageing was causing a dispersed pattern of natural deaths that — given a lack of move-ins — resulted in scattered vacancy. While a monitoring and guiding role was recommended to the city, housing developers complained that suitable locations for higher-quality development in the inner city were lacking, indicating that the urban environment in general needed strengthening. Instead, the housing corporations went on to divert their energy to their existing stock in the large housing estates, where they have been gradually adding higher-quality units to their stock by refurbishing housing units in partially downsized buildings. The slow pace of regeneration was viewed by public planners

as a wasted opportunity for retaining higher-income employees of the local industry. Finally, the 2021 update to the housing downsizing plan revealed severe future challenges for the large housing estates on the city's outskirts; these cumulatively account for one-third of the city's housing stock. Here the vacancy rate was, on average, 17 percent; and 46.5 percent of the resident population was over 60 years of age. Such statistics reaffirmed the common priority for all actors: further downsizing in these areas.

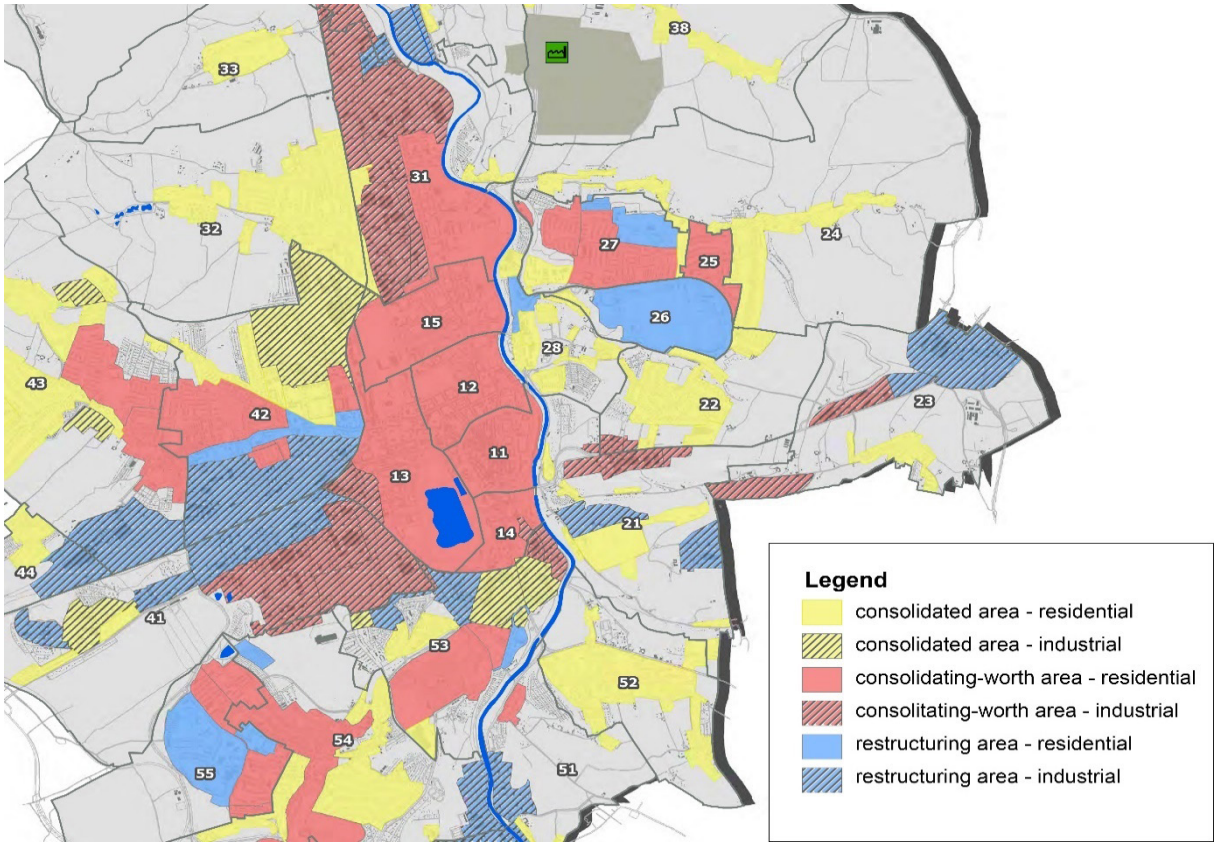

Figure 1 shows a zoomed-in section of the plan for urban development strategy from the year 2013, with the city centre as Area 11 and Eckersbach E5/2-3 as Area 26; legends translated by author

