PLANNING THE DENSE AND GREEN CITY

AN ANALYSIS OF ACCESS TO GREEN SPACES IN THE PLANNING OF URBAN DENSIFICATION

Inaugural dissertation
of the Faculty of Science
University of Bern

presented by

Jessica Verheij

from the Netherlands

Supervisor of the doctoral thesis:
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Doctoral dissertation

by

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Summary

Many cities nowadays have policies in place that aim for both densification and urban greening, in line with sustainable urban development. However, given the scarcity of land in cities, these policy goals hardly go hand in hand. This thesis focuses on the conflicting relationship between densification and urban greening, asking how the governance of densification affects access to green spaces. It furthermore asks what planning approaches are successful in achieving cities that are both dense and green.

Understanding densification and urban greening as inherently political processes, I focus not only on urban form or the physical supply of green space, but rather on access to green spaces as a socially organized process involving exclusion and inclusion. To understand how the governance of densification affects access to green spaces, I apply a new institutionalist approach based on the Institutional Resource Regime framework. I combine this literature with theories from institutional economics on the Commons and on the Theory of Access to conceptualize property and access. I analyse how legal property is translated into different access regimes through the analytical concept of Localized Regulatory Arrangements.

The research is based on qualitative data collected through four case studies of recently-completed densification projects in the Netherlands and Switzerland. In both countries, densification or compact development is the preferred form of spatial development for growing municipalities due to environmental concerns and a general scarcity of land. Cases were selected across a large central city and a medium-sized city in each country, namely Utrecht and Woerden (the Netherlands), and Bern and Biel (Switzerland).

The findings of this research focus on the role of private landowners, the municipal planning authority, land policy and commoning processes on the negotiations taking place among actors within the Localized Regulatory Arrangement. The research shows how, due to the powerful role of for-profit actors in planning processes, urban greening becomes integrated mainly based on its economic value. Urban greening is hereby instrumentalized for the sake of densification, resulting in exclusive access to green spaces. Commoning processes have a role to play in shifting the logics of densification and urban greening towards non-profit development. Finally, the research shows how the analysis of Localized Regulatory Arrangements is key to understand the implementation of conflicting policy goals.

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List of Abbreviations

ARE	Ministry of Spatial Development [*Bundesamt für Raumentwicklung*]
CPR	Common-Pool Resources
IRR	Institutional Resource Regime
LRA	Localized Regulatory Arrangement
NPM	New Public Management
SPA	Spatial Planning Act
UHI	Urban Heat Island

PART I – INTRODUCTION

"*No one argued that it was impossible to ask nature to serve as a public good and a means to private investment simultaneously. Instead, nature was claimed and reclaimed in the same terms: as an objectively available, universally beneficial public good that all people desired, benefited from, and deserved to have access to.*"

Hillary Angelo (2021) in How Green Became Good: Urbanized Nature and the Making of Cities and Citizens, p. 196.

1 Planning the Dense and Green City

The growth of cities has been linked to numerous negative outcomes. Cities typically grow by expanding into non-urban surroundings, called urban sprawl. This leads to a loss of agricultural land and natural areas; inefficient use of infrastructure such as public transport, roads, and sewage systems; and increased car use, causing traffic and pollution. Urban densification is considered the answer to many of these spatial problems. It allows cities to grow without expanding. Densification is a process by which the use density (based on the number of people living or working in a given area) or the built density (based on floor space in a given area) within the existing city is intentionally increased. Vacant or underused plots and buildings are transformed or redeveloped for new uses, like the redevelopment of an industrial plot into housing. Hereby, densification prevents sprawl and the many problems resulting from it, as new development takes place on already-urbanized land and is typically well-connected to the amenities of the surrounding city. Therefore, densification is usually considered a condition for sustainable urban development.

However, over the last decades many planning and urban scholars have pointed out the negative consequences of densification (e.g. Burton, 2000; Neuman, 2005; Williams, 1999). It is often related to gentrification processes and increased housing prices, for which it can lead to displacement of existing residents, social exclusion and segregation, and a loss of affordable housing. If not well-managed, densification can lead to crowding and overuse of public services, such as roads, public spaces, and schools. In many cities densification has moreover resulted in a loss of green spaces. Given that land available for redevelopment is generally scarce in urban areas, existing green and open spaces such as sport fields, allotment gardens, parks, and other gardens, have been targeted for densification. This has led not only to an overall decrease of available green space but also to a fragmentation of existing green infrastructure, resulting in the loss of ecosystem services (Haaland & van den Bosch, 2015; Madureira & Monteiro, 2021; Xu et al., 2018). While it has been argued that the loss of urban green spaces is justified if preventing the negative outcomes of urban sprawl, others have provided evidence of the crucial role of nature and green spaces in cities (Pearlmutter et al., 2017). Urban green spaces are extremely effective in mitigating the Urban Heat Island (UHI) effect[1]. This function will only become more important in the decades to come, as cities will increasingly experience the consequences of

