Hasegawa, Emika (2018) *How to realise sustainable urban form for a post-growth era: comparative policies of medium-sized cities in Europe.* [MSc]

http://endeavour.gla.ac.uk/346/

Deposited: 13 December 2018

University of Glasgow

School of Social and Political Sciences

Urban Studies Dissertation

How to realise sustainable urban form for a post-growth era: comparative policies of medium-sized cities in Europe

Presented in partial fulfilment of the requirements for the degree of

M.Sc. [Public and Urban Policy]

August 2018

(Word count: 14,583)

Abstract

Population growth is not going to continue everlastingly everywhere. Realising *sustainability* in *shrinking* cities will be one of the most significant and challenging agendas in the planning and urban policy domain for the next generation. On the other hand, globalisation is weakening relatively smaller cities while, simultaneously, strengthening only a few megacities. However, *growth* is still considered an ideal pathway, and academic and policy arenas have paid little attention to shrinkage and medium-sized cities.

This paper will explore possible means of urban development in terms of sustainability in a depopulating, post-growth era, focusing on medium-sized shrinking cities. First, along with historical debates, the most recent debates about sustainability and policy responses to urban shrinkage are investigated. Second, using case studies on pro-shrinking policies in two cities—Halle (Germany) and Parkstad Limburg (Holland)—the relationship with sustainability and common features of shrink-oriented policies are examined. Most pro-shrinkage policies were evaluated as having *strong* sustainability regarding their environmental advantage and means of transformation outside existing social structures, including wider territorial authority and public engagement. Shrinkage-orientation calls for a new way of thinking about planning and sustainability arguments.

<u>Acknowledgments</u>

Contents

Table of figures

Chapter 1. Introduction

The European Commission (EC) (2011, p.18) notes that 'Europe is no longer in a situation of continuous economic and demographic growth'. Thus, a post-growth development model needs to be argued for next generation. Sooner or later, most developed countries will likely face ageing and declining populations, known as the 'second demographic transition' (Wiechmann and Bontje, 2015), and shrinking domestic markets. The policy agenda of *shrinking cities* has arisen as the next challenge in the urban studies realm (Hospers, 2014a). In combination with the effects of economic downturn and urban sprawl, cities losing their inhabitants are likely to confront many challenges, including a large amount of housing vacancies, degradation of built environments, continuous decline of local economies and public revenue and so on (Sousa and Pinho, 2015). Current mainstream economics views *growth* as vital, as do major perceptions in political arenas (Hopwood et al., 2005). In this light, *shrinkage* seems like a very pessimistic and negative concept (Sousa and Pinho, 2015).

Simultaneously, globalisation has been creating new challenges for cities, such as the international zero-sum game between cities in different countries and the aggregation of economic superiority for a few megacities (EC, 2011; Martinez-Fernandez et al., 2012). While such large cities are gathering skilled people and private businesses, other smaller cities are facing outmigration and economic decline (Martinez-Fernandez et al., 2012). Accordingly, the question of 'how to shrink a city' will become more critical, particularly for small and medium-sized cities (Economist, 2015). However, smaller ordinal cities have been given less attention by both academic and political fields, while global cities have focused on traditional economic and urbanism discussions (Puissant and Lacour, 2011; Hamdouch et al., 2017).

On the other hand, depopulation used to be considered a desirable direction by certain economists, namely Malthusians, regarding its advantage in terms of natural resources. They viewed it as having the potential to bring realistic and durable development from long-term perspectives (Martínez-Alier et al., 2010). The recent and most powerful concept of post-growth is *sustainability*. It has a new value of 'goodness' other than economic growth, which enables the continued development

of society that is reconciled with the natural environment (Lombardi et al., 2011; Hopwood et al. 2005). From these perceptions, the opposite of growth—*shrinkage*—can be presumed as more suitable for creating sustainable cities for the future.

Thus, one way of achieving post-growth should be to pursue *sustainable urbanism,* but this is not so simple because of the lack of a single accepted definition of the phrase (Jenks et al., 2013). For example, even very growth-oriented policies are often advertised as sustainable; only socioeconomic sustainability (not including environmental aspects) is referred to in some contexts (Lombardi et al., 2011). In urbanism, while urban sprawl is widely considered an unsustainable urban form, even the most well-known urban form—the compact city—is still questioned (Neuman, 2005). Mainstream policy practice still admires growth because it attracts, for example, creative people and businesses from outside (Hollander, 2011), but such urban strategy is seemingly applicable only in larger cities. Planning policy tools mostly commit to new buildings alone and are based on 'business-as-usual' growth (Popper and Popper, 2002). Unlike growing cities, shrinking cities are assumed to have an environmental dimension that would be unchallenging, while the socioeconomic dimension, including the quality of livelihoods, could be more of a challenge. A large knowledge gap about post-growth models of urban development exists, particularly under depopulating conditions.

Nevertheless, recently, not many, but some policy practice and academic studies have begun to think about this issue from an 'accepting' pro-shrinkage point of view. Policy behaviours towards downscaling have been observed in a few Western European countries (Hospers, 2014a). The EC (2011) also mentions the significance 'to achieve simplicity – de-engineer, de-commercialise, de-hierarchise, de-grow' (p.48) in an argument about a sustainable city, although it also admits '(b)ringing in this notion of "do not grow" is not easy' (p.48) because 'it requires a change of lifestyle' (p.48). Theorists studying shrinking cities appreciate policy attitudes that accept the shrinking trend is more realistic (Wiechmann and Bontje, 2015; Hospers, 2014b; Mallach et al., 2017). They recognise shrinkage as one type of development pathway that has many merits as well as growth. Moreover, shrinking can be 'utilised' to achieve a good quality of life (QOL) (Hospers, 2014a). A Dutch government document emphasises that shrinkage might offer new

opportunities, including less congestion and relaxed housing markets (Elzerman and Bontje, 2015). Sousa and Pinho (2015) highlight the advantages of shrinkage, including the ability to better control suburbanisation, minimise land consumption, retain sufficient open space and restructure the urban system. However, only little has been studied about pro-shrinking urbanism, and little is known about the relationship between sustainability and shrinking conditions.

This paper aims to explore the possible means of urban development in terms of sustainability in a depopulating, post-growth era, focusing on medium-sized shrinking cities. More specifically, the following questions will be explored for this purpose:

Q1. How can the urban development and the policy approach towards 'shrinkage' be compatible with or correlated to the concept of 'sustainability'?

Q2. What kind of political tools and processes are significant when shrinking urban policy shifts to an 'accepting' and seemingly radical attitude?

Here, the focal point is urban development as *inputs*—in other words 'policy', rather than consequents or manifestations resulting from certain external changes or interventions. Sustainability itself is multidimensional and divergent, and this dissertation attempts to provide a holistic perspective, although its socioeconomic facet on long-term human well-being is given more weight than the environmental facet, particularly in the context of the shrinking paradigm.

This dissertation proceeds as follows: the next section reviews previous theoretical perspectives of *sustainability* and urban policy for *shrinking* to clarify important points that following arguments draw on. In particular, basic concepts, diverse definitions, aspects and degrees of sustainability; and current situation, typology of policy responses and emerging views addressing to shrinkage are carefully described and classified. Through this process, the affinity between the two concepts is implied, while the knowledge gap about a model for sustainable development under the ongoing shrinking climate is also shown.

Next, after a brief explanation of methodology (analytical framework and case selection), two case studies are provided to gain profound insights about pro-shrinkage urban policies, along with the analytical framework of the weak-strong

continuum of sustainability. The cases—Halle, Germany, and Parkstad Limburg, Holland—provide key responses, including an unintended environmental advantage, radical downsizing of housing capacity, inequality between the restructuring process of public and private property, reforestation and little economic revitalisation. They also offer significant innovations in governance beyond existing traditional structures of the policy arena and market economy.

Finally, it is concluded that the existing theoretical framework of sustainability is not sufficient for understanding a development model that incorporates shrinkage; a new model might require social values beyond the present emphasis on environmental concerns. Furthermore, both top-down and bottom-up governance is essential for a planning process that is genuinely for the public interest.

Chapter 2. Literature Review

2.1 Introduction

Considering that *sustainability* was originally a concept that was intended to depart from the dominant value of 'growth', the opposite— 'shrinkage'—should be treated as a significant viewpoint. It may either be a desirable direction for resolving problems automatically or a new agenda requiring different theories applicable to it. However, the academic debate related to 'sustainability' and 'shrinkage' have been respectively developed without consideration of one another. This section summarises the basic concept, arguments and relevant policies of 'sustainability' and 'shrinkage' based on previous literature. Then, important frameworks for understanding and using each concept and the current research gap are identified.

2.2 Sustainability

2.2.1 Concept of sustainable development

Sustainability has been a globally and inter-disciplinarily popular and important concept. The most well-known definition appeared with the term 'sustainable development' as defined in the Brundtland Report, which described a development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission for Environment and Development (WCED), 1987, p.43). It is a category of thinking about 'what is good' that replaces the dominant way, *growth* (Neuman, 2005). This concept was the Copernican perceptive shift about the natural environment: from the entity outside of the economy to the interwoven essence underpinning the long-lasting prosperity and health of human beings (Hopwood et al., 2005). As Daly (1993 cited in Hopwood et al., 2005) emphasises, whereas 'growth' indicates quantitative expansion, here, 'development' indicates a qualitative leap or progress. Thus, 'sustainable development' is an antithesis of the post-war mainstream in economics, which holds that global prosperity and human well-being can be achieved through economic growth that is represented only by the GDP, rather than wider social and environmental outcomes.

Although sometimes it has been criticised as 'an unashamedly

anthropocentric concept' (Lee, 2000, p. 32 cited in Hopwood et al., 2005), nevertheless, sustainability should be considered as a kind of desirable human development that is compatible with the natural environment.

2.2.2 Meaning of 'sustain'

Originally, the word 'sustainable' was probably chosen to denote the characteristics of a new view of development that emphasises preservation of natural resources to keep 'continuous' 'for future', as described in Brundtland's definition. However, the impression inspired by the term 'sustain' seems to be allowing for a wider and more diverse usage of the term 'sustainability', although only a small amount literature has focused on this fundamental meaning. The original word, 'sustain', lexically means 'to keep something going over the long run' (Neuman, 2005, p.20); thus, the concept of sustainability must contain the notion of 'long-term', 'steady-state' or 'continue for future'. Derived from this attractive wording, the concept of 'sustainability' has evolved divergently, and sometimes it does not include the notion of nature conservation that was vital in the original definition.

Neuman (2005) demonstrated the five main historical traditions of sustainability: *capacity*, *balance, fitness*, *resilience* and *diversity*. According to his classification, the Club of Rome's *Limits to Growth* (1972), which concerns *capacity*, states that the amount of resources determines the size of the population. They are known for the following pessimistic prediction: 'under the assumption of no major change in the present system, population and industrial growth will certainly stop within the next century, at the latest' (Meadows et al., 1972, p.126). As a more radical (ultimate) thought, 'de-growth', which requires drastic downscaling of human production and consumption through the transformation of existing lifestyles, was also asserted in the same period (Georgescu-Roegen, 1975, cited in Martínez-Alier et al., 2010). The Brundtland's Report (1987) held a viewpoint from *balance* (he saw it a bargaining and compromise) between nature and civilisation. This perception has been widely employed by political discourses because of its realistic and positive stance not denying further human development. Worrying about spreading value towards growth, Schumacher (1973 cited in Neuman, 2005) celebrates a moderate level of development suits or matches human life in his masterpiece *Small is*

Beautiful. This concept of *fitness* has been supported by planners as a design harmonised with the existing urban fabric and human scale. Evolving the concept of *fitness* by adding the character of adaptability to external changes over time, *resilience* is a powerful idea. While *fitness* considers an adjustment to a given ecosystem or social community, *resilience* has to do with a location's ability to retain its health against external shocks and was inspired by evolutionary thought. *Diversity* accommodates different people or species in the same location simultaneously, and the location should be adaptable for various situations and needs. It seems to share a similarity with *resilience*. It also contributes to equal access and interaction between different groups, which are keys to social sustainability. These values have been supported and employed by arguments on sustainability in urban realms (Neuman, 2005; Hopwood et al., 2005).

These five traditions overlap and share the common idea of sustaining for a long period of time, rather than being reciprocally exclusive. However, while the former two can stand only when taking both dimensions of 'man' and 'nature' together, the latter three allow for a separation in thought between the two dimensions. Haughton (1999) highlights the core principles of sustainability using the lens of the five types of *equity*. While inter-species equity is a dual value regarding both humans and nature, the other four—inter-generational (present and future), intra-generational (ordinal meaning of equity as equitability or social justice), geographical (global) and procedural equity (open and fair regulatory and participatory systems)—are anthropocentric views. The latter four do not necessarily require consideration of the ecological dimension. Similarly, the argument exists that the sustainability debate has partly shifted from the ecological to the socioeconomic, whereby '"social sustainability" has emerged as a theme in its own right' (Turkington and Sangster, 2006, p. 184 cited in Dempsey et al.,2011). Therefore, we must beware whether 'sustainability' in specific contexts indicates the original meaning that comprises the dual worlds of nature and human, either one of them, or even a mixture of the two.

2.2.3 Three/two pillars of sustainability

A widely accepted consensus has emerged that sustainability can be captured through

three dimensions: environmental, economic and social or through the dual aspects of human (socioeconomic) and nature (environmental) (Hopwood et al., 2005; Dempsey et al., 2011; Lombardi et al., 2011). Broadly, the environmental pillar is the means of conservation of natural resources. The economic and social dimensions are less clear, but generally, they refer to the protection and improvement of health and cultural living standards of human beings and underpinning systems for all people equally. In other words, the human dimension is ultimately to retain 'quality of life' or 'utility' (Yaguchi, 2010; Kawaguchi, 2006).

Each pillar can be observed more clearly when applied to a specific context in the real world. In the urban policy domain, they are argued in more concrete and pragmatic ways as key elements for making a *sustainable city*. First, for the natural environment, traditionally, the heat island effect, pollution, reduction of emission and waste, energy efficiency and urban green and blue fields (planting, parks and watercourses) were focused on; recently, local ecology (healthy wildlife and habitat, connection) has also been suggested (Larco, 2015, Frey et al., 2010). On the other hand, socioeconomic sustainability, particular types of urban structures contributing to economic prosperity and social equity have been supported. The representatives include residents' density of support for the local economy and services, transportation for pedestrians and bicycles, public open spaces, landscapes, affordable and appropriate housing, mixed-use, sense of place, human-scale design, integrated communities and social mix (ibid). Dempsey et al. (2011) identify keys of the social dimension that consist of equitable access and steadiness of the community itself. Frey et al. (2010) emphasise two types of accessibility: to local amenities (on foot) and to a higher level of facilities (by public transport). *Compact city* has been treated almost as a synonym for a sustainable city (Jenks et al., 2013; Neuman, 2005). The European Community, the strongest and most enthusiastic supporter (Jenks et al., 1996), and the UK's Urban Task Force's (1999) *Towards an Urban Renaissance* celebrated it as a model.

These current sustainability debates may be succeeding the thought of *post-modern* urban principles, including, for example, walkability, reduction in car-dependency, density, local identity and diversification of people, as stated by seminal theories (e.g. Jacobs, Lynch, Bentley). *Post-modern urbanism* is likely to view cities

as propellers of the economy, whereby cities attempt to gather creative groups and private investment from outside through the attractiveness of the city, such as its vibrant city life, culture and diversity (Florida, 2014; Hirt, 2009). Such logic is seemingly still strongly connected to pro-growth policies. Many desirable urban forms or their components are now discussed under the name 'sustainability', as shown above. However, whether those elements can be employed in shrinking conditions is unclear.