Retail and urban centre development is visibly a major challenge to the city. Shops near the city centre had a high vacancy rate (ca. 30 percent) due to poor building conditions and traffic pollution (Friedrich and Hahn, 2013). Abandoned shopping facilities were present in many housing areas, which was caused by decreasing revenue as the population shrank. The retail planning report (GMA, 2011) found a 33 percent oversupply of retail floor space, and noted five shopping centres, six district shopping zones, and the city centre shopping zone. The car-oriented shopping centres on the outskirts offered a more attractive shopping environment and were positioned to profit from wealthier customers from the hinterland (ibid.). However, a lack of effective instruments for actively reducing the oversupply of retail space and revitalising retail space in the inner city was considered by local planners as the main challenge, whilst the instruments that the municipality could apply mainly included the promotion of public events and the beautification of the public space to make the urban centres more attractive and preserve the inner-city economy.

4.1.2. Areas of growth and shrinkage

Figure 2 (left) shows the city centre characterised by its restored heritage architecture; Figure 3 (right) shows the recreational space in Eckersbach E5/2-3 which was created through the demolition of several buildings.

A typical 'restructuring' area is Eckersbach E5/2-3. It is owned by large local housing corporations and had a vacancy rate of 42 percent in 2001. Its unpopularity was attributed to poor design — crammed layout, minimal green space, and out-of-date floor plans. To improve the area in the 2000s, the original 7,000 building units were reduced to 1,000. The freed-up space was turned into playgrounds or renaturalised. A fast connection to the city centre by public transport was also created. In the nearby 'consolidating-worth' parts of Eckersbach, whole buildings were demolished to make space for new parking lots and green space. The fields in E5/2-3 did not stay empty for long before a new use was found for them — a new football stadium was built here by the city's housing corporation. This, paradoxically, expanded sport infrastructure despite the trend of shrinkage, because restoring the old stadium would have cost more. Later, the public planners initiated a strategic project to create a new, energy-efficient neighbourhood on the remaining vacant land. This project was motivated by the expected expansion of the nearby university and state subsidies for energy-efficient housing. This development would have supplied single-family houses, modern apartments, and knowledge facilities. However, external experts argued against it because, for compact shrinkage, the inner city needed redevelopment more than the outskirts. The city council also declined the project citing the high vacancy rate in general as the reason.

In the first decade after Reunification, the city centre underwent comprehensive renewal: infrastructure provision, the removal of industrial contamination, building restoration and modernisation, public space improvement, and so on. Since then, several high-profile projects have introduced more urban qualities, including the creation of a riverside park by rerouting a federal road via an underpass, as well as the conversion of a former grain storage warehouse into a new city library. The area has become the centre of retail and service businesses, cultural facilities, and is also home to a university campus, and heritage architecture — albeit against a dissonant background of the large housing estates that were developed in the soviet period. Residential vacancy dropped from 27.2 percent to 9.8 percent (2000–2012). This lowered the priority status of the area in the new ISEK agenda, but an expert-led visioning process, Zwickau 2050, argues for further use-intensifying transformations. The experts were critical of how public investment had mainly been focused on outskirt districts and saw redevelopment of the city centre as the fundamental solution to revitalising the inner city, increasing urban attractiveness, and ensuring a compact shrinkage. Although the visioning process was supported by the municipality, the results were controversial, mainly because of the fear of displacing lower income groups living in the large housing estates. This vision also implied the loss of revenue and difficult tenant relocation for the housing corporations, which would have been unacceptable, because they would rather follow a strategy of preservation for this area.

4.2. Den Helder, The Netherlands

4.2.1. City-level policies

Den Helder is home to a maritime and offshore industry as well as coastal tourism. The Dutch navy operates a base here and plays a vital role in its economic development as an employer and contract giver. The city started to shrink towards the end of the Cold War due to defence budget cuts. In the last decade, the shrinkage — driven by the outmigration of young people — has stabilised at a moderate rate, but the number of households has not yet decreased. The city has been regarded as a 'problem case' because the whole region has grown. The loss of young people combined with a coming wave of retirement among the baby-boomer generation is perceived as a serious future problem for the social infrastructure and the labour market of the city.

The strategic visions of the years 2000 and 2007 emphasised population regrowth targets and quick economic revival. In the wake of a critical report commissioned by the state (Deetman and Mans, 2010), policy-making looked beyond population goals in its next round of strategic planning (Gemeente Den Helder, 2012). The framework defined three 'domains' for strategic urban development — the residential domain, the maritime domain, and the visitors' domain. Each domain was analysed based on its connections to global or regional networks and the relevant local spaces — areas, nodes, and connections — that together form the basis for the domain function (see Figure 4 for an example). Projects transecting domains were identified as strategic projects for the city. Given this, the framework clarified the spatial structure for long-term development as well as key measures. Various other policy fields have referred to this spatial framework in the design of their own policy measures.