[1] The Urban Heat Island effect describes the effect of the built environment on air temperature. In general, temperatures in cities are substantially higher than in rural surroundings. The UHI effect is reinforced during heatwaves. Tree canopy and water bodies contribute to lower temperatures and thereby mitigate this effect (Burger et al., 2021; Erlwein & Pauleit, 2021).

climate change. Green spaces furthermore allow for flood regulation and stormwater management, mitigation of air pollution, enhanced biodiversity, and a general contribution to human well-being and public health. Without green spaces, densification cannot fulfil its promises of urban sustainable development: "If green space is deprived, a compact city becomes the antithesis of a green city" (Jim, 2004, p. 312).

This thesis focuses on the difficult relationship between densification and urban green spaces. Most European cities nowadays have policies in place that aim both for an increase in density, in order to "grow inward", and for urban greening, aiming towards the protection of existing green infrastructure or the supply of new green spaces. Yet in reality these two policy goals hardly go hand in hand: to aim for both densification and urban greening is "a paradox of the sustainable city that is imposed by the constraints of space" (Giezen et al., 2018, p. 3). With scarce land available, planners often need to choose between one or the other. As public policy documents tend to overlook this inherent challenge, planners lack guidelines and insights on how to navigate the inevitable trade-offs resulting from combining densification with urban greening goals (Artmann et al., 2019; Giezen et al., 2018; Khoshkar et al., 2018). With my research, I aim to contribute to a better understanding of how cities can develop into becoming both denser and greener, in order to enhance urban sustainability. I do so by focusing on the governance of densification projects and the related planning processes. Rather than measuring the outcomes of densification or providing new concepts and frameworks, I focus on the decision-making processes that shape urban development. Everyone can agree that cities ought to develop in a sustainable way, yet many times this is not what happens. Why is this the case? Who makes these decisions? What happens between the formulation of public policy and the actual transformation of the built environment? Who has the power to shape these processes, and who does not? Precisely because densification and urban greening present seemingly conflicting sustainability goals, the mutual implementation of these policy goals provides the perfect lens through which these questions can be addressed.

Two European countries – the Netherlands and Switzerland – provide the empirical background for this research. Due to their respective geographies, both countries have to deal with limited availability of land. In Switzerland, most of the population lives in the relatively flat part of the Swiss Plateau, as the Alps make a large part of the country virtually inhabitable. In the Netherlands, urbanization has traditionally been concentrated in the western part of the country, while in the remaining part over 60% of land is used for agriculture. However, while the Netherlands has a long tradition of compact city development and proactive planning authorities who steer spatial development, spatial planning in Switzerland has been generally reactive. For decades, spatial planning was done mostly to allocate land uses in specific places, without

actively directing spatial development. Since 2014, however, densification or inner-city development is recognized as key planning principle in the federal Spatial Planning Act. As a result, many Swiss cities are shifting towards more active planning policy. Despite some similarities, the two countries also present important differences, for instance in relation to the planning instruments available and the extent to which municipalities can interfere in local land markets. By analysing planning processes from both countries, I hope to produce research findings that go beyond the scope of these two geographical contexts.

1.1 The paradoxical relationship between densification and urban greening

Despite its promises of urban sustainability, densification has led to a decrease in green space availability in many cities. Around the world, urban vegetation cover has declined due to urbanization (Richards & Belcher, 2019). More precisely, a study of land use changes in the city of Amsterdam showed a decrease of green space supply and fragmentation of green infrastructure between 2003 and 2016, as the city grew mainly through densification (Giezen et al., 2018). Research on urban growth scenarios for the city of Munich illustrated a general decrease in green space availability, mainly due to increased demands for housing (Xu et al., 2018). Also in Brussels, urban growth through densification resulted in a decrease in green space supply (Balikçi et al., 2022). Likewise, increased housing density has been associated with a decrease in both public and private green spaces and tree canopy in Sydney (Lin et al., 2015). The loss of green spaces in densifying cities is, however, not inevitable. A study on the city of Berlin identified the possibility of a "greening-growing" scenario, where vegetation as well as population density grew simultaneously (Wellmann et al., 2020). In fact, different forms of urban greening are often integrated in densification projects. Developers and investors have long recognized the economic value of urban green spaces, as proximity to urban green tends to have a positive effect on real-estate prices (Daams et al., 2019). Bolleter & Ramalho (2014) have even argued that greening projects can stimulate densification, as these result in increased land values for which development becomes more profitable and thus more attractive. The provision of amenities such as urban green spaces has furthermore been linked to higher levels of public acceptance of densification, showing that urban greening can indeed support densification (Wicki & Kaufmann, 2022). Hence, the relationship between densification and urban greening is far from straightforward.

Urban green spaces provide many benefits or ecosystem services to the urban population. Mainly, the supply of urban green increases thermal comfort, as it mitigates the UHI effect (Alcoforado et al., 2009; Burger et al., 2021; Erlwein & Pauleit, 2021). This, together with the

capacity of green spaces to retain floodwater, are functions that will become more and more critical in the context of climate change. Green spaces in cities are therefore not a 'nice to have', but rather a vital part of sustainable urban futures. Many cities have recognized this and developed greening policies accordingly, seeking to protect and enhance green infrastructure. Yet, despite these policies, research has shown that greening objectives are often compromised in favour of densification (Balikçi et al., 2022; Giezen et al., 2018; Haaland & van den Bosch, 2015; Khoshkar et al., 2018). Both policy objectives require a scarce resource: available land in cities. Therefore, mutual implementation is widely recognized as a complex planning problem (Balikçi et al., 2022; Haaland & van den Bosch, 2015; Khoshkar et al., 2018). Nevertheless, little guidance is available to planners on how to successfully navigate spatial trade-offs between densification and urban greening (Artmann et al., 2019).

1.2 Densification as reorganization of urban space

Because of the inherent trade-offs, the mutual implementation of densification and urban greening goals presents a highly political process. Being first and foremost a process of urban change and transformation, densification results in the prioritization of some land uses over others, for example the redevelopment of allotment gardens into apartment buildings. Where does densification take place? What does it look like? What needs to give way and what is preserved? Which parts of the city are deemed suitable for densification, and which ones are not? Steering urban development into certain directions and not others, the governance of densification or compact city development ultimately creates winners and losers (Gerber & Debrunner, 2022), thereby reflecting the power relations that shape spatial development (Flyvbjerg, 2002).

In general, urban development takes place within a close web of existing interests in land, protected mainly through property rights. Landowners are in a powerful position to influence spatial development, because property rights are well-protected by law: the extent to which public policy can constrain and change land uses on privately-owned land is limited (van der Krabben & Jacobs, 2013; Varone & Nahrath, 2014). To implement densification goals, planners often need to work together with private landowners and negotiate regulations for a specific development project. Although planners have a range of instruments at their disposal to enforce certain policy objectives, densification cannot be implemented as long as those holding property rights over the land are not on board (Dembski et al., 2020; Tasan-Kok et al., 2019). These decisions and related power games take place mostly at the project level: although public policy provides directions and goals for spatial development, the implementation of policy happens at

the local scale of development projects (Gerber & Debrunner, 2022). In this sense, the implementation of densification is not just about urban form and increased density: it constitutes a process of urban development that lays bare the power relations shaping the spatial development of cities. Its analysis, therefore, demonstrates not only that planning is political, but also how some actors are powerful while others are not, and how this impacts the outcome of planning (Metzger et al., 2017).

1.3 Access to urban green spaces

Over the past few decades, scholars have increasingly pointed to the complicated effects of urban greening processes. Taking place in a context of growth and neoliberal urbanism, urban greening can be linked to what has been termed eco- or green gentrification. The term builds on ecological gentrification as conceptualized by Dooling (2009), who originally addressed the displacement of homeless people from parks for the sake of implementing environmental planning agendas. A few years later, Checker (2011) demonstrated how not only homeless but also housed people suffered the consequences of state-led sustainable development. Through environmental improvements aimed at attracting private investments, urban greening can function as an active driver of gentrification. In a similar vein, Quastel (2009) emphasized the link between urban environmental planning and gentrification building on the example of Vancouver, where the imaginary of 'sustainable urban living' is used to drive up housing prices. The author argued that how parks, gardens, and ecological landscapes are produced and developed is often linked to processes of upscaling and regenerating neighbourhoods. Anguelovski (2016) even concluded that environmental improvements in neighbourhoods can be 'unwanted' precisely due to the adverse effects on housing affordability. This literature builds on the concept of environmental justice, which links environmental concerns to socio-economic inequalities, stressing how environmental inequalities follow the lines of structural social inequalities (Schlosberg, 2007). Not only are low-income classes and minorities disproportionally exposed to environmental harms; environmental improvements such as decontamination and greening often only happen when higher-income classes move in. In these cases, urban greening is used as a strategy of neighbourhood improvement aimed at attracting new residents and making development more profitable. Building on the concept of the "rent gap" as developed by Smith (1987), scholars have identified the working of an "ecological rent gap" (Quastel, 2009), as the potential land rent increase resulting from urban greening projects (Anguelovski, Connolly, et al., 2019; García-Lamarca et al., 2022). Greening becomes a rent extraction strategy, with significant implications in terms of who enjoys its benefits, be it due to uneven spatial distribution

(prioritizing privileged neighbourhoods), physical access to green spaces (designed for the use of some groups but not others), and resulting gentrification (Haase et al., 2017).

Densification — as growth-oriented strategy — affects not only whether or not green spaces are produced, but also what type of green spaces are produced and for whom. In the context of densifying cities in Switzerland, for instance, community gardens are preferred over traditional allotment gardens, given their multifunctionality, flexibility and space-efficient design (Jahrl et al., 2022). In Vienna, urban growth approaches were prioritized over the preservation of urban agriculture, as a redevelopment project resulted in the replacement of one type of green space with another (Kumnig, 2017). In her book "How Green Became Good", Angelo (2021) describes how ideas of nature were mobilized in the redevelopment of former industrial areas of the Ruhr Valley in Germany. For instance, an artificial lake was developed as 'public amenity' for a large housing development project. Because the lake was seen as a public good, its impact on surrounding real-estate values was largely ignored: "the project had made concessions to private interests that had compromised the park as a public resource. And, in constructing the lake without imposing rent controls or making provisions for affordable housing, the city had produced a new green amenity that was now causing displacement in the neighbourhood" (Angelo, 2021, p. 194).

As the aesthetics of urban green are used to boost real-estate sales rather than to ensure everyday use by a diversity of users, urban greening is not a neutral universally beneficial process. As Anguelovski and colleagues suggested, there is a "need to bring the political back into the practice of urban greening to debunk the claim that urban greening is a public good for all. Rather, greening will have a mix of social and ecological effects requiring a deeper analysis of the conditions and pathways through which greening can help to bring about 'just sustainabilities'" (Anguelovski, Connolly, et al., 2019, p. 1071). Therefore, in order to go beyond the imaginary of "green is good", in this research I focus on "access to green spaces" in order to recognize the profound politics behind urban greening in the analysis of densification processes.

1.4 Research gaps, aims and questions

In recent decades, research has addressed the paradoxical relationship between densification and urban greening in various ways. There is extensive quantitative evidence showing how increased densities are linked to a loss of green spaces and low levels of per capita green space availability, as well as to negative effects on biodiversity and ecosystem services (see for an overview Haaland & van den Bosch, 2015; Madureira & Monteiro, 2021). Most studies, however, focus on the outcome of densification for green space provision without taking into

account the underlying planning processes. Some notable exceptions are the studies carried out by Khoshkar and colleagues on planning for green spaces in Stockholm (2018), and by Balikçi and colleagues focusing on governance challenges in Amsterdam and Brussels (2022). Still, these studies focus on general city-wide planning policy, without providing insights into localized planning processes. The role of power relations and project-based negotiations in translating policy to localized on-the-ground development projects is largely overlooked.

Moreover, access to green spaces in cities is typically analysed based on spatial availability, spatial distribution, physical qualities, and public participation (see e.g. Borelli et al., 2021; Kabisch et al., 2016; Weber et al., 2023; Xu et al., 2018). Although this allows for measuring access based on a set of pre-defined criteria, it does not allow for appreciating how inclusion and exclusion are socially organized processes, by which different types of rights are distributed among different user groups. Furthermore, it does not allow for situating access to green spaces in the broader socio-spatial patterns resulting from urban densification. Although the mobilization of urban greening for profit-oriented urban development has been explored extensively (Anguelovski, Connolly, et al., 2019), the understanding of access to green spaces as the outcome of densification processes is largely missing in the literature.

Based on these considerations, I aim to contribute to existing literature by understanding green spaces as urban commons. Mobilizing the vast body of literature on the commons allows for analysing how inclusion and exclusion are organized, beyond physical access and legal institutions such as ownership. I link this approach with the understanding of access as a set of abilities, instead of rights, in line with the Theory of Access as developed by Ribot & Peluso (2003). Accordingly, access is defined not just by the legal right to access and make use of a space, but rather by a set of abilities that allow one to derive benefits from the space. This includes legal institutions but also other structural and political mechanisms, such as social identity and physical capabilities as well as access to decision-making processes. By combining a commons approach with the Theory of Access, I aim to contribute to an enhanced understanding of access to green spaces beyond availability and physical supply. Applying a new institutionalist framework, I furthermore aim to zoom in on specific localized planning processes related to densification projects. Hereby, I go beyond the analysis of public policies to take a step towards understanding the implementation of policy objectives, focusing on the critical role of actors and power relations in shaping implementation.

Overall, I aim to contribute to existing literature on how densification and urