

The influence of the ladder for sustainable urbanization on the location and nature of housing developments: a case study on the municipality of Amersfoort



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Figure front page: Amersfoort Vathorst at sunset. Source: Linnenkamp (2018)

Preface

Before you lies my master's thesis: "The influence of the ladder for sustainable urbanization on the location and nature of housing developments: a case study on the municipality of Amersfoort". With this, the master's program in Spatial Planning that I have followed at Utrecht University comes to an end. In addition to a part-time job as an consultant in spatial planning, this marks the end of an intensive but particularly instructive journey. It was quite often a challenge to divide the available time and attention, but fortunately most of the time it went well and I'm glad I can conclude this 'dual role' here.

I would like to take this opportunity to thank a number of people. First, my supervisor, Dr. Shaun Smith, thank you very much for your expert guidance and constructive feedback. It was thanks to this that I was able to smoothly navigate the thesis process. Furthermore, I would like to thank the individuals who participated in the interviews and provided valuable input: Dick Schalks (Municipality of Amersfoort), Rik Hoogzaad (Municipality of Amersfoort), Diederik Theunissen (Province of Utrecht), Raymond Bijen (Province of Utrecht), Ronald van Wees (Heilijgers Project Development), Peter Klevering (Dura Vermeer Real Estate/Project Development), Ard de Jong (Latei Project Development) and Peter Wallenburg (Kubiek Spatial Consultancy).

I hope you will enjoy reading!

Tjeerd Visser
Nijkerk, July 5, 2023

Abstract

In the Netherlands, arranging the numerous space claims within the limited space is a considerable challenge. This applies not least in view of the urgent need for housing development. New urban development is inevitable in that context. The ladder for sustainable urbanization is a national legal policy instrument introduced in 2012 to promote efficient land use. However, opinions regarding this policy instrument vary and are often negative. It is argued that the ladder leads to undesirable delays and, particularly for extra-urban housing development, to unnecessarily hinders. This study aims to deepen the understanding of the ladder's practical implementation by examining its spatial impact on housing developments in the municipality of Amersfoort. Through a qualitative single-case study, data was collected from relevant municipal and provincial policies, as well as interviews with civil servants, project developers, and a spatial planning consultant. Analysis of the data, guided by existing scientific literature, reveals that the location and nature of housing developments are not directly influenced by the ladder but rather are shaped by policy considerations and the feasibility of developers' business cases. The ladder's principles, such as prioritizing inner-city development, have become common practice in (the implementation of) Amersfoort's policy. While the ladder primarily functions as a potential punitive measure in legal proceedings, it has not obstructed or canceled housing developments when a thorough pre-process has been followed. Under these conditions, it can be inferred that the ladder indirectly influences the location and nature of housing developments within the municipality of Amersfoort. Although based on a single municipality and limited respondents, this study's design provides a suitable starting point for comparative research in other municipalities or with a broader range of respondents. Further investigation is needed to position the observed prioritization of inner-city development, particularly in the seemingly contradictory context of the decentralization and deregulation of Dutch national spatial policy over the past decade.

Samenvatting (Dutch)

In Nederland vormt het arrangeren van de talrijke ruimteclaims binnen de beperkte ruimte een aanzienlijke uitdaging. Dat geldt niet in de laatste plaats met oog op de urgente woningbouwopgave. Nieuwe stedelijke ontwikkeling is in dit kader onvermijdelijk. De ladder voor duurzame verstedelijking is een nationaal wettelijk beleidsinstrument dat in 2012 is geïntroduceerd om efficiënt ruimtegebruik te bevorderen. Echter, meningen over dit beleidsinstrument variëren en zijn niet zelden negatief. Er wordt betoogd dat de ladder leidt tot ongewenste vertragingen en, met name voor buitenstedelijke woningbouw, onnodige belemmeringen veroorzaakt. Deze studie beoogt het begrip van de praktische implementatie van de ladder te verdiepen door de ruimtelijke impact ervan op woningbouwprojecten in de gemeente Amersfoort te onderzoeken. Middels een kwalitatieve, enkelvoudige casestudie zijn gegevens verzameld uit relevante gemeentelijke en provinciale beleidsstukken, evenals interviews met ambtenaren, projectontwikkelaars en een adviseur ruimtelijke ordening. Analyse van de gegevens, geleid door bestaande wetenschappelijke literatuur, toont aan dat de locatie en aard van woningbouwprojecten niet direct worden beïnvloed door de ladder, maar veeleer worden bepaald door beleidsoverwegingen en de haalbaarheid van de businesscases van ontwikkelaars. De principes van de ladder, zoals het prioriteren van binnenstedelijke ontwikkeling, zijn gangbare praktijk geworden in (de uitvoering van) het beleid van gemeente Amersfoort. Hoewel de ladder voornamelijk fungeert als potentieel bezwaarobject in juridische procedures, heeft het de realisatie van woningbouwprojecten niet belemmerd of geannuleerd wanneer een zorgvuldig voorproces is gevolgd. Onder deze omstandigheden kan worden afgeleid dat de ladder indirect invloed uitoefent op de locatie en aard van woningbouwprojecten binnen de gemeente Amersfoort. Hoewel de conclusies gebaseerd zijn op een enkele gemeente en een beperkt aantal respondenten, biedt de opzet van deze studie een geschikt startpunt voor vergelijkend onderzoek in andere gemeenten of met een breder scala aan respondenten. Verder onderzoek is nodig om de waargenomen prioritering van binnenstedelijke ontwikkeling te positioneren, met name in de schijnbaar tegenstrijdige context van decentralisatie en deregulering van het Nederlandse nationale ruimtelijk beleid in de afgelopen decennium.

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1. Introduction

1.1. Research issue

Given the persistent housing shortage in the Netherlands (Ministerie van BZK, 2023), the Dutch government is committed to realizing 900,000 new houses by 2030 (Ministerie van BZK, 2022a). Achieving this ambition will require substantial housing development. The question is how this translates spatially (König, 2023), especially in relation to other space claims on, for example, agriculture, infrastructure, nature, energy transition and water management (PBL, 2021a). With some of these space claims, the physical growth of urban areas due to further concentration of people and economic activity, captured in the concept of urbanization (Ochoca et al., 2018), seems inevitable. Urbanization can also be seen from a social-transformative point of view i.e. rural-urban migration (as an underlying trend), however, the spatial effect is of particular interest here, especially when it comes to housing development. Housing development can for example be dense, compact inner-city or sprawling, extensive extra-urban. Policy choices undeniably play an important role here (Artmann et al., 2019; PBL, 2021b).

For several decades, the Dutch national government has actively steered towards the desired spatial development, varying from stimulating inner-city developments to the realization of extra-urban 'VINEX' neighbourhoods (Bontje, 2002). However, since the beginning of the 21st century, there has been a significant decentralization of Dutch spatial planning (Van der Wouden et al., 2014). As laid down by law in the Spatial Planning Act (2008), the municipalities are primarily the designated level of government to adopt zoning plans (bestemmingsplannen) and thus enable housing development. Nevertheless, within this legal context there is also attention and direction for the major housing construction task at national level (De Jonge, 2022a). While the national government currently has limited control over spatial design, it has developed a key policy instrument that seeks to spatially guide housing development at the provincial and municipal levels: the ladder for sustainable urbanization. This policy instrument, entered into force in 2012, promotes efficient land use and aims to prevent urban sprawl and real estate vacancy by requiring plans that enable new urban development to include a description of the need for that development. Furthermore, if the development takes place outside the existing urban area, it demands a justification for why the need cannot be met within the established urban boundaries (Rijkswaterstaat, 2023b). The ladder for sustainable urbanization thus fits into a global trend of a greater understanding of the importance of curbing urban sprawl and foster a more efficient use of the land (Bouwmeester et al., 2023; T. Zhang, 2000; Wilson et al., 2003). Moreover, the explicit mention of the Dutch urbanization ladder in the international literature emphasizes its relevance within this context (e.g. Dembski et al., 2020, p. 209).

While the ladder may sound promising in theory, the instrument has been subjected to extensive criticism since its introduction in 2012. Part of this criticism has been the reason for a simplification of the ladder, which took place in 2017. However, questions were raised immediately regarding the intended implementation practices and solutions for addressing the encountered bottlenecks, particularly concerning the precise definitions of "new urban development", "need" and "existing urban area" in the legal text (Mohuddy, 2017). And still, a few years later, there is a lot of criticism of the ladder. The ladder would be "a serious impediment to accelerating housing development in extra-urban areas" (Feijtel, 2022b) and only cause delays, not infrequently fuelled from the provinces (Feijtel, 2022c). It is argued that the ladder would be better scrapped given that it is "at the end of its policy cycle" (De Zeeuw, 2022). Finally, too much housing development is almost never an issue in the current Dutch situation and there would be more opportunities to prevent housing development in the wrong place (Feijtel, 2022a). These criticisms of a policy instrument that forms part of the assessment framework for much-needed new housing development form the occasion for this study.

1.2. Problem definition and research goal

Apart from the depiction of the anticipated future urbanization (Hamers & Piek, 2012) and evaluation of past urbanization policies (Faludi & Van der Valk, 1991; Geurs & van Wee, 2006), the ladder for sustainable urbanization is not widely researched as a concrete, operational policy instrument in mainstream scientific literature. However, as shown in Table 1, previous research does indicate that the pattern of urban densification with the construction of housing in existing residential areas and transformation areas was already underway before the ladder for sustainable urbanization was introduced (Claassens & Koomen, 2017). Based on this single fact, it can be hypothesized that the ladder has had a limited effect on such developments. Critics referred above argue that in addition to the ladder for sustainable urbanization, there are more ways to prevent housing construction in undesired places and prevent urban sprawl. However, this latter claim is disputed by officials at the national ministry who state “the ladder is the only instrument the government has to ensure that housing is built in the right places. Without the ladder, it is up to municipalities and provinces to decide where to build” (Ministerie van BZK, 2022b, p. 1). So the ladder’s position and (alleged) influence are contended and to some extent controversial.

	2000-2005	2006-2011	2012-2017
Inner-city development	42,3%	47,1%	68,6%
Extra-urban development	57,7%	52,9%	31,4%

Table 1. Inner-city development versus extra-urban development in the Netherlands. It is becoming clear that even before the ladder for sustainable urbanization was introduced, the number of extra-urban developments was decreasing compared to the number of inner-city developments. Source: Claassens & Koomen (2017)

So far, the ladder has been the subject of study in (at least) three master’s theses. The first study examined the impact of the ladder on the municipal spatial planning policy regarding new housing development in growing and shrinking municipalities (Sinoo, 2015). The focus of this study was on the impact of the ladder on strategic spatial policy rather than more operational policy, such as zoning plans, which ultimately make spatial development legally feasible. The ladder has since been revised, and some of the recommendations from this study have been incorporated. The second study looked into the extent to which the ladder is a sustainable planning instrument for urban municipalities (Van Teefelen, 2016). This study provides a clear insight into the ladder’s functioning in urban areas, but has limited attention to spatial outcomes, nor does it focus specifically on housing developments. Thus, the study suggests further examination of the ladder’s contribution to the compactness of the city. Finally, a study focused on the ladder’s impact within the province of Gelderland and evaluated the ladder’s inclusion in the zoning plan (Rekker, 2018). This study specifically focuses on the provincial level of government and shows that this province has incorporated the national ladder for sustainable urbanization into its own policy, which is legally binding for municipalities. However, it remains unclear how the provincial interpretation of the national ladder translates to actual housing development at the municipal level of government.

Since the aforementioned studies on the ladder for sustainable urbanization, the adapted ladder (2017) has already passed its five-year mark. To date, no research has been conducted on the effect of the ladder for sustainable urbanization specifically concerning the spatial manifestation of housing developments at a municipal level, also set against other (in)formal factors (e.g. spatial, procedural, economical, et cetera) to be determined of importance in this context. It is also important to examine how the ladder functions in the broader debate on urbanization (e.g. inner-city versus extra-urban development) and spatial challenges in the Netherlands, given the call for more national direction in spatial planning (De Jonge, 2022a). This study aims to provide more insight into the practical functioning of the ladder for sustainable urbanization, specifically by examining its spatial impact on

housing developments in practice in cities with a high demand for housing. The research employs a qualitative case study approach conducted within the municipality of Amersfoort, a medium-sized municipality in the Netherlands with approximately 160,000 inhabitants. The study focuses on both inner-city and extra-urban housing developments that have taken place recently or are currently underway. Subsequently, the following research questions have been formulated for this study:

To what extent does the ladder for sustainable urbanization influence the location and nature of housing developments in the municipality of Amersfoort?

1. What are the key objectives of the ladder for sustainable urbanization and how does this relate to housing development?
2. What are the key factors determining the location and nature of housing developments in the municipality of Amersfoort?
3. How is the ladder for sustainable urbanization applied in planning for housing developments?
4. To what extent has the ladder for sustainable urbanization been effective in preventing urban sprawl and encouraging inner-city housing developments?

1.3. Societal relevance

The current pressures on the Dutch housing market have widespread consequences. Housing development is crucial in reducing the housing shortage and meeting the national ambition of delivering 900,000 new houses by 2030 (Ministerie van BZK, 2022a). In addition to this quantitative goal, it is also noted that there are increasing value conflicts with other (qualitative) policy objectives, such as housing affordability, climate adaptability and high-quality public green spaces (Jonkman et al., 2022). Implementing those ambitions requires coordination at both the provincial and the municipal level, where the latter must approve zoning plans. Thus, there is a multi-level concern, which will receive attention in this study. Better understanding of the processes surrounding (planning for) housing developments in order to further (re)shape them can be useful, as it is in the public interest to make careful choices regarding the physical living environment, given the fact that these choices have both a direct and long-term impact.

When it comes to the spatial development of housing in existing urban areas, there is always discussion and controversy because it can be at the expense of work functions, public space and urban green space (Daamen & Franzen, 2020). In this process of careful spatial decision-making, the ladder for sustainable urbanization also plays a role. However, there are concerns that the ladder may slow down the process of achieving housing development (Feijtel, 2022a). As an extension of this, it is argued that constraints in the availability of sites for housing development are an important explanation for the scarcity of housing spaces in the Netherlands (CPB, 2019). Incidentally, recent studies show that many houses can still be realized inner-city (KAW, 2020; Stec groep, 2023). It is, among other things, such inner-city development (with thus great potential) that the ladder for sustainable urbanization intends to promote.

This study aims to draw conclusions about the current state of affairs regarding the practical implementation of the ladder in housing developments in the municipality of Amersfoort. By examining its actual spatial influence, this research can lead to recommendations on whether to continue using the ladder as a policy instrument. This may include an examination of the extent to which criticisms of the policy instrument are valid. Overall, this research is societally relevant as it can provide insights into the effectiveness and limitations of the ladder in promoting sustainable urbanization and addressing the housing shortage in the Netherlands.

It is also worth noting that the new Environmental and Planning Act (Omgevingswet) is scheduled to come into force on January 1, 2024 (Ministerie van I&W, 2023). This law consolidates all existing laws related to the physical living environment and aims to simplify the regulation of the physical living environment. It also facilitates a more integrated way of working, including a strong focus on participation. For now, the ladder for sustainable urbanization is also planned to be included in this new law (IPLO, 2023). Although this study focuses on practice under the current legal context, it makes this study of continued relevance even under the upcoming jurisdiction.

1.4. Academic relevance

This research mainly aims to fill a knowledge gap concerning the influence of the ladder for sustainable urbanization on the spatial pattern of housing developments. In addition to filling the knowledge gap, it also envisages a concrete research recommendation done by Van Teefelen (2016), recommending to look at the extent to which the ladder contributes to the compactness of the city.

Since its publication, the concept of sustainability has been an integral part of the scientific debate, particularly in the context of spatial and urban development (e.g. Campbell, 1996; Barton, 2000; Beatley & Wheeler, 2004; Rydin, 2010). This study can contribute to the broader academic debate about urban growth and form, and what is or is not sustainable within it (e.g. Neuman, 2005; Jabareen, 2006). The ladder for sustainable urbanization aims to promote efficient use of space and a compact city, which scholars argue would be a sustainable urban form (e.g. Bay & Lehmann, 2017; Rod et al., 2000). On the other hand, the question is asked whether the compact city is a desirable planning goal (e.g. Gordon & Richardson, 1997; Neuman, 2005). With the collection of experiences and insights from practice, this research can support or disprove such positions to a greater or lesser extent.

Government policy uses specific policy instruments to steer certain social objectives (Hoogerwerf & Herweijer, 2003). The ladder for sustainable urbanization is a policy instrument that aims to promote the social goal of efficient use of space. However, there are more policy instruments to serve such a purpose, which must also be weighed up and evaluated among themselves (Solly et al., 2021). Experiences with the ladder for sustainable urbanization in the context of this research can contribute to such policy (evaluative) research. The academic relevance of this study also extends beyond the Netherlands, as it provides a conceptual understanding of the ladder for sustainable urbanization as an policy instrument for promoting sustainable urbanization, with potential applications in other contexts.

Finally, research on a current topic is relevant in an academic sense because surprising outcomes and conclusions can be found both for the current (Spatial Planning Act) and future jurisdiction (Environmental and Planning Act). By exploring the impact of the sustainable ladder on housing developments, this study may reveal outcomes and conclusions that can inform future policy recommendations and guide further research.

1.5. Reading guide

This research is further documented as follows. In chapter 2 the main theoretical concepts will be discussed, which form the theoretical background and foundation for the research. The research methodology will be explained in chapter 3. Then in chapter 4 the history of spatial policy in the Netherlands and the role of the ladder for sustainable urbanization in it will be described, after which chapter 5 will discuss the results and draw partial conclusions. Chapter 6 will answer the main and sub-questions based on the information gathered. From this, further recommendations for both practice and the research field will also follow. It concludes with a methodological and theoretical reflection in chapter 7.

2. Theoretical framework

This chapter provides the academic background of the main concepts of this study. It examines how sustainable development has become the key paradigm in urban development and how the concept of sustainability translates to the physical environment through urban form. Then, by unraveling urban growth patterns, it examines how such urban forms come about and what this means for housing development. Finally, it will discuss what role policy and strategy can or should play in achieving sustainable urbanization and how housing developments come about in the Dutch context.

2.1. Sustainable (urban) development

If the ladder for sustainable urbanization derives its title from the sustainable urban development concept, it is relevant to examine its morphology. The concept of sustainable development (SD) first emerged in the Club of Rome's 1972 report 'limits to growth', emphasizing the finite nature of natural resources given the strong growth of the world population (Beatley & Wheeler, 2004). This report was followed more than a decade later by the report of the UN Commission Brundtland (1987), which defined the need for sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (p. 292). A definition that encompasses both preservation and development into one statement, representing today's most well-known definition of sustainable development (Dabija, 2021). Still, this definition is widely used in the literature and has evolved from then to the present day as the main paradigm in thinking about urban development (Barton, 2000; Beatley & Wheeler, 2004; Rydin, 2010). The question is, however, to what extent the original intention of the Brundtland Commission will have an effect in practice. Sharp, sceptical or more critical approaches can be found here (e.g. Barkemeyer et al., 2011; Luke, 2005; Næss, 2001). Blowers et al. (2012) state "it can be argued that sustainable development has become diverted from its central purposes and instead been appropriated to describe and justify approaches which are far more concerned with the demands of the present than the needs of the future" (p. 2). Considering the purpose of this study, it is relevant to examine the extent to which the original concept of sustainable development and if the critic of Blowers et al. (2012) is reflected in practical application of the ladder for sustainable urbanization: is there in the application of the ladder indeed a greater focus on present needs rather than future needs?