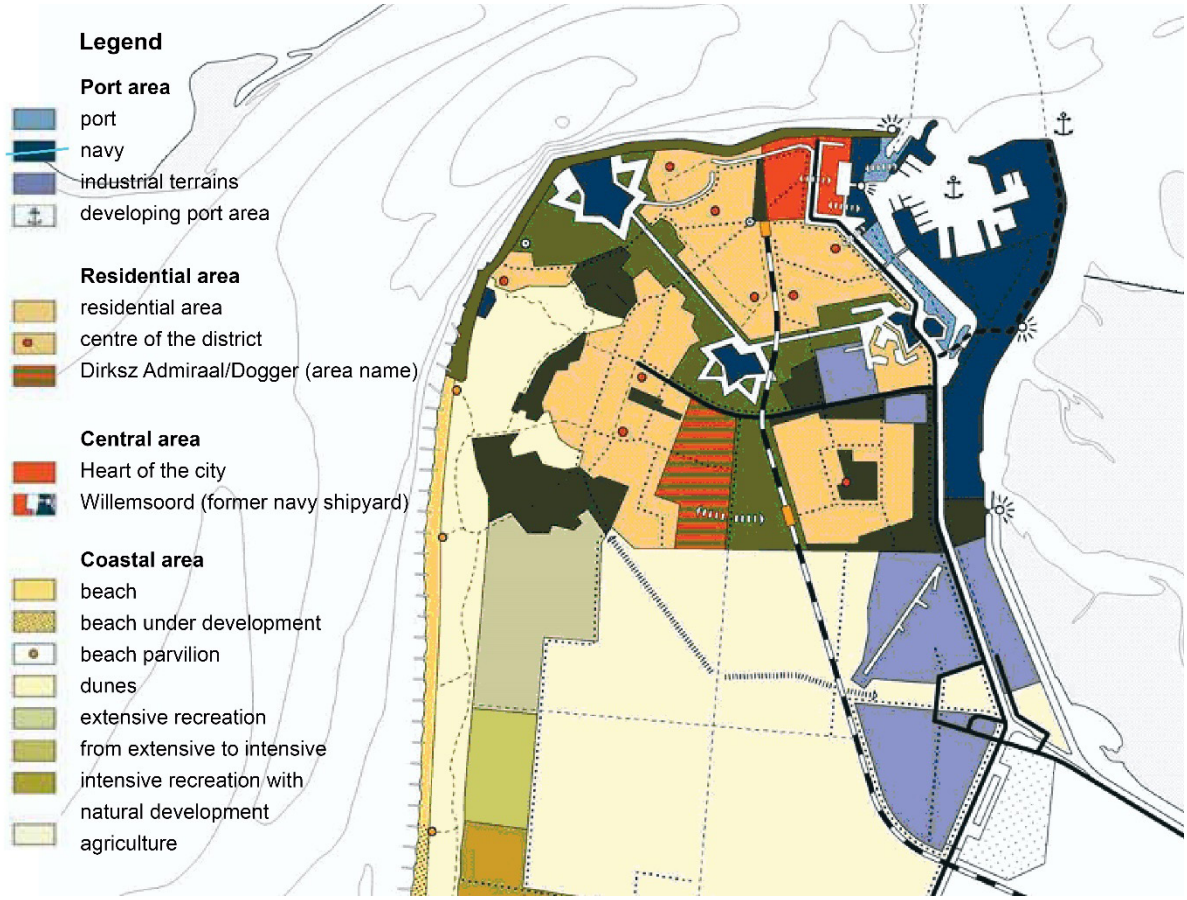

Figure 4 a zoomed-in section of the spatial vision from the year 2012; legends translated by author.

The housing policies were first established in 2003 and regularly updated; with the latest housing vision produced in 2016. The essential spatial strategy was to de-densify the outskirts and densify the inner city, with the goal of achieving a compact form under shrinkage. A main objective for the housing stock was

diversification and modernisation, especially to make housing units more senior-friendly. A particular target was the downsizing of outdated social housing stock that could not be modernised in a cost-efficient manner. A minimum supply of social housing based on socio-economic statistics was to be ensured. A further objective was improving and diversifying the residential environment to create place attachment amongst residents. Another main objective was to strengthen 'social mix'. New housing for higher-income groups was introduced into areas previously dominated by lower-income groups, and new social housing was realised at locations spread across the city to prevent a concentration of vulnerable groups. The housing supply for young people and career starters was promoted with a spatial focus on central locations. Most of these policies have been realised through the cooperation between the municipality and the city's largest housing corporation Woningstichting Den Helder (WSDH).