Finally, the inter-relationship between these three (or two) pillars has not been argued to the extent that major theorists consider a model in which each pillar is independent in existence. Recently, some potent views propose a dependent model in which socioeconomic pillars can only exist while relying on the environmental pillar. Also possible is that within the human realm, the economy depends on society (Lombardi et al., 2011).

2.2.4 Degree of sustainability

As shown, the convenient and elusive word 'sustainability' has been used with very different meanings in diverse contexts. No single integrated definition has been established yet. One of the other causes can be attributed to the divergence of the *degree* of sustainability among different advocators. Broadly, it can be organised in the continuum of so-called *strong sustainability* and *weak sustainability*, as Figure 1 shows (Hopwood et al., 2005; Lombardi et al., 2011; Yaguchi, 2010). For example, policymakers and business leaders tend to use it weakly, even for very growth-oriented policies, as scholars have criticised it as myth or rhetoric (Hopwood et al., 2005; Zumelzu and Doevendansa, 2016).

This strong-weak continuum is useful in understanding the fundamental philosophy of each side of the debate. However, this classification seems to be applicable when sustainability in a specific context includes both the natural and human dimensions. Based on a similar continuum model, Hopwood et al. (2005) added the axis of environmental-socioeconomic pillars. They mapped various views of sustainability based on how radical/minor and structural change is pursued in those views (see **Error! Reference source not found.**4). For extreme examples, *Limits to Growth* has a stronger

Figure 1 Characteristics of weak and strong sustainability (Ehrenfeld, 2000 adapted in Lombardi et al., 2011, p.277)

Weak sustainability/ modernity paradigm	Strong sustainability/ sustainability paradigm
Status quo	Transformation
Technological fix with minor or no changes to lifestyle choices	Fundamental reassessment of values and lifestyle choices
Prioritise economic issue: deal with environmental issues as needed	Integrated, holistic approach to three dimensions
Technical progress and optimism	Technological scepticism and precautionary principle
Perfect substitution of natural and manmade capital	Limited substitution of natural and manmade capital
Manage business risk within existing free-market system	Transform market system

level of sustainability in terms of nature, without taking into account almost any consideration of human society. Another example is socialists who disregard ecology and devote themselves to socioeconomic equity. The weakest form in both axes is neo-liberal economists. Most of the definitions can be plotted somewhere in between the two poles.

2.3 Shrinking cities

2.3.1 Trends and shrinking causes in Europe

Shrinkage should be part of the forthcoming world's policy agenda. Most developed countries will witness or have begun witnessing the decline of their populations, whereas the world population is predicted to keep rising until 2100, mainly in Africa and America. (the United Nations, 2017). In Western countries, the shrinking phenomenon has hitherto been viewed as partial and temporal, occurring in cities suffering from deindustrialisation and suburbanisation, such as Detroit and Glasgow (Wiechmann and Bontje, 2015; Reckien and Martinez-Fernandez, 2011). However, during the next generation, depopulation will be more steady, structural and national—known as the 'second demographic transition'—and will include a low birth rate. The most rapid case of this is found in Japan (ibid; Hospers, 2014a; Mallach et al., 2017).

In a European context, Western countries, including the UK and France, are not likely to shrink soon, although the German population will fall despite the recent moderate recovery of immigrants. On the other hand, many Central and Eastern countries are losing their inhabitants due to emigration towards wealthier countries after the transformation of post-socialism (Figure 2). These countries will experience a rapid decline in population by 15% or more by 2050 (Mohdin, 2018). Southern Europe now has an unbalanced age structure consisting of a high proportion of elderly and a lower fertility rate (Eurostat, 2018). A sense of crisis has been expressed by the EU: 'Europe is no longer in a situation of continuous economic and demographic growth' (EC, 2011, p.18).

Figure 2 Shrinking countries - compared with UK (based on Eurostat, 2018)
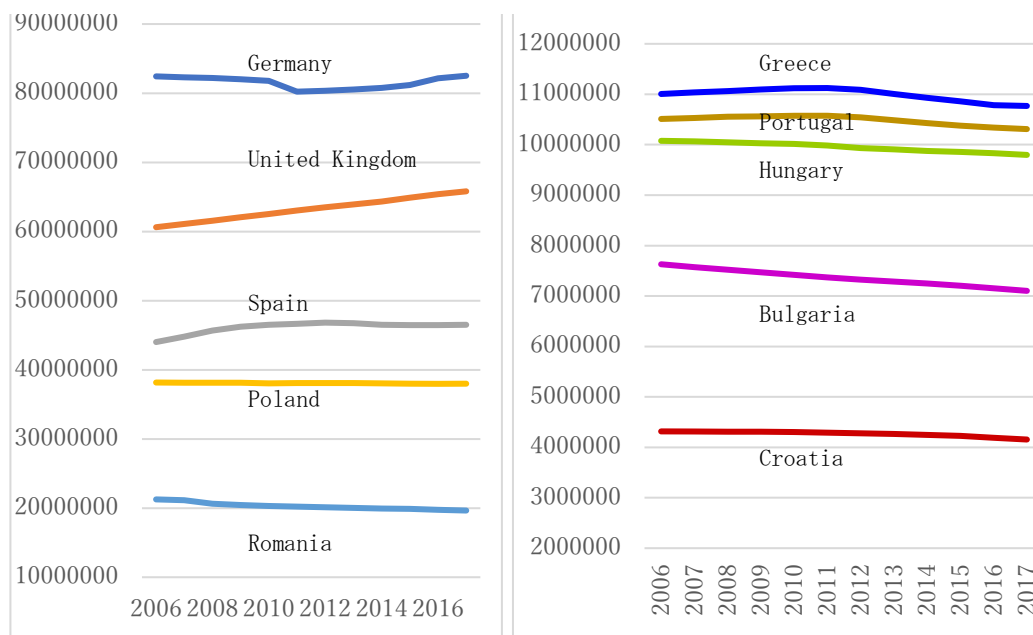
Simultaneously, globalisation can exert inequivalent influences on different geographical areas. Increasing competition between cities allows only a few 'global cities' to be the winners and to gather skilled people, financial activities and information, while other relatively smaller cities are losing population and economic resources (Martinez-Fernandez et al., 2012). European countries have apparent dominance of wealth in their capital cities due to having large advantages as centres of economy and policy (EC, 2011). Contrastingly, 'inner-peripheral' regions, which are remote from thriving economic centres, tend to have more shrinking cities

(Wiechmann and Wolff, 2013). Moreover, seminal academic literature on attractive cities, such as 'creative class' theory (Florida, 2014), have mostly focused on very large cities. The policy arena is also keen on concentrating public and private investment into larger cities as economic engines. Other ordinal cities have been almost ignored by academic and policy debates (Puissant and Lacour, 2011; Hamdouch et al., 2017). However, mid-sized cities, in fact, often play significant roles as lively places for their citizens and economic centres supporting smaller surrounding villages (EC, 2011).

2.3.2 Meaning of 'shrinking'

The term *shrinking*, for cities, is generally defined as an urban trajectory related to population loss in the majority of literature. Sousa and Pinho, (2015, p.14–15) present representative definitions, including:

- 'a total of at least 10% or more than 1% annually' (Shrinking Cities Project, 2006)
- 'a densely populated urban area with a minimum population of 10,000 residents that has faced a population loss in large parts of it for more than 2 years, and is undergoing economic transformations with some symptoms of a structural crisis' (Wiechmann's, 2006).

Shrinking can produce several typical, negative impacts. First, apparently, vacancy of land and housing increase, which may bring crime or other nuisances and can affect residents' perceptions of their neighbourhoods (Hollander, 2011). Second, a smaller tax base can erode the viability of public service (Sousa and Pinho, 2015). Third, the cost of oversized social and technical infrastructures must be shouldered by fewer residents (ibid). Finally, relatively disadvantaged people (e.g. low-income, elderly and foreign) are likely to concentrate in such areas, which can lead to less purchasing power, knowledge and culture but more problems (ibid).

On the other hand, depopulation on a small-scale was considered desirable by traditional economists. In the 19th century, Malthus summarized that food and other biological essences determine the survival population level (Neuman, 2005). Underestimating agricultural innovation, he claimed that a rapidly growing population would face widespread poverty unless the birth rate stabilised, especially

for poorer social groups (Suzuki, 2009). Neo-Malthusians J.S. Mill and Daly, also known as *steady-state economists* celebrating optimal-scale economy, also desired depopulation (Martínez-Alier et al., 2010). Malthusianism has often been criticised as inhuman (ibid, Onuma, 2010), but the underlying thoughts seem sympathetic to the view of *capacity*, as with de-growth and *Limits to Growth*. Furthermore, Mill believed that steady-state and no-growth result in a much better world in which human livelihoods can be improved by effective distribution and good moral (Yaguchi, 2010; Onuma, 2010). Succeeding his theory, Daly looks to sustainability without growth, rather than constant improvement of welfare and QOL (Yaguchi, 2010). Their key ideas have recently been re-evaluated in sustainability arguments (Suzuki, 2009; Yaguchi, 2010).

2.3.3 Traditional policy response: pro-growth

To mitigate and avoid negative consequences resulting from shrinkage, policymakers have broadly taken on two different types of urban policies: 'counteracting' and 'accepting' (Figure 3).

Figure 3 Typologies of urban shrinking policy

	Pro-growth (counteracting)		Pro-shrinkage (accepting)	
Hospers (2014a, p.1511-1514)	trivializing - not taking symptoms seriously (doing nothing)	countering - perceiving temporal, aiming growth through attracting creative class (building new residential areas and landmarks, place-marketing)	accepting - trying to manage the effects, looking for ways to stabilize the population (improving the urban QOL for the current population)	utilising - viewing positive, taking advantage (using demolished housing blocks into greens, experimenting smart living concepts)
Hospers (2014b)	counteracting - trying to reverse shrinkage through attracting new people and business (new constructions, upgrading the hardware and software, city-branding).		accepting - trying to manage the effect, stabilising the population through retaining existing residents (upgrading shrinking areas and old houses, adapting to ageing residents, pulling down whole housing)	
Sousa and Pinho (2015, p.18)	reaction (growth-orientated) - reversing shrinkage and resume growth		adaptation - seeking to adapt/optimise to consequences, rather than to end it	
Großmann	growth-orientated		accepting/ mitigating	

et al. (2013)			
ESPON (2017, p.2)	going for growth – reversing shrinking trends and stimulate population growth		coping with decline – accepting shrinkage, adapting to its economic and social consequences
Shrink Smart (2012, p.5-6)	conservative (do nothing) - either refusing the existence of the problem or not responding despite recognising the problem	conservative (growth orientated) - trying to reverse the trend, stimulating population growth (tax and financial incentives)	radical (accepting/mediating) - accepting the decline and managing its consequences

While the 'pro-growth' approach attempts to counter the depopulating trend, 'pro-shrinkage' accepts reality and concerns the impacts of remaining inhabitants. The majority of policy examples have been placed in the former category thus far. Accepting the reality of the shrinkage of cities is politically and psychologically difficult (Popper and Popper, 2002). The words 'shrink', 'decline' and 'slow(no)-growth' are seen as belonging to very pessimistic, negative and undesirable conditions (Sousa and Pinho, 2015). Historically, 'growing' has predominated the planning arena, such as the urban regime of 'growth machines' (Reckien and Martinez-Fernandez, 2011; Hollander, 2011). Hence, traditionally, policymakers have preferred a pro-growth direction, whereby they attempt to reverse the shrinking trend.

Sousa and Pinho (2015) indicated that typical growth-oriented urban policy utilises 'culture, creativity and creative industries …. to attract and retain the creative population segment' (ibid, p.19). Relatively large post-industrial cities, such as Seattle and Glasgow, have been employing regenerative policies with city-branding. Hospers (2014a) pointed out that such market-led approaches are often found in Eastern and Southern Europe. The weak and distrusted post-socialist government is one reason for reliance on the private sector (Großmann et al., 2013). Even worse, a 'trivializing' attitude exists, despite urgent and severe demographic projections (Hospers, 2014a).

Many researchers criticise these measures. Hospers (2014a) refers to three drawbacks: the lack of uniqueness in simply pursuing a uniform, ideal direction, the

zero-sum competition between cities in the same group and the low mobility of people and businesses, which occurs mostly in the same city or region. Although some famous cases are viewed as having had certain successes, such a strategy may not be valid anywhere (Sousa and Pinho, 2015; Richardson and Nam, 2014). Shrink Smart (2012) observed that those neo-liberal policies that depend on exogenous investment often lack a holistic strategy, even though they partly contribute to relieving negative impacts.

2.3.4 Emerging policy response: pro-shrinkage

Shrinking theorists appreciate the second type— 'accepting' responses (Figure 3 Typologies of urban shrinking policy)—as more realistic and suitable (Hospers, 2014a; Mallach et al., 2017; ESPON, 2017), although potent measures are not yet clear (Hollander, 2011). Wiechmann and Bontje (2015, p.5) claim that 'a realistic future view might entail planning for the future of considerably smaller cities: to depopulate run-down neighbourhoods, to re-green once built-up areas, and to adopt economic development plans that emphasize controlled shrinkage in smaller but nevertheless liveable places.' Hollander (2011, p.131) summarised that 'typical arguments are that effective shrinkage would mean fewer abandoned buildings and vacant lots, that the successor land uses to such blighting influences might be parks or community gardens'. Reducing local infrastructure, which can save local public expenditure, may be effective as well (ibid). However, only a few examples exist because, as described, the path of shifting from growth to shrinkage is not clear.

Popper and Popper (2002, p.23) emphasised the necessity of 'planning for less - fewer people, fewer buildings, fewer land uses.' This means urban policy, which currently clings to traditions that rest on the assumptions of population growth, needs a fundamental transition. Traditionally, three major tools—guidance, incentive and control (Carmona et al., 2010)—all cope with how to keep *additional* constructions desirable (or harmless) to the public interest. On the other hand, policymakers in shrinking cities must determine how/where to reduce the *existing* surplus residential capacity when adjusting to shrunken demand. The finances for demolition and restructuring without following profitable redevelopment and the emotional rejection from neighbours should be unprecedented challenges (Haartsen

and Venhorst, 2010). As Sousa and Pinho (2015) suggested, due to the clearly reduced ability to secure safe payback mechanisms, the approach of attracting private investments is not likely to succeed in shrinking cities.

Nevertheless, according to Hospers (2014a), a few acceptive policies can be observed in Germany, Holland and the UK, accompanied by slogans like 'planning for decline' and 'smart shrinking'. Commonly, these policies have primarily been concerned with the oversupply of housing and infrastructure and have conducted demolition through strong leadership of the government. Oswalt (2008), doubting the suitability of the capitalist approach to shrinking cities, identifies four fields of action in adaptive planning policy, i.e. deconstructing (e.g. compact city, QOL without density, reforestation); re-evaluating (e.g. utilising vacant property); reorganizing (e.g. governance, not private-led); and imagining (e.g. community, identity).