In light of the foregoing, it can be noted that sustainable urbanization has become an important aspect of promoting sustainable development (Shen et al., 2012) and has emerged as a dynamic process that considers the various environmental, social, economic and governance factors (Shen et al., 2011; Tan et al., 2016). These factors provide a basis for communicating the status of sustainability practices through linked 'urban sustainability indicators' and for analyzing specific strategies and policies to see to what extent they have been successful in achieving sustainability goals (Shen et al., 2011). From the literature, it becomes clear how the aforementioned environmental, social and economic factors resonate in the broader sustainable development debate, but especially also in the sustainable urbanization debate. Aptly, De Jong et al. (2015) describe this in their study on specific sustainable city concepts, how the notion of 'triple bottom line' (TBL), "which articulates the interrelationship between and co-dependence of environmental, economic and social dimensions, has become mainstream in research, policy and practice and, some would say, a core thematic principle of much of what passes as 'sustainable', 'eco', 'liveable' etc. city concepts" (p. 26). In the next paragraph, these city concepts will be further discussed, as they are also relevant to the present study.

On the triple bottom line in (urban) planning, Campbell (1996) is well known for describing the work of a planner in dealing with these three fundamental goals of sustainability: economic development, environmental protection and social justice. Operating in balance in this field of tension would then lead to sustainable development, displayed in the midst of the 'planners triangle' as shown in Figure

1. According to Campbell (1996), between these sustainability dimensions, there are continuous fields of tension and conflict that planners, in the role of mediator, must know how to deal with. This approach is interesting, also for the study at hand, to see what (fundamental) sustainability conflicts might exist and how they are expressed in practice. The areas of tension Campbell distinguishes are the property conflict, the resource conflict and the development conflict.

The property conflict arises from competing claims on and uses of property (e.g. landlord vs. tenant). The tension here is generated “as the private sector simultaneously resists and needs social intervention (e.g. governmental by zoning), given the intrinsically contradictory nature of the property. Indeed, the essence of property in our society is the tense pulling between these two forces. The conflict defines the boundary between private interest and the public good” (Campbell, 1996, p. 298).

The resource conflict is between society and the natural environment, occurring when those two meet. “Business resists the regulation of its exploitation of nature, but at the same time needs regulation to conserve those resources for present and future demands” and “industry must leave enough of the exploited resource, be it human labor or nature, so that the resource will continue to deliver in the future” (Campbell, 1996, p. 299).

The development conflict encompasses the tension between social and environmental values. “If the property conflict is characterized by the economy’s ambivalent interest in providing at least a subsistence existence for working people, and the resource conflict by the economy’s ambivalent interest in providing sustainable conditions for the natural environment, the development conflict stems from the difficulty of doing both at once” (Campbell, 1996, p. 299). This conflict is about spending money on social values on the one hand, or nature (protection) on the other, whereby Campbell also identifies scale levels from local to global at which this conflict can occur.

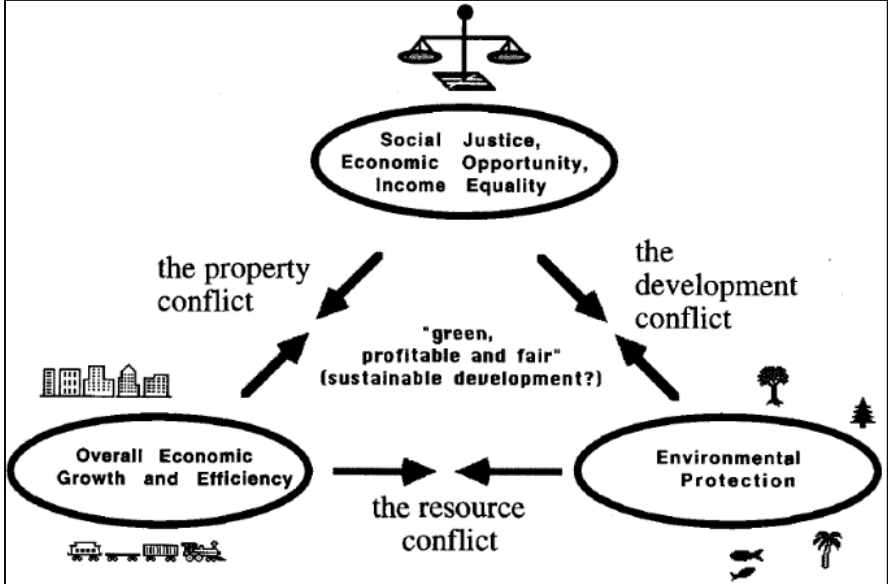


Figure 1. The planners triangle. Source: Campbell (1996)

This classical triangle has since been subject to evaluation. In a search for conceptual origins, Purvis et al. (2018) show that “there is no single point of origin of this three-pillar conception, but rather a gradual emergence from various critiques in the early academic literature of the economic status quo from both social and ecological perspectives on the one hand, and the quest to reconcile economic growth as a solution to social and ecological problems on the part of the United Nations on the other” (p. 681). Connelly (2007) in a more critical study, notes, that with regard to Campbell’s recognition of

the separate domains and the possibility of dissecting the ambiguity of ‘sustainable development’ into various conceptions of the concept: “their common weakness lies in the isolation of sustainable development from other political and value positions and the conflation of the various dimensions along which sustainable development can be differentiated” (p. 268). Following up on this critique, Connelly (2007) presents a model (see Figure 2) where sustainable development is “located as a blurred and contested region around its centre” (p. 260) providing “a way of visualizing the arguments over the meaning of ‘sustainable development’ which constitute the politics of sustainable development policymaking and draws out the implication that ‘sustainable development’ as a term plays a range of analytical and rhetorical roles, and so also prompts critical analysis of how the term is used by policymakers and others” (p. 260).

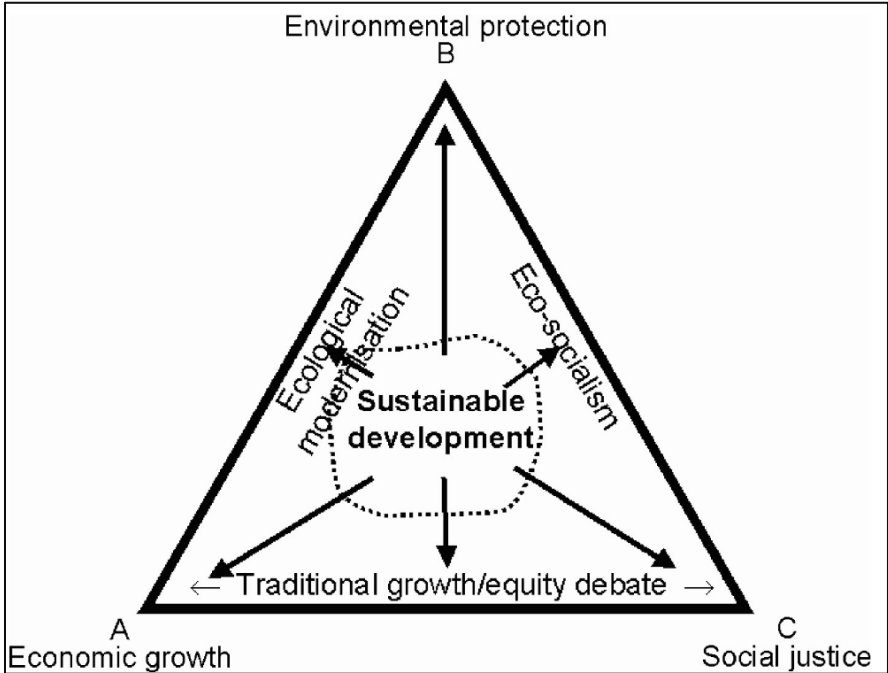


Figure 2. Modified planners triangle. Source: Connelly (2007)

In a later publication (2013), Campbell will note that despite the somewhat vague nature of the sustainability concept, it remains important also given its evolving nature and adds: “the sustainability movement will continue to be powerful as long as it creates a commons where planners, their allies and their adversaries can debate the hard questions, negotiate compromises in the distribution of natural and human wealth, and creatively explore alternative urban futures” (p. 90). So, the importance of sustainable development will not easily be denied, but it is an ongoing question of which social goals should be served by it (Connelly, 2007). A symbiosis within the ‘triple bottom line’ is not always possible, logical or appropriate. The city concept plays a role in the interrelations between ecological, social and economic aspects and thus the (policy-based) future of the city (De Jong et al., 2015). Apart from the urban concept, it can be observed across cities that urban sustainability is neither a singular concept nor a unified or coherent approach. It rather constitutes a contested concept that is first and foremost ideological and shaped by the policy environment in which it is operating (Zimmerman, 2001).

To conclude this section, it is important to note that while the primary objective of this study is not to evaluate Campbell’s work or directly examine the extent to which the ladder serves as a sustainable planning instrument (as already explored by Van Teefelen, 2016), the preceding theoretical overview has revealed the continued significance of the triple bottom line and the contextual factors (both

political-ideological and policy environmental) in planning for sustainable urbanization. Therefore, the role of those aspects in the practical implementation of the ladder for sustainable urbanization in housing developments require further attention in this study.

2.2. (Sustainable) urban forms

When considering the notion of sustainable urbanization, it is crucial to acknowledge the translation of this concept into the physical built environment, as emphasized by De Jong et al. (2015) in the preceding section. As Jabareen (2006) states: “the emergence of sustainable development as a popular concept has revived discussion about the form of cities” (p. 38). However, the debate about the ideal urban form is not new and dates back to – at least - the late nineteenth century, when Ebenezer Howard (1902) presented his ideas about the ideal city: ‘the Garden City’. In his vision, the growth of a city should involve the gradual transformation of existing centrally concentrated cities into decentralized towns (Rod et al., 2000). Figure 3 below shows the Garden City ideal which illustrate the idea of decentralized concentration. In the Garden City idea, density is combined with greening and mixed-land use in order to combine the best of both city and countryside living.

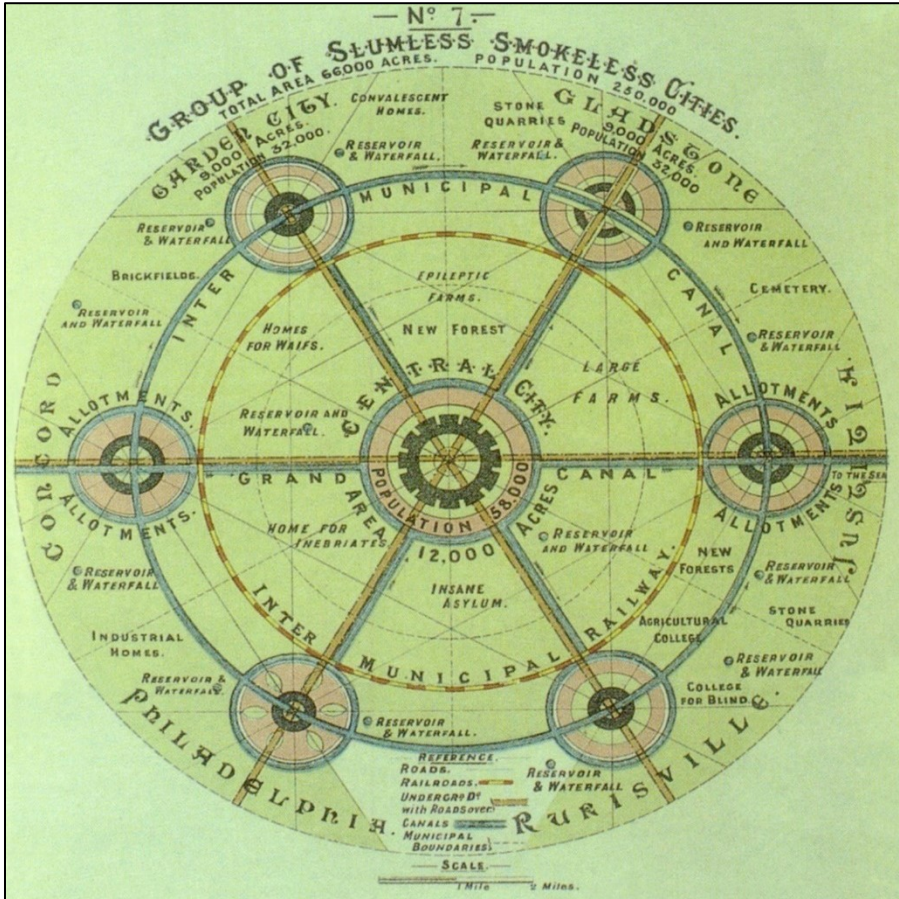


Figure 3. The Garden City ideal. Source: Howard (1902)

To look first at the academic definition, urban form could be defined as “the physical characteristics that make up built-up areas, including the shape, size, density and configuration of settlements” (McDonald et al., 2023, p. 85). In the literature, urban form is also referred to as ‘urban morphology’. Kropf (2009) in his critical analysis compares several definitions of urban form and refers to Calhoun's (2002) definition, stating that urban morphology “refers to the shape of a city, including its architecture, layout of streets, and different densities of habitation. It is often distinguished in urban studies from functional zonation – the pattern of land use in a city” (p. 108). Kropf (2009) concludes

that there are two different conceptions of urban form, distinguishing “two more or less distinct aspects: physical form and land use or function” (p. 108). In his analysis, Kropf describes four main aspects of urban form as identified in the various approaches to urban morphology: 1) spatial relation of physical objects, 2) interrelations between humans and physical form, 3) flows of resources and 4) temporal relations. He notes “If defined strictly, physical form is the spatial relations of physical objects. Function, use and activity are interrelations between humans and some physical form. When referring to use, we talk about the use of some object or space defined by objects within a town. Functions such as residential or employment presuppose the infrastructure, building and equipment that accommodate the activities. It is this fact that leads to the tendency . . . to conflate the two” (Kropf, 2009, p. 117). For this study, the main focus will be on the physical urban form concerning the location and nature of housing development, while not disregarding the significance of the aspect of land use (as will be evident below).

It was noted earlier that Jabareen (2006) made the link of thinking about urban form in particular to the emergence of the sustainable development paradigm. In line with this, thinking about sustainable urban form also started. Regarding those sustainable urban forms Wheeler (2003) identified five holistic design values related to it: compactness; contiguity; connectivity; diversity; and ecological integration. Jabareen (2006) identified seven significant themes in this regard: compactness; sustainable transport; density; mixed land uses; diversity; passive solar design; and greening. The extent and nature of the manifestation of such themes determines how sustainable an urban form is. An issue that remains topical, especially with the growing world population and the associated rapid urbanization (Shen & Zhou, 2014). It is in this context that the phenomenon of leapfrog development, called ‘urban sprawl’ has arisen (Frumkin, 2002). Urban sprawl can be defined as: “urban development with low-density housing, both residential and commercial, segregated land use, and a high level of automobile use combined with a lack of public transport, which is in high demand for land” (Johnson, 2001 in Haaland & Van den Bosch, 2015, p. 760; see Table 2). Although it should be noted that there is a changing conceptualization and different definitions of sprawl (Ewing and Himidi, 2015; T. Zhang, 2000), nor is there consensus on how the phenomenon is best measured (Jaeger et al., 2010). However, among planners, “their primary conception of ‘sprawl’ relates to the pattern of density” (Ewing and Himidi, 2015, p. 15). For this study it is relevant to mention that the promotion of efficient land use (both in physical urban form e.g. high rise buildings, as well as in land use e.g. using schools as meeting places in the evening), as envisaged by the ladder for sustainable urbanization, is seen as crucial to fight urban sprawl in the Netherlands (Van der Valk, 2002).

Given the manifestation of the aforementioned ‘sustainability themes’ (Wheeler, 2003; Jabareen, 2006), urban sprawl is often classified as unsustainable. To illustrate, urban sprawl has been researched over the years in relation to traffic accidents, physical inactivity, various diseases, air pollution, extreme heat events, residential energy use, emergency response times, private-vehicle commute distances and times, where urban sprawl - barring exceptions - has often been linked to negative outcomes (Ewing and Himidi, 2015).

Urban sprawl characteristics
1. Low residential density
2. Unlimited outward extension of new development
3. Spatial segregation of different types of land uses through zoning
4. Leapfrog development
5. No centralized ownership of land or planning of land development
6. All transportation is dominated by privately owned motor vehicles
7. Fragmentation of governance authority of land uses among many local governments
8. Great variances in the fiscal capacity of local governments
9. Widespread commercial strip development along major roadways
10. Major reliance on a filtering process to provide housing for low-income households

Table 2. Source: Burchell et al. (1998)

Over time, more sustainable urban forms than urban sprawl have been suggested (e.g. Jenks et al., 1996, Jabareen, 2006; Sonne, 2009). Jabareen's (2006) much-cited work describes four sustainable urban forms: the neotraditional development, the urban containment, the compact city, and the eco-city. Those types are overlapping, but each form has its own distinctive concepts and key differences:

- Compact cities - the distinctive concepts of the compact city are high density and compactness. It proposes mixed land uses like the approaches of new urbanism or neotraditional development.
- The eco-city - emphasizes urban greening, ecological and cultural diversity, and passive solar design. In addition, the approaches of the eco-city emphasize environmental management and other key environmentally sound policies.
- Neotraditional development - emphasizes sustainable transportation, diversity (e.g., of housing types), compactness, mixed land uses, and greening. In addition, neotraditional development has much to do with style and design coding.
- Urban containment - emphasizes policies of compactness.

Especially the ideal of the compact city is guided by densification (or urban consolidation or re-compaction), the intensification of the built structure and thus the efficient use of space as opposed to sprawling urban development (Neuman, 2005; see Table 3). For this study it is relevant to further investigate what scholars say about this ideal, since it mainly corresponds to the primary goal of the ladder for sustainable urbanization: efficient use of existing urban space and prevention of urban sprawl.

Dantzig & Saaty (1973) are considered to be the first to suggest the ideal of a compact city. This specific 'form' is particularly important given the present study. All the more so because this also touches on academic debates about whether or not to densify cities and the relationship between urban form and sustainability (Harrison et al., 2021; Jenks et al., 1996; Lin & Fuller, 2013; Neuman, 2005; Schmidt-Thomé et al., 2013), being the most recent focus of the debate on urban form and development between 'centrists' and 'decentrists' which started two centuries ago (Breheny, 1996). For example, the 'compact-city paradox' describes the conflicting tendencies to assign high quality of life to low density and high sustainability to high density (Arundel & Ronald, 2016). The 'intensification paradox' describes the effect that if population density increases, local environments suffer despite per capita sustainability gains achieved by densification (Melia et al., 2011). Eggimann et al. (2021) therefore note in reference to Cacciaguerra (2015) that "densification in cities is a complex phenomenon and affects multiple qualities cities should have, i.e. 'maximum levels of aesthetic and functional, economic and operational, environmental and energetic, and social and process quality'" (p. 2).