Retail policies were first established in 2007 and though these have been updated over time, the essence of the policies remains unchanged. The main spatial approach was the restriction of retail activities to central locations, and it was supported by regulative instruments. Accompanying this was investment in improving the business environment in these zones. The policies gave the highest priority to the city centre and argued that it should be strengthened and made more compact. Other areas with business functions, for example, the de-industrialised former shipyard were required to design their programmes so that they did not compete with the city centre. Within existing retail zones, expansion and restructuring for economic efficiency and experience-oriented shopping were promoted.

4.2.2. Areas of growth and shrinkage

Figure 5 (left) shows a renewed shopping street in the city centre; Figure 6 (right) shows landscape created as part of a redevelopment after demolition in Nieuw Den Helder Oost

The city centre is surrounded by diverse urban functions: the railway station, the redeveloped shipyard with cultural and office buildings, the seafront, and residential areas. In the 2000s, the city centre had one of the highest vacancy rates in the city. A fifteen-year-long project was launched in 2008 to transform the spatial structure, functions, and public space. First, the main streets and the railway station square were renovated. Second, retail and catering were gradually concentrated into the pedestrian zone near the railway station by converting peripheral shops to residential units. Last, a park was built on the vacant plots that were created by relocating public facilities to form a green axis that connects the centre to the seafront. The projects on public space strengthened spatial connections to surrounding areas and functions and the improvement of the city centre in general contributed to local quality of life through its impacts on leisure and shopping experiences. The city centre was also addressed as a key residential location. Specifically, the city and WSDH planned that, for the period 2016–2022, some 380 new housing units would be constructed with 27 percent comprised of social housing. Between 2013 and 2020, the housing vacancy dropped from 16 percent to 10 percent, while the number of homes grew by 12 percent. The next stage is the development of a compact neighbourhood on the seafront that will create mixed-use blocks and 200-300 new housing units.

Nieuw Den Helder Oost, a district on the outskirts primarily consisting of large housing estates, was designated as the place to 'capture shrinkage'. Already in the 1980s, the district was an island of severe population shrinkage and social problems. This decline was attributed to the densely built low-quality housing stock of

the areas as well as its social structure. At the end of the 1990s, the most problematic blocks (372 units) were demolished. In 2012 as part of housing planning, some 1,000 unpopular social housing units were identified for long-term downsizing. The following redevelopment was built at a rate of one-third of the original density, thereby making room for a generous amount of park landscape. Old blocks and new developments were bonded through this new green infrastructure. In addition, plots where previously hundreds of apartments had existed, were leased out to make way for a dozen autonomous tiny houses with large gardens. This attracted new middle-class residents to the area, whilst the district centre and social infrastructure was also renewed. The renovation of the remaining industrial housing continues as a long-term policy. As a result, the vacancy rate reduced and stabilised at 6 percent, while the population has slightly increased since 2015.

5. Analysis and findings

5.1. Planning goals

The rationales in the two cases as to why substantial measures are necessary for shrinkage can be grouped under two main planning goals:

- Adaptation to shrinkage as the 'defensive' goal — reducing and adjusting infrastructure supply to the shrinking population size as well as decreasing consumption capacity. A byproduct of such adaptations is higher environmental quality; but a key characteristic differentiating this goal from the next goal is the relatively little investment in follow-up development to create new urban functions and shape new urban qualities in the space freed up through downsizing.
- Revitalisation as the 'offensive' goal — transforming urban spaces in order to create or enhance functions and attractive qualities that go beyond those which the existing population is accustomed to. The reason for this is that, as planners in both cities emphasise, revitalisation under shrinkage must be based on social revitalisation, i.e. attracting and retaining younger people and people with higher incomes through the provision of higher-quality urban environments.

5.2. Strategic area transformations

In both cities, strategic projects were the main approach adopted to regenerate urban functions and spatial qualities in areas. One reason for this, as actors in both cities indicated, was the need for 'model projects' to showcase that new standards were possible in communities with stagnated development.

Some of these strategic projects are relatively more embedded in broader urban development strategies and integrate objectives from different policy sectors in order to foster overall urban attractiveness. For example, the city centre renewal in Den Helder gave critical impetus in issues such as regional connection, public space network, retail space restructuring, and housing restructuring. The transformation of Nieuw Den Helder reduced the housing quantity to balance out growth resulting from regeneration in the city centre, while exploring a degrowth form of residential development in a pilot project.