Furthermore, a more progressive view exists— 'utilising' responses— which views depopulation as a phenomenon with advantages comparable to growth. Recently, Hollander (2011) has observed that inhabitants are more likely to be satisfied with the quality of neighbourhoods in shrinking cities than growing cities in the US context. Similarly, Ellis (2008) has found that satisfaction with life is not necessarily related to whether a city is growing or shrinking in the context of Western Germany. The 'utilising' approach re-recognises shrinkage's values of having a less busy living environment, with richer nature, less pollution and so on. Some also suggest shrinking conditions can offer a strong chance for reserving affluent resources for future uses, restructuring land use and transportation and controlling further urban sprawl (Sousa and Pinho, 2015; Hospers, 2014a; Mallach et al., 2017).

In terms of the economy, the elderly and redundant land are potentially expected to be promising new opportunities in shrinking cities. The former is represented by a 'silver economy', which includes a new service sector of living and leisure for an active older population, and a 'white economy', which includes healthcare and the medical service field. The latter, called a 'green economy', includes urban agriculture, local energy and biomass, local foods and tourism related to nature (ESPON, 2017; Hospers, 2014a).

2.4 Summary

Sustainability originated from a desire for new post-growth value. Its initial concern, the relationship between corroding natural resources and expanding human development, seems to be resolved by shrinking. However, regarding socioeconomic sustainability independently, shrinkage certainly poses different questions. What is the suitable development means of maintaining QOL as a significant element of sustainability for the seemingly disadvantageous conditions of depopulation and economic downturn?

Previous arguments about sustainability have been devoted to how to moderate environmental impacts of economic expansion. Otherwise, growth-oriented policies have been treated as sustainable urbanism in contexts only witnessing socioeconomic sustainability. Thus, a huge experimental and theoretical gap exists on the inter-relationship and compatibility between sustainability and shrinkage. Everlasting or unlimited growth seems unrealistic, so this question of creating a potent means of development, shrinkage, must be dealt with. To explore this inquiry, a detailed examination of real-life policy examples is conducted and is expected to reveal profound insights.

Chapter 3. Methodology

3.1 Introduction

Overall, this research uses qualitative case studies to examine the assumption constructed in the previous section through a detailed understanding. The focus is on policy responses that entail complexity with path-dependency, strong relations with settings and strong power relations. Although, generally, some results from the case studies may depend on specific contexts, common elements or even very contextualised outcomes from even a single case can be generalised (Flyvbjerg, 2006). To organise the information on targeted policies accepting shrinkage and to analyse systematically, a simple framework of sustainability is employed. Highlighting the relationship between the two concepts to some degree may be useful. Finding common/contrasting elements between the two cases may also be useful.

3.2 Analytical framework

This thesis attempts to draw insights from two examples of urban policy in depopulating areas that include pro-shrinking attitudes. To deeply understand the characteristics of specific policies in light of sustainability, Lombardi et al.'s (2011) analytical framework (Figure 4), following Hopwood et al.'s (2005) method, allows for systematic classification of the information. This is a good starting point of analysis based on the classification organised by the fundamental viewpoints argued in the literature review section: the two human-nature axes of sustainability (or three dimensions of environmental-social-economic) and the strong-weak continuum.

Although the method, which was originally used in Hopwood et al. (2005) and summarised in Lombardi et al. (2011), has included quantitative systems to rate the degree, this essay employs a more qualitative technique. Hopwood et al. (2005) indicated their results on a map to demonstrate the entire picture of the trend of different theories or ideologies written in a large amount of previous diverse literature. However, this paper does not focus on diverse views and opinions on sustainable development. Lombardi et al. (2011) adapted the map to analyse a regeneration project through numerical scoring of the degree of sustainability for each related discourse. Their data contains various primary data created or spoken by different stakeholders talking about a single topic, such as government documents,

transcription of interviews and participatory observation. In this manner, their discourse analysis, which plotted different dialogues onto a two-axes map, was suitable for comparing the language and underlying thought, depending on different stakeholders.

On the other hand, this thesis does not focus on the difference between ideologies and rhetoric owned by diverse, relevant groups. Rather, the contents and the influence of the programmes informed by previous studies as secondary sources matter. Regarding such characteristic differences in research, rather than using quantitative indicators of scores and graphs, key features of each policy are rated into three degrees of strong-weak sustainability, and every determination made for the rating in the next section is explained using qualitative reasons that are grounded in the criteria in Figure 4. Moreover, coming from the special context of shrinking cities, each urban policy in these cases has actually been introduced with a concentration on tackling shrinkage, rather than consciously pursuing sustainability. Generally, perceptions about the *nature of sustainable development* and the *nature of problem* (Figure 4) are unlikely to be shown explicitly and are more likely mixed. Therefore, the original framework has been adapted into a simpler matrix to fit the purpose of this study (see the tables in Chapter 4). Paying attention to separating the actual primary intentions (they are not always about sustainability) and the intended/unintended results of programmes is also required.

Figure 4 Framework for analysis of data sources on the weak-strong spectrum of the views for sustainability (Hopwood et al., 2005 is summarised in Lombardi et al., 2011, p.284)

Lines of enquiry	Status quo: issue raised	Reform: issue stressed	Transformation: issue deemed critical
Nature of sustainable development			
Environmental	'Weak sustainability' Technology as solution	Reduce energy/ carbon use Reuse materials Healthier ecology	Transformation of society and/ or human relations with the environment
Socioeconomic	Weak concern with poverty and lack of equity in political power	'Sustainable, accountable and equitable forms of capitalism'	Radical reform to socioeconomic structure Strong commitment to

		Social issues important, human needs, poverty, democratic revitalisation	social equity
Nature of problem			
Environmental	Minor problem: pollution	Mounting problems: environmental degradation; global instability	Mounting crisis: environmental degradation; possible future collapse
Socioeconomic	Minor problem: poverty	Mounting problems: inequality and poverty	Mounting crisis: poverty, lack of justice
Root of problem (socioeconomic)	Lack of information, existing values	Failure to capture externalities	Existing economic and power structures of society
Actions required to redress (socioeconomic)	Increase information Change values Improve management techniques New technologies Taxes and trading Generate and evolve consumer demand	Good science and information Modify the market through taxes and subsidies Role of technology Reform government, increase democracy and participation	Build alliance, mobilise coalitions and polity Radical reform to market, taxes, and subsidies Inclusive social and political action within and outside existing structure

3.3 Case selection

The focus is on a medium-sized shrinking city in a European context. Thus, at first, the candidates were predicted to be found among cities conforming to the conditions below:

- is in a depopulating county aligned in the European Union
- is (or used to be) facing steep population decline nationally (or the city itself)
- medium-sized cities: non-capital cities, maybe with a 100,000–500,000 s population and possibly including type B or C cities (Figure 5), second-tier cities and regional centres (or second central city in a region)
- has few advantages (geographical (e.g. near capital cities), special attractions (e.g. tourist or historical districts) etc.)
- has an urban policy that attempts to adjust the urban form to the shrunk scale (ideally: cities proven to have certain success based on previous literature).

Figure 5 Types of European cities (EC, 2010, p.10-11)

	definition	population
Type A	"Principal Metropolises" (very large cities, including capitals)	an average of >1,000,000 inhabitants
Type B	"Regional Centres", in Western countries	an average population of around 290,000
Type C	"Smaller Centres" less dynamic than Type B, mainly in Western countries	-
Type D	"Towns and Cities of the Lagging Regions" (smaller cities from economically lagging regions with lower GDP per head), in Central and Southern Europe	-

Although the severest situations are to be found in Eastern and Southern countries, suitable cases among them are difficult to find, with the exception of Germany. One reason is that most national and local government documents are not available in English or are not published. Thus, significant pragmatic constraints exist in terms of access to sufficient information not only about ongoing policies but also even basic documents of city planning or development strategies. Another, more fundamental, constraint is that those countries do not have accepting behaviour yet, as Hospers (2014a, p.1515) claims that even 'talking about shrinkage is still a taboo'. Even though a few cities were studied (e.g. Sosnowiec (Poland)), they are generally still concluded as clearly pursuing pro-growth orientation, which is the opposite direction of the goal.

Therefore, the cases were selected from the accepting policies mentioned in previous literature on shrinking. Based on the binary typology of policy on shrinking (Figure 3), policy examples found in past research were categorised (see Appendix). From the cities and regions that are said to have some accepting policy behaviours, a few cases were identified in light of the other conditions mentioned above. According to this approach, eventually, Halle (Saale) in Germany and the Limburg region in the Netherlands were chosen as the targeted cases. On the other hand, the 'usual suspects', Leipzig and Liverpool, were omitted in terms of city size. Simultaneously, specific policies considering the future of shrinking by the local (and national) governments were also chosen. When it is useful, some particular districts or regenerating projects are also focused on.

3.4 Reflections

The major constraint of this research is the limitation of the availability of original public documents written in English. As a result, most of the data in this research must depend on secondary data in previous academic literature. The number of researchers studying urban policies of shrinking is also small. Many of the reports were provided some type of public funds by the EU. Moreover, some focus on the same line-up of cities because they were in the same research group, such as the Shrink Smart project funded by EU. Interpretation and possibility of distortion made by the research in such secondary data may be different from the original rhetoric and wording of primary documents.

Considering the absence of primary data, exact discourse analysis is not likely to be realistic or suitable as it requires plenty of text, including words from different stakeholders (Lees, 2004). This method is also not very suitable for this study which focus on the contents of each programme, rather than ideology and language used by various relevant actors. Similarly, coding is not appropriate considering its characteristic requiring plenty of sentences, and it is easy to dismiss contextualised meanings through fragmentation (Nadamitsu et al. 2014, Bryman, 2016). Accessibility to up-to-date information about ongoing conditions and policies under consideration, particularly in terms of English translation, is another hurdle.

Ensuring judgements and interpretations made by the author are also completely bias-free is challenging, especially in such qualitative research (Creswell and Miller, 2000). To minimise the influence of bias, the effort to include the reasoning behind judgements was as detailed as possible. There are no ethical issues because this study is based on secondary rather than primary data collection.

Chapter 4. Case Studies

4.1 Introduction

To explore the question about the inter-relationship between sustainability and shrinking direction derived from the literature, here, real-life instances of pro-shrinkage policy in two shrinking areas are inspected in detail. According to the typology (Figure 3), Halle in Germany offers insights about 'accepting' through planned housing restructuring (Stadtumbau Ost) and 'utilising' through reforestation in once-developed fields (Urban Forest). A sub-regional example in Holland, Parkstad Limburg, contributes to an understanding about 'accepting' policy controlling the housing supply and underpinning new governance institutions on both a wider (regional coordination) and smaller scale (IBA).

4.2 Halle, Germany

4.2.1 General Information

Halle (or Halle an der Saale) is an old city located in Eastern Germany, roughly 36 km from the 10th largest city, Leipzig. It now has 238,005 inhabitants (2016) (Brinkhoff, n.d.). The city consists of two main parts, a historical inner-city and a new town (Neustadt). During the socialist era, the 1960s–1980s, the city used to prosper in the chemical industry. A huge amount of *Plattenbau* (prefabricated multi-storey public housing) was quickly built in suburban Neustadt for the workers, while the old city was abandoned and not maintained.

Figure 6 Location of Halle (source: Hattori, 2010, p.62; HalleSaale.info, n.d. adapted by author)
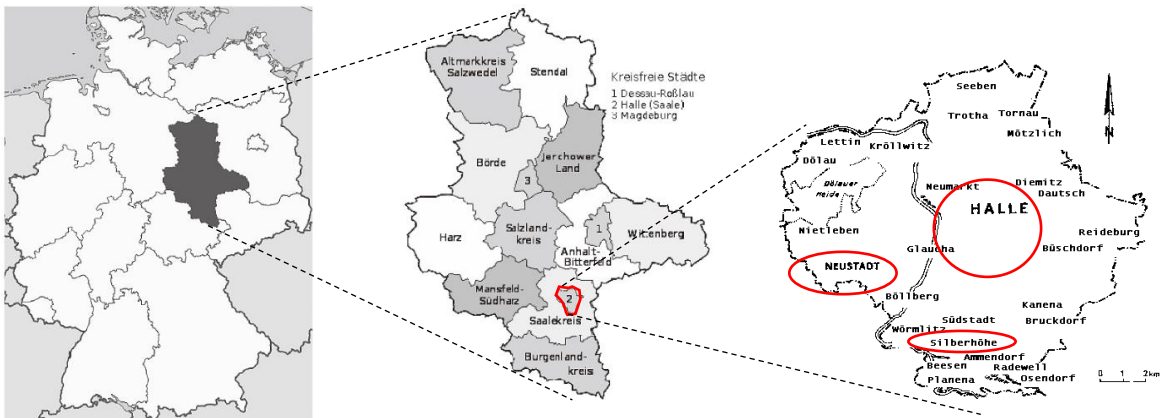
4.2.2 Cause and conditions of shrinkage

The population once peaked at 329,625 in 1986. After German reunification, the city rapidly and heavily deceased in inhabitants due to the decline of the chemical industry and the outflow migration toward richer western regions with more job opportunities (REDIS, 2010). The population in the east dropped by 12% from 1989 to 2008. Until 2011, more than quarter of Halle's population, mainly young educated people, had left the city, accelerating depopulation, which was combined with a low fertility rate and ageing (Shrink Smart, 2010; Brinkhoff, n.d.).

As with other cities, the shrinkage issue was primarily recognised through housing vacancy. Despite depopulation, until 2000, private development of additional residences and commercial estate at the urban peripheries was led by the optimism of the open market and the absence of planning control (Shrink Smart, 2010, Ohmura, 2013). The suburbanised city structure and the largescale vacancy caused a collapse of the housing market and an inefficiency of public service (Shrink Smart, 2010). The new towns with prefabs tended to experience the greatest loss, maintaining a higher proportion of elderly and lower-income residents.

Since the early 2000s, as described below, several drastic countermeasures have been employed. Recently, depopulation has stabilised and even slightly reversed, along with a nationwide rise in population due to international immigration. However, from a long-term perspective, the city is not likely to have substantial growth, whereas larger cities, such as Leipzig, are re-growing and absorbing intra-regional inflow (Shrink Smart, 2010; Bartholomae and Nam, 2014). Although suburbanisation has also occurred, the main reason was emigration to other areas led by job loss due to deindustrialisation.

Figure 7 Population of Halle (source: Brinkhoff, n.d. (only 2014 is: Eurostat, n.d.))

	1987	1995	2001	2011	2014	2016
Halle (Saale)	329,625	282,784	243,045	229,153	231565	238,005
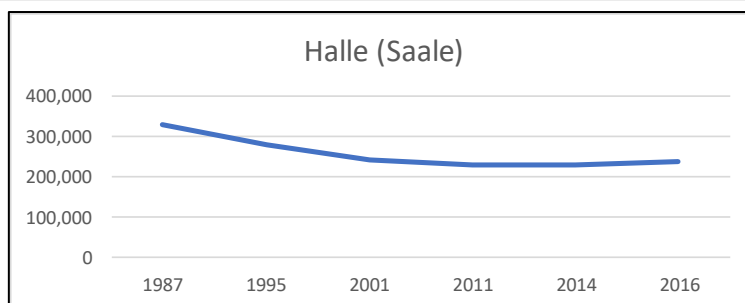
4.2.3 Two programmes accepting shrinkage

Stadtumbau Ost ('Urban Restructuring for East'), a federal urban policy, is one of the most well-known programmes that accepts shrinkage (Bernt, 2017). The reason Stadtumbau is considered significant, despite demolition itself, is not so novel. It encouraged housing demolition without any redevelopment plan, and it was clearly combined with mandatory integrated city planning (Hattori, 2013; Bernt, 2017). The programme period was from 2001 to 2009 (and extended to 2016). Each city could receive huge financial support from both the federal and state governments as long as the city submitted an elaborated, overarching spatial plan (later called an Integrated Urban Development Strategy (ISEK)). This framework initially intended to use an integrated approach of both reducing vacancy and upgrading core areas based on the thought of 'shrink from outside to the inside', which orients compact urban structure (Radzimski, 2015). The subsidies can be utilised for the following purposes: demolition of housing (and sometimes cleansing demolished brownfields), renovation of housing to be retained for the future, purchasing and conserving historical buildings by municipalities and repair or removal of infrastructures (Hattori, 2013).