Compact city characteristics
1. High residential and employment densities
2. Mixture of land uses
3. Fine grain of land uses (proximity of varied uses and small relative size of land parcels)
4. Increased social and economic interactions
5. Contiguous development (some parcels or structures may be vacant or abandoned or surface parking)
6. Contained urban development, demarcated by legible limits
7. Urban infrastructure, especially sewerage and water mains
8. Multimodal transportation
9. High degrees of accessibility: local/regional
10. High degrees of street connectivity (internal/external), including sidewalks and bicycle lanes
11. High degree of impervious surface coverage
12. Low open-space ratio
13. Unitary control of planning of land development, or closely coordinated control
14. Sufficient government fiscal capacity to finance urban facilities and infrastructure

Table 3. Source: Neuman (2005)

The overall question that can be asked is what the most sustainable practice is. Compact, dense urban development coupled with high residential and employment densities offers health benefits (Stevenson et al., 2016), can mitigate the effects of urban development on regional climate change (Stone & Rodgers, 2001) and offers opportunities with the reduction of energy consumption, vehicle miles travelled, and carbon dioxide emissions (National Research Council, 2009). And coming back to the previously mentioned notion of the 'triple bottom line', Rode & Burdett (2011) take a more socio-economic interpretation of the three aspects (social, economic, environmental) and advocate that cities should offer density which would engender productivity benefits for firms, and help stimulate innovation and new job creation by clustering (e.g. tech-clustering: silicon valley, USA). Nevertheless, in their narrative literature review at the time, Gordon and Richardson (1997) evaluated similar arguments and found no support for the pursuit of a compact city as intended in the literature. Instead, they argued in favor of urban sprawl as a benign response to consumer preferences. Neuman (2005) points in his critical work 'The Compact City Fallacy' to the one-sided focus of the compact-city concept on urban form and argues that a sustainable city will never exist, but that the city revolves much more around evolutionary processes, including in relation to its inhabitants and environment. "Sprawl and compact development have both costs and benefits, and no development pattern is optimal in all respects" Ewing and Hamidi (2015, p. 1) argue. Still, despite the downsides and challenges of the compact city approach, many researchers support the compact city as a sustainable urban form (e.g. Bay & Lehmann, 2017; Rod et al., 2000), on the basis of which it can be argued that the ladder for sustainable urbanization (still) serves a noble purpose.

2.3. Achieving a compact city

Urban compactness is essential for building sustainable cities (Wolsink, 2016) and is one of the best solutions to urban sprawl (Song & Knaap, 2004). But how to achieve a compact city? Studies of urban growth patterns show three main modes of urban expansion: infilling, edge expansion and outlying growth of newly built-up tracts and changes in their relative share (Liu et al., 2010; Shi et al., 2012). An extensive overview of the literature on urban growth has been provided by Reis et al. (2015). It can generally be said that sprawling -and compact development represent two ends of a continuum of developmental types (Ewing & Hamidi, 2015). For this study, only the three aforementioned growth modes are used, whereby infill development leads to compact urban growth, edge expansion results in (often lower-density) spatial expansion of the city (Shi et al., 2012; Xu et al., 2007) and outlying growth (leapfrog-like development) makes cities more dispersed and promotes urban sprawl (Dahal et al., 2017; He et al., 2017). Briefly, Chakraborty et al. (2022a) define these urban growth modes as follows:

1. Infilling– new developments that are entirely or mostly surrounded by already existing built-up lands;
2. Edge expansion– unidirectional growth of newly built-up patches from the edge of an existing urban patch;
3. Outlying or leapfrog growth– urban growth taking place but detached from the existing built-up tracts.

For their world-wide analysis of urban expansion patterns Chakraborty et al. (2022a) used Figure 4 below, being a "graphical depiction of spatial rules for the identification of urban expansion patterns/modes" (p. 4). It shows how the aforementioned three growth modes should be interpreted spatially.

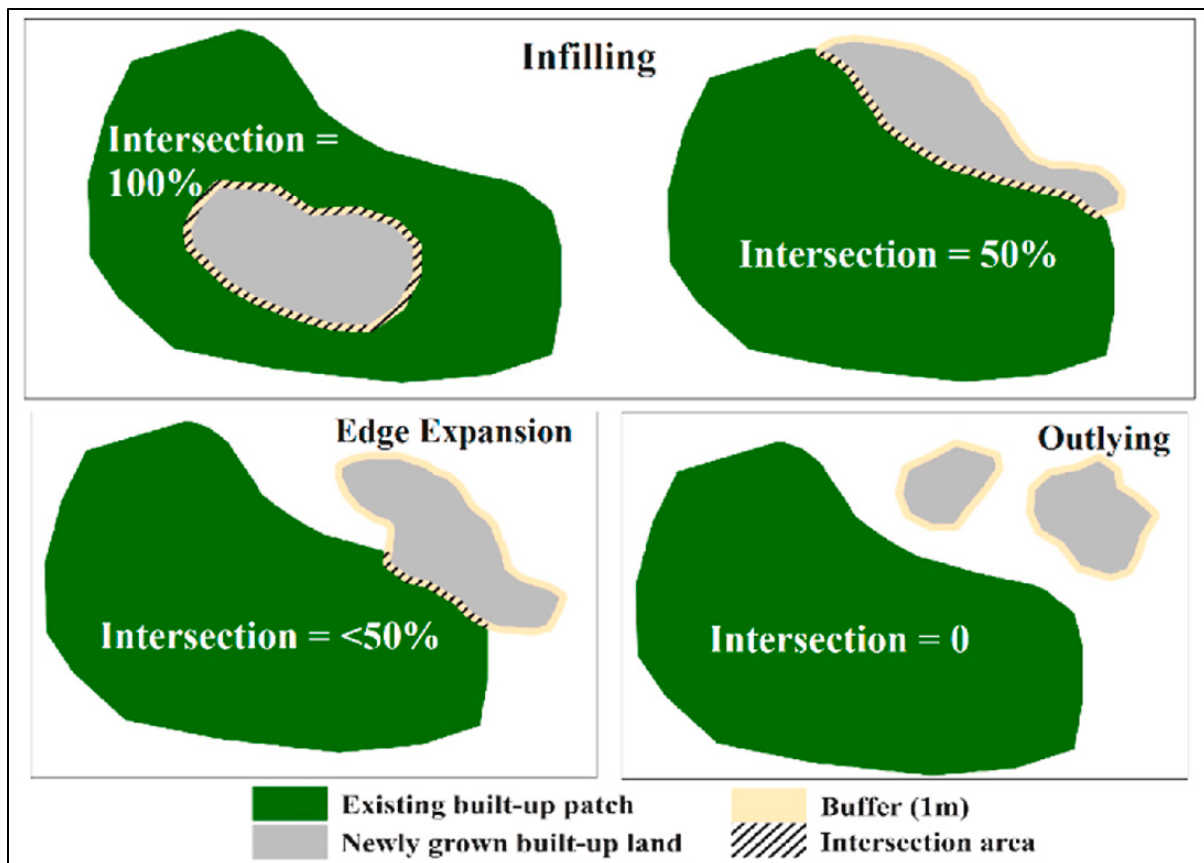


Figure 4. Three main urban growth modes. Source: Chakraborty et al. (2022a)

Mentioning urban growth, the concept of the urban fringe, also referred to as the metropolitan fringe, or rural-urban fringe, comes into play (Theobald, 2001). It is commonly defined as “the transition zone between the city or urban areas and the surrounding countryside” (Lamb, 1983 in Theobald, 2001, p. 545), however difficult to map (Theobald, 2001). In a report on the Dutch situation, PBL (2009) states “this zone surrounds the existing urban area like a whimsical shell, including the area in the immediate proximity to highway exits. The size of the urban fringe zone depends on its size of the urban area” (PBL, 2009, p. 9; see Figure 5). The authors further state that “urbanization in the urban fringe zone fits within the bundling policy (urbanization close in an existing built-up area). At the same time, developments are at odds with the original objective to maintain and strengthen the contrast between city and countryside: there is namely a fairly fragmented, amorphous urban fringe zone in which the contrast has faded” (p. 9). It is even argued that the urban-rural dichotomy, or traditional distinction between city and countryside is no longer tenable for the Dutch situation (Dammers, 2011). This is because the differences between city and countryside would no longer be functionally clear. “Indeed, both have become increasingly interrelated. And morphologically (visibly) the difference between city and country is also more difficult to make” (Dammers, 2011, p. 2). Therefore, in reference to Zonneveld (2009), Dammers (2011) argues to no longer use the terms ‘city’ and ‘country’ as different areas, but rather of ‘urbanity’ and ‘rurality’ as different dimensions. And although this latter may be more of a scholarly dispute, it is relevant for this study to examine if and how the urban fringe manifests in practice and the role played by the ladder for sustainable urbanization in this context.

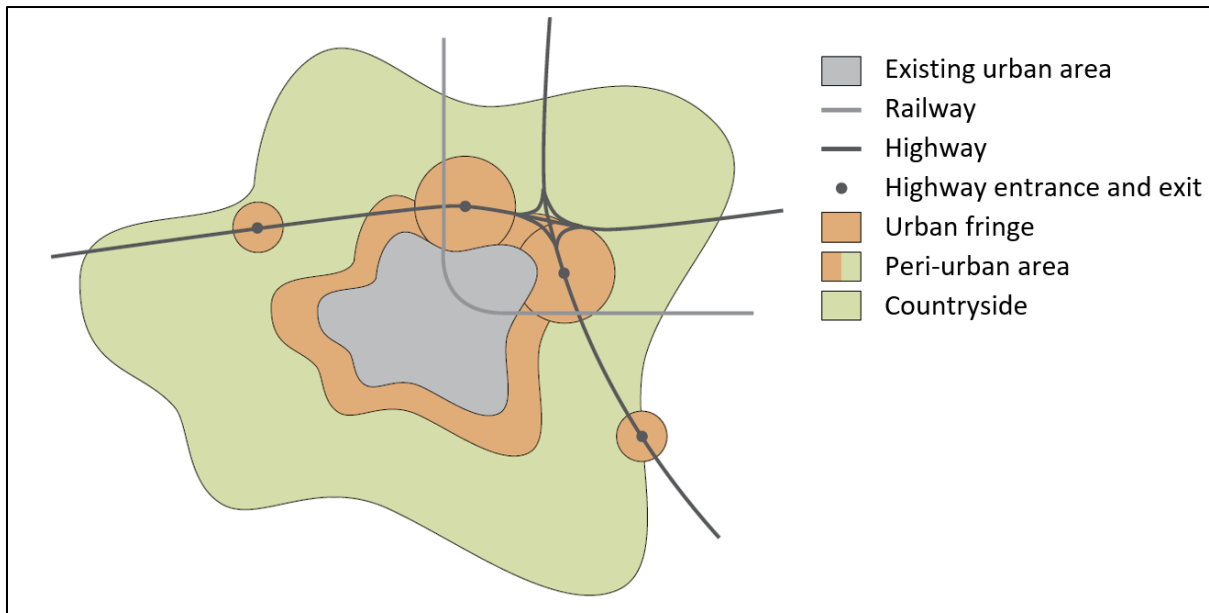


Figure 5. Operationalized urban fringe zone. Source: PBL (2009); own translation.

Based on the literature it can be said that infilling fits best in the conceptual pursuit of the compact city and outlying least, with edge expansion occupying a middle position. However, there is no silver bullet in the pursuit of the compact city based on the aforementioned three urban growth modes. Although infilling cannot be wrongly regarded as the most desirable, Haaland & Van den Bosch (2015) note that although urban sprawl can threaten the countryside, densification processes in cities can potentially threaten the greenery present there. This is at least the case with building in urban green space: inner-city greenfield development (e.g. in parks). However, infill development does not necessarily mean that green disappears. In order to be able to state this, it is important to make a non-exhaustive distinction between two other principal types of infill development: brownfields and greyfields (Newton & Glackin, 2014).

The literature often refers to the possibility of redeveloping inner-city brownfields as opposed to (often extra-urban) greenfields (De la Cal, 2018; Dorsey, 2003; Greenberg et al., 2001; Haaland & Van den Bosch, 2015). Brownfield are characterized by transformation and “can be characterized as derelict and underused sites that are often contaminated. These sites regularly contain remains of buildings and other facilities reflecting their previous uses and offer no immediate prospect of re-development” (Bartke & Schwarze, 2015, p. 12) and “typically owned by a single party, usually government or industry and of a scale which is closer to that provided by greenfield sites for development” (Newton & Glackin, 2014, pp. 124-125). Within the broad concept of infilling, brownfield development, therefore, occupies a specific position, generally involving industrial and/or polluted locations. Greyfields, however, usually have no need for site remediation and “they predominantly lie between the more vibrant central business district (CBD) and inner city housing market and the more recently developed greenfield suburbs, providing greater access to employment, public transport and services than the latter zone. They comprise large tracts of under-capitalized real estate assets that are individually owned and occupied, not in consolidated blocks representative of brownfields” (Newton & Glackin, 2014, p. 125).

From the above, it becomes clear that urban (re)development can take place in multiple ways. The urban context, such as the availability of vacant plots, greenfields, brownfields, or greyfields, plays a significant role in this regard. The extent to which sustainable development is achieved in these processes (as often intended) is a subject of ongoing debate (e.g. Kim & Larsen, 2016; Thorne et al., 2017). For instance, the potential negative consequences of gentrification need to be considered in

this context (Dale & Newman, 2009). In light of this, it is relevant to further zoom in on the planning outcomes of densification, as it is crucial in achieving a compact city.

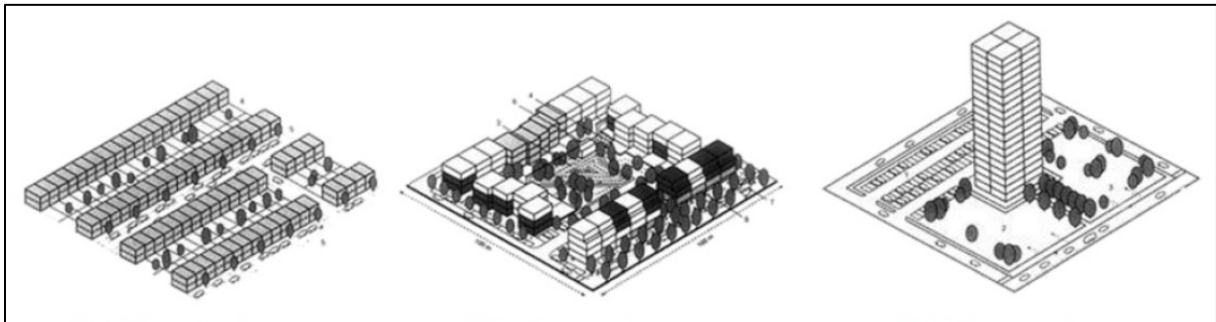


Figure 6. Three different urban structures with 75 houses per hectare. The first design shows low-rise buildings, the middle one medium-rise and the latest high-rise. The latter creates the most space for facilities and greenery. Source: Meyer et al., 2008

Figure 6 shows three different subdivision structures, each with 75 houses per hectare, but having different political and social meaning (Charmes & Keil, 2015). For inner-city developments, it shows the difference between ‘hard’ and ‘soft’ densification. Hard densification advocates a radical transformation of prevailing urban forms, often through the replacement of existing buildings and altering the living environment (Touati-Morel, 2015). In contrast, soft densification is “a policy whose instruments allow private actors to work towards the progressive densification of low-rise single-family neighborhoods through successive subdivision of the land into smaller plots, followed by construction on the newly created plots” (Touati-Morel, 2015, p. 606). Touati-Morel (2015) suggests that soft densification could serve as a middle ground between exchange value and use value. This approach aims to balance the economic interests of urban development with the needs and desires of residents. By implementing soft densification, it may be possible to avoid resistance from residents that can arise from more aggressive forms of densification, such as hard densification. So, Figure 6 shows that housing density provides no insight into the characteristics of the urban planning structure. Forsyth (2003) therefore cautions against confusing density with building types, and exemplifies: “A high-rise tower with large units set on a park-like site may be lower density than a set of detached houses on small lots” (p. 4).

Based on existing literature regarding urban growth processes, a conceptual distinction can be made between inner-city and extra-urban development. While greenfield development can occur in undeveloped areas for both types, inner-city development also involves (re)development of brownfields and greyfields. Additionally, urban structure has been identified as a relevant factor, although this does not necessarily say anything about the density. This study will further examine these aspects to determine the practical relationship with the ladder for sustainable development.

2.4. Spatial urban policy

The promotion of urban densification and compact urban development is necessary to control urban sprawl and its many adverse consequences (Broitman & Koomen, 2015), as the aforementioned scholars show. It should be noted that society is permeated with both market failure and government failure, which can influence the ultimate policy outcomes and where both are regarded as (potential) contributing factors for urban sprawl (Ewing & Hamidi, 2015; Ulfarsson & Carruthers, 2006). Nevertheless, governmental policy-making plays a crucial role in stimulating specific types of spatial development (Artmann et al., 2019; PBL, 2021b).

In line with Hoogerwerf & Herweijer (2003), it can be roughly stated that government policy exists to solve societal problems (e.g. urban sprawl) and/or achieve societal objectives (e.g. sustainable cities). In this context, X. Q. Zhang (2016) argues that “urbanization is an inevitable force” (p. 251), “policy responses should be linked to local circumstances” (p. 252) and those “policies and strategies should aim to optimize both the urbanization process and urban functions and infrastructure in order to achieve sustainable urbanization and maximize urbanization benefits and reduce the negative impacts” (p. 251). So, “managing/governing the micro-level processes of infilling, edge expansion and outlying growth is crucial” (Chakraborty et al., 2022a and Xu et al., 2019 in Chakraborty et al., 2022b, p. 10). In order to promote sustainable urban development it is necessary to strengthen the role of land use control and management Y. Zhang et al. (2018) argues. Finally, Lewin (2012) in reference to Breheny (1992) states that in this context the following policy actions and goals are recommended and have been widely adopted:

- Urban containment policies should continue.
- Extreme compact cities are unrealistic and undesirable.
- Various forms of decentralized concentration may be appropriate.
- Inner cities must be rejuvenated.
- Urban greening must be promoted.
- Public transport must be improved.
- People-intensive activities must be deployed around transit nodes.
- Mixing uses must be encouraged.
- District energy systems should be promoted.

In general, specific resources are needed to achieve policy goals: the use of policy instruments (Hoogerwerf & Herweijer, 2003). Typically, governments employ a combination of instruments at various stages of the policy process to achieve their goals (Van Geet et al., 2021). Interestingly, in view of the foregoing, Solly et al. (2021) within the ESPON SUPER pan-European research project mapped out the success factors and pitfalls and warnings of a variety of policy objectives and policy instruments on promoting sustainable land use. They distinguish five different scopes and objectives from the analyzed policy interventions: “densification (e.g., up-zoning, infill development), fostering the regeneration of unused and/or problematic sites (e.g., land redevelopment, urban renewal), the containment of urbanization processes (e.g., green belts, urban growth boundaries), the introduction of specific governance models and mechanisms (e.g., cross-sectoral integration, integrated plans) or the achievement of specific sectoral policies (e.g., related to transport, environment or rural development)” (p. 6). To serve those scopes and goals five policy instruments are discussed: “visions and strategies (e.g., strategic plans, guidance documents, etc.), rules and legal devices (e.g., national and regional laws), land use regulations (e.g., zoning, local plans), programs (e.g., economic incentives and other types of funds) and projects (e.g., single spatial transformation actions and initiatives)” (p. 6). Given the focus of the current study, the policy goal ‘densification’ and the policy instrument ‘rules and legal devices’ seem particularly relevant, of which the results (as shown in Table 4) can be tested in the present study.