Other strategic projects are relatively isolated in the sense of strategy-making, such as the idea of a new neighbourhood in the post-demolition area in Zwickau. Other than attracting new residents, it would not have a broader impact on urban infrastructure and overall environment. The redevelopment of the city centre suggested by Zwickau 2050 has the potential to revitalise the inner city as an important node in the public space network, thereby improving an important aspect of local quality of life and visitors' experiences.

The ongoing downsizing on the outskirts of Zwickau are a continuation of previous strategies mainly because of the ongoing, severe shrinkage. The increasingly routinised characteristic is the opposite to the 'paradigm change' that Healey (1997) emphasised as part of strategic planning. This shows how severe shrinkage can diminish room for innovative strategy-making. Yet given the expected scale and sporadic pattern of shrinkage under demographic ageing, the downsizing routine could increasingly struggle to keep up with emerging vacancies.

5.3. Coordinative strategies

The coordinative spatial framework in Zwickau is comprised of a system of downsizing zones. There are no interactive elements between the areas, which means that they are not viewed as a relational network with synergy. The strategies are determined by the severity of shrinkage — the most urgent present issue — rather than holistic spatial goals for the city. With the advantage of less severe shrinkage, Den Helder coordinates measures based on a vision of spatial structure. This is aimed at producing stronger urban functions and a compact urban form, which is meant for proactively increasing resilience against further shrinkage.

The approach applied in both cities to address the retail infrastructure is a systematic, relational one, which takes inventory of retail facilities and the declining overall consumption capacity and clarifies the interactions between different shopping locations. This is aimed at concentrating businesses and consumption in urban centres, in order to reduce vacancy and to maintain (commercial) service supply as well as public space. For example, Den Helder launched long-term investments in the urban centres to increase the 'pull', and placed restrictions outside urban centres to exert the 'push'. Both instruments are lacking in Zwickau.

Den Helder approached housing and social development via an overarching strategy, 'social mix'. The strategy was not only about increasing more expensive housing in lower-income neighbourhoods but also about distributing social and affordable housing into higher-income neighbourhoods as well as areas with better infrastructure. The strategy has been implemented as strategic projects, in which properties were acquired and redeveloped by a partner of the municipality. In Zwickau, housing development has not been guided by any overarching strategies or city-wide framing. Housing corporations admitted that they cannot strategically plan more than five years ahead. Introducing housing of better quality is essentially a matter of tactics, whenever and wherever resources are available. The deconcentration of housing for lower-income households has not been specifically mentioned.

6. Conclusion

This research answers three questions: (1) How does urban planning in shrinking cities spatialise strategies for shrinkage? (2) How do spatial strategies leverage growth and shrinkage to achieve planning goals? (3) What is the (unique) role of urban planning in making spatial strategies?

The answer to the first question is that it can help fill an important research gap: the vast range of empirical findings on strategies for shrinkage need to be framed with spatial thinking to be systematically considered for strategic spatial planning. This is because cities are more complex (multiple scales) than areas in which specific policies are studied (single scale). The case studies above demonstrate how, aside from strategic concepts such as goals, means, and actors, strategies can be systematically described in their spatiality with spatial concepts (scale, bounded space, place, and network), which can provide a tool for comparing and conceptualising spatial strategies for shrinkage.

However, not all strategies that are articulated come into implementation, whilst others may, for a lack of implementation tools, never even be articulated. One key factor constraining the spatialisation of strategies is the severity of shrinkage. The constantly increasing housing vacancies, compounded by sporadic patterns as a result of the population ageing, pose tricky challenges for making long-term visions and paradigm changing strategies. Other goals, such as social development, quality of life, and inner-city environmental quality might become secondary criteria in city-wide planning. Furthermore, two institutional factors essentially constrain urban planning:

- Development competences at the city scale. In Den Helder, the urban development company, Zeestadt, and the housing corporation WSDH represent such competences because they actively invest in, respectively, the public and private aspects of the urban development city-wide. In contrast, the local housing corporations in Zwickau are interested mainly in their properties on the outskirt. The lack of such competences and partners with whom to make strategies for the inner city hampers the making of coordinative strategies at the city scale.

- A lack of political perception as to the need for new urban qualities. The main argument in the political debate against building new housing units based on high vacancy rates indicates that decision-makers might not have considered the difference between quantitative growth — which exacerbates vacancies — and qualitative growth — which aims to diversify the stock and improve place qualities. Meanwhile, younger residents migrate out of the city to seek attractive environment elsewhere, making political support for qualitative regeneration weaker.

With regard to the second research question, shrinkage and growth in local planning needs to be considered with more nuances as interlocked socio-spatial dynamics. Such dynamics can be leveraged by strategic planning for spatial transformations:

- Growth in terms of use-intensifying development, when carefully designed, can introduce housing and public space that is of better quality for existing communities. Strategic projects can inspire other property owners to improve their properties and may result in further positive developments. However, the scale and pace of such developments have to be carefully planned to prevent gentrification (Tighe and Ganning, 2016).
- Shrinkage plays a key role in renewing spatial resources. On vacated plots new visions can emerge. But whatever the new functions — be they landscape, a tiny house settlement, or a new compact neighbourhood — they need to be integrated into the urban environment and community to have strategic meaning for the future of the city.
- Localised shrinkage could be accelerated by growth developments elsewhere, as residents willingly move to the new locations. Such a process can reduce displacement and conflicts, and thereby make the area available for future restructuring.

With regard to the third research question, the case study has illustrated how urban planning plays a key role in spatial strategy-making in shrinking cities, especially if conditions allow it to fulfil its potential. This research considers all actors who contribute to relational planning in policymaking as 'planners'. Their most important roles include:

- Identifying and shaping innovative forms of development to improve the resilience of urban spaces to shrinkage. Because strategic projects and experiments (even degrowth projects) need to be positioned in specific local contexts to succeed and thrive, planners play a unique role in the selection of, connection to, and further cultivation of the urban context to support such innovations.
- Coordinating localised growth and shrinkage for greater spatial sustainability. Relational planning leverages the interactions or interdependencies between urban spaces for synergy, and finds the suitable spatial context for innovations such as degrowth experiments. Spatial frameworks as the coordinative instrument not only integrates different policies but also channels them into concrete projects.
- Reframing the task of urban development to bring about a 'paradigm change' to direct attention towards addressing spatial shrinkage. Such a paradigm change can occur with regard to both the functions and qualities of a local area as well as the spatial structure of a city. As the example of Zwickau 2050 demonstrates, conceptual strategic planning can provoke dialogues on the long-term spatial strategies of the city, encourage hopes and dreams, and challenge existing knowledge (Kunzmann, 2013; Albrechts, 2015).

Finally, the primary limitation of this case study is its sole focus on medium-sized cities with a population trend of centralisation. The findings about strategic content could differ if researchers were to look at large cities with complex spatial relations that extend beyond the local scale, or spread-out American cities with less distinct urban centres, where interdependencies between areas and processes might be configured differently. The description of spatial strategies should be tested in these cases. In addition, it should be noted that this paper's findings might not fully apply to cities with a trend of hollowing out — whilst the question, whether the spatial vision of compact shrinkage should/can be realised against the growth of suburbs, remains to be studied. Furthermore, both cases studied here are situated in western European countries with state-subsidised local development. It follows that further studies that focus on cities with different spatial structures, different types of shrinkage and/or different institutional contexts would help to create a more comprehensive theory of spatial strategies for shrinking cities.

References

Albrechts, Louis (2004) Strategic (spatial) planning reexamined. *Environment and Planning B: Planning and design,* 31**,** 743-758.

Albrechts, Louis (2006) Shifts in strategic spatial planning? Some evidence from Europe and Australia. *Environment and planning A,* 38**,** 1149-1170.

Albrechts, Louis (2015) Ingredients for a more radical strategic spatial planning. *Environment and Planning B: Planning and Design,* 42**,** 510-525.

Albrechts, Louis and Alessandro Balducci (2013) Practicing strategic planning: In search of critical features to explain the strategic character of plans. *DISP,* 49**,** 16-27.

Albrechts, Louis, Patsy Healey and Klaus R. Kunzmann (2003) Strategic spatial planning and regional governance in Europe. *Journal of the American Planning Association,* 69**,** 113-129.

Berglund, Lisa (2020) The Shrinking City as a Growth Machine: Detroit's Reinvention of Growth through Triage, Foundation Work and Talent Attraction. *International Journal of Urban and Regional Research,* 44**,** 219-247.

Bernt, M. (2009) Partnerships for demolition: The governance of urban renewal in East Germany's shrinking cities. *International Journal of Urban and Regional Research,* 33**,** 754-769.

Bernt, M., A. Haase, K. Großmann, M. Cocks, C. Couch, C. Cortese and R. Krzysztofik (2014) How does(n't) Urban Shrinkage get onto the Agenda? Experiences from Leipzig, Liverpool, Genoa and Bytom. *International Journal of Urban and Regional Research,* 38**,** 1749-1766.

Couch, Chris, Olivier Sykes and Wolfgang Börstinghaus (2011) Thirty years of urban regeneration in Britain, Germany and France: The importance of context and path dependency. *Progress in Planning,* 75**,** 1-52.

Daniel, F. (2010) The "perforated city": Leipzig's model of urban shrinkage management. *Berkeley Planning Journal,* 23**,** 83-101.

Deetman, Wim and Jan Mans (2010) Krimp of Niet: Advies betreffende demografische ontwikkeling Den Helder. Den Helder: Gemeente Den Helder.

Ehrenfeucht, Renia and Marla Nelson (2020) Just revitalization in shrinking and shrunken cities? Observations on gentrification from New Orleans and Cincinnati. *Journal of Urban Affairs,* 42**,** 435-449.

Fol, Sylvie (2012) Urban shrinkage and socio-spatial disparities: Are the remedies worse than the disease? *Built Environment,* 38**,** 259-275.

Friedmann, John (2004) Strategic spatial planning and the longer range. *Planning Theory & Practice,* 5**,** 49-67.

Friedrich, Kathleen and Carolin Hahn (2013) *Lebenswerte Innenstadt? Ein Handlungskonzept zur Revitalisierung von Leerstand und Brachflächen in Innerstädtischen Gebieten der Stadt Zwickau.* Master Thesis, Brandenburgische Technische Universität Cottbus.

Gemeente Den Helder (2012) Structuurvisie Den Helder 2025. Den Helder: Gemeente Den Helder.

Gerring, John (2016) *Case study research: Principles and practices,* Cambridge, UK, Cambridge university press.

Gma (2011) Einzelhandels- und Zentrenkonzept Zwickau 2010. Zwickau: Stadt Zwickau.

González-Leonardo, M., A. López-Gay and C. D. Demogràfics (2021) From rural exodus to interurban brain drain: the second wave of depopulation. *Ager,* 2021**,** 7-42.

González, S. and G. Vigar (2010) The Ouseburn Trust in Newcastle: A struggle to innovate in the context of a weak local state. *Can Neighbourhoods Save the City? Community Development and Social Innovation.* Routledge Taylor & Francis Group.

Haase, Annegret, Dieter Rink, Katrin Grossmann, Matthias Bernt and Vlad Mykhnenko (2014) Conceptualizing urban shrinkage. *Environment and Planning A,* 46**,** 1519-1534.

Hackworth, Jason (2014) The limits to market-based strategies for addressing land abandonment in shrinking American cities. *Progress in Planning,* 90**,** 1-37.

Hackworth, Jason (2018) Urbanization, planning and the possibility of being post-growth. *The Routledge Handbook on Spaces of Urban Politics*. New York, NY, USA: Routledge.

Hartt, Maxwell (2018) How cities shrink: Complex pathways to population decline. *Cities,* 75**,** 38–49.

Hartt, Maxwell and Joshua Warkentin (2017) The development and revitalisation of shrinking cities: A twin city comparison. *Town Planning Review,* 88**,** 29-41.

Healey, Patsy (1997) *Collaborative planning: Shaping places in fragmented societies,* London, UK, Macmillan International Higher Education.

Healey, Patsy (2004) The treatment of space and place in the new strategic spatial planning in Europe. *International Journal of Urban and Regional Research,* 28**,** 45-67.

Herrmann, Dustin L., William D. Shuster, A. L. Mayer and A. S. Garmestani (2016) Sustainability for shrinking cities. *Sustainability,* 8.

Hirt, Sonia and Robert Beauregard (2019) Must shrinking cities be distressed cities? A historical and conceptual critique. *International Planning Studies*.

Hospers, Gert-Jan (2014) Policy responses to urban shrinkage: From growth thinking to civic engagement. *European Planning Studies,* 22**,** 1507–1523.

Kabisch, Sigrun, Florian Koch, Erik Gawel, Annegret Haase, Sonja Knapp, K. Krellenberg, J. Nivala and A. Zehnsdorf (2018) *Urban Transformations: Sustainable Urban Development Through Resource Efficiency, Quality of Life and Resilience*, Springer International Publishing.

Kirkpatrick, L. Owen (2015) Urban Triage, City Systems, and the Remnants of Community: Some "Sticky" Complications in the Greening of Detroit. *Journal of Urban History,* 41**,** 261–278.

Kunzmann, Klaus R. (2013) Strategic planning: A chance for spatial innovation and creativity. *DISP,* 49**,** 28-31.

Matyushkina, Anastasiya, Solène Le Borgne and Agnes Matoga (2023) Overcoming the limitations to co-production in shrinking cities: insights from Latvia, France, and the Netherlands. *European Planning Studies***,** 1-19.

Mintzberg, Henry (1994) The fall and rise of strategic planning. *Harvard business review,* 72**,** 107-114.

Montgomery, A. F. (2015) Different futures for different neighborhoods: The sustainability fix in Detroit. *Ethnography,* 16**,** 523-555.

Moss, Timothy (2008) 'Cold spots' of urban infrastructure: 'Shrinking' processes in Eastern Germany and the modern infrastructural ideal. *International Journal of Urban and Regional Research,* 32**,** 436–451.

Murtagh, Brendan (2016) The role of the social economy in the Shrinking city. *Future Directions for the European Shrinking City.* New York, NY, USA: Routledge.

Pallagst, Karina, René Fleschurz and Siba Said (2017) What drives planning in a shrinking city? Tales from two German and two American cases. *Town Planning Review,* 88**,** 15–28.

Pallagst, Karina and Thorsten Wiechmann (2004) Shrinking smart? Städtische Schrumpfungsprozesse in den USA. *In:* GESTRING, N., GLASAUER, H., HANNEMANN, W. & PETROWSKY, W. (eds.) *Jahrbuch StadtRegion 2004/05, Schwerpunkt "Schrumpfende Städte".* Wiesbaden: VS Verlag.

Reverda, Nol, Maurice Hermans and Nicole Maurer (2018) Towards a culture of degrowth. *In:* HOSPERS, G.-J. & SYSSNER, J. (eds.) *Dealing with Urban and Rural Shrinkage: Formal and Informal Strategies.* Münster, Germany: LIT Verlag Münster.

Rink, Dieter, Annegret Haase, Katrin Grossmann, Chris Couch and Matthew Cocks (2012) From long-term shrinkage to re-growth? the urban development trajectories of Liverpool and Leipzig. *Built Environment,* 38**,** 162–178.

Silverman, Robert (2018) Rethinking shrinking cities: Peripheral dual cities have arrived. *Journal of Urban Affairs***,** 1-18.

Slach, O., V. Bosák, L. Krtička, A. Nováček and P. Rumpel (2019) Urban shrinkage and sustainability: Assessing the nexus between population density, urban structures and urban sustainability. *Sustainability,* 11.

Slach, Ondřej, Alexandr Nováček, Vojtěch Bosák and Luděk Krtička (2020) Mega-retail-led regeneration in the shrinking city: Panacea or placebo? *Cities,* 104**,** 102799.

Sorkin, Donna L (1984) *Strategies for cities and counties: A strategic planning guide,* Washington, DC, USA, Public Technology.

Sousa, Sílvia and Paulo Pinho (2015) Planning for Shrinkage: Paradox or Paradigm. *European Planning Studies,* 23**,** 12–32.

Stadt Zwickau (2013) Integriertes Stadtentwicklungskonzept (INSEK): Zwickau 2030. *In:* STADTPLANUNGSAMT (ed.). Zwickau: Stadt Zwickau.

Strauß, Christian (2012) The importance of strategic spatial goals for the planning process under shrinkage tendencies. *Parallel Patterns of Shrinking Cities and Urban Growth: Spatial Planning for Sustainable Development of City Regions and Rural Areas.* Farnham, UK: Ashgate Publishing Ltd.

Strohmeier, Klaus Peter and Silvia Bader (2004) Demographic decline, segregation and social urban renewal in old industrial metropolitan areas. *German Journal of Urban Studies,* 44**,** 51–69.

Tighe, J. Rosie and Joanna P. Ganning (2016) Do Shrinking Cities Allow Redevelopment Without Displacement? An Analysis of Affordability Based on Housing and Transportation Costs for Redeveloping, Declining, and Stable Neighborhoods. *Housing Policy Debate,* 26**,** 785-800.

Wiechmann, Thorsten (2008a) *Planung und Adaption: Strategieentwicklung in Regionen, Organisationen und Netzwerken,* Dortmund, Germany, Rohn.

Wiechmann, Thorsten (2008b) Strategic Flexibility beyond Growth and Shrinkage. Lessons from Dresden, Germany. *In:* RUGARE, S. & SCHWARZ, T. (eds.) *Cities Growing Smaller.* Cleveland, OH, USA.

Wiechmann, Thorsten and Marco Bontje (2015) Responding to Tough Times: Policy and Planning Strategies in Shrinking Cities. *European Planning Studies,* 23**,** 1-11.

Wiechmann, Thorsten and Karina Pallagst (2012) Urban shrinkage in Germany and the USA: A Comparison of Transformation Patterns and Local Strategies. *International Journal of Urban and Regional Research,* 36**,** 261-280.

Wiersma, Jake, Luca Bertolini and Thomas Straatemeier (2017) Adapting spatial conditions to reduce car dependency in mid-sized 'post growth' European city regions: The case of South Limburg, Netherlands. *Transport Policy,* 55**,** 62-69.

Yin, R.K. (2017) *Case Study Research and Applications: Design and Methods,* Thousand Oaks, CA, USA, SAGE Publications.