Another large policy task is reutilising the brownfields created by enormous demolition. Reservation for future use with interim usage is possible (Haase et al., 2018), but Halle's one radical answer was to create an 'Urban Forest' in Silberhöhe, where drastic residential demolition is occurring (inhabitants were 40,000 in 1989, 10,000 in 2012, and will only be 3,000) (Werkstatt-Stadt, 2013). It is intended as an area with dwellings surrounded by various neighbouring types of nature, forests, groves, flowers, green corridors and so on (EUKN, 2010; Werkstatt-Stadt, 2013). The flats are being shortened from 11 storeys to 5 storeys, and technical infrastructures were largely dismantled (EUKN, 2010).

4.2.4 Analysis of Stadtumbau Ost

How can Stadtumbau Ost be assessed in terms of sustainability? The summary based on Lombardi's framework (Figure 4) is organised in Figure 8. First, from the environmental perspective, no clear recognition exists. However, when examining the actual impact, less human activity, caused by shrinking and the disappearance of

the chemical industry, resulted in cleaner air and water. The fact that less people and facilities use less energy and resources is also apparent. Compact urban form will reduce car-dependency. Additionally, unlike other post-industrial cities, land in Halle is not contaminated, merely neglected, resulting in wildness (Rave, 2014). Therefore, even though the city did not pay attention, consequently, it took *transformative* action towards ecology through changing the human-environment relationship.

The other socioeconomic aspect is more complicated. Along with the initial philosophy of the integrated approach, ISEK was required to fit the realistic demographic projection to acquire the subsidy (Bernt, 2017). Halle downscaled the spatial master plan to fit a city size of 200,000 inhabitants into a more compact and efficient urban form (Shrink Smart, 2010). Such an approach seems contrary to a market-led *transformation*. However, it might have been rather ostensible actually to justify drastic measure for actual prioritised purpose (Bernt, 2017). In fact, at the early stage, the programme places strong emphasis on housing in practice, as is often criticised (Couch et al., 2011). This direction is clearly observed by Radzimski (2015) that during 2002 to 2009, over 50% of the subsidy was spent on deconstruction of residences because, only for this part, municipalities evaded their duty to pay. Until 2014, quite quickly, 313,200 dwellings disappeared from East Germany (Bernt, 2017). In Halle, over 9,000 tenements have been demolished (Shrink Smart, 2010). The serious shakeout of the housing market was the highest political interest then (Bernt, 2017). Drastic demolition outside of market mechanisms makes it possible to use the term *transformative*. On the other hand, the actual intention was very economy-oriented, which can create *weaker* sustainability. At a city level, the partnership between the city and housing companies existed, whereas other economic and social sectors and ordinal citizens were almost excluded from the decision-making process (Bernt, 2009). Such governance with weak democracy can be considered *status quo*.

Furthermore, the geographical concentration of demolition in suburbs, particularly in Neustadt and Silberhöhe, was not necessarily strategic. Admittedly, they had more reasonable characteristics to be shrunken: higher vacancy rates and lower physical quality of prefabricated buildings. However, they were also relatively easy to be restructured due to the small number of owners, such as councils or public

companies, who had more ability to apply for the subsidy. Contrastingly, small inner-city plots owned by individual landlords have not received the subsidy as much (Radzimski, 2015). This is due to the dependence on contingent individual's intentions and a reduced capacity to use the programme (Radzimski, 2015; Bernt, 2009). Although the housing share of public flats is predominant, such unfair characterisation and the random and slow process in the core area (Bernt, 2009) should be considered *status quo.*

From 2010, the federation corrected the course of implementation by shifting to core areas. It is obvious in the items of expenditure, in which upgrading spent 70% (once 42%), and historical buildings spent 14% (once 1%) (Radzimski, 2015). Halle also followed this with the renovation of high-quality but old and outdated residences and historical buildings in the core. Social infrastructures (kindergarten, school, elderly care facilities etc.) were concentrated in the inner-area. On the other hand, in the areas to be demolished, technical infrastructures are no longer improved with only minimum maintenance for the remaining inhabitants (Shrink Smart, 2010). This can contribute to decreasing local governments' expenditure. However, the dilemma exists that newer infrastructures are located in new towns, while older ones requiring significant repair are in the older inner-city (ibid). Removing rigid technical infrastructures, such as sewage, is also difficult, despite the underuse, which causes a 30% rise of the payment per capita for the fewer users remaining in the demolishing area (Rave, 2014). Focusing on the process, which is not market-led, overall, it might be a kind of *transformation*. However, at least during the shrinking process, it causes a quite inequitable distribution of public service geographically, which is uncertain in terms of *strong* sustainability.

At the initial stage, the federation immediately followed the recommendation made by a commission consisting of external experts in 2000 (Mallach et al., 2017). Martinez-Fernandez (2016) and Hattori (2013) appreciate the realistic view and the radical and comprehensive approach of the accepting attitude towards ongoing shrinkage and the downscaling of excessive urban structures. In this way, the German government seems to utilise science and information in the policy arena (*reform*). However, again, lobbying by housing companies was the most influential factor at that time (*status quo*).

Finally, an inaction, the lack of a regional scheme (Kübler et al., 2012), may be partly responsible for the intra-regional emigration. The strong neighbour, Leipzig, is rapidly re-growing through inflow, including people from near municipalities. The failure to establish partnerships between Halle and smaller surrounding municipalities (Shrink Smart, 2010) should cause continuous suburban private development, such as shopping centres in easier outskirts. These market-like trends, probably *status quo*, can damage Halle's urban strategy.

Figure 8 Strong-weak analysis for Stadtumbau Ost in Halle

	Related action or result of programme <purpose>	Evaluation of the degree (comment about the judgment)
Environmental	Less air pollution, emission and energy consumption <unintended and consequently>	*Transformation?* (no perception, but actually human activity reduced)
Socioeconomic	Drastic demolition of housing based on integrated planning <actually, utilised for justification of state policy for housing market>	*Transformation?* (strong intervention, no market-led overall, but ostensible?)
	Demolition concentrated in suburb; fewer random demolition in core <Restructuring towards compact structure from suburban to core>	*Status quo* (early and huge demolition took place with less difficulty, i.e. public/ company owned prefabs)
	Strengthening inner-city (housing, historical buildings); minimising infrastructure/service for shrinking suburb <reducing expenditure; secure living standard>	*Transformation?* (no market-led overall, but inequitable?)
	Followed experts' recommendation at federal level <lobbying by housing companies>	*Reformation* (good science) <*Status quo* (business-led)>
	Little cooperation/ plan in regional (upper) level	*Status quo* (emigration towards rival cities)

4.2.5 Analysis for the Urban Forest

When evaluating the sustainability of the Urban Forest (Figure 9), obviously, reforestation of the once-developed land is radical from an ecological viewpoint. Furthermore, in this case, stakeholders have recognised this value. Unlike mere demolition, once afforested, it may be irreversible and not likely to re-urbanise the

land anymore. Thus, Silberhöhe's example can be a typical *transformation* environmentally, which changed the relationship between human and nature.

This project is realised through collaboration with the stakeholders. Although it is a low-cost strategy (GREEN SURGE, 2015), some financial problems were overcome through the cooperation of relevant housing companies (holding the majority of the housing estate) (Werkstatt-Stadt, 2013). Diverse processes to enhance public engagement may contribute to the residents' highly accepting behaviour about the leitmotif of 'forest city' and the largescale demolition (Shrink Smart, 2010). This includes, for example, the involvement of inhabitants in the debate from a very early stage through an online participation platform and tailored involvement regarding specific groups of people (young children, university students, the elderly, skaters etc.) (GREEN SURGE, 2015). They also held temporary exhibitions and campaigns, such as art projects, to enhance communication and coordination. These activities became popular sub-regionally and contributed to the branding of the town (Werkstatt-Stadt, 2013). This democratic and open decision-making process can be *a transformation* or *reformation* based on the criteria of Figure 4.

Figure 9 Strong-weak analysis for Urban Forest in Halle

	Related action or result of programme <purpose>	**Evaluation of the degree (comment about the judgment)**
Environmental	Reforestation substituted from residential block <but environmental problem was minor>	*Transformation* (intendedly, human activity decreased and nature increased)
Socioeconomic	Public involvement from early stage, targeting specific interest groups <acceptance/ welcome by remaining residents>	*Reformation? Transformation?* (participatory approach, mobilising collaboration)

4.2.6 Short summary

Overall, the restructuring programme, including the housing policy, took quite *transformative* approaches without a market mechanism, whereas the actual concern was economy-oriented and *status quo*. The environmental impact is unintended but *transformative*, whereas the social results are often *status quo*. In particular, equality can be challenging. Reforestation should be more *transformative* in both the environmental and socioeconomic dimensions.

4.3 Parkstad Limburg, a region in the Netherlands

4.3.1 General Information

Limburg is a peripheral province located in the southern Netherlands near the border with Germany and Belgium and consists of 33 municipalities. In the Southern part (Zuid Limburg), a conurbation, Parkstad Limburg, has been established and is comprised of 8 municipalities, including Heerlen (the largest has 86,819 inhabitants (Brinkhoff, n.d.)) (Figure 10). It used to be a thriving coalmining location since the early 1900s, but it has been shrinking for a long time. As the name 'Parkstad' means 'Park City', the region has rich nature and biodiversity, creating a landscape with urban and green, despite some seriously polluted former mines (Bontje, 2013; Grin et al., 2010).

Figure 10 Location of Parkstad Limburg (Hoekveld and Bontje, 2016, p.286 adapted by author)

Source: Authors, based on CBS/Kadaster (2012).

4.3.2 Cause and condition of shrinkage

Nationally, Holland is not likely to face depopulation in most areas of its land soon, but on a regional level, rural provinces, such as Groningen, and post-industrial regions, such as Limburg, are suffering from shrinkage (Haartsen and Venhorst, 2010). Parkstad entered into a long depression due to the closure of national mines in the mid-1960s and the economic stagnation since the mid-1990s (Elzerman and Bontje, 2015; Westerink et al. 2017). When the Dutch government decided to close the mines, some national administrative offices were moved into the region to

compensate for the job loss, but the former miners rarely received profits. The sites of former coalmines were replaced by wilderness, parks and residential districts (Bontje, 2013; Grin et al., 2010).

As a result, combined with the low level of income and education, out-migration of young people has led to demographic decline (Elzerman and Bontje, 2015; Westerink et al. 2017). For example, the population of Heerlen dropped by 8.7% from 2001 onwards (Figure 11). The disadvantaged location, remote from the national economic and cultural centres, has also worsened the situation (Elzerman and Bontje, 2015; Grin et al., 2010). Demographic structure is another influential factor of depopulation. The national elderly age dependency ratio (aged 65 and older/aged 20–64) in 2013 was 17% in Amsterdam and 32.9% in Heerlen (Eurostat, n.d.). Suburbanisation is not observed very much in this instance.

The oversupply of dwellings has emerged as a serious political concern. Moreover, combined with outdated maintenance in much of the housing, this lowers the housing price (Elzerman and Bontje, 2015). The increase of single households in urban areas (Haartsen and Venhorst, 2010) and the decay of houses might create an incongruity between housing needs and vacancy. Accordingly, vacancy of retail estate has occurred too. Through the declining process, the residents' feeling for the region was also damaged (Elzerman and Bontje, 2015). After decades of 'mourning' time, this regional shrinkage has been put into national policy agenda and accepted as an inevitable structural process. Today, the state has shown the motto of 'smart shrink' or 'shrinking as opportunity', especially since 'national shrinking strategy' was developed in 2009 (ibid).

Figure 11 Population of Limburg (data source: Brinkhoff, n.d.)

	2001	2011	2015	2018
Limburg	1,142,584	1,122,627	1,117,941	1,117,314
Heerlen	95,149	89,212	87,500	86,819
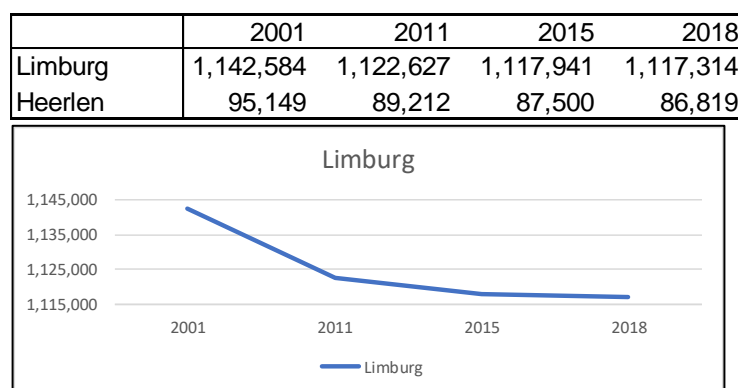
4.3.3 Three projects adjusting to shrinkage

Parkstad is the first Dutch region where the irreversible shrinking trend is accepted, and shrinkage-oriented planning policies have been implemented (Elzerman and Bontje, 2015). Addressing the multitude of problems, the eight municipalities agreed to open a sub-regional corporation in 1998 (Grin et al., 2010). Although the change was small-scale in early years because the municipalities hesitated to reduce local autonomy, the sense of regional cohesion had gradually formulated. Remarkably, through the very inclusive debating arena for the long-term and holistic regional vision finalised in 2003, the awareness of the steady shrinkage and the aimed for sustainable development for the future have been widely shared among stakeholders (Grin et al., 2010). Subsequently, in 2006, Parkstad attained a legal status based on a national law called WGR+ (in-between provinces and municipalities), where basically some competences are transferred from municipalities to regions (Elzerman and Bontje, 2015; Grin et al., 2010). Intensifying the cooperation, they signed the 'Pact of Parkstad' to bestow stronger mandates to the regional board in 2009, which succeeded the elements of the vision (Elzerman and Bontje, 2015).

Secondly, regarding the imbalance between the housing capacity and declining population, the regional authority then elaborated on the joint Reconstruction Strategy in 2009. The Strategy established concrete numerical targets of demolition and construction and the areas to be/not to be strengthened (Westerink et al. 2017). Furthermore, in cooperation with the province of Limburg, a housing regulation for municipalities in Zuid Limburg was established in which an approval for new housing construction is prohibited unless at least one (two in Parkstad) dwelling is to be demolished (Westerink et al. 2017; Bontje, 2013).

Finally, IBA Parkstad 2013–2020 began, inspired by German precedents of the Internationale Bau Ausstellung (IBA) ('international construction exhibition'). This is a long-term event that aims to enhance public engagement regarding the future of the region and to restore the self-image of the region.