Scope and Objectives	Success Factors	Pitfalls and Warnings
Densification	<ul style="list-style-type: none"> • The adoption of a long-term perspective (e.g., up-zoning and measures for infill development). • The inclusion and cooperation with private partners, as well as a balance between public and private interests. • The adoption of legally binding instruments often improves the success of such interventions. 	<ul style="list-style-type: none"> • Densification may contribute to increasing traffic congestion if not opportunely designed. • In some cases, densification has been shown to increase housing prices, which has a negative impact on affordable housing. • Densification may contribute to reduction of green public areas in favor of buildings.
Type of Instruments	Successful Factors	Pitfalls and Warnings
Rules and legal devices	<ul style="list-style-type: none"> • Should be clear in their final objective (limit land consumption, protect valuable natural areas, monitor the rental and housing markets). • Should be normatively strict and adapted to their different institutional contexts. • Should be technically feasible (coherent set of norms and regulations that may guarantee the applicability of interventions). • Should be socially acceptable (sustained by social legitimacy). 	<ul style="list-style-type: none"> • Legal devices are not strict but envisage some windows of flexibility (not mandatory). • Legal devices do not consider sustainability in a holistic perspective privileging one of its dimensions at the expense of the others.

Table 4. Spatial policy scopes/objectives and- instruments. Source: Solly et al. (2011)

In general, two types of policy instruments can be distinguished: substantive and procedural ones (Howlett, 2000 in Van Geet et al., 2021), in which, for public planning interventions, it has been observed that “there is an ongoing tension between the certainty of law and the need for flexibility, . . . between the rule type of regulation and the steering instruments” (Salet, 2014, p. 4). Considering this, the ladder for sustainable urbanization is identified as a procedural policy instrument (Salet, 2014; Van Geet et al., 2021), acting to indirectly “guide or steer policy processes in the direction government wishes through the manipulation of policy actors and their interrelationships” (Howlett, 2000, p. 424 in Van Geet et al., 2021). In relation to the objective of this study, reference can also be made to De Olde & Oosterlynck (2021), who rightly argue that understanding the formulation and implementation phases of spatial policy instruments targeting urban growth management is crucial for gaining insight into the conditions of success and failure. For the remainder of this study, the focus will primarily be on the practical implementation of the ladder for sustainable urbanization.

2.5. Housing development

The definition of urbanization used in this study, namely the physical growth of urban areas due to further concentration of people and economic activity (Ochoa et al., 2018), implies, along with the Dutch housing shortage, a necessity for housing development. When it comes to housing/residential development, Broitman & Koomen (2015) state: “the development of residential areas over time is a complex process that is characterized by substantial spatial and temporal variation” (p. 32). How exactly such a process takes place depends, among other things, on local laws and regulations. In view of the focus of this study, the Dutch context will be maintained.

In the Netherlands, (un)developed land is owned by farmers, municipalities (or other government parties), developers, corporations and other market parties (CPB, 2019). It is worth noting that while for decades Dutch municipalities pursued a more active land policy (the municipality owned land and took control of development), after the global credit crisis (which led to substantial financial deficits on some municipal budgets) this has turned into a more passive and facilitative land policy for many municipalities, with land mostly owned by market parties (Buitelaar & Bregman, 2016; Witting, 2020). Incidentally, it is important to note that various forms of market failure (e.g. coordination concerns,

information asymmetry) and the safeguarding of the public interest do justify a certain government role (Bruinsma & Koomen, 2018).

The process of land development can roughly be separated into four stages or activities: 1) land acquisition, 2) development, 3) construction, 4) end ownership/long-term investment (Meijer & Buitelaar, 2023). Meijer & Buitelaar (2023) note: “land can be acquired strategically, long before it is clear that development is allowed at all (i.e. land banking), or closer to and with greater certainty about the development, either bilaterally or through a public tender. It needs to be noted that the stages, particularly stages 1 and 2 sometimes occur in parallel and in interaction with each other rather than sequentially” (p. 2). For this study, steps 1) land acquisition and 2) development appear to be the most relevant, as they determine the location and nature of housing construction.

Based on work by CPB (2019), Figure 7 visualizes the usual process of extra-urban greenfield housing development in the Dutch context. Although other pathways are possible and the role of capital and the Dutch Building Decree (Bouwbesluit) has not been mentioned, for most Dutch houses the steps outlined in the figure below apply (CPB, 2019). In this visual, a private party (e.g. a project developer) purchasing the land and develops it. The role of the municipality is primarily facilitating, which is reflected, among other things, in the adaptation of the zoning plan. So, housing development involves physical capacity on the one hand, but planning capacity on the other (Buitelaar, 2018). Planning capacity often refers to the possibility of housing development as laid down in an adopted zoning plan. The aspects physical capacity and planning capacity are also clear from the previously described figure from CPB (2019). However, while planning capacity is, according to Buitelaar (2018), “a necessary condition for housing development in the city”, it is “not a sufficient condition”. There may be so-called ‘stalled sites’: “places where building is allowed but not (yet) done for a variety of reasons” (McAllister et al., 2016 in Buitelaar, 2018). This can be for both strategic -and other, more general, financial reasons (Buitelaar, 2018). This distinction between physical capacity and planning capacity should also receive further attention in the light of this study.

From agricultural greenfield to housing

The construction process of new houses is long and complex. This infographic describe what steps are needed and how much time they take.

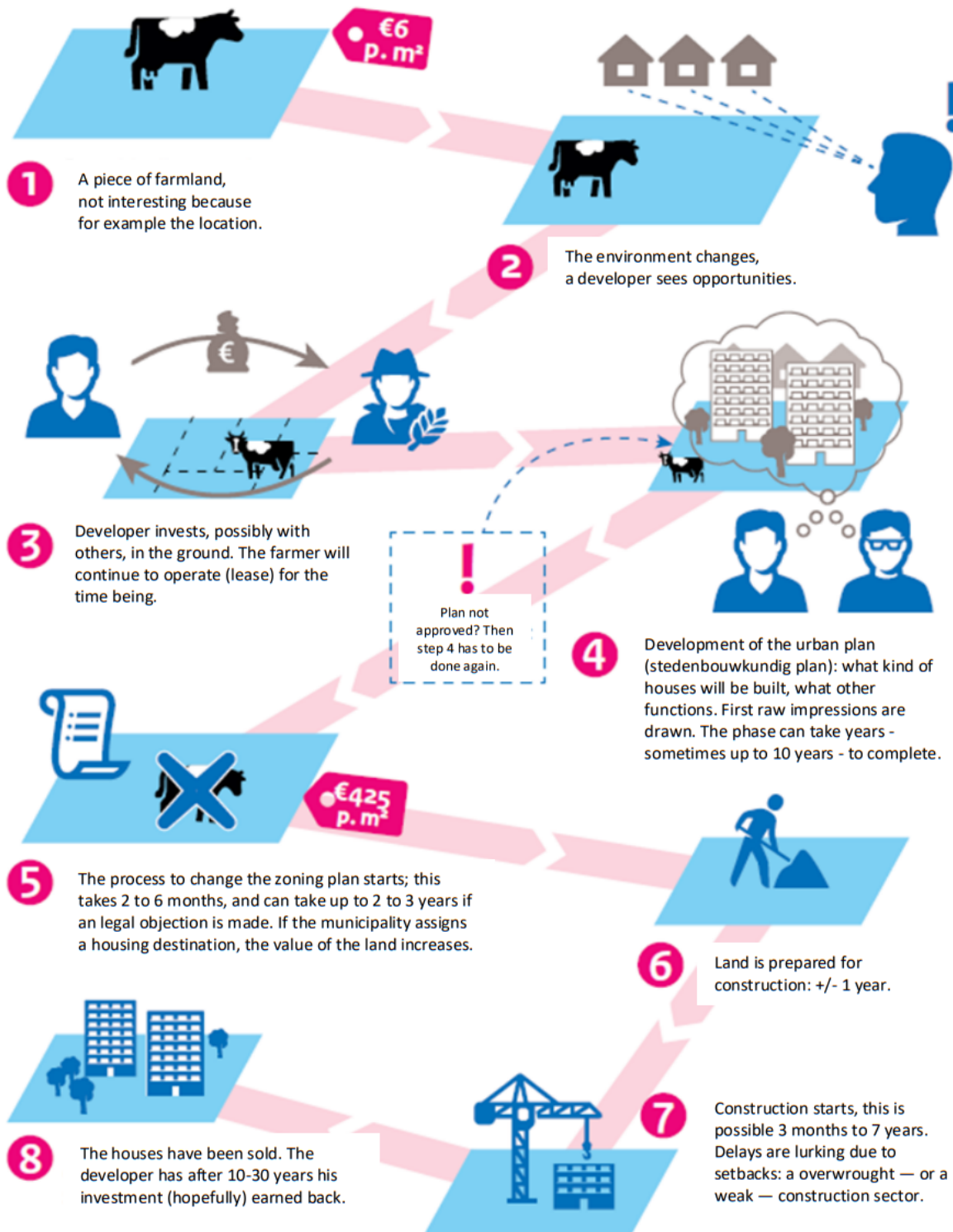


Figure 7. The common housing development process at extra-urban agricultural greenfield locations in the Dutch context. Source: CPB (2019); own translation

Of importance in housing development is the financial component. Project developers want to develop a product that can be sold for a price that is greater than the sum of the costs (Meijer & Buitelaar, 2023). When it comes to financing housing development in the Dutch situation, inner-city development is generally more expensive than extra-urban development. This is mainly due to its more central location. As a result, the land exploitation costs are higher on average, especially the costs of land acquisition and planning and process costs (Buitelaar & Witte, 2011). Profit margins are also ultimately lower on inner-city developments (Buitelaar, 2018). But notes Buitelaar (2018), social costs and benefits must also be considered. For example, in inner-city developments, facilities infrastructure (electricity, water, roads, public transport, etc.) are often already in place, for which therefore limited or no costs need to be incurred. In addition to the foregoing, it can be noted that the housing types and urban structure to be realized play an important role in the overall cost consideration. This is also clear from Figure 8 below. The destination, or allowed buildings/functions, (as laid down in the zoning plan) determines the value of land (Buitelaar, 2021). The market value of the realized real estate minus the foundation costs (e.g. building costs and land costs), tax costs and profit for the parties involved yields a financial surplus, the so-called 'residual land value' (Bruinsma & Koomen, 2018; see Figure 8).

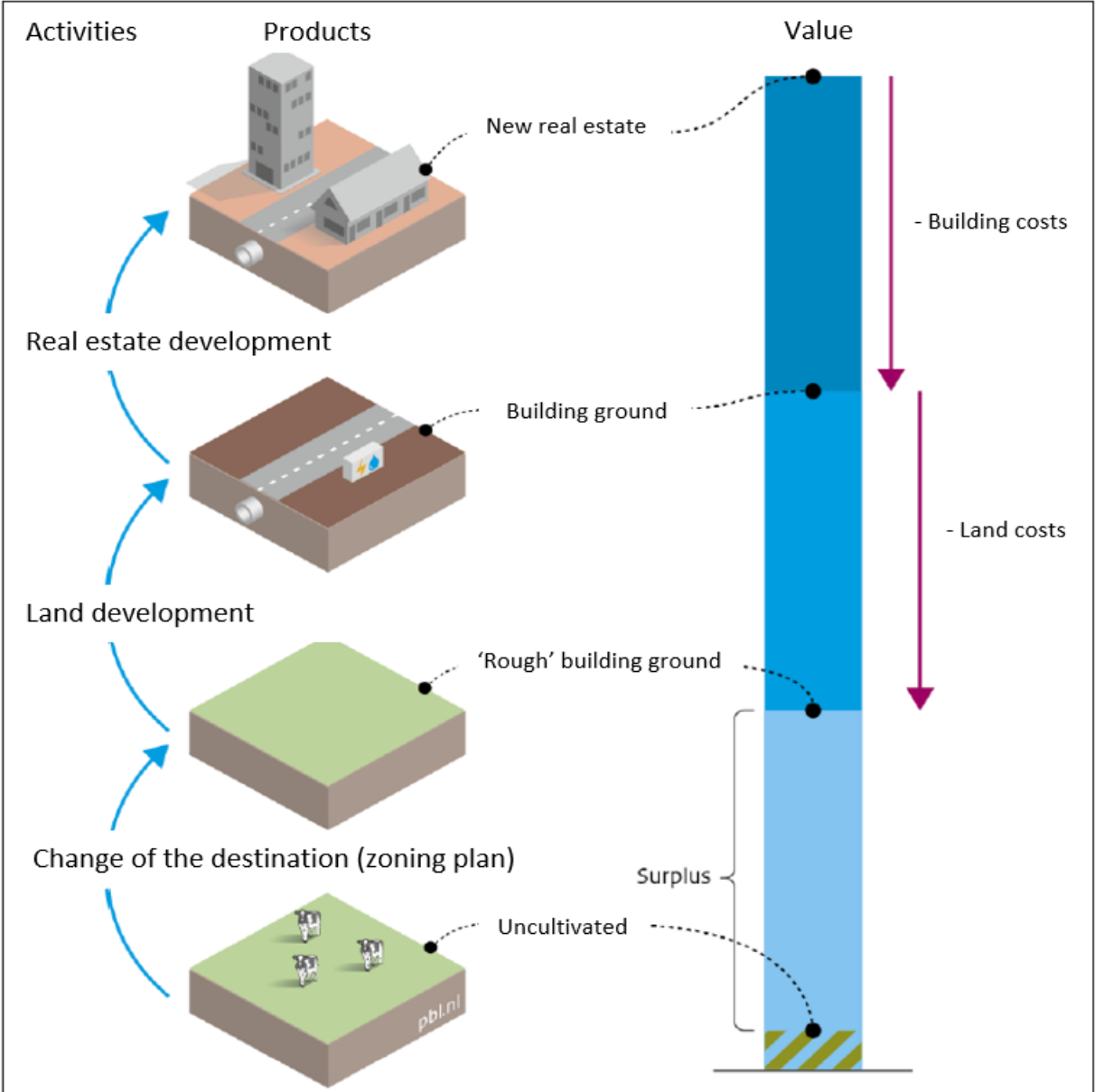


Figure 8. Value creation in real estate and area development. Source: Buitelaar (2021); own translation.

Finally, given the demonstrated significance of the economic/financial component, it is important to briefly reflect on the ownership structure of homes for the end-user, as this aspect also warrants attention in the study. As for home ownership in the Dutch case, a home is usually owner-occupied or rented out, whether or not via social rent. In the Netherlands, home ownership has increased enormously in recent decades, at the expense of the share of tenants (Helderman et al., 2004; Scanlon et al., 2014). Within owner-occupied and rental, further divisions can be made on the basis of price. In line with the above, a higher-priced home provides more financial value than a lower-priced home. However, the demand for affordable housing, including social housing, is currently the highest in the Netherlands (Ministerie van BZK, 2022a).

3. Methodology

This chapter presents the methods used to address the research questions. It starts with a description of the research approach, followed by a justification and explanation of the chosen case. Subsequently, the data collection procedures will be discussed, after which the chapter is concluded with a description of the method of data analysis.

3.1. Research approach

This study primarily aims to provide more insight into the practical functioning of the ladder for sustainable urbanization, specifically by examining its influence on the location and nature of housing developments in practice. The approach to this goal and the underlying research questions further aims to address the effectiveness and limitations of the ladder in promoting sustainable urbanization and addressing the housing shortage. To this end, practical experiences and insights are collected. A qualitative research approach is best suited to this.

A preliminary framework (see Figure 9) is developed to operationalize the key concepts of the location and nature of housing developments, along with the assumed relationships and linkages of 1) the ladder for sustainable developments and 2) other yet-to-be-determined factors that influence these aspects of housing developments in Amersfoort. In the framework, the arrows in the upper half refer to a possible cause-effect and the lines in the lower half refer merely to operational distinctions.

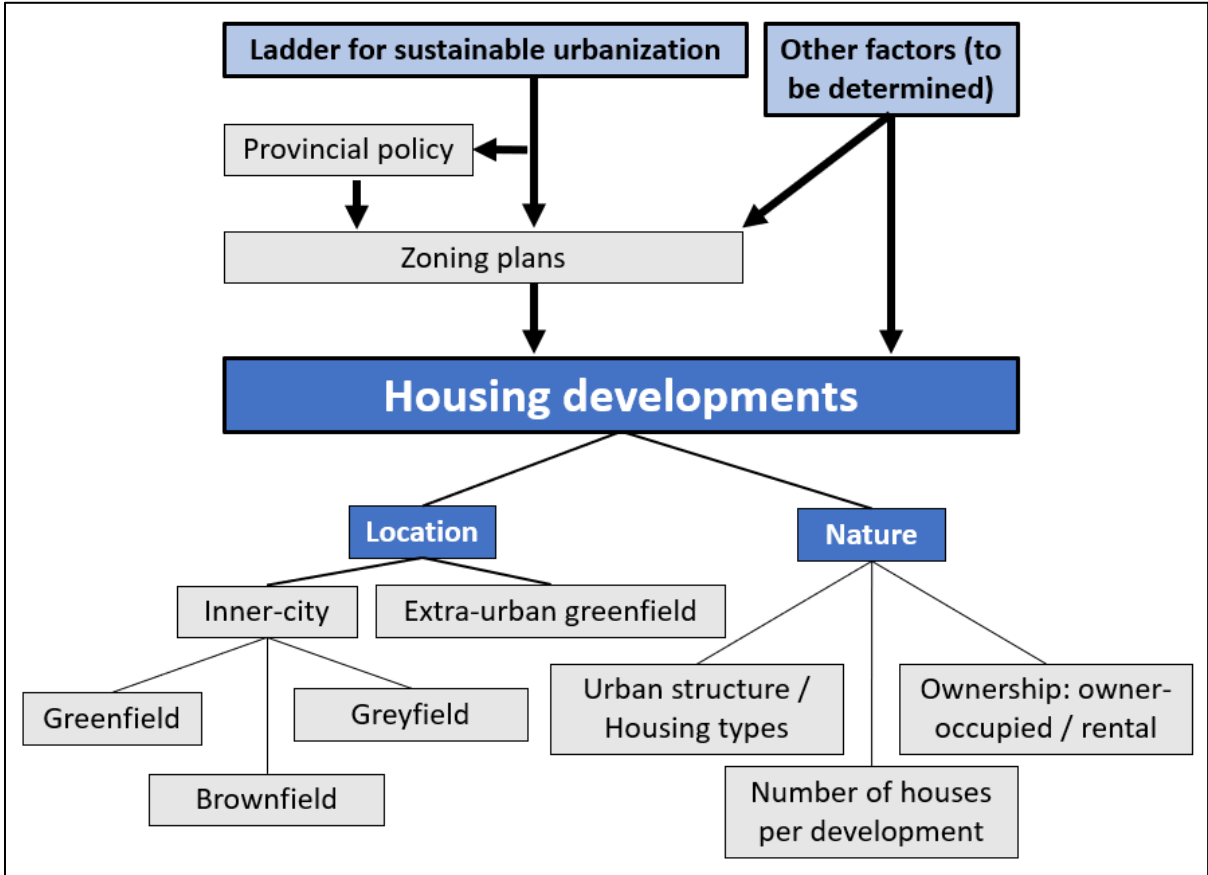


Figure 9. Research framework. Source: own work.

Given the focus placed on the municipality of Amersfoort, the utilization of a case study research method is inherently suitable in this context. This is consistent with the guideline provided by Yin (2017) as the research questions require an extensive and ‘in-depth’ description of a current and

specific phenomenon. A case study is therefore most simply defined as “an empirical inquiry that investigates a contemporary phenomenon (the ‘case’) in depth and within its real-world context” (Yin, 2017, p. 16).

3.2. The case

Given the subject matter of the study, which pertains to a specific Dutch policy instrument, the inherent focus is on the Dutch context. The ladder for sustainable urbanization, referred to here, is mainly manifested in the zoning plan as adopted at the municipal level. Consequently, the investigation into the spatial impact of the ladder on housing developments will also be mainly carried out at the municipal level. This is because it is at this level that the ladder is expected to hold potential influence in the process. Considering the aforementioned factors, any municipality in the Netherlands could potentially serve as a case, although a condition is that there is (or recently has been) housing developments going on both inner-city and, ideally, extra-urban where the ladder could potentially have had an influence.

For this study, in order to thoroughly analyze this potential influence, a single-case study approach has been adopted, with a specific focus on the municipality of Amersfoort (see Figure 10). The selection of a single case study design not only considers the research's context and objectives but also takes into account practical considerations, such as the available time frame, the researcher's personal network and the researcher's ability to easily reach the municipality physically.

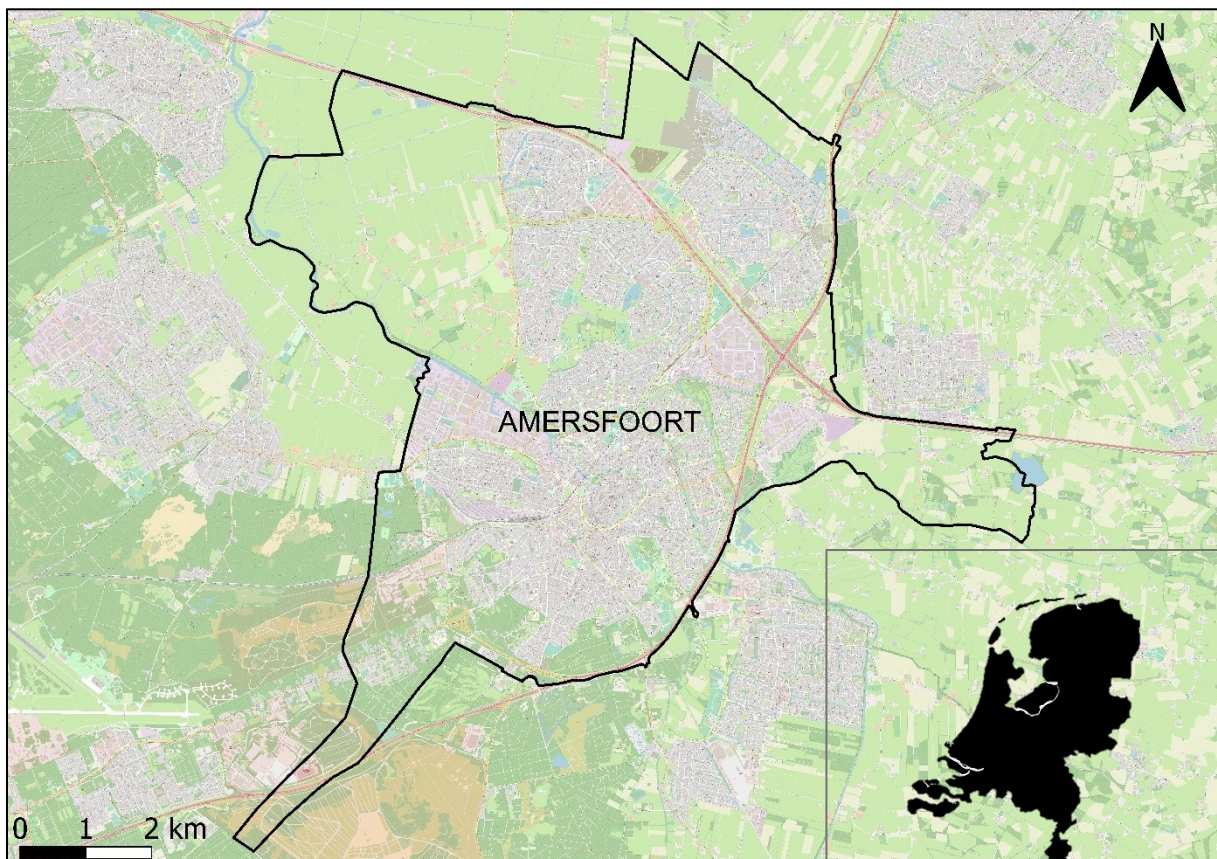


Figure 10. Administrative borders of the municipality of Amersfoort. Source: QGIS, own work.

The choice for the municipality of Amersfoort is furthermore based on the following criteria. First, Amersfoort is a medium-sized Dutch city with approximately 160,000 inhabitants in 2022 (CBS, 2023), which in 2023 is ranked 11th in the top 20 of cities with the most overheated housing market,

indicating that, among other things, housing demand far exceeds housing supply (BPD, 2023). The municipality of Amersfoort aims to construct approximately 13,000 houses by the year 2030, necessitating an annual production rate of 1,000 houses (Gemeente Amersfoort, 2023). In the light of this study it is relevant to examine how this task is implemented in practice. Second, the municipality of Amersfoort is relevant since the nationally known extra-urban VINEX-location of Vathorst (approx. 11.000 houses) has been realized here since around 1990, parts of which are still being realized or planned (e.g. Vathorst Bovenduist) today (BPD, 2021; Gemeente Amersfoort, 2023; see Figure 11). It is relevant to examine the recent developments here and whether the ladder plays a role here.

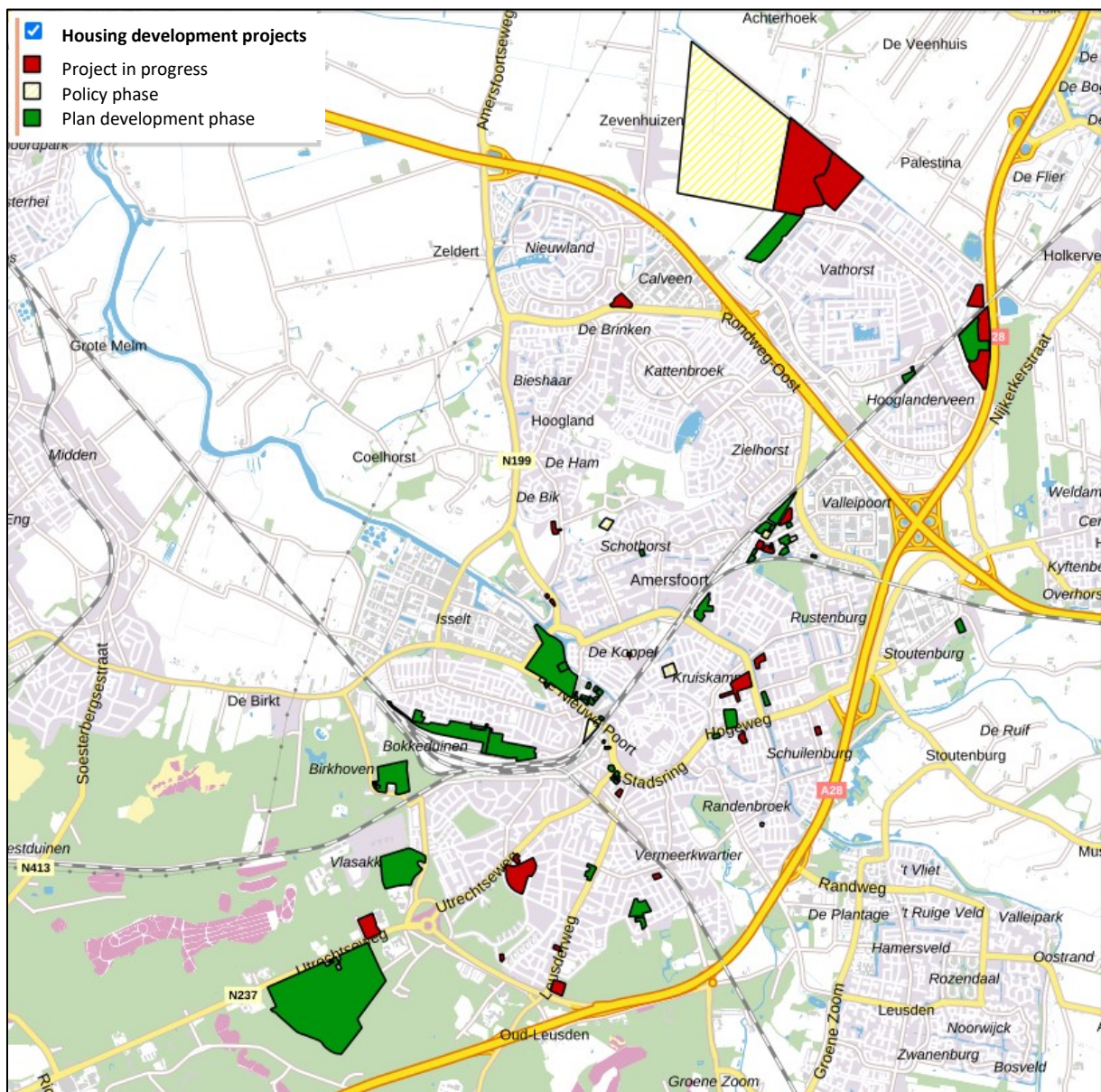


Figure 11. Overview of planned housing developments within the municipality of Amersfoort. Source: Gemeente Amersfoort, 2023; own translation.

3.3. Data collection

To ensure convergence and corroboration (Bowen, 2009), triangulation is employed in this study. This principle is essential as recognized by Yin (2017). For this study it means that both primary and secondary data are used for data collection.

The analysis of secondary data involved conducting a literature review on the history of Dutch spatial policy, as well as the origin and content of the ladder for sustainable urbanization. Additionally, a total of two provincial and five municipal policy documents (see Table 5 and 6) were examined to understand how housing development is influenced by these layers of government. As highlighted by Bowen (2009), document analysis is particularly suitable for qualitative case studies, as it provides valuable insights into the current policy context within which housing developments occur in this study.

The criteria for selecting the documents were twofold: they had to represent the current housing (development) policy and be publicly accessible. Draft policies were excluded from the selection, as they are not anticipated to have had any recent practical impact. Additionally, consultation with interviewees from the municipality and province ensured that the identified policy documents were deemed adequate and relevant for the study.

Name	Year published	Content
Interim Environmental Regulation (Interim Omgevingsverordening)	2021	Contains the rules needed to implement the policies from the Provincial Environmental Vision. These include instructional rules by which the province directly affects the content at the municipal level. Contains, for example, restrictive rules regarding extra-urban housing development. Legally, this Interim Environmental Regulation serves to bridge the period until the Environmental and Planning Act comes into force, after which a new Environment Regulation will come into force.
Environmental Vision (Omgevingsvisie)	2021	Long-term spatial policy document that contains the choices for the arrangement of space. Themes such as housing needs, energy transition and nature development are described here and considered in context.

Table 5. Relevant analyzed provincial policy documents. Source: own work.

Name	Year published	Content
Structural Vision Amersfoort 2030 (<i>Structuurvisie Amersfoort 2030</i>)	2013	Long-term spatial policy document that contains the choices for the arrangement of space. Indicates, among other things, the portion of the municipal territory targeted for future (within the term of the vision) housing development.
Delta Plan Housing (<i>Deltaplan Wonen</i>)	2019	Intends to address the overheated housing market in Amersfoort. The goal is to have suitable and affordable housing available for everyone. The commitment is 1,000 new houses per year until 2030. Desired housing typology, areas and policy direction are further discussed in the Delta Plan.
Housing Vision 2011-2020 (<i>Woonvisie 2011-2020</i>)	2011	Policy document detailing policy on the municipal housing market. This pays attention to both expansion locations and the existing city with the green character of Amersfoort as an important carrier for that quality.
High-rise Vision (<i>Hoogbouwvisie</i>)	2019	Indicates where the municipality wants to encourage high-rise buildings, where the municipality does not want high-rise buildings and where the municipality is cautious about high-rise buildings. The consideration of whether and how high-rise buildings can be built in a location remains customized.
Coalition agreement (Coalitieakkoord)	2022	Agreement between the groups of the political parties forming the coalition government in Amersfoort municipality for the period 2022-2026. Deals, among other things, with the spatial domain and specifically housing.

Table 6. Relevant analyzed municipal policy documents. Source: own work.

Secondly, to gather insights into the implementation and impact of the ladder for sustainable urbanization, eight semi-structured in-depth interviews were conducted with various relevant stakeholders, including municipal officials, provincial municipals, project developers, and a spatial planning consultant. The selection of interviewees was based on multiple sources. Firstly, individuals were chosen from the researcher’s personal network. Additionally, desk research was conducted on the internet to identify relevant parties operating within the municipality of Amersfoort. Suggestions provided by the interviewees in contact with the researcher also influenced the selection process. This approach resulted in the identification of potentially relevant actors who were subsequently approached for participation, including two municipal officials, two provincial officials, ten project developers, three housing corporations, and one spatial consultancy firm (see Table 7). The researcher initiated contact with these parties via email or phone, clearly stating the purpose, research question, objective, and the specific case of Amersfoort. During the initial contact, an interview topic list was shared. The approached parties were asked to consider within their organization who would be the most suitable person, based on their work experiences within the municipality of Amersfoort, to engage in a conversation with the researcher.

This approach resulted in the municipality indicating that involving more than 2 officials would not be necessary due to potential information overlap. On the other hand, despite multiple emails and follow-up calls to the private parties, including project developers and housing corporations, no responses or rejections were received. Notably, one project developer preemptively stated that, despite having multiple ongoing projects in the municipality of Amersfoort, they saw no added value in participating in an interview, because they have little to do with the ladder in their developments (R. Hoep, personal communication, May 8, 2023).

Semi-structured interviews were chosen because they mainly produce qualitative data (DiCocco-Bloom & Crabtree, 2006). Typically, semi-structured interviews follow a pre-established set of open-ended questions, with the flexibility to incorporate additional questions that may arise during the conversation between the interviewer and interviewee (DiCocco-Bloom & Crabtree, 2006). The interview questions were partly derived from the information contained in the aforementioned policy documents, as also recommended by Bowen (2009). An interview guide was drawn up and used for the interviews, which can be found in the appendix. The interviews were conducted either in person at the interviewee’s office, or remotely using Microsoft Teams, depending on the preference and availability of the participants. Under permission, audio recordings were made of all interviews.

	Name	Function	Public/private	Reference
1	Dick Schalks	City and development department official, municipality of Amersfoort	Public	Municipal official 1
2	Rik Hoogzaad	Housing department official, municipality of Amersfoort	Public	Municipal official 2
3	Diederik Theunissen	Municipal spatial development department official, province of Utrecht	Public	Provincial official 1
4	Raymond Bijen	Strategic spatial development department official, province of Utrecht	Public	Provincial official 2
5	Ronald van Wees	Project manager, Heiligers project development	Private	Project developer 1
6	Peter Klevering	Director, Dura Vermeer real estate / project development	Private	Project developer 2
7	Ard de Jong	Director, Latei project development	Private	Project developer 3
8	Peter Wallenburg	Consultant, Kubiek spatial consultancy	Private	Spatial consultant 1

Table 7. List of interviewees. Source: own work.

3.4. Data analysis

Both the interview transcripts and the policy documents were analyzed using manual qualitative content analysis. This necessitates the examination and interpretation of the data to extract meaning, acquire comprehension, and foster empirical knowledge (Bowen, 2009).

The policy documents were downloaded in full-text and first analyzed for content, entailing a first-pass document review, in which meaningful and relevant passages of text are identified for further analysis. The researcher's subjective judgment was taken into account, alongside a deliberate consideration of the occurrence of themes as reflected in the coding (mentioned below).

For the interviews, whose content is inherently more focused on the theme of the study, verbatim transcripts were made from the audio recordings for further analysis. The interview transcripts can be found in the appendices, provided as a separate document.

The actual analysis took place deductively through pre-established thematical codes, as can be found in the appendix. These codes are linked to the research framework and mainly emerged from the theoretical framework and the literature review on Dutch spatial policy and specifically the ladder for sustainable urbanization. The coded content was compared to find similarities and differences and finally to fill in the results section.

4. Dutch spatial policy and the ladder for sustainable urbanization

Based on secondary literature, this chapter will first discuss the historic and legal context of the Dutch spatial policy. From here, the emergence, purpose and context of the ladder for sustainable urbanization will be outlined. It will then turn to the application of the ladder in practice, before examining the challenges and experiences in this practice.

4.1. The historical and legal context of Dutch spatial policy

For centuries, the Netherlands has attempted to control spatial developments through governmental policy (Bontje, 2002). An excellent example is the continuous struggle against water, which has resulted in a spatial system of dikes, windmills, and land reclamation. More recently, the Second World War in particular has had a major influence on the speed at which the organization of spatial planning in the Netherlands has developed (Bruinsma & Koomen, 2018). Important driving forces were the housing shortage on the one hand, and the enormous economic development on the other. The organization expressed itself on a national scale in the publication of spatial policy documents (Bontje, 2002). These reports aimed to provide a policy framework to the underlying regional and local levels. The national reports are characterized by a concrete, ambitious spatial program. This centralized approach earned the Netherlands a good reputation internationally for an effective and systematic planning system (e.g. Burke & Holford, 1966; Dutt & Costa, 1985). In the Netherlands, Faludi and Van der Valk, in particular, viewed this approach positively, and the planning doctrine (the set of policy discussions and actions aimed at achieving a certain spatial layout) with concepts such as ‘growth core’ and ‘compact city’ as an explanation for the high degree of consensus on the spatial development of the Netherlands (Faludi, 2000; Faludi & Van der Valk, 1994).

Below in Table 8 is a summary of the national reports on spatial planning that have been published over the years, including their main focus. This overview is mainly based on Bontje (2002) and Van der Wouden et al. (2014), who in their articles provide an extensive historical consideration of Dutch spatial policy in the past century.

Title	Timeframe	Focus
Report West of the Country	1958-1960	Predicted large labor migration to the big cities in the west due to births and employment growth. Aim to spread this growth across cities in the country by stimulating the economy in the north and east.
First Report on Spatial Planning	1960-1966	Economic development central. Urbanization strategy is aimed at widening and preventing mega-cities. If a city threatened to become more than 8 kilometers wide, a new city had to be spaced out to accommodate the population. Introduction of the ‘Green Heart’ concept that must remain free of large-scale urbanization given its role as an important area for food production and recreation.
Second Report on Spatial Planning	1966-1974	Focus on bundled deconcentration by growth centers and buffer zones. Cities must be prevented from growing (too much) together.
Third Report on Spatial Planning	1974-1988	More focus on existing cities, after a period of new construction after the Second World War. In the Urbanization Report (1975) attention was drawn to the continued existence of deserting cities.
Fourth Report on Spatial Planning	1988-1991	More visionary, than elaborative report. Focus on concentration and change of direction toward compact city ideals.
Fourth Report on Spatial Planning Extra	1991-2001	Addition to the fourth report as a result of a cabinet change. Ambitious housing program, with expansion locations indicated on the map, the so-called VINEX-locations.
Fifth Report on Spatial Planning	2001-2004	Emphasizes responsible consideration in spatial policy given the enormous space claims of living and working. In certain parts of the Green Heart more possibilities for urban development. Provinces had to indicate building boundaries with red contours. The report was eventually withdrawn due to the fall of the cabinet.
Spatial Report	2004	Drawn up by a new cabinet that wanted less dirigiste spatial policy. Bundling areas and national landscapes remain, but red contours disappear in this report. Furthermore, this report no longer contains a central spatial vision. The emergence of the motto “decentralized where possible, centralized where necessary”.

Table 8. Historical overview of Dutch national spatial planning reports. Source: own work.

Four years after the publication of the Spatial Report, the new Spatial Planning Act (2008) came into effect (Van der Wouden et al., 2014). In view of the content of this act, it becomes clear that ongoing decentralization was also legally a fact.

When comparing spatial policies with key concepts from planning theory, it can be said that compact-city policies emerged in the late 1970s and reached a heyday in the 1980s (Faludi & Van der Valk, 1994). The emergence of the compact city ideal followed the idea of growth centers, first mentioned in the Structure Sketch Urban areas (Structuurschets stedelijke gebieden) from 1983 and subsequently formalized in a new policy document that appeared in 1988 as the Fourth Report on Spatial Planning (Bruinsma & Koomen, 2018). When it comes to the significance for urbanization policy, PBL (2016) can be quoted: “The new urbanization had to in accordance with the concept of the ‘compact city’, take place in or near the major cities. Urbanization therefore included both inner-city projects and expansion locations. ‘Brownfield’ and ‘greenfield’ fell under one urbanization concept, different from the Second Report on Spatial Planning”.

Still, compact-city policies continue to guide Dutch spatial planning, which involves constructing housing on previously developed land in built-up areas of cities and villages and limiting urban development on extra-urban greenfield sites (Altes & Tambach, 2008). However, Altes & Tambach noted in 2008 that Dutch compact city policies are “not primarily realized by building on green spaces inside the cities. This approach is opposed not only by local residents but also at local government level – a highly relevant fact, since local government plays a dominant role in the creation of housing in compact cities”. Instead, when their study was published in 2008, most new additions to the housing stock occur in ‘change-of-function’ areas e.g. former industrial locations, hospitals, schools, etc.

4.2. Emergence, purpose and context of the ladder for sustainable urbanization

Compact urbanization is considered to be more sustainable than extensive urbanization and has therefore been promoted in Dutch spatial policies over the years, as was shown above. In this context, the current ladder for sustainable urbanization first emerged in the National Policy Strategy for Infrastructure and Spatial Planning introduced in 2012 as a successor to the SER-ladder. This ladder had already been developed and introduced in 1999 by the Social and Economic Council of the Netherlands (SER) in its advice on the Spatial Economic Policy Report. The report concerns the use of space for economic functions in the Netherlands. The advice argues that careful use of space and good accessibility should be stimulated, whereby the ladder is introduced for the functions of housing, business and infrastructure, based on selectivity and efficiency in managing space claims (SER, 1999). This ladder has a similar substantive purpose as the ladder for sustainable urbanization, namely: optimal use of space. However, this SER ladder was only made mandatory for new office and business locations by General Administrative Order (Algemene Maatregel van Bestuur) to combat vacancy and obsolescence here. The SER-ladder consisted of the following steps (SER, 1999):

1. “Use the space already made available or through restructuring can be made available;
2. Make optimal use of the possibilities for multiple use of space increase space productivity;
3. If the previous steps offer insufficient relief, and the choice is made for expansion: carefully weigh up the relevant values and interests in an area-oriented approach (respecting and strengthening the quality of nature and landscape).”

This SER ladder was succeeded by the ‘ladder for sustainable urbanization’, covering the entirety of new urban development (i.e., not only offices and businesses). This ladder is legislated in a General Administrative Order, titled Spatial Planning Decree (Besluit ruimtelijke ordening). This decree

safeguards, among other things, the national spatial interest, aimed at careful consideration and transparent decision-making in spatial processes (Rijksoverheid, 2017). The purpose of the current ladder for sustainable urbanization is careful or sustainable use of space as a goal, considering future space needs and the development of the environment (Rijksoverheid, 2017). The Ladder aims to prevent vacancy and overcapacity. It encourages municipalities to make a sound assessment between inner-city and extra-urban construction, and to avoid unnecessary construction in rural areas. In this regard, inner-city development serves as the fundamental principle (Ollongren, 2019). Through the Ladder, both the procedural and substantive aspects are thus legally safeguarded (Sinoo, 2015).

Article 3.1.6 of the Spatial Planning Decree contains the provisions understood as the ladder for sustainable urbanization. The initial ladder, from 2012, required all plans that allowed for new urban development to go through a three-step process (Mohuddy, 2017). First, the competent authority, in legal terms (typically the municipality), must assess the extent to which there is a current regional need for the development. Second, the competent authority must address the question of whether the development, if it takes place outside an urban area, can be realized within the existing urban area. Third, if the development cannot take place within the existing urban area, it must describe the extent to which the location has adequate access or is being developed as such. These descriptions had to be in the plan notes (as being a legal justification to the plan).

In 2017, article 3.1.6 was amended (Mohuddy, 2017). The main changes were the removal of the third step and the merging of the first two steps. This loosened the three-step structure. Also, the adjectives “current” and “regional” have disappeared from “need” for the development. As of July 1, 2017, the second paragraph of Article 3.1.6 of the Spatial Planning Decree on the ladder currently reads as follows: “The notes to a zoning plan that allows for new urban development shall include a description of the need for that development and, if the zoning plan allows for that development outside the existing urban area, a justification as to why that need cannot be met within the existing urban area”. To complete this section, the Decree defines existing urban area as follows: “existing urban combination of buildings for housing, services, industry, retail or hospitality, as well as related public or socio-cultural facilities, urban green spaces and infrastructure”. It can be noted that the qualification of existing urban area depends on the circumstances of the case, the specific location, the factual situation, the zoning plan, and the nature of the environment. Furthermore, jurisprudence is also relevant, as will be demonstrated below.

4.3. Application of the ladder for sustainable urbanization and jurisprudence

A guideline is available with the aim of providing governments and plan initiators with an up-to-date overview of essential legal precedents, practical advice, and best practices concerning the application of the ladder for sustainable urbanization (Rijkswaterstaat, 2023a). It is crucial to emphasize that the ladder imposes an obligation to provide justifications and does not include any statutory assessment framework beyond the prescribed steps (as graphically depicted in Figure 12). The ladder for sustainable urbanization constitutes a procedural requirement in accordance with the Spatial Planning Decree, which mandates that the ladder must be followed when zoning plans enable new urban development (Rijkswaterstaat, 2023a). The Decree defines urban development as follows: “spatial development of an industrial or seaport site, or of offices, retail, housing sites or other urban facilities”. Motivating the ladder is a legal obligation, but it is not always possible to determine in advance whether this has been done adequately. Whether there is a need for a particular urban development cannot always be determined unequivocally, and that also applies to its location. In the first instance, this is at the discretion of the political and planning agencies involved, but if a legal appeal is lodged against a zoning plan, the court will give a final judgment whether the provided evidence is adequate (Salet, 2014).

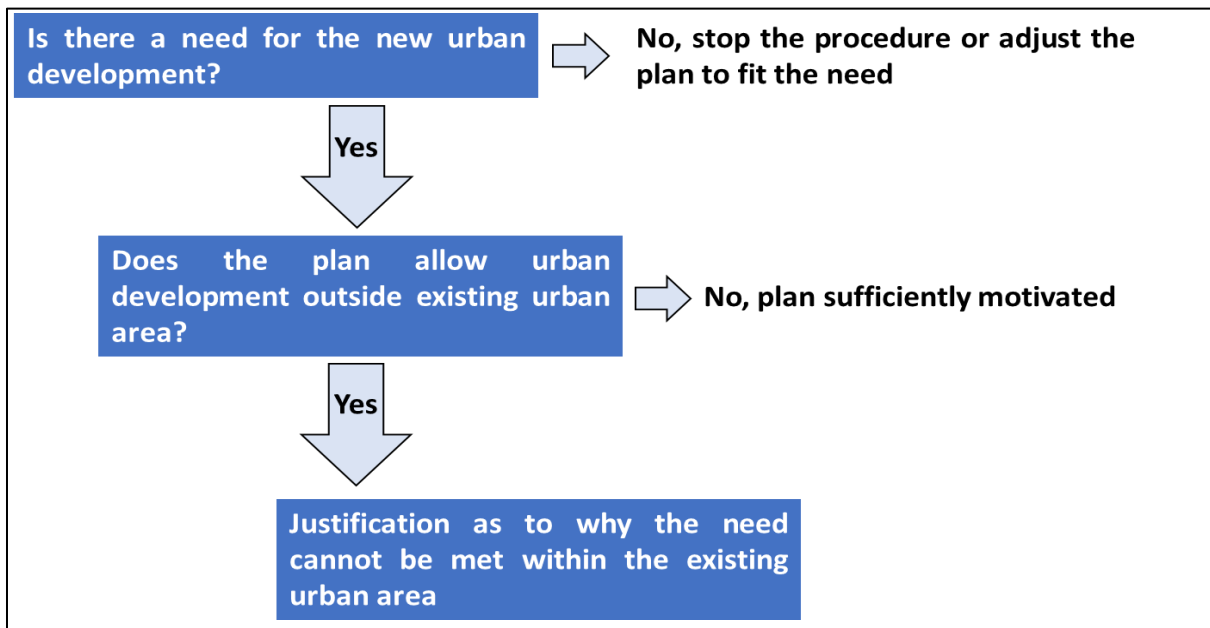


Figure 12. Flowchart of application of the ladder for sustainable urbanization. Source: own work.

Since the introduction of the ladder for sustainable urbanization, there have been frequent court cases in which the ladder is subject to review. These lawsuits arise from appeals against a zoning plan, which includes a justification for the ladder. When the simplified ladder came into force in 2017, the highest administrative court in the Netherlands, the Council of State, published a summary ruling listing the key jurisprudence on the ladder (Dutch Council of State, ECLI:NL:RVS:2017:1724). The case law revolves around the definition and application of key concepts in the ladder, namely “new urban development”, “description of need”, and “existing urban area”. It is relevant to consider the case law surrounding these three concepts in relation to housing development. Cited from Rijkswaterstaat (2023c), filtered by relevance for this study, the following overview can be given:

“New urban development

- From 12 houses there is new urban development, with 11 or fewer houses this is not.

Description of need

- It must be determined on a case-by-case basis which regional level of scale is appropriate for the development envisaged in the plan.
- The municipality can spread the need across cores as long as this fits within the need.
- When assessing whether there is a need for a development, the demand must be weighed against the existing supply.
- Even without a quantitative need, renewal and strengthening of the supply may be necessary for qualitative reasons.
- Qualitative need plays a role in the Ladder assessment insofar as it is properly safeguarded in the zoning plan.

Existing urban area

- If an urban development is located in an existing urban area and meets a need, then the Ladder has been met.
- A development adjacent to existing buildings and on land where an urban function was already possible in the past can be an existing urban area.
- When undeveloped land has an agricultural purpose, circumstances such as connection to existing buildings do not lead to an existing urban area.

- Undeveloped land, such as sports fields, can also be regarded as an existing urban area when part of public and socio-cultural facilities as well as urban green areas.
- It is not necessary to first build on all (possible) expansion and transformation possibilities before a decision can be made to expand if the need exceeds the possibilities available in the existing urban area.”

4.4. The role of the provinces

For zoning plans, in addition to the policy of the national government, it must also be tested against the policy of the province within which the plan area is located. As is clear from the work of Rekker (2018), the ladder for sustainable urbanization also has an effect on this provincial policy. The ladder for sustainable urbanization can be customized by the provinces to suit their particular needs. Over the past few years, the Dutch provinces have adjusted their spatial policy to align with the ladder for sustainable urbanization. The choices made by each province in this respect are influenced by their distinct provincial policy objectives and- visions.

As made clear by Rijkswaterstaat (2023a), there is a formal relationship between the provinces and the Spatial Planning Decree (where the ladder for sustainable urbanization is laid down):

- “Provinces sometimes provide additions to the Ladder. Sometimes they designate extra developments and planning situations as mandatory, sometimes they introduce additional considerations in the Ladder.
- Provinces sometimes provide instructions on how to apply the Ladder. This may concern, for example, which estimate of needs should be used, or how vacancy, types of target groups or demand segments should be viewed.
- Provinces sometimes stipulate that plans comply with regional programming and/or must be regionally coordinated, in a manner established by provincial ordinance.
- Provinces can give instructions to update and/or deprogram plans if they demonstrably do not meet the need and/or the Ladder.”

4.5. Challenges and experiences in the application of the ladder for sustainable urbanization

Over the years, both before and after the 2017 update, various evaluations have been carried out into the functioning of the ladder for sustainable urbanization. Evers and Blom (2016) conducted a comprehensive evaluation of the functioning of the ladder at the municipal level. Interviews with municipal officials involved in spatial plan development, show that the ladder has had both direct (e.g., adjusting the housing program) and indirect effects (municipalities were prompted to articulate very explicitly why a development was needed in a particular location) on the decision-making process and the final plan. The authors state: “municipal officials who implement spatial policy have nuanced and diverse views on the usefulness and necessity of the Ladder and on its effects on spatial planning; the pros and cons of the Ladder appear to be balanced. There are few signs that the Ladder needs to change substantially. However, there is demand for more clarity on when the Ladder should be applied and when its requirements are met” (Evers & Blom, 2016).

Later, another comprehensive evaluation was conducted by Van der Heiden & Polman (2019) specifically on the effects, bottlenecks and solutions in the application of the ladder in the field of housing development. A recency letter from the Minister of Housing and Spatial Planning to Parliament referred to this 2019 evaluation (De Jonge, 2022b). The evaluation shows that both province and municipality experience few bottlenecks in the application of the ladder when it comes to housing development. In some cases, the ladder has been found to be clearer and easier since its simplification in 2017. It has promoted building in inner-city areas, although some municipalities doubt the added

value of the ladder in this regard. Overall, according to municipalities and provinces, the ladder does not slow down housing production. The authors recommend continuing the ladder for housing, but to further define the core concepts (as mentioned in the previous paragraph) on the basis of existing case law.

5. Results

This chapter presents the main results following the data analysis of the interviews and policy documents. Sequentially, the housing development process and the application of the ladder for sustainable urbanization are discussed, followed by the influence of the ladder on the location of housing developments, the nature of housing development and its role in addressing the housing shortage.

5.1. The context and processes of housing development in Amersfoort and relation to planning procedures

In the context of Amersfoort, it is highlighted that it is spatially characterized as one large central core (Spatial consultant 1) with a relatively small rural area (Municipal official 1). However, according to the *High-rise Vision*, there is significant potential for urban densification within the city. The city is characterized by a large proportion of families, accounting for nearly 40% of households and over 60% of residents, with the municipal *Delta Plan Housing* noting that in terms of the share of children, Amersfoort is the youngest city in the Netherlands. Similar to the housing situation throughout the Netherlands, there is a housing shortage that calls for extensive construction efforts (Delta Plan Housing). As already made clear in the theoretical framework, this housing construction involves a complex process that is characterized by substantial spatial and temporal variation. The interviews aimed to explore the role of the respective person and/or organization in housing developments and investigate how this process is shaped in Amersfoort. The acquisition/initiation phase is regarded as the start of the housing development process and the transfer to the final user/completion as the end of the process.

A plot of land, with or without existing buildings, is owned by either the municipality or a third party (Municipal official 2). The municipal officials interviewed in Amersfoort indicated that the municipality does not possess much land; most developments in Amersfoort take place on privately owned land with the municipality in a more passive, facilitating role. This trend has been established, particularly after the global credit crisis (Municipal official 1). Apart from financial considerations, the municipality also acknowledges the practical challenge of reconciling its dual roles as both the land agent and the public evaluator of plans. Interestingly, this issue is also recognized by a project developer (Project developer 3). Incidentally, the municipal *Coalition Agreement* does state that the municipal land policy will be “subjected to scrutiny” in the coming period

According to the municipality, its role in the housing development process depends on whether it has a land position (Municipal official 2). The initiative for a particular development lies with the landowner. In the case of a private party, the landowner, often after an initial financial assessment, presents a specific initiative to the municipality. This is followed by an intake meeting (intaketafel) where the initiative is assessed against the zoning plan. If the initiative does not fit into the zoning plan, this is followed for small-scale projects by an environment table (omgevingstafel) with a fixed group of advisors, while larger and more complex projects involve a separate project group with a project leader to navigate the subsequent process. The composition of the environment table was not asked, but it is clear to the project group that the composition is tailored to the specific project. The municipal policy does not address this working methods/processes any further.

In the case of major developments, the municipality also produces a framework note (kaderstellende notitie), outlining the main grounds for supporting a particular development (Municipal official 2). This note is formally approved by the municipal council. The municipality indicates that in many cases, prior to detailed planning, public participation with the local community must also take place. This is also emphasized in the *Structural Vision Amersfoort 2030*, which states that the municipality, as the

guardian of the public interest, should ensure transparency of all interests during participation and should weigh them accordingly. The rules for this participation process are further outlined in a municipal participation guide. The aforementioned ensures, on one hand, that a plan is constructed “based on consultation with the surroundings”, while on the other hand, it also ensures that “the municipal council and the municipal executive are gradually involved in a development” (Municipal official 1).

Building upon the framework note, the plan is further developed (Municipal official 2), and the developer subsequently presents a detailed plan before finalizing the prior agreement (antérieure overeenkomst) (Project developer 3). Subsequently, a new zoning plan is created to enable the plan legally. In most cases, the municipality of Amersfoort undertakes this task (Municipal official 1), although there is a shifting trend whereby the municipality collaborates with the initiator to have them prepare it themselves, as stated by a project developer (Project developer 3). The province has a guiding role in the process and only checks whether its policy and regulations have been properly processed and applied (Provincial official 1).

The results do not provide any insights into the housing construction process beyond the creation/adaptation of the zoning plan: the construction and end-ownership stages. These stages, in fact, constitute an implementation of what has been determined during the acquisition and development phases.

5.2. Application and importance of the ladder for sustainable urbanization for housing development

The application of the ladder for sustainable urbanization in the zoning plan is legally stipulated. As previously demonstrated in this study, it entails substantiating the need for urban development and, if located outside urban areas, providing a justification for why it cannot be realized within urban areas. The municipality of Amersfoort does not have any additional guidelines on this matter and simply follows the legal framework (Municipal official 1, 2). The provincial officials also indicate that the province of Utrecht has no additional requirements on the ladder (Provincial official 1, 2). This can be confirmed, as the *Interim Environmental Regulation* explicitly designates the ladder as the “sustainable urbanization ladder” and directly refers to the application requirements outlined in the national Spatial Planning Decree. The municipal policy does not explicitly mention the ladder for sustainable urbanization.

The municipal officials are aware of the jurisprudence regarding the minimum threshold of 12 houses and states that most plans are more complex and larger than that, requiring a substantiation and assessment based on the ladder for sustainable urbanization (Municipal official 1). The municipality usually carries out this substantiation itself, as well as the preparation of the zoning plan. This implies that they prepare all the necessary documents in accordance with legal (formal) requirements for the political decision-making process by the municipal council and/or the college of mayor and aldermen. This is corroborated by a project developer (Project developer 3).

Both the municipality and the spatial consultancy firm, when conducting a substantiation of the need based on the ladder, refer to the municipal policy (Municipal official 2; Spatial consultant 1). “Municipalities often use housing demand studies as a basis for their housing visions. So, they have already examined the demand for their area. Often, this is further specified for specific target groups, allowing us to precisely assess whether our plan aligns with the identified demand. Recently, there has been an almost unlimited demand for housing, making this substantiation process easier. It used to be more challenging in the past” (Spatial consultant 1). To sum, both the municipality and the spatial

consultancy firm rely on the municipal policy and housing demand studies to substantiate their plans, ensuring alignment with identified demand and addressing the evolving housing needs, which nowadays have become more manageable due to the current high demand for housing.

The question of potential sanctions for non-compliance with the ladder is raised by a project developer (Project developer 3). The developer indicates that negotiations with the municipality are often possible if a plan does not meet the ladder requirements. Within the municipality, it is the officials who check whether a substantiation is sufficient (Municipal official 1). According to the interview with the spatial consultant, the ultimate moment of assessment often occurs in court in case of appeals or objections (Spatial consultant 1). Although his perception in this context is as follows: “People generally do believe that there is a demand for housing, so they are less likely to appeal. Moreover, since there is less external pressure on municipal officials, the necessity to strictly justify the ladder is reduced”. This perception is confirmed by a municipal official (Municipal official 1). In general, it appears that the application of the ladder occurs more behind the scenes and retrospectively, with the details primarily being challenged in the event of a potential legal proceeding.

Finally, it is relevant to mention that the municipal officials do mention that the application of the housing ladder substantially differs from the application of the ladder for, for example, retail functions. In such cases it is often difficult to determine the catchment area for the need, but also that for retail there is often still something vacant somewhere (Municipal official 1). This is indirectly mentioned by a project developer who emphasizes the qualitative aspect in justifying retail functions and the need to examine what does and does not work in terms of the type of businesses activities (Project developer 2).

5.3. The influence of the ladder for sustainable urbanization on the location of housing developments

As previously demonstrated in this study, the legal text of the ladder for sustainable urbanization refers to (existing) urban areas. However, the definition provided by the legislator for urban areas is not always clear and, as mentioned earlier, is also influenced by case law. The interviewee at the spatial consultancy firm states: “In my experience, they often look at provincial policies first. Provinces often include the concept of existing urban areas in their regulations, or a term that closely resembles it. If the proposed development falls within those boundaries, it is generally accepted as an urban area. In other cases, although I haven't encountered many borderline cases myself, I know that if you can prove that the existing environment creates an urban impression in a different way, you can often argue that it qualifies as an urban area or built-up area” (Spatial consultant 1). When it comes to the desired locations for housing development, both provincial and municipal policies make a distinction between (inner) urban areas and extra-urban, or rural areas. The provincial *Interim Environmental Regulation* includes specific delineations for this purpose, as illustrated in Figure 13 below.

From the aforementioned Figure 13, it can also be deduced that an indicative urban fringe zone is included in the provincial *Interim Environmental Regulation*. Specifically, this policy document states: “Municipalities are encouraged to develop policies aimed at preserving and enhancing the spatial quality of the area within the urban fringe zone . . . of their core(s). If it is necessary to seek a cost bearer for quality enhancement, urbanization can be made possible through the application of this article. This urbanization outside the urban area implies an encroachment. This is only permissible if simultaneous enhancement of the spatial quality occurs in the urban fringe zone or in the core.” From this, it is clear that provincial policy, under certain conditions, allows for urban development in the urban fringe zone. However, this topic was not addressed in the interviews, therefore no further results can be provided regarding its practical implications.

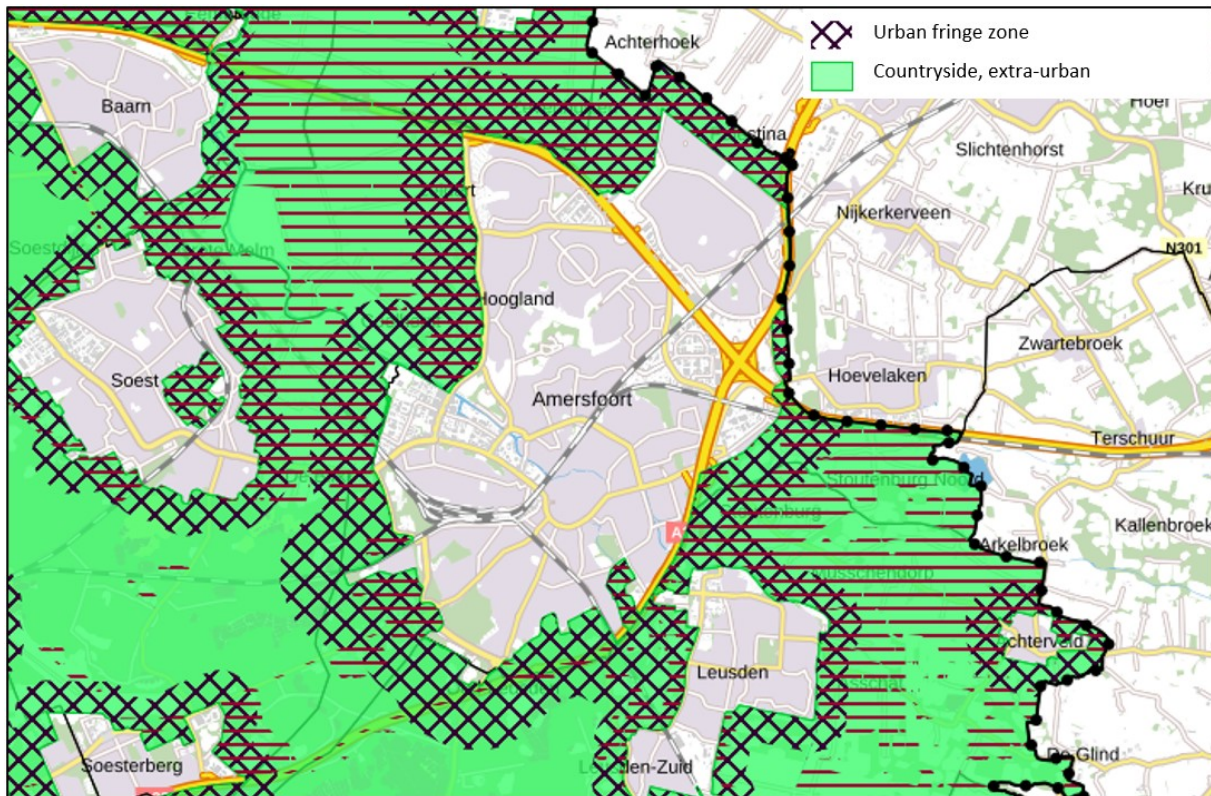


Figure 13. Excerpt from map of provincial policy showing delineation of urban areas. Source: Interim Environmental Regulation, 2021; own translation.

Both the municipality and the spatial advisory firm observe that Amersfoort has limited rural, or non-urban, areas (Municipal official 1; Spatial consultant 1). According to a municipal official, the delineation in practice is therefore quite clear. The same municipal official also emphasizes that the surrounding landscapes contribute to the quality of the city and, therefore, should be treated with caution, i.e. should not just be built over (Municipal official 1).

According to one respondent, more than three-quarters of the recent housing developments in Amersfoort take place in the existing urban area (Municipal official 2). The municipal official also states that the municipality's focus is explicitly on developing inner-city. This is confirmed by all analyzed municipal policy documents. In the municipal *Delta Plan Housing* and the *High-rise Vision*, the areas 'Langs Eem and Spoor' (Eemplein, Wagenwerkplaats, Trapezium, De Nieuwe Stad, and Kop van Isselt), 'De Hoef', and 'Langs het Valleikanaal' are specifically mentioned for inner-city housing development. Given the housing demand, the municipal approach for inner-city housing development is to develop wherever possible, without specific emphasis on a particular form of inner-city urban development (Municipal official 2). This also applies to the province, which is committed to utilizing all inner-city opportunities (Provincial official 1).

Currently in Amersfoort, there are only limited developments taking place in what is considered 'extra-urban' locations. According to a municipal official, there are some small-scale extra-urban developments planned or under development in the southern part of Amersfoort (Municipal official 1). The only major recent extra-urban housing development is Vathorst. The municipal official notes that the existing Vathorst (VINEX-location, as recognized previously) is nearly completed. As for Vathorst-Bovenduist, which represents a further extension beyond the existing Vathorst, it has been politically and administratively determined that housing development can take place there, but it is intended to be the last large-scale expansion location for the municipality of Amersfoort for the time

being (Municipal official 2). Vathorst-Bovenduist is also mentioned in the municipal *Delta Plan Housing*, the municipal *Coalition agreement* and the provincial policy documents as a future expansion location. However, the further planning process for Bovenduist has yet to commence (Municipal official 2). A possible role of the ladder with regard to the decision-making for Bovenduist is not apparent from the interviews and the provincial and municipal policy.

in the process of arriving at new (large-scale) housing locations the province collaborates with municipalities in joint governance structures (like U Ned, also mentioned in the provincial Environmental Vision) to identify potential development locations, although the municipality is the first to take the initiative to identify potential housing locations (Provincial official 2). As mentioned, the priority is inner-city development. Extra-urban options are only considered if these are not available or suitable. In general, the provincial officials mention that a clear interest with regard to new housing development is mobility; a location must be good or can be accessed (preferably also by public transport). Additionally, any proposed housing development location by a municipality is always assessed against the prevailing *Interim Environmental Regulation*, and given that it has already been shown that the ladder for sustainable urbanization is included in this provincial regulation, the ladder is also part of this process, albeit more from a testing role.

All interviewed project developers engage in both inner-city and outer-city development. One project developer mentioned that inner-city development is more complex but also more enjoyable (Project developer 2). The municipal *Delta Plan Housing* accordingly states: “Planning for inner-city construction is more complex than planning for expansion locations”. During the acquisition phase, one of the project developers mentioned that they primarily focus on the questions: “Can you buy it?” and “Can you achieve a viable business case?” (Project developer 1). Additionally, a project developer considers the specific spatial policies that are relevant to a particular location (Project developer 2). So: in the case of housing development, there must be reasonable certainty (on the basis of current policy documents, for example) that housing can be developed (in the future).

It has been evident from the above discussion that urban development within city limits is encouraged in both provincial and municipal policies. Regarding the choice between inner-city and extra-urban development, both the municipality and the project developers indicate that the ladder for sustainable urbanization is not directly applicable in this context. None of the interviewees have encountered situations where the ladder for sustainable urbanization made extra-urban projects impossible. However, it is worth noting that the interviewee from the spatial consultancy firm suggests that the ladder for sustainable urbanization might pose slightly more challenges for extra-urban development, as “it requires slightly more justification” (Spatial consultant 1). Both the municipal officials and the spatial consultant highlight that the influence of the ladder for sustainable urbanization on the location of housing development may potentially create more obstacles, particularly for extra-urban housing development in small cities/towns (Municipal official 1; Spatial consultant 1). In reverse, this indicates a limitation of the selected case where the majority of housing construction is currently taking place inner-city, where the housing demand can be met, so for the location of housing the ladder has not proven to be an issue.

5.4. The influence of the ladder for sustainable urbanization on the nature of housing developments

In this study, a distinction has been made between urban structure/housing types, the number of houses per development, and ownership in order to define the nature of housing developments. The interviews reveal a strong interrelation among all these aspects. Particularly, the interviews with the project developers indicate that the urban structure and, consequently, the number of houses per

development are primarily influenced by both the location (available space) and the applicable governmental policies.

With regards to location, the physically available space determines what can be built but the identity and appearance of the surrounding area also comes into play: a development must 'fit' into its surroundings (Project developer 3). Having stated this, there is generally a difference between inner-city and extra-urban development. The municipal *High-rise Vision* follows that the aim of municipal policy in inner-city locations is: densification, providing space for facilities, greenery and public space and strengthening existing urban structures. As a result of this policy, inner-city mainly apartments are created; therefore, for Vathorst Bovenduist, the choice is made to prioritize more ground-based houses to meet that specific demand (Municipal official 2). Furthermore, it is noteworthy that the municipality also acknowledges the influence of neighboring municipalities, stating: "And also neighboring municipalities who think, 'Hey, Amersfoort, all those people looking for ground-based houses, they come to us.' Nijkerk is an example of that, and 'We already struggle to build for our own people, and if you don't build it'. The discussion regarding social housing is the opposite. We construct a relatively large number of social housing units, which are not built in other municipalities" (Municipal official 2). It follows from this that there are inter-municipal interests in the field of housing, both in quantitative and qualitative aspects. Although not explicitly considered and shown in this study, this observation may be relevant with a view to the need motivation of the ladder for sustainable urbanisation.

From the interviews and policy it is clear that affordability is an important theme in housing development in Amersfoort. The municipality has therefore included specific requirements for this in the Delta Plan Housing: in principle, per project, at least 35 percent of the houses to be built must be self-contained social rent. Consequently, an initiator must adhere to those policy requirements (Municipal official 2). The province also considers affordability as a prerequisite (increasingly so), but it primarily monitors the overall picture, while the specific translation of affordability per development is left to the municipality (Provincial official 2). All interviewed project developers are aware of these conditions. In terms of the resulting urban structure, one of the project developers noted that social housing often leads to smaller houses and plots compared to the private (buy/rent) sector (Project developer 1).

Regarding site acquisition, one project developer emphasized that "The value of a location is determined by what spatial planning has to offer", i.e. the value of the location depends on the permitted construction and land use (Project developer 1). Another project developer also referred to this issue and highlighted the challenges it poses in discussions surrounding long-term housing developments, particularly when the land was acquired prior to the introduction of affordability standards and when the acquisition reflected a different housing program. Simultaneously, extended financing further contributes to a less favorable business case (Project developer 3). If necessary in such cases, this project developer also explores options for reprogramming in order to align with market demand.

The affordability categories, as established in the municipal policy, are (partly) based on housing needs assessments (Spatial consultant 1). The interviews with project developers reveal that they, as market actors, construct housing based on demand: "We build what we sell" (Project developer 2). However, this approach does not always align with the overall demand within the municipality. This is acknowledged by one project developer: "Everyone needs a place to live, regardless of their financial means" (Project developer 1). Still, it turned out that in practice, certain discrepancies can arise in this regard. The interview with the municipality indicates that municipal officials attempt to balance

various interests, including the financial interests of developers and the housing needs of (potential) residents (Municipal official 2). However, as the municipal official indicates, the final decision is made by the politicians, also when it comes to the housing development program.

Regarding policies, one of the project developers also mentioned that there are increasingly instances where a specific space allocation is already claimed for purposes such as climate adaptive water storage (Project developer 3). For example, the province has implemented the program 'Green Grows Along', included in the *Environmental Vision*, which links new (extra-)urban development to green development (Provincial official 1). The first pilot projects of this nature are taking place in the vicinity of Amersfoort. In general regarding the role of the province, an official highlights that the province has interests in terms of landscape/greenery and mobility, which can influence the urban structure, but the overall role of the province regarding the urban structure is relatively limited (Provincial official 1). However, they also note that the province's role in urban design is increasing, particularly within larger area developments or when drafting strategically oriented area visions (Provincial official 2).

Furthermore, urban development trends, such as shared mobility, may also exert influence on the form of housing development (Project developer 2, 3). It is clear from the interviews with project developers that they follow such trends in the market and implement them where possible (and appropriate) in their projects. A project developer also notes that there is a difference between small and large municipalities when it comes to following and adopting specific trends, also when it comes to climate adaptation and nature inclusion (Project developer 1). He further asserts, "And if you're in a very ambitious municipality, like Utrecht and Amersfoort, then you can achieve all those things. But especially in smaller, more traditional municipalities, they seem to hold on to the trends that exist in the market. These are not just trends, as you have to address issues such as heat stress and climate adaptive measures; the municipality also needs to be on board with these aspects. We do often encounter this as a challenge" (Project developer 1).

Regarding the number of houses per development, the interviewed project developers only undertake developments starting from 20/30 houses, primarily because it imposes less disproportionate burden on their organization (Project developer 1, 3). The interviewed developers are not concerned with maximizing the number of houses on a plot, particularly because the quantity does not directly correlate with the generated land value (Project developer 3). Houses tend to remain on the market for a considerable period, prompting one of the developers to explicitly consider in their projects quality, marketability, and societal impact (Project developer 3). Another developer expresses the sentiment that one should still feel satisfied when revisiting the development later on (Project developer 1). However, the interviewed developers do note that the level of 'ambition' regarding density has increased over the years. Nevertheless, this shift is more related to sustainable land use rather than financial optimization of the development (Project developer 2). High-rise construction in Amersfoort is now almost encouraged, whereas it was previously unthinkable (Project developer 3). Illustrating this context is the previously mentioned municipal *High-rise Vision*, indicating the municipality's intention to facilitate or promote high-rise construction in certain parts of the city.

The ladder for sustainable urbanization also requires a justification of the types of housing to be realized in terms of qualitative demand aspects. Within the municipality, it is noted in this regard that there is currently a demand for all types of housing, but "When does it become excessive?" (Municipal official 1). Municipal officials indicate that this can sometimes be challenging in the assessment of the substantiation of the ladder for sustainable urbanization. This assessment focuses on the present situation, while in view of the qualitative aspects of the current housing construction versus the qualitative need, it (sometimes) could only become skewed after 10-20 years. In this context, one of

the project developers proposes their vision of building a city for 5 generations, which would produce more sustainable and more vibrant cities than constructing a city for a homogeneous group that would – so to speak - require demolition and new construction after a certain number of years (Project developer 2).

It was found that the ladder for sustainable urbanization often comes later in the housing development process and therefore has no direct influence on the nature of housing developments. The discussion regarding housing types has already taken place during framing or implementation and is determined by entirely different aspects, according to a municipal official (Municipal official 1). Therefore, he refers to the ladder for sustainable urbanization as a “legal finalization”. However, it is clear that planning ideals advocated by the ladder for sustainable urbanization, such as the compact city with higher densities, are explicitly prioritized in provincial and municipal policies and are also evident in the practice of housing developments. Thus, it can be stated that the ladder, considering its policy objective, at least indirectly achieves the desired spatial outcome.

5.5. Role of the ladder for sustainable urbanization in addressing the housing shortage

The demand for housing, particularly affordable housing, has already been mentioned in the previous paragraphs. It is a recurring theme in both the interviews and the policy. In light of its social relevance, the role of the ladder in addressing the housing shortage has been explicitly considered, more specifically, does the ladder act as a barrier to housing development?

The interviews indicate that the challenges in addressing the housing shortage are highly time and location dependent. In Amersfoort, the availability of locations for housing construction is currently not a problem (Municipal official 2). However, challenges arise from issues such as the nitrogen crisis, electricity grid congestion, mobility, and limited capacity due to a shortage of civil servants (Municipal official 2). Furthermore, a project developer specifically mentions higher interest rates and recent regulations in the rental sector as a barrier (Project developer 2). The economic situation poses difficulties for project developers as they aim to provide land value to landowners while also constructing houses that are affordable and feasible for sale to individuals, investors, or housing corporations (Project developer 1). Additionally, project developers emphasize the larger and more diverse number of stakeholders in inner-city developments compared to extra-urban ones, potentially leading to lengthy objection procedures (Project developer 2, 3). They also highlight that the issue of the nitrogen crisis primarily affects extra-urban areas. Furthermore, frequently changing government policies are identified as a general challenge (Project developer 1).

In the municipality of Amersfoort, there are stalled sites, as defined in the theoretical framework. From the perspective of the municipality, the interviewee highlights: “We have approved plans ready to go, with everything in place. They could start tomorrow, but they don't. You see this, for example, in the Hoef area. There are plans approved for thousands of houses. They could start tomorrow, but nothing is happening” (Municipal official 1). From a project developer's perspective, it is mentioned that at least 70 percent of the houses in a development need to be sold before construction can begin (Project developer 1). He indicates that in some cases, a project can be phased, but this is not always possible. This can then lead to a stalled site.

From the interviews it became clear that the housing shortage can be interpreted in various ways. Often, it refers to a quantitative deficit, but one interviewee already argues that this perspective is very one-dimensional (Project developer 2). The municipal *Housing Vision 2011-2020* acknowledges that the housing shortage is increasingly characterized by a qualitative deficit. The substantiation of the need for the ladder for sustainable urbanization also includes a qualitative element, and municipal

housing needs assessments and housing visions often provide some direction in this regard (Spatial consultant 1). However, there is in practice sometimes the question of, “What is the need and don't you create it by building those houses somewhere?” (Spatial consultant 1). Possibly in line with such a remark, the municipal *Housing Vision 2011-2020* places emphasis on market mobility in the housing market: “The housing seekers in our city benefit the most from market mobility, which sets off a whole chain of moves. Each relocation provides the consumer with the opportunity to move to a house that better aligns with their housing preferences.” A project developer also underscores the significance of market dynamics and points in this connection to the enormous demand for ground-based senior houses that he generally observes (Project developer 3).

Regarding the role of the ladder for sustainable urbanization in addressing the housing shortage, all interviewees agree that it does not pose a direct hindrance to housing development in the municipality of Amersfoort. From the perspective of the municipality, it is stated: “It would be a barrier if it, let's say, obstructing desired development, but it doesn't. It is more of a bureaucratic thing. It's just another report, incurring additional costs, and we have to look at it” (Municipal official 2). From the province, it is stated: “I think that if you, like we are currently doing together with the municipality and with the national government, do our homework well and provide a solid justification for why certain locations are relevant to us and we want to facilitate them, then in the substantiation of a zoning plan, the ladder is not such an issue anymore, because you have already conducted thorough research together” (Provincial Official 2). Furthermore, it is pointed out that the ladder for sustainable urbanization was introduced during a completely different time, namely during the global credit crisis with a lot of vacant properties (Municipal official 1). A project developer states that, based on his experience, there was much more emphasis on the ladder for sustainable urbanization ten years ago than there is now (Project developer 3).

6. Conclusion

6.1. Answering the research questions

This study aimed to deepen the understanding of the ladder for sustainable urbanization's practical implementation by examining its spatial impact on housing developments in the municipality of Amersfoort. To achieve this objective, a single-case study was performed with data collection from relevant municipal and provincial policies, as well as interviews with civil servants, project developers, and a spatial planning consultant. As is clear from the literature, the purpose of the ladder for sustainable urbanization as a procedural policy instrument is to promote efficient use of space in new urban developments, including housing development. Its primary goal is to prevent vacancy and overcapacity by substantiating the need for desired urban development and providing further justification when the intended location is located extra-urban. The latter can be done by demonstrating that there are no inner-city (re)development options to meet the stated need. In this context for Amersfoort, the ladder is implemented in zoning plans enabling new housing developments in accordance with the legal framework and relevant case law. Neither the municipality nor the province have additional application or justification requirements. Existing municipal policy documents and housing market studies are used to justify the need, ensuring alignment with identified demand and addressing the evolving housing needs. Currently, given the high demand for all types of housing in Amersfoort, this substantiation does never pose a challenge. In this regard, it has also been suggested that, given this situation, fewer objection procedures are initiated that undergo judicial review of the ladder justification.

In the municipality of Amersfoort, the location and nature of housing developments are largely influenced by provincial and municipal policies. These two levels of government exhibit significant policy overlap, and certain aspects of the policy are jointly formulated. Regarding this overlap, the policy incorporates several key principles that are demonstrably reflected in practice. The two most significant identified principles are: 1) prioritizing the utilization of inner-city development possibilities before considering extra-urban locations, and 2) ensuring affordability of housing by allocating specific percentages of houses within a development as affordable (e.g. social housing). These principles are well-known among project developers and are adhered to. Additionally, the province has specific interests and ambitions related to mobility and landscape, potentially influencing the location and nature housing development. It has been observed that project developers approach site acquisitions more opportunistically by considering the feasible business case within the prevailing governmental policy framework. While the municipality strives to weigh various aspects of the location and nature of housing developments in the public interest, ultimately, political approval is either granted or denied.

Given the main research question "To what extent does the ladder for sustainable urbanization influence the location and nature of housing developments in the municipality of Amersfoort?" it can be stated that in practice, the ladder substantiation in the zoning plan merely represents the final legal step in the process of realizing a housing development. The ladder is not explicitly considered by any of the parties involved earlier in the process. However, it is acknowledged and evident that the underlying principles of the ladder are interwoven in both municipal and provincial policies, which are indeed taken into account at earlier stages of the process. Currently, the majority of housing developments in the municipality of Amersfoort occur inner-city. The ladder serves as a potential punitive measure, particularly in judicial proceedings, but for the municipality of Amersfoort it turned out that – although perceived as bureaucratic – it did not lead to insurmountable barriers in housing developments. The unique spatial characteristics of Amersfoort (a single urban core, limited rural area, sufficient options for inner-city development) appear to play a role in this context, limiting the generalizability of the findings and serving as a limitation of the specific case at hand. For Amersfoort,

the prioritization of planning ideals promoted by the ladder for sustainable urbanization, such as the compact city concept with increased population densities, is apparent both in provincial and municipal policies as well as in the implementation of housing projects. Consequently, it can be argued that the ladder, aligned with its policy objective, indirectly still accomplishes the intended spatial results.

6.2. Recommendations

Although this study focused on the municipality of Amersfoort, future research could potentially compare it with another municipality, in which the current study design can serve as a starting point. After all, both grey literature and this study have suggested or indicated that the ladder for extra-urban housing development imposes limitations in certain smaller cities (with often a higher pressure on extra-urban development). It may be relevant to further investigate this and examine the possible cause-effect relationship. Additionally, future research, possibly in the form of a case study, could attract a larger and more diverse range of respondents. This could shed more light on the legal aspects of the ladder, as well as the role of actors such as housing associations. The latter, as indicated by one of the project developers (Project developer 3), play a crucial role in housing development, particularly in the development and operation of social rental housing (Scanlon et al., 2014). Finally, in addition to exploring the ladder for sustainable urbanization, further research could delve into the underlying factors contributing to the surge in inner-city housing development, particularly within the last decade. This investigation should also consider the apparent paradox of decentralization and deregulation in Dutch national spatial policy. During the preliminary phase of this study, a senior researcher at the PBL (Dutch environmental assessment agency) had already recommended a similar avenue of inquiry (D. Hamers, personal communication, February 1, 2023). Moreover, this study also raises a question regarding the degree to which the inner-city housing typology (often comprising apartments rather than ground-based houses) genuinely addresses the (long-term) housing demand (Municipal official 1) or whether opportunistic/political motivations come into play.

7. Reflection

7.1. Methodological reflection

In the present study, the decision was made to employ qualitative research methods and not quantitative methods. This choice can be justified by the aim of the research at hand, which is to provide insights into the practical functioning of the ladder for sustainable urbanization, particularly by examining its spatial impact on housing developments in practice. Purely statistically, correlations can hardly be identified in this regard; this can actually only be achieved through qualitative descriptions based on practical experiences. However, quantitative data has proven useful in providing context, such as the percentage of Dutch inner-city developments over the years (Claassens & Koomen, 2017). In general, the employed method of a qualitative design with a single-case study has sufficiently led to an answer to the research problem and underlying research questions.

Regarding the selection of the case, it is important to note that, in addition to more substantive reasons, there were explicit practical considerations at play, including physical accessibility and the researcher's connections within the municipality of Amersfoort. This facilitated the timely engagement with the appropriate individuals. However, it has been challenging, especially for private parties, to approach the right stakeholders. The methodology outlined in the study was followed in this regard, but as mentioned earlier, it did not always yield the desired result. In this context, it should be noted that, for developers, this is not a homogeneous group (Meijer & Buitelaar, 2023). Although this aspect was not explicitly considered in the approach to the interviewees, it is relevant because it may explain why some developers have no experience with the ladder and therefore chose not to participate in the research. The location and nature of a housing development, as revealed in the study, are determined in the early stages. Therefore, the position of a respondent within the entire housing development process is relevant too.

Regarding the reliability of the study, it is worth noting that the research is highly time-bound. Fluctuating policies and economic conditions have a significant influence. The study explicitly indicates that the ladder, given the current housing demand, does not pose an obstacle and emerged during a time of crisis when it was considered more relevant. The analyzed policy represents a snapshot, and during the interviews, both the municipality (Municipal official 1) and the province (Provincial official 1) mentioned the existence of relevant spatial policies under preparation, which have consciously not been included in the study but may have a significant impact on the location and nature of housing developments in the future.

7.2. Theoretical reflection

The sustainability concept and the associated, more focused, concept of sustainable (urban) development have garnered significant interest in the field of science. Insights from international science have proven to be useful in clarifying definitions, backgrounds, and conceptual distinctions, as well as operationalizing core concepts. However, in the context of housing development specifically, a more context-specific interpretation is necessary, hence the focus was tailored to the Dutch context.

All existing theoretical insights and identified interrelationships have been incorporated into a research framework (see Figure 9). This framework has particularly demonstrated its value in formulating interview questions and analyzing qualitative data, thereby enhancing the coherence of the study. However, it should be noted that not all conceptual distinctions are equally evident in the study's results. This is exemplified by the concept of inner-city development, which distinguishes between greenfield, brownfield, and greyfield developments. In this case, the response that "Given the housing demand, the approach of the municipality of Amersfoort for inner-city housing development is to develop wherever possible, without specific emphasis on a particular form of inner-city urban

development” (Municipal municipal 1), somewhat prompted the decision not to maintain this distinction clearly. The scope of the interviews proved too extensive to uphold this conceptual distinction and to ascertain the drivers and barriers for each type of inner-city development. This aspect alone could form a separate study, which undoubtedly allows for a further distinction in terms of inner-city housing development forms, such as the subdivision of existing houses (‘woningsplitsing’) or the addition of a floor to an existing house / housing block (‘optoppen’) (see e.g. KAW, 2020; Stec groep, 2023).

Finally, it is possible to argue that the element of ‘other factors’ in the research framework (see Figure 9) may offer insufficient framework. Although intentionally formulated in a broad manner, it might benefit from further (graphical) elaboration based on existing literature (deductive) or the results of this study (inductive), leading to a more refined framework/model of the research subject.

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9. Appendix

9.1. Interview questions

Interview questions municipal officials

Introduction

- Can you briefly introduce yourself?
- Where in the process of realizing a housing development (from land acquisition/initiative to realisation/transfer to end user) is the municipality normally involved?

Application of the ladder for sustainable urbanization

- Does your organization outsource the preparation of zoning plans?
 - What about the substantiation of or assessment against the ladder for sustainable urbanisation?
- When and how will the ladder for sustainable urbanization be applied in housing construction within the municipality?
 - Is only the legal framework used here or are there specific guidelines within the municipality?
- Does the province, in addition to the provisions of the ladder for sustainable urbanization, impose further restrictions or requirements with regard to the scope of application (need, location) of the ladder?

Location of housing developments

- Where do housing developments within the municipality mainly take place?
 - Inner city: greenfield, brownfield, greyfield?
 - Extra-urban: are there any plans? Status Vathorst Overduist?
- What determines whether housing construction takes place in inner-city or extra-urban areas?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
- Do you think that the ladder for sustainable urbanization promotes inner-city construction and discourages extra-urban housing?

Nature of housing developments

- What determines the urban structure (high-rise/low-rise etc.) and housing types (detached/row house/apartments etc.) within housing developments?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- What determines the number of houses per development?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- What determines the housing program (purchase or (social) rent)?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
- How do the urban structure, housing types, the number of houses and the housing program relate to each other?

Role ladder for sustainable urbanization in addressing the housing shortage

- Do you see the ladder for sustainable urbanization as an obstacle to tackling the housing shortage (both quantitatively and qualitatively > build according to need)?
- What other obstacles or challenges do you or your organization see in tackling the housing shortage?

Other

- With which persons or parties should I talk more in the context of my research?
- Is there anything else you would like to share as part of my research?

Interview questions provincial officials

Introduction

- Can you briefly introduce yourself?
- Where in the process of realizing a housing development (from land acquisition/initiative to realisation/transfer of the end user) is the province normally involved?

Application of the ladder for sustainable urbanization

- What is the role of the province in drawing up zoning plans?
- Does the province, in addition to the provisions of the ladder for sustainable urbanization, impose further restrictions or requirements with regard to the scope of application (need, location) of the ladder?
 - Does the province test substantiations against the ladder for sustainable urbanisation?

Location of housing developments

- What role does the province have when it comes to the location (inner-city/extra-urban) of housing developments?
- Do you think that the ladder for sustainable urbanization promotes inner-city construction and discourages extra-urban housing?

Nature of housing developments

- What role does the province have when it comes to the urban structure (high-rise/low-rise, etc.) and housing types (detached/row house/apartments etc.) within housing developments?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- What is the role of the province when it comes to the number of houses per development?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- What is the role of the province when it comes to the housing program (sale or (social) rental)?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?

Role ladder for sustainable urbanization in tackling the housing shortage

- Do you see the ladder for sustainable urbanization as an obstacle to tackling the housing shortage (both quantitatively and qualitatively > build according to need)?
- What other obstacles or challenges do you or your organization see in tackling the housing shortage?

Other

- With which persons or parties should I talk more in the context of my research?
- Is there anything else you would like to share as part of my research?

Interview questions project developers

Introduction

- Can you briefly introduce yourself and <organization name>?
- Does <organization name> focus on a specific region in the Netherlands in terms of work area?
- Which projects does or did <organization name> have within the municipality of Amersfoort?
- Where in the process of realizing a housing development (from land acquisition/initiative to realization/transfer of the end user) is <organization name> involved?

Application of the ladder for sustainable urbanization

- Does <name of organization> outsource the preparation of zoning plans?
 - What about the substantiation of or assessment against the ladder for sustainable urbanisation?

Location of housing developments

- Does <organization name> mainly develop inner-city or mainly extra-urban?

- Inner city: greenfield, brownfield, greyfield?
- What determines whether a housing development takes place in an inner-city or extra-urban area?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - Does provincial policy play a role in this, and if so, how?
- Do you think that the ladder for sustainable urbanization promotes inner-city construction and discourages extra-urban housing?
 - What else influences the choice for inner-city or extra-urban housing within the municipality of Amersfoort?

Nature of housing developments

- What does the process of a housing development look like once the intended location (inner-city/extra-urban) is known?
- What determines the urban structure (high-rise/low-rise etc.) and housing types (detached/row house/apartments etc.) within housing developments?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- How large is the average housing development (number of houses) in which <name of organization> is involved?
- What determines the number of houses per development?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- What determines the housing program (purchase or (social) rent)?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
- How do the urban structure, housing types, the number of houses and the housing program relate to each other?

Role Ladder for sustainable urbanization in tackling the housing shortage

- Does the ladder for sustainable urbanization form an obstacle to tackling the housing shortage (both quantitatively and qualitatively > build according to need)?
- What obstacles or challenges do you or <name of organization> (further) see in tackling the housing shortage?

Other

- With which persons or parties should I talk more in the context of my research?
- Is there anything else you would like to share as part of my research?

Interview questions spatial planning consultancy firm

Introduction

- Can you briefly introduce yourself and <organization name>?
- Does <organization name> focus on a specific region in the Netherlands in terms of work area?
- Which projects does or did <organization name> have within the municipality of Amersfoort?
- Where in the process of realizing a housing development (from land acquisition/initiative to realization/transfer of the end user) is <organization name> involved?

Application of the ladder for sustainable urbanization

- Does <name of organisation> itself write substantiations for the ladder for sustainable urbanisation?
- When and how will the ladder for sustainable urbanization be applied in housing (within the municipality of Amersfoort)?
 - Is only the legal framework usually used or are there specific guidelines within this depending on the municipality?

- Does the province, in addition to the provisions of the ladder for sustainable urbanization, impose further restrictions or requirements with regard to the scope of application (need, location) of the ladder?
- What does the substantiation of the ladder for sustainable urbanization look like in terms of content?
 - How is this drafted or what is the approach?

Location of housing developments

- What determines whether a housing development takes place in an inner-city or extra-urban area?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - Does provincial policy play a role in this, and if so, how?
- Do you think that the ladder for sustainable urbanization promotes inner-city construction and discourages extra-urban housing?
 - What else influences the choice for inner-city or extra-urban housing (within the municipality of Amersfoort)?

Nature of housing developments

- What does the process of a housing development look like once the intended location (inner city/outer city) is known?
- What determines the urban structure (high-rise/low-rise, etc.) and housing types (detached/row house/apartments, etc.) within housing developments?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- How large is the average housing development (number of houses) in which <name of organization> is involved?
- What determines the number of houses per development?
 - Does the Ladder for sustainable urbanization play a role in this and if so, how?
 - What role does the location (inner-city/extra-urban) play in a development?
- What determines the housing program (purchase or (social) rent)?
 - Does the ladder for sustainable urbanization play a role in this and if so, how?
- How do the urban structure, housing types, the number of houses and the housing program relate to each other?

Role ladder for sustainable urbanization in tackling the housing shortage

- Does the ladder for sustainable urbanization form an obstacle to tackling the housing shortage (both quantitatively and qualitatively > build according to need)?
- What obstacles or challenges do you or <name of organization> (further) see in tackling the housing shortage?

Other

- With which persons or parties should I talk more in the context of my research?
- Is there anything else you would like to share as part of my research?

9.2. Codes qualitative data analysis

Code	Description
Introduction interviews	
Introduction interviewer+study	Interviewer introduces himself and the study
Introduction interviewee+organization	Interviewee introduces himself and the organization (including the involvement in various process steps for housing development)
Application of the ladder for sustainable urbanization	
Motivation ladder	Description who (person, organization) motivates ladder in the zoning plan and/or content of the motivation.
Need	Description of the need to motivate the ladder in the zoning plan.
Role province	Role of the province in the application of the ladder.
Location of housing developments	
Inner-city	Characteristics/motives/ambitions/projects inner-city housing development.
Extra-urban	Characteristics/motives/ambitions/projects extra-urban housing development.
The nature of housing developments	
Urban structure+housing types	Characteristics/motives/ambitions/projects regarding urban structure or types in housing.
Number of houses per development	Characteristics/motives/ambitions/projects regarding number of houses per development.
Ownership	Characteristics/motives/ambitions/projects regarding home ownership.
Adressing the housing shortage	
Role ladder in adressing the housing shortage	Role of the ladder in tackling the housing shortage: whether or not a barrier.
Other relevant aspects in adressing the housing shortage	Relevant factors in tackling the housing shortage: barriers and challenges.
Other	
Closing interview	Closing remarks