4.3.4 Analysis of regional collaboration

Although the 2003 vision emphasised 'sustainability', the environmental aspect is weak. Almost only one relevant point is advertising for a better regional image using

existing nature (Bontje, 2013; Lindenberg and Westendorp, 2015). They recognised the main sales point of the region is the urban landscape combined with high-quality green. Pollution is recognised as a major problem, without having a particular measure (Grin et al., 2010). These stances on nature may be *reformative*, but actual action is just rebranding the existing nature from a quite anthropocentric view.

On the other hand, the socioeconomic dimension seems *stronger* in some points. Sharing a formal regional vision, including common recognition apart from local interest, must be remarkable. This is because, generally, an independent approach by each city is likely to lead to a 'zero-sum inter-city competition' or anxiety about a 'free rider' among municipalities in the process of restraining pro-growth investments. The regional strategy focuses on enhancements of employability or business opportunities and liveable environment for remaining people, rather than unrealistic attempts to increase population (Elzerman and Bontje, 2015). The Parkstad's approach can be said to be *transformative* in terms of shift from individual interest to a comprehensive future view.

Similarly, the envisioning process itself was *transformative* and was overall facilitated and designed by researchers based on systematic methods and academic knowledge beyond that of traditional governing institutions. As Grin et al. (2010) demonstrate, a special debating arena was intentionally placed outside of the regular policy arena that tends to concern short-term matters. To engage stakeholders, representatives from diverse domains (e.g. housing, tourism, other business, media, culture, healthcare, environmental NGO, church) were involved in the discussion, and they were told to hold off on short-term interests. Consequently, this enabled a long-term perspective to be developed and ensured widespread understanding among stakeholders.

Figure 12 Strong-weak analysis for regional collaboration

	Related action or result of programme <purpose>	**Evaluation of the degree (comment about the judgment)**
Environmental	Re-evaluating the rich nature <utilising as main sales point>	*Reformation?* (conserving healthy ecology, pollution is mounting problem)

Socioeconomic	Strong cooperation with competences at regional (upper) level <To mitigate competition between municipalities>	*Transformation* (not rely on any market mechanism, transition of existing structure)
	Debating arena for envisioning process <shielded from regular political arena and short-term concern, using academic skill>	*Transformation* (Inclusive, outside of existing structure, uses science)

4.3.5 Analysis of regional housing control

Like Halle, sustainability (particularly the environmental aspect) is barely recognised in the joint Reconstruction Strategy (2009). It specifically aims to stabilise the housing market by 2020 in which 6,245 houses must be removed, substituting 5,110 new houses that are already granted building permissions and the necessary 1,802 nursing homes for the elderly (Elzerman and Bontje, 2015). Although little literature exists on ecological impacts of the sequential policies, controlling the total number of dwellings could possibly reduce human activity. That situation can lead to less additional pollution and consumption in a *transformative*, albeit very uncertain, way.

Overall, the regional housing strategy is positively evaluated thus far (Bontje, 2013). Haartsen and Venhorst (2010) indicate that regional cooperation would be the best solution for shrinking conditions, when drastic demolition is rising as an unavoidable policy option. It could bring harmful impacts if a city in the same region would build more housing to attract inhabitants from other surrounding cities, whereas other municipalities are trying to reduce overstock of dwellings (Westerink et al. 2017). Thus, the regionwide and clear target worked well. The problem is being tackled by very restrictive intervention that is impossible in the market mechanism, so it is also possible to categorise this as *transformative*.

However, similar to Halle, the actual progress of the demolition is not equivalent or open. While 67% of the regional housing market and 30–40% of the redundant dwellings are owned by the private sector, most demolitions have been conducted for the social renting residences owned by housing associations (Hoekveld and Bontje, 2016). What is worse, these dwellings are not necessarily more urgent and blighted than others. In fact, 'the core of the restructuring problem lies in the private property' (Elzerman and Bontje, 2015, p.97). However, committing

private property to the public sector is difficult. Selling to others is also difficult due to problems, including poorer maintenance levels and unpaid mortgages (ibid; Uemura, 2016). Such a less controlled and uneven process should be considered *status quo*.

Figure 13 Strong-weak analysis for regional housing control

	Related action or result of programme <purpose>	Evaluation of the degree (comment about the judgment)
Environmental	Less air pollution, emission and energy consumption (perhaps) <unintended and consequently>	*Transformation?* (no perception, but human activity might reduce)
Socioeconomic	Restricting new constructions in the region regarding total number of housing <To reduce vacancy, increasing good living places by updating>	*Transformation* (failure of market fixed by restrictive intervention outside of regular policy institution)
	Demolition concentrates to housing associations' property; few in private property <conducting in an order of easiness>	*Status quo* (huge demolition took place with less difficulty, uncontrolled)

4.3.6 Analysis of IBA Parkstad

Finally, while the regional housing policy is quite top-down, and the formulating process of the regional cohesion was inclusive but elite, the region also desires a more bottom-up approach in which citizens or wider stakeholders are involved in the shrinking policy (Westerink et al., 2017). IBA 2013–2020 is designed for developing projects by social actors or local business actors who are considering a redevelopment idea using demolished or empty spaces, discussing future views (called 'open invitation'), exchanging ideas and learning with inhabitants and so on. Proposed projects from inhabitants and other actors are selected to gain support in the institutional and financial framework organised by the governments of municipalities and Limburg region (Westerink et al., 2017; Bontje, 2013). This new approach of the planning arena is hoped for as an alternative new model of urban governance that is more deliberative, creative and inclusive (Elzerman and Bontje, 2015; Westerink et al., 2017). This participatory approach can be *transformative* in terms of mobilising knowledge and action apart from traditional policy structure. On the other hand, factors to be seen as *weak* exist, such as no environmental recognition and a quite classical style of application and selection.

Figure 14 Strong-weak analysis for IBA Parkstad

	Related action or result of programme \<purpose\>	**Evaluation of the degree (comment about the judgment)**
Environmental	Nothing \<no recognition\>	
Socioeconomic	Public mobilisation to urban policy \<to use knowledge, to enhance understanding\>	*Transformative?* (outside of existing structure, mobilising wider groups)

4.3.7 Short summary

Overall, Parkstad is not concerned about the natural environment very much. Its three measures are particularly *transformative* in terms of its governing process, utilising both wider administration and grassroots empowerment, rather than the existing structure. On the other hand, like Halle, housing demolition is not very strategic and equitable and is thus relatively *status quo*.

4.4 Summary

Commonly, policy responses in the two areas are provoked by housing surpluses after deindustrialisation. Both of them unintendedly have *transformative* consequences for environmental sustainability. Downscaling the housing capacity is the typical 'accepting' countermeasure that targets the effect of depopulation. However, both cities still confront the difficulty of tackling with private property and employ quite *ad hoc* implementation in order of convenience. Although the idea of 'utilising', or 'shrinkage as opportunity', is articulated in a Dutch context, the urban forest in Halle seems the clearest and most embodied exercise. On the other hand, shrinkage's economic advantages are hardly recognised in either case.

Nevertheless, most of the programmes could not be realised within the traditional structures of the market economy and political arena (although Halle is actually focusing on the housing market as the priority). This means accepting policies are likely to be rated as having *strong* sustainability overall. Considering the planning process, some programmes have been conducted through inventive open governance (some approaches are rather top-down) by mobilising diverse citizens and stakeholders and by isolating the discussion arena from existing structures,

which allows for more long-term thinking and a wider perspective. On the other hand, in general, little awareness about equity, social equality and poverty exist, other than during the participatory process.

Chapter 5. Discussion

5.1 Introduction

This chapter is the synthesis chapter and attempts to provide indications for the answers to the research questions based on the literature and the cases. Departing from the findings in the specific context of the case studies, this chapter critically discusses the concerns related to two questions, referring to the theoretical understandings building on literature, from more general and theoretical perspectives.

Thus, firstly, the relationship between sustainability and pro-shrinking policy is explored, especially derived from the analysis of each case study using the strong-weak sustainability framework. The usefulness and, more importantly, the insufficiency of the current framework are indicated. Secondly, to gain a deep insight about the distinctiveness of 'urban development in shrinking conditions', common features and methods and different approaches among pro-shrinking policy responses in the two cities are examined.

5.2 Inter-relationship between sustainability and pro-shrinking

Drawing on the literature and policy examples, basically, relatively strong compatibility between the two concepts, sustainability and shrinkage, is observed. Overall, pro-shrinking policy often has a one-sided view of sustainability: clear awareness about the persistence of human society and little consideration of the natural environment.

One distinction is that a certain ecological benefit is achieved without clear consciousness. The shrinking trend probably creates less pollution and more physical space for the ecology. The total amount of energy consumption and resource usage would be reduced. Sometimes, neglected and unused land and buildings may become ruin and rough forging that is undesirable for a living environment, but it is not necessarily harmful to the natural world. In terms of actual results, as described above, the shrinking approach can be evaluated as *transformative* (*strong* sustainability) and unintendedly reduces the amount of human activity. This change of balance between humans and nature is the opposite way of the believed direction: the growth of human society is unable to reverse. However, a theoretical explanation of this point is not sufficient because policy practice and academic research have

paid very little attention to the environmental influence of urban shrinkage thus far (Rave, 2014).

On the other hand, regarding sustainability in the dimension of human society, some features are difficult to explain based on the framework. The given condition of economic downscaling must pose challenges. Figure 4 is not sufficient to position and appraise the disappointing effects for durability of economy. The argument about sustainability has ignored the potential trajectory of downsizing human activity. Giving up further economic (GDP) growth has been considered an unrealistic or unacceptable trend that has been out of the scope. Moving on to a more social dimension, although some of the policy approaches include novel governing structures evaluated as *transformative*, the recognition of social fairness and disadvantaged people seems *weak*. On the other hand, QOL perceived by the inhabitants are actually not low, measured by satisfaction for the neighbourhoods. It was also difficult to evaluate some positive outcomes of the urban forest in Halle-Silberhöhe, such as good living environment for humans and low maintenance cost, beneficial for the shrunken fiscal capacity of the government. In summary, from the perspective of human society, shrinking conditions may affect material wealth but may not necessarily damage mental well-being.

Therefore, the existing analytical framework seeing growth as 'business-as-usual' is not very helpful to apply to shrinking conditions and pro-shrinking policies. This incongruity makes the conceptualisation of a sustainable model of urban development towards shrinkage complicated and illegible not only in political practice but also in academic debates.

To explore the relationship more deeply by revisiting the five traditions and five equities of sustainability, the pro-shrinkage attitude is evaluated very differently. First, considering the *capacity* tradition or *inter-species equity* of sustainability, the shrinking trend cannot be said to be undesirable. Similarly, based on views of *balance* and *inter-generational equity*, shrinking conditions are also outside, or totally opposite, of their prerequisite concern. In terms of merits of conserving natural resources for ecology and for future generations, it should be welcome. However, assessing it as purely positive is difficult, considering the possible demerits for socioeconomic aspects, especially for the present generation. Nevertheless, pro-

shrinking strategies are barely aware of these theoretical understandings, despite being unintendedly sympathetic.

Second, overall, the accepting responses are in harmony with the idea of *fitness* in a de facto way. The central idea of the policies is the celebration of adapting the built capacity and supply of services to the shrinking demand, which seems to be close to the essence of *fitness*, optimal scale and moderate level. However, even though optimal urban scale may be ideal as a goal, how big this scale is and how to measure it are still unclear. It also seems to face several challenges in the process of reaching the goal. On the other hand, little attention has been paid to *resilience* and *diversity*. In terms of *resilience*, in part, increasing unused land may have great potential to have a margin that meets future needs (Haase et al., 2018). However, the programmes of reforestation and dismantlement of technical infrastructures may be rigid regarding future use. Appraising the *diversity* of shrinking policies is also difficult because of the absence of the consciousness. *Variety* might be reduced by demolition of particular kinds of constructions in particular types of areas and by giving up gathering inflow migration from different places and concentrating on the interest of existing inhabitants. There are advantages for *diversity*, respecting the inclusive decision-making process open for various actors and mixed urban form comprising natural greens and developed urban fields.

Third, in the more anthropocentric domain of sustainability, two aspects of *intra-generational* and *geographical equity* are not considered or even intendedly reversed when responding to the necessity of distributing limited public resources unequally. For example, the major programme, housing demolition, took an unfair way between residential blocks owned by public companies and private dwellings. Minimising or removing social and technical infrastructure in particular areas, mainly suburban housing blocks, can degrade living standard and convenience, raise living cost and hinder the accessibility to local amenities. Downscaling of such infrastructures is unavoidable to realise the persistent government finance, which is ultimately local public services included in social sustainability for the entire city from long-term perspectives. However, still, a serious dilemma exists between ensuring equitability for current residents in the transition period and restructuring more durable and reasonable urban forms for the future. Similarly, *procedural equity*

can be assessed as *weak* for such housing policy, whereas some of the participatory governance can be equivalently considered *strong*. Thus, in light of the social dimension as equity, on the one hand, the semi-forcible approach of demolition and displacement may be less democratic (*weak*); on the other hand, the government-led strategic approach without a market mechanism can be said to be transformative (*strong*).

5.3 Common features of pro-shrinking policies

To understand keys of 'planning in shrinking conditions', identifying some common features of the two cities is useful. As emphasised, turning the policy attitude from growth-oriented to shrinkage-oriented should be distinctively challenging. In the exemplified cases, clear messages accepting shrinkage shown by upper-level governments must have contributed to making local governments and citizens receptive to the reality of irreversible decline and indisposing policy. This also may be attributed to two major contextual characteristics: the capacity of national government (power, finance, knowledge, supporting stakeholders) and the speed and scale of demographic decline. Germany has an active state-led tradition in planning policy (Radzimski, 2015), enough centripetal force and a firm state economy. The Dutch state is also known as innovative in the policy arena. What is more, the existence of crisis in the housing market and the dynamic population change provoked energetic federal discussion. Similarly, rapid decline in Halle and long-term decline in Parkstad should have eased the psychological and political shift.

Compared to ordinal pro-growth policy, pro-shrinkage programmes must take a stronger initiative of the government. In particular, non-profitable measures, including reforestation or greening of vacant land, definitely require the leading role and commitment of the public sector, including huge subsidies and direct control (Haase et al., 2018). In fact, two cases employed such types of measures, and moreover, notably restrictive regulations to restrain the housing capacity.

In the process of shrinking, seemingly unwelcomed programmes are often needed at the practice level. Like reduction of residences and services and abstaining pro-growth local policy, such as 'not in my backyard' (NIMBY) issues may have been enabled by upper-level administration as a more neutral polity. The initiative

driven by higher government (national and regional) worked to carry out the uncomfortable policy against short-term concern and personal interests. Regional perspectives, rather than city's, is celebrated by shrinking theorist because it can overcome the issue of competition among neighbouring municipalities, the mismatch between daily commute area and administrative borders, and duplicate investment (Hospers, 2014a; b; Sousa and Pinho, 2015; ESPON, 2017). Parkstad's example demonstrates this point, while Halle's example ironically demonstrates the absence of it.

Seemingly opposite to such a top-down approach, community involvement, a very bottom-up approach, was also observed as a beneficial factor in the cases. Hospers (2014a; b) insists its significance is based on the advantages of creating consensus for uncomfortable decisions (e.g. demolition) welcomed by public, compensating for weakened capacity of governments using local knowledge and recovering local pride about the location. The urban forest in Halle-Silberhöhe and long-term vision and IBA in Parkstad embody those merits of citizen engagement.

Finally, as mentioned before, examined cases did not show any recognition of the shrinkage as good opportunity for new economic sectors, such as the silver, white and green economy. In summary, the common keys to conducting accepting policies include proactive initiatives by wider administrative institutions, top-down leadership and public engagement.

5.4 Planning for a sustainable shrinking city

Curiously, the dominant perception views shrinkage as a miserable climate, while shrinkage has been admired by many theorists (not always the mainstream faction) of economics and sustainability. Smaller/optimal scales of population and economy have been repeatedly advocated as an ideal style of human society by Malthusians, steady-state economists, de-growth theorists and early thoughts of sustainability. Similarly, shrinkage does not necessarily degrade mental well-being or the satisfaction for the neighbourhoods, despite the suffering economy and material wealth. However, in many contexts, sustainability still remains in the position as an antithesis of the pure growth, just as the economic structure added the environmental aspect. Thus, brain freeze occurs in sustainable arguments when the vital issue of the

natural dimension is seemingly resolved by a shrinking population.

Revisiting the fundamental question of 'what is good' should be necessary from a broader perspective, beyond sustainable development as development compatible with long-lasting natural resources. Advanced thoughts are found in the theories of some scholars. J.S. Mill focused more on mental values, morality, beauty and culture as worthy factors for the economy in the higher level of human society (Yaguchi, 2010; Suzuki, 2009). He also emphasised the importance of good redistribution by the government. Mill and Schumacher celebrated a smaller or moderate scale of economy that is sufficient and suitable for people and able to continue qualitative improvement without quantitative expansion (ibid; Hopwood, 2005; Newman, 2005). Such a self-restraining way against business interests may need truly transformative measures outside the present social structure resting on market mechanisms.

Reconsidering the former chapters, pro-shrinkage urbanism requires a very different planning approach to pro-growth policy. It needs the financially disadvantaged way (at least in the short-term) that is unfit for market mechanisms; it mainly interferes with existing physical structures not only future building construction, and it confronts the NIMBY issue. In this manner, planning for shrinking can be a clear-cut policy domain, where proactive public intervention is specifically essential. Furthermore, not only this top-down approach but also the bottom-up process mobilising the public is vital in downscaling planning. Thus, the governance of pro-shrinking development embraces complex character with seemingly contesting double approaches.

Planning itself partly but inherently stems from the need to mediate the failure of the market as it relates to externality and public interest. Development for shrinking direction may reweigh the original role of planning for public welfare, coming back from promoting private-led regeneration or the city as a growth machine for economic prosperity. Such values could join the dimension of social sustainability, equity or social justice, which aims to entitle 'everyone to an acceptable quality and standard of living' (Beder, 2001). Transiting the widespread common sense of that economic growth as necessary to keep living standard is undoubtedly challenging. Some logical explanation for those elusive values, other

than numerical economic benefit, may need to be explored to gain stronger theoretical basis and pragmatic evidence to convince policymakers, the public and stakeholders.

Chapter 6. Conclusion

6.1 Introduction

This paper has explored sustainable means of urban form for medium-sized cities in a depopulating, post-growth era. Based on the findings derived from the literature, the case studies and the broader consideration, this chapter attempts to provide some answers and a future research agenda about the questions.

6.2 Summary of findings building on the literature

The term 'sustainability' is widely and very divergently used in various contexts. The concept is primarily established as a desirable means of socioeconomic development substitutive for growth that is compatible with the natural environment. Although currently sustainability is often treated as a more holistic value of 'what is good', still, the main focus is how to mitigate environmental damage from economic growth. To examine this more deeply, the meaning of 'sustain' was explored through the five traditions and five types of equity. Based on those theoretical views, two different ways to use the concept were found: thoughts in which the tension or the relationship between the two pillars of the ecological and the socioeconomic and perceptions in which only the human dimension as socioeconomic sustainability is independently referred to. In an analysis, paying attention to this difference is required. A large gap in degrees of sustainability also exists regarding how much socioeconomic transformation is intended.

Shrinkage, the opposite of growth, should also be a usual situation, but political and academic arenas have barely been treating this situation as a premise in their arguments. It has been underestimated in its universality and regarded as a temporal and geographically limited phenomenon. Urban policy for shrinking has broadly two different types of response: 'counteracting' and 'accepting'. The predominant growth-oriented approach, 'counteracting', or trying to reverse the depopulating trend, does not seem to be feasible everywhere, especially in smaller cities. Rather, accepting, or pro-shrinkage policy, has been repeatedly advocated as a more realistic direction that does not necessarily impair QOL of happiness of the people.

The affinity between sustainability and shrinkage-orientation is assumed,

but little existent knowledge about this topic exists thus far.

6.3 Key findings based on case studies

Two case studies of urban policies in Halle and Limburg highlight the common distinctive features of pro-shrinkage policy responses. Overall, most of the programmes are assessed as being *transformative* because of the quite drastic measures. First, clearly, housing crisis plays role in provoking political arguments and promoting psychological acceptance. Thus, the focal point of the shrinking policy is also control of the volume of dwellings and infrastructures. Even though radical reduction and restriction of housing may have been unwelcomed policy in general, these cities implemented such programmes standing on realistic recognition about their potential and future. An unintended environmental benefit is the typical advantage found with the reduction of human activity and expansion of nature such as through reforestation. On the other hand, the acknowledgements of the durability of economy and the equality of society are weak, which remains a point of suspense for sustainability of the human dimension.

The cases also demonstrated distinctions in the realm of governance beyond existing traditional structures of polity and market. To realise challenging policy directions, programmes were designed to depart from the traditional structure that tends to be short-sighted and keen on local interests. In summary, a top-down approach, including the leadership of national and regional level authorities, and a bottom-up exercise, such as public engagement, are invented and mobilised.

Despite the novelty and strength of the measures, the difficulty of private property still remains as untouched domain. Programmes sometimes proceed in less strategic and rather random or *ad hoc* fashions. The problem of the unfair or uneven progress of the downsizing process is also a challenge to be solved. Nevertheless, as long as demographic projection is not likely to be reversed, accepting the reality that downscaling existing capacity is inevitable sooner or later is worthy. The process as a whole tends to show *strong* sustainability.

6.4 Suggestions derived from broader discussion

Based on a more general and abstract discussion, pro-shrinkage poses a new angle

for the arena of planning. As the cases demonstrated, shrinking policy is not likely to be realised within market mechanisms. In other words, it is probably a true policy field needing public initiative. Currently, one of the most important jobs of governments is considered to be enhancing the economy, including through the promotion of private business investments, which is precisely growth-oriented. However, inherently, as represented by redistribution, complementation of the market or mitigating the effects of the market's failure must be the government's job. Unlike growth policy, shrinking policy requires stronger and wider public resources, mobilising both traditional tools, such as regulation and planning, and inventive measures, such as public participation with inhabitants and various actors from different fields.

Although the pro-shrinkage policies have been evaluated as *transformative, strong* sustainability, the result might have been influenced by the characteristics of the analytical framework. Because sustainability originated from the concern for the environmental crisis resulting from unlimited expansion of human society, previous frameworks are not sufficient for shrinking conditions in which the socioeconomic dimension is more concerned for than the ecological dimension. Thus, the weakness of the social and economic aspects of pro-shrinkage does not rise from that viewpoint. The concept of sustainability itself might not be sufficient in terms of mental value and quality of human lives.

6.5 Conclusion of key findings

To conclude, the essences in former chapters include the following:

➢ Sustainability often refers to a means of development consistent with long-lasting natural environment. However, coming from the notion of 'sustain', it is used in various meanings in different context not only regarding the balance between nature and human but also the durability of human society and of economy independently.

➢ Policy responses for shrinkage are categorised into 'counteracting' and 'accepting', and the latter is beginning to be considered a more realistic and worthy direction by scholars.

➢ Examining real-life examples, most pro-shrinkage policies are evaluated to have

strong sustainability regarding environmental advantages and transformative ways outside the existing social structure, including wider territorial authority and public engagement.

➢ The major theoretical framework about sustainability still focuses on the environmental issue of growing the economy, which makes the understanding of shrinking conditions insufficient. Shrinkage-orientation provides a new way of thinking in debates about planning and sustainability.

To consider the fundamental role of urban policy and the essence of the concept of sustainability again, the significant point is ensuring a quality of livelihoods that is compatible with the natural environment. Based on this view, the ideal development style of human society may progress by improving quality within the smaller and more moderate scale of the economy, not simply by expanding quantity towards more economic growth. In this manner, the pro-shrinkage direction has a great potential to realise a vale in the next stage of human society. To understand sustainable urban form in shrinking conditions, a socioeconomic facet of sustainability may need deeper and more detailed conceptualisation and theorisation, combined with broader values.

6.6 Limitations and future research suggestion

Due to the constraints, limited availability of original public documents, including language problems, means the case studies rely heavily on secondary data in previous literature written by researchers. Thus, unlike pure discourse analysis using primary data consisting of dialogues of various relative actors, this research might be influenced by the interpretation and bias of the authors as outsiders. The latest data about the ongoing process was also impossible to access. Lack of primary data also resulted in utilisation of the modification of existing analytical framework into more simple style.

At the analysis phase, my judgments and interpretations might have been influential when using a very qualitative method. The effort to explain the reasons of the evaluation was made, but it could be read differently by another researcher. Regarding the case, only a limited number of programmes were focused on due to

the limitation of time, data and so on. The selection of accepting policies might have been arbitrary. In particular, economic sustainability must have been a huge concern, but no effective measure has been observed in the case studies.

As argued, the current framework of sustainability is not sufficient for understanding pro-shrinkage policy. The concept or focus of sustainability itself needs to be improved to be more applicable to shrinking conditions, not only concerning negative environmental impacts of growth.

Through the new aspect posed by arguments about sustainability and urban planning for shrinkage, significant questions will appear. What is the inherent responsibility of the government and governance in planning policy for public goodness? How does it relate to inclusive governance institutions? More significantly, what is 'goodness', modified sustainability or post-sustainability as next stage of value? Reconsidering such fundamental questions surrounding 'what is good' for human society and the natural environment is hoped for in the next generations.

Bibliography

Bartholomae, F. and Nam, C.W. (2014), 'Halle: A shrinking city in eastern Germany', p.255-263 in Richardson, H.W. and Nam, C.W. (eds.), *Shrinking cities: a global perspective*, Abingdon, Oxon: Routledge

Beder, S. (2001), *What is equity?* [accessed 10th July 2018], <https://www.uow.edu.au/~sharonb/STS300/equity/meaning/>

Bernt, M. (2017), 'The emergence of "Stadtumbau Ost"', *Urban Geography*, p.1-18

Bernt, M. (2009),'Partnerships for Demolition: The Governance of Urban Renewal in East Germany's Shrinking Cities', *International Journal of Urban and Regional Research*, Vol.33.3, p.754–69

Bontje, M. (2013) 'Parkstad Limburg: Coping with Shrinkage for Better or Worse', *The Protocity.com*, 23rd December 2013 [accessed 15th June 2018], <theprotocity.com/parkstad-limburg-coping-with-shrinkage-for-better-or-worse/>

Brinkhoff, T. (n.d), *City Population*, [accessed 10th July 2018], <http://www.citypopulation.de>

Bryman, A. (2016), *Social Research Methods 5th edition*, Oxford University Press, Oxford

Carmona, M., Tiesdell, S., Heath, T. and Oc, T. (2010), *Public Places Urban Spaces: The Dimensions of Urban Design, Second Edition*, Oxford: Architectural Press

Couch, C. Sykes, O. and Bo¨rstinghaus, W. (2011),'Thirty years of urban regeneration in Britain, Germany and France: The importance of context and path dependency', *Progress in Planning*, Vol.75, p.1–52

Creswell, J.W. and Miller, D.L. (2000), 'Determining validity in qualitative inquiry', *Theory Into Practice*, Vol.39, No.3 p.124-130

Dempsey, N., Bramley, G., Power, S. and Brown, C. (2011), 'The Social Dimension of Sustainable Development: Defining Urban Social Sustainability', *Sustainable Development*, Vol. 19, p.289–300

Department of Environment, Transport and the Regions (DETR) (1999), *Towards an Urban Renaissance*, London, Urban Task Force

Economist (2015), *Urban policy: How to shrink a city*, 30th May 2015 [accessed 15th June 2018], <https://www.economist.com/leaders/2015/05/30/how-to-

shrink-a-city>

Ellis D. (2008), 'Happiness in shrinking cities in Germany: A research note', *Journal of Happiness Studies*, Vol.9, Issue 2, p.213-218

Elzerman, K. and Bontje, M. (2015),'Urban Shrinkage in Parkstad Limburg', *European Planning Studies*, Vol. 23, No. 1, p.87–103

ESPON (2017), *POLICY BRIEF: Shrinking rural regions in Europe Towards smart and innovative approaches to regional development challenges in depopulating rural regions, [accessed 30th June 2018], <https://www.espon.eu/rural-shrinking>*

EUKN (2010), 'Urban development model for Halle (Saale)', written by Ringel, J., Weidner, S. and Korzer, T., *Article of European Urban Knowledge Network,* 7th December 2010 [accessed 30th June 2018], <www.eukn.eu/e-library/project/bericht/eventDetail/urban-development-model-for-halle-saale/>

European Commission (2010), *Second State of European Cities Report*, [e-book], Research Project by Rheinisch-Westfälisches Institut für Wirtschaftsforschung, German Institute of Urban Affairs (DIFU), NEA Transport research and training & Policy Research & Consultancy (PRAC) <http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/urban/stateof cities_2010.pdf>

European Commission (2011), *Cities of tomorrow - Challenges, visions, ways forward -*, [e-book], Publications Office of the European Union, Luxembourg, <http://ec.europa.eu/regional_policy/index_en.htm>

Eurostat (n.d.), provided by European Commission, [accessed 30th June 2018], < http://ec.europa.eu/eurostat/cache/RCI/#?vis=city.statistics&lang=en>

Florida R. (2014), 'The Creative Class and Economic Development', Economic Development Quarterly, Vol. 28, No. 3, p.196–205

Flyvbjerg, B. (2006),'Five misunderstandings about case-study research', *Qualitative inquiry*, Vol.12, No.2, p.219-245.

Frey, H., Bagaeen, S., Gianchis, C. and Faria, P. (2010), *Urbanising suburbia: The handbook. Establishing threshold, average and target values of sustainable urban quarters*, [e-book], Report in city-form.org.uk, <http://www.city-form.org/uk/pdfs/CityForm_US_Handbook.pdf>

GREEN SURGE, (2015), *HALLE (SAALE), GERMANY: Case Study City Portrait*, written by Hansen, R. and Santos, A., [accessed 30th June 2018], <http://greensurge.eu/products/case-studies/Case_Study_Portrait_Halle.pdf>

Grin, J., Rotmans, J. and Schot, J. (2010), *Transitions to Sustainable Development: New Directions in the Study of Long Term Transformative Change*, Oxon: Routledge

Großmann, K., Bontje, M., Haase, A. and Mykhnenko, V. (2013),'Shrinking cities: Notes for the further research agenda', *Cities*, Vol.35, p.221-225

Haartsen, T. and Venhorst, V. (2010),'Planning for Decline: Anticipating on Population Decline in the Netherlnad', *Tijdschrift voor Economische en Sociale Geografie [Magazine for Economic and Social Geography]*, Vol.101, No.2, p.218–227

Haase, A., Wolff, M. and Rink, D.(2018),'From Shrinkage to Regrowth: The Nexus Between Urban Dynamics: Land Use Change and Ecosystem Service Provision', p.197-219, in Kabisch, S, Koch, F., Gawel, E., Haase, A., Knapp, S., Krellenberg, K., Nivala, J. and Zehnsdorf, A. (eds.), *Urban Transformations Sustainable Urban Development Through Resource Efficiency: Quality of Life and Resilience*, Cham: Springer Nature, [e-book], <https://link-springer-com.ezproxy.lib.gla.ac.uk/book/10.1007%2F978-3-319-59324-1>

HalleSaale.info / VorHalle / Straßen-Name (n.d.) <http://www.hallesaale.info/str1n.htm>

Hamdouch, A. and Demaziere, C. and Banovac, K. (2017), 'The Socio-economic Profiles of Small and Medium-sized Towns: Insights from European Case Studies', *Tijdschrift voor Economische en Sociale Geografie [Royal Dutch Geographical Society]*, Vol. 108, No. 4, p.456-471

Hattori, K. (2013), 'Kyu-Doitsu no shukusho toshi no kenkyu - Burandenburugu-shu no Kottobusu-shi wo jirei to shite' ['The Study of Shrinking City in former GDR, Germany: A Case Study of Cottbus, Brandenburg'], *Keizai-kenkyu[The papers and proceedings of economics]*, Vo.146, p.127-166

Hattori, K. (2010), 'Zakusen-Anharuto-shu no shukusho-seisaku ni kansuru kenkyu' ['Research about the shrinking urban policy in Saxony-Anhalt'], *The Bulletin of Institute for Research and Economics*, No.27, p.61-87

Haughton, G. (1999),'Environmental Justice and the Sustainable City', *Journal of Planning Education and Research*, Vol.18, Issue 3, p.233-243

Hirt, S. A., (2009),' 'Premodern, Modern, Postmodern? Placing New Urbanism into a Historical Perspective', *JOURNAL OF PLANNING HISTORY,* Vol. 8, No. 3, p.248-273

Hoekveld, J.J. and Bontje, M. (2016),'Intra-Regional Differentiation of Population Development in Southern-Limburg, The Netherlands', T*ijdschrift voor Economische en Sociale Geografie [Magazine for Economic and Social Geography]*, Vol.107, No. 3, p.282–297

Hollander, J.B. (2011) 'Can a City Successfully Shrink? Evidence from Survey Data on Neighborhood Quality', *Urban Affairs Review*, vol.47, No.1, p.129 –141

Hopwood, B., Mellor, M. and O'Brien, G. (2005), 'Sustainable Development: Mapping Different Approaches', *Sustainable Development*, vol.13, p.38–52

Hospers, G.J. (2014a), Policy Responses to Urban Shrinkage: From Growth Thinking to Civic Engagement', *European Planning Studies*, Vol.22, No.7, p.1507–1523

Hospers, G.J. (2014b), 'Chapter 4 Urban Shrinkage in the EU', p.47-58 in Richardson, H.W. and Nam, C.W. (eds.), *Shrinking cities: a global perspective*, Abingdon, Oxon: Routledge

Jenks, M, Williams, K. and Burton, E. (1996), *The Compact City: A Sustainable Urban Form*, [e-book] Spon Press, London, <https://ebookcentral.proquest.com/lib/gla/detail.action?docID=181079>

Jenks, M, Williams, K. and Burton, E. (2013), *Achieving sustainable urban form*, [e-book] London & New York, E & FN Spon, <https://books.google.co.uk/books?id=gVnoeny1wG4C&printsec=frontcover>

Kawaguchi, M. (2006), 'Jizoku-kanosei "sustainability" toha nani ka' [What is 'sustainability'?], *Keiei-Senryaku Kenkyu [Research of Management Strategy]***,** Vol.9, p.30-59, [accessed 16th June 2018], <www.daiwa-grp.jp/csr/publication/pdf/060807csr.pdf>

Kübler, A, Stauß, C. and Warner, B. (2012), 'Regional Land use Management under Shrinkage Tendencies in the Region Halle-Leipzig', p.93-109 in Ganser, R. and Piro, R. (eds.), *Parallel patterns of shrinking cities and urban growth: Spatial*

Planning for Sustainable Development of City Regions and Rural Areas (Urban Planning and Environment), Surrey: Ashgate

Larco, N. (2015),'Sustainable Urban Design: A (Draft) Framework', *Journal of Urban Design*, Vol.21, No.1, p.1-29

Lees, L. (2004),'Urban geography: discourse analysis and urban research', *Progress in Human Geography*, Vol.28, No.1, p.101-107

Lindenberg, J. and Westendorp, R.G.J. (2015), 'Overcoming Old in Age-Friendliness', *Journal of Social Work Practice*, Vol.29, No.1, p.85-98,

Lombardi, D.R. Porter, L. Barber, A and Rogers C.D.F. (2011),'Conceptualising Sustainability in UK Urban Regeneration: a Discursive Formation', *Urban Studies*, Vol.48, No.2, p.273-296

Mallach, A Haase, A. and Hattori, K. et al. (2017),'The shrinking city in comparative perspective: Contrasting dynamics and responses to urban shrinkage', *Cities*, Vol.69, p.102-108

Martínez-Alier, J., Pascual, U., Vivien, FD & Zaccai, E. (2010) 'Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm', *Ecological Economics*, vol.69, p.1741–1747

Martinez-Fernandez, C., Weyman, T., Fol, S. Audirac, I. Cunningham-Sabot, E., Wiechmann, T. and Yahagi, H. (2016),'Shrinking cities in Australia, Japan, Europe and the USA: From a global process to local policy responses', *Progress in Planning*, Vol.105, p.1-48

Martinez-Fernandez, C., Audirac, I., Fol, S. and Cunningham-Sabot, E. (2012), 'Shrinking Cities: Urban Challenges of Globalization', *International Journal of Urban and Regional Research,* Vol. 36 No.2, p.213-225

Meadows D.H., Meadows D.L., Randers J. and Behrens W. (1972), *The Limits to Growth: a Report for the Club of Rome's Project on the Predicament of Mankind*, London: Earth Island

Mohdin, A. (2018),'IT'S A SMALL, SMALL WORLD: The fastest shrinking countries on earth are in Eastern Europe', *QUARTZ*, 24 January 2018, [accessed 15 June 2018], < https://qz.com/1187819/country-ranking-worlds-fastest-shrinking-countries-are-in-eastern-europe/ >

Nadamitsu, Y., Asai, A. and Koyanagi, S. (2014), 'shitsu-teki kenkyu-hou ni tsuite

kangaeru: Grounded Theory Approach, Narrative Analysis, and Action Research wo chushin to shite' [A Comparison of Three Qualitative Research Methods: Grounded Theory Approach, Narrative Analysis, and Action Research], *Ibunka communication Ronshu [Intercultural communication review]*, Vol.12, p.67-84

Neuman, M. (2005), 'The Compact City Fallacy', *Journal of Planning Education and Research*, vol. 25, p.11-26

Ohmura, K. (2013),'Doitsu ni okeru Shukusho Taio-gata Toshikeikaku: Danchi-Saisei wo Tyushin ni' [Planning Accepting Shrinkage in Germany: Focus on Housing Complex Regeneration], *Tochi Sogo Kenkyu [Integrated Research of Land]*, Vol. 21, Issue 1, p.1-20

Onuma, S. (2010),'Marusasu, Miru, soshite Masharu: Hinkon to Jinkou ni tsuite' ['Malthus, Mill, and Marshall: on poverty and population'], *Tohoku-Gakuin-Daigaku Keizai-gaku Ronshu [Collection of Economics Essays of University of Tohoku Gakuin]*, Vol.175, p.39-52

Oswalt, P. (2008), 'Chapter 1 Shrinking Cities', p.3-17 in *Shrinking Cities: Complete Works 3: Japan, [accessed 8th August 2018]* < http://www.shrinkingcities.com/digital.0.html%3F&L=1.html >

Popper, D.E., and Popper, F.J. (2002), 'Small can be beautiful: Coming to terms with decline', *Planning*, Vol.68 No.7, p.20–23.

Puissant, S. and Lacour, C. (2011),'Mid-sized French cities and their niche competitiveness', *Cities*, Vol.28, p.433-443

Radzimski, A. (2015), *Can Policies Learn? The Case of Urban Restructuring in Eastern Germany*: Paper presented at the Regional Studies Association Annual Conference 2015 Piacenza, Italy, 24-27 May 2015, [accessed 30th June 2018], <https://ssrn.com/abstract=2662428>

Rave, T. (2014),'Chapter 21: Environmental Impacts of Shrinking Cities', p.311-325 in Richardson, H.W. and Nam, C.W. (eds.), *Shrinking cities: a global perspective*, Abingdon, Oxon: Routledge

Reckien, D. and Martinez-Fernandez, C. (2011),'Why Do Cities Shrink?', *European Planning Studies*, Vol.19, No.8, p.1375-1397

REDIS, (2010), *Towards a creative cluster in Halle (Saale): Results of the REDIS*

Implementation Lab, written by Winden, W.V. [accessed 15 June 2018], < urbact.eu/file/7723/download?token=yu_MdIW9>

Richardson, H.W. and Nam, C.W. (2014),' Chapter 1 Shrinking Cities' p.1-7 in Richardson, H.W. and Nam, C.W. (eds.), *Shrinking cities: a global perspective*, Abingdon, Oxon: Routledge

Sousa, L. and Pinho, P. (2015),'Planning for Shrinkage: Paradox or Paradigm', *European Planning Studies*, Vol.23, No.1, p.12–32,

Shrink Smart, (2010), *Urban shrinkage in Leipzig and Halle, the Leipzig-Halle urban region, Germany Research report*, written by Rink, D., Haase, A., Bernt, M., Arndt, T. and Ludwig, J. [accessed 30th June 2018], <www.ufz.de/export/data/400/39014_WP2_report_Leipzig_Halle_kompr.pdf>

Shrink Smart (2012), *Governance of shrinkage – Lessons learnt from analysis for urban planning and policy*, written by Rink, D., Rumpel, P., Slach, O., Cortese, C., Violante, A., Bini, P.C., Haase, A., Mykhnenko, V., Nadolu, B., Couch, C., Cocks, M., and Krzystofik R., [accessed 30th June 2018], <www.ufz.de/export/data/400/39029_WP7_D13_14_15_FINAL_2.pdf>

Suzuki, Y. (2009),'J.S. Mill no Shizen-kan to Teijou-joutai no Keizai-shiso'[The View of Nature and Economic Ideology of Steady State Economy of J.S. Mill], *Communication & Society*, Vol.19, p.69-77

the United Nations (2017), *World Population Prospects: The 2017 Revision*, <https://www.un.org/development/desa/publications/world-population-prospects-the-2017-revision.html>

Uemura, T. (2016), 'Oranda Rinburufu shu Buraideruhaide ni okeru Akiya no Genchiku-Saisei no Torikumi', [Downscaling and Regeneration of Empty Housing in Bleijerheide, Limburg, Holland], *NRI Public Management Review*, Vol.154, p.1-8

United Nations World Commission on Environment and Development (WCED) (1987), *Our Common Future*, *The Brundtland Report,* Oxford and New York, Oxford University Press

Werkstatt-Stadt, (2013), *Urban forest landscape on demolition areas: Halle-Silberhöhe 'Forest Town'(Saxony-Anhalt), [Last update: 12th December 2013]*, < https://www.nationale-

stadtentwicklungspolitik.de/NSP/SharedDocs/Projekte/WSProjekte_ENG/Halle_Silberhoe he_Waldstadt.html>

Westerink, J. Kempenaar, A., van Lierop, M., Groot, S., van der Valk, A. and van den Brink, A. (2017),'The participating government: Shifting boundaries in collaborative spatial planning of urban regions', *Environment and Planning C: Politics and Space*, Vol.35, Issue 1, p.147–168

Wiechmann, T. and Bontje, M. (2015),'EDITORIAL: Responding to Tough Times: Policy and Planning Strategies in Shrinking Cities', *European Planning Studies*, Vol.23, Issue 1, p.1-11

Wiechmann, T. and Wolff, M. (2013), *Urban Shrinkage in a Spatial Perspective – Operationalization of Shrinking Cities in Europe 1990-2010*, in AESOP-AC S P Joint Congress, 15-19 July 2013, Dublin

Yaguchi, K. (2010),'" Jizoku-Kano na Hatten" to Jizoku-Kanosei Shihyo' ['"Sustainable development" and sustainability indices'], *Reference*, Vol.60, Issue 4, p.3-27

Zumelzu, A. and Doevendansa, K. (2016), 'Modularity and sustainability: Eindhoven as an example of pragmatic sustainable design', *URBAN DESIGN International,* Vol.21, p.93–110

Appendix

A note of categorising policy responses to urban shrinkage in EU countries and cities (organising extracts and summaries from literature)

area	typology	attitude/ stance	Projects/ Programmes	city examples
Western EU				
Germany				
East Germany	Accepting	Slowly but surely tend to accept the declining trend. (Hospers, 2014, p.51) The Germans call this "Gesundschrumpfen" (healthy shrinking)(Hospers, 2014a, 1513)		-
East Germany	Pro-growth		Eastern Germany reduced fee for student inflow (Hospers, 2014a;b)	?
East Germany	Accepting	state-run, attempt to deal with the consequences of demographic change and urban shrinkage in comprehensive way. Federal States stands for the aspiration to adapt to the on-going trajectories and to scale down the oversized physical structures of shrinking cities. (Martinez-Fernandez et al. 2016, p.39)	**Stadtumbau Ost**, at first tackled to housing vacancy (demolition)) using different stakeholders' resources and following Commission Recommendation (Mallach et al. 2017) (Großmann et al. 2013) Two pillars of Reduce vacant housing in suburban area (mainly prefabricated ones) and Upgrading the historical core areas. Those two aimed to make attractive living environment; shrink 'from outside to the inside'; Municipalities must submit overarching spatial city planning (2001-2009, extended to 2016); 2003-2007: reducing vacant housing by demolish stabilising the housing market was predominant, over 50%,then 2010-2013, upgrading 70% and historical buildings of 14% (Radzimski, 2015)	Halle (238005) Leipzig (571088)
East Germany	Accepting		A good example is the transfer agency "Urban Restructuring East" (Bundestransferstelle **Stadtumbau Ost**) in Germany. This national funded agency is an instrument to steer urban restructuring in shrinking cities (Shrink Smart, 2012, p.12)	
East Germany	Accepting		In order to cope with the impacts of shrinkage, the cities in Eastern Germany have elaborated and established comprehensive and integrated urban development master plans (INSEK or SEKo). (srink smart 2010)	Halle (238005) Leipzig (571088)
Halle (238005)	Accepting		In the context of the federal programme Stadtumbau Ost, elaborated **integrated masterplans** to tackle with shrinkage. It, practising management of shrinkage as well with a **controlled downsizing and restructuring** of the city and **the goal of a stabilisation at a population number of 200,000 inhabitants** (srink smart 2012, p.8) planning strategies are orientated to this scenario since all measures and instruments (e.g. local business development, housing policy, university development) should support such a development. (shrink smart, 2010, p.77)	
Halle (238005)	Accepting		**demolition** took place mainly in prefab housing areas Halle –Neustadt and Halle-Silberhöhe; which was mainly owned by public sector (owner living rate is quite low.) (shrink smart, 2010)	
Halle (238005)	Accepting		the strategies for urban restructuring (development in the inner parts of the cities and demolition in the outer parts) can only be realised in cooperation with housing companies that hold large housing areas. (Green Surge, 2015, p.9)	
Halle (238005)	Accepting		Glaucha district established **'landlord moderator'** who give information and advice to think renovation of selling to individual landlords tackling housing problems (Radzimski, 2015, p.10)	
Halle (238005)	Accepting		**'forest city' (Halle-Silberhöhe),** low cost and valuable use after demolition, Urban forest is an extensive and long-term oriented form of landscaping; the costs of the input and landscaping are relatively low. Through stakeholder processes the inhabitants involved in these restructuring and the leitmotif became highly accepted. (shrink smart 2010)	Halle (238005)
Halle (238005)	Accepting		Forest ciy is base on "Spatial Vision Halle 2025 plus", part of the ISEK(**Integrated Urban Development Strategy (ISEK)**) 2012 aiming at creating a positive image of the city. For. Early participation was taken as part of the ISEK process, which regards specific group of people (young-children, university students, the elderly, skaters etc.) (Green Surge 2015)	
Halle (238005)	?		was not able to stop suburbanisation by enlarge the teritory of the city (failed to integrate surrounding municipalities into same authority); and conflicting each interests (shrink smart 2010)	
Leipzig (571088)	Pro-growth		Huge investment to create new transportation (airport), industrial district, office complex and housing improvement; and event using Western German budget let it possible to regrowth by mainly young generation (Rink et al., 2012)	
Leipzig (571088)	Pro-growth		Leipzig gathering new residents from surrounding area (Richardson & Nam, 2014)	
Leipzig (571088)	Accepting		The Interim Use Agreement (Gestattungsvereinbarung) promotes use of a private open plot or brownfield. While the owner maintains the building rights for his property, the local authority gets the right for a public use to green spaces, make them accessible for public use and improve the attractiveness, and subsidise (lower const than public ownership) . (srink smart 2012, p.26) a model was developed in Leipzig about how to keep vacant plots from further dilapidation: the so-called Gestattungsvereinbarung is an agreement between the owner of the plot and a user who uses the plot for a given time with the acceptance of the owner; eabling landlords to improve their brownfield areas and to make them accessible to the public for a certain time with financial support from the municipality. (shrink smart 2010, p.45)	

West Germany	?	However, growth due to immigration from Central and Eastern Europe to West German cities put a sudden end to this debate.(Wiechmann & Bontje, 2015, p.2)		
Ruhr	Accepting (utilisng?)		German Ruhr Area are experimenting with smart living concepts for elderly people (Hospers, 2014a, p.1514)	
UK				
	Accepting	Slowly but surely tend to accept the declining trend. (Hospers, 2014b, p.51) English refer to "planning for decline".(Hospers, 2014a, p.1513)		
	Accepting?	urban decline, brown-field land, and abandoned housing have typically been discussed in the context of 'urban regeneration' and 'neighbourhood revitalisation' strategies (Großmann et al. 2013, p.222)		
	?	Urban regeneration has always been on the agenda especially in the large ''old industrial cities''(Martinez-Fernandez et al. 2016, p.24)		
	?		To demolish housing, Compulsory purchase order should be applied only in emergency cases (smart shrink, 2012, p.40)	Liverpool
New-castle(282,708)	pro-growth	creative cities approach (Richardson & Nam, 2014)		
Liverpool (571,733)	pro-growth	approaches to managing decline, implemented in parallel to the growth strategies (smart shrink, 2012, p.7)	stopped suburbanisation and natural demographic improvement contributed the re-growth; **national strong regional support** (Rink et al, 2012) Huge investment to airport, cultural and technological facilities, tuoursm and event using naional budget let it possible to regrowth by immigrants (Rink et al., 2012)	
Liverpool (571,733)	Accepting		stopped suburbanisation led by a **state policy** encouraging redeveloping existent land to housing and focus on inner city (smart shrink, 2012)	
Liverpool (571,733)	Accepting		**housing moratoria,**whereby new housing development was restricted to inner ity area actively stopping suburbanisation in the form of a statutory 'supplementary planning document' to the **the Liverpool Unitary Development Plan (UDP, 2002)** was effective (smart shrink, 2012, p.33)	
Liverpool (571,733)	Accepting		green belt around the city where only limited development is permitted (through a **Merseyside Green Belt Local Plan**) (smart shrink, 2012, p.33)	
Liverpool (571,733)	Accepting		**Housing Market Renewal initiative** was established in England in 2002; funds, and this generally involved a mix of refurbishment, demolition and new build.(smart shrink, 2012, p.33)	Liverpool
Liverpool (571,733)	Accepting		regional level, **a Regional Spatial Strategy (2004-2010)** designated mandatory housing targets for sub-regions within its remit, so limiting the ability of suburban and peripheral districts to increase their housing stock.(smart shrink, 2012, p.7)	Liverpool
Liverpool (571,733)	Accepting		included strategic consolidation of schools in neighbourhoods where the young population was falling .(smart shrink, 2012, p.7)	
France				
	pro-growth	absent, but some of similar PJs to support declined areas in mainly post-industrial cities has been conducted. the decline of small towns is obviously not on the policy agenda at the national level. (Martinez-Fernandez et al. 2016, p.23)		
	triviatising	does not take symptoms of shrinkage seriously and consequently does not take any action (Hospers, 2014, a, p.1511) "doing nothing" (Hospers, 2014a, p.1511)		
Netherlands				
	Accepting	Slowly but surely tend to accept the declining trend. (Hospers, 2014b, p.51) South of the Netherlands, strategies of "slimpen" (smart shrinking)(Hospers, 2014a, p.1513) Nowadays, the motto "shrinkage as opportunity" is frequently heard in both governmental as well as research publications. (Elzerman & Bontje 2015, p.95)	-	-
	Accepting	Derks et al. (2006). Nevertheless, the Derks report has had a strong agendasetting influence in Dutch policy-making. planners and policy-makers use 'planning for quality' and 'smart shrinking' (Haartsten&Venhorst, 2010, p.218)		

	Accepting	recent shrinkage in the Netherlands is mostly a rural affair; Growth-oriented planning is still adequate and needed in the largest city-regions of the Netherlands, but has meanwhile become counterproductive in less urbanized areas and in the border regions (Elzerman & Bontje 2015, p.87[)	In 2009, the Dutch national government even developed a "national shrinkage strategy", the Ministry develop the inter-administrative action plan "Krimpen met kwaliteit" ("shrinking with quality") (BZK/WWI/VROM/VNG/IPO, 2009) with local authorities, in which shrinkage should be accepted and guided and might even offer new opportunities and not only threats (less congestion, a less strained housing market etc.) is stressed (Elzerman & Bontje 2015, p.91)	
	Accepting	national policy shift towards compact city policies since mid of the 1980s as reurbanisation (Elzerman & Bontje 2015)		
	Accepting	-	A new housing construction must be accompanied by two demolitions of houses (Hospers, 2014)	?
Dordrecht (118,466)	Accepting	-	once promoted demolition, but turned to promote renovation (Hospers, 2014)	
Groningen region (583,109)			generally demolishing and rebuilding houses is taken by policymaker, but in north-east Groningen, policy-makers are considering focusing on caring for the elderly, instead of building, in order to prevent a surplus of care houses in the housing stock within the next twenty years; Groningen this resulted in a surplus of privately-owned houses (Haartsten&Venhorst, 2010 ,p.225)	
Groningen region (583,109)			Co-operation at the regional level is thought to be the solution (Haartsten&Venhorst, 2010)	
Groningen city (202,900)	Accepting		Municipalities are now considering buying some of these starter-houses from their private owners, and demolishing some of them (Haartsten&Venhorst, 2010, p.225)	
Delfzijl (24,876)	Accepting			
Winschoten in Oldambt (38,077)	Accepting			
Limburg region (1,117,314)	Accepting	Parkstad Limburg was the first region in the Netherlands where shrinkage was not only accepted as a structural trend, but also led to shrinkage-oriented planning policies. (Elzerman & Bontje 2015, p.88)	Co-operation at the regional level is thought to be the solution (Haartsten&Venhorst, 2010, p.224) eight municipalities signed the "Pact of Parkstad" (Parkstad Limburg, 2009b), which is a step towards the provision of more political mandates for the regional board; but the complex local relations and the fragmentation of identities in the region still make it hard for local politicians to prioritise regional interests over local sentiments (Elzerman & Bontje 2015, p.99)	
Limburg region (1,117,314)	Accepting	Without collaboration they fear that each municipality would build to attract inhabitants from the other municipalities, leading to even more vacancy. (Westerink et al. 2017 , p.156)	The city region coordinated the composition of the joint Reconstruction Strategy (Herstructureringsvisie) (Parkstad, 2009), in which the municipalities agreed where to aim for intensification and where for extensification of neighbourhoods, including targets for numbers of houses to be demolished and built (Westerink et al. 2017 , p.157)	
Limburg region (1,117,314)	Accepting	This regulating role of the province is appreciated by the municipalities, because it prevents free-riding and imposes collaboration. (Westerink et al. 2017 , p.156)	In the Housing regulation for Zuid Limburg (Verordening Wonen Zuid-Limburg) of 2013, the province forbids municipalities to approve building plans if not at least the same number of houses is being demolished. (Westerink et al. 2017 , p.156)	
Limburg region (1,117,314)	Accepting		The local and regional governments in Parkstad Limburg have recently developed a strategy to adapt the housing stock: a stable regional housing market in 2020. In short, it is estimated that 6245 houses must be taken out of the market, 5110 houses must be built because of already granted building permissions, and 1802 care houses will be added to cope with the housing preferences of an ageing society. (Elzerman & Bontje 2015, p.97)	
Limburg region (1,117,314)	Accepting	After going through a time-consuming mourning process of denial, condemnation, and resistance, shrinkage is now finally accepted by most of the policy-makers in Parkstad Limburg;as planning for decline and in some areas maintenance (Elzerman & Bontje 2015, p,92)	Kenniscentrum Bevolkingsdaling (Knowledge Centre Population Decline) in the province of Limburg was founded to bring together scholars (Elzerman & Bontje 2015, p.92)	
Limburg region (1,117,314)	Accepting		It is planned to start the IBA Parkstad Limburg in 2012 (Parkstad Limburg, 2010, pp. 63–66) creating public awareness, civil involvement, and micro economic activities. (Elzerman & Bontje 2015, p.100) IBA Parkstad 2013–2020 is intended as a series of bottom-up projects that will form an exhibition in 2020 (Westerink et al. 2017, p.160)	
Limburg region (1,117,314)	Accepting		]	
Limburg region (1,117,314)	Accepting			
Heerlen (86,819)	Accepting		Up to now,restructuring in smaller cities in the regions of decline has worked out well (Haartsten&Venhorst, 2010, p.225)	
Heerlen (86,819)	Accepting (utilisng?)		Dutch shrinking city of Heerlen, such "pocket parks" turn out to be popular among the locals (Hospers, 2014a, p.1514)	
Belgium				
Messancy	accepting (unsuccsessful)		setting up communities especially for the elderly are not very successful (Hospers 2014a, p.1514)	
Central-East EU (post-socialist)				
		Under postsocialism, urban and regional policy in eastern Europe has been geared almost exclusively towards attracting foreign direct investment and increasing the competitiveness of individual cities.(Großmann et al. 2013, p.222)		
Poland				

66

	market-led, Pro-growth	talking about shrinkage is still taboo (Rink et al. in Hospers 2014, p.1515)		-
	triviatising	does not take symptoms of shrinkage seriously and consequently does not take any action (Hospers, 2014a, p.1511) "doing nothing" (Hospers, 2014a, p.1511)		
			lack of revitalisation law, cities wait for the national legislation (Strzelecka, 2008)	
Sosnowiec (204013)	market-led, Pro-growth	The Polish city of Sosnowiec is one of the many cities in Eastern Europe trying to counteract shrinkage with tax reliefs and direct loans for high-tech firms (Hospers, 2014a, p.1512)	introduced tax relief, direct loan for high-tech firms. (Hospers, 2014b, p.50) good experiences with Special Economic Zones facilitating investment and offering tax releases for a limited period of time. (shrink smart, 2012, p.11)	
Sosnowiec (204013)	market-led, Pro-growth		Katowice or Sosnowiec in Poland made good experiences with Special Economic Zones facilitating investment and offering tax releases for a limited period of time (Shrink Smart, 2012, p.40)	
Sosnowiec (204013)	?		between different municipalities within a region or an urban agglomeration, e.g. the association of Upper Silesian Cities (ZMG) in Poland created better linked and streamlined; a strategic dialogue (shrink smart, 2012, p.41)	
Sosnowiec (204013)	?	not developed a strategic planning against shrinkage or planning for the context of decline up to present. (shrink smart, 2012, p.11)		
Bytom				
Romania				
	market-led, Pro-growth	talking about shrinkage is still taboo (Rink et al. Hospers 2014, p.1515)		
	triviatising	does not take symptoms of shrinkage seriously and consequently does not take any action (Hospers, 2014a, p.1511) "doing nothing" (Hospers, 2014a, p.1511)		
Czech				
Brno (379,527)	Accepting (urban policy?)	-	since 2008, social cohesion and free support for child-caring parents to rerain existing residents (Hospers, 2014, p.53)	
Hungary				
Tolna county (221,799)			2007-2013 EU funding period the 'Tamási District Complex Development Programme, that interlinked project packages were approved instead of financing independent and isolated projects (ESPON brief 2017, p.8)	Tamási district
South EU				
Spain				
	triviatising	does not take symptoms of shrinkage seriously and consequently does not take any action (Hospers, 2014a, p.1511) "doing nothing" (Hospers, 2014a, p.1511)		
Aviles (79,514)	Pro-growth	Aviles (Spain) is trying to get rid of its old industrial image by investing in flagship projects accompanied by aggressive place marketing (Hospers, 2014a, 1512)	invests flagship PJ and aggressive place making to remove its old industrial image (Hospers, 2014b, p.50)	
Vitoria-Gasteiz (246,976)	?		The city has a high proportion of green public areas, ensuring that the entire population lives within 300m of an open green space.(European Green Capital in 2012)	
Portugal				
		despite clear evidence of population decrease in Portugal, spatial planning policy and regional spatial plans have either disavowal or reactive character pertaining population decrease and shrinkage. (Sousa and Pinho, 2014, p.260)		
Porto (227535)				
Italy				
Taranto (199,561)	Pro-growth	attempting to favour new growth, building new structures for public utilities and services (Camarda et al., 2015, p.43)		
Taranto (199,561)	Accepting P		Master Plan in terms of building a city fit for 360,000 inhabitants with the actual population of Taranto barely accounting for 210,000. Price Waterhouse & Coopers proposed smaller new plan (Camarda et al., 2015, p.139)	
Naples (970,185)		individual cities tried to develop programmes (Richardson & Nam, 2014, p.5)		
Abruzzo region (1,322,247)	Pro-growth		In 2009 a major earthquake caused extensive destruction…. the Gran Sasso Science Institute (GSSI) was developed, physics to attract international high-skilled researchers, by almost completely public finance (ESPON brief 2017, p.10)	
Northern Europe				
Finland				
Seniorpolis	accepting (unsuccsessful)		setting up communities especially for the elderly are not very successful (Hospers 2014a, p.1514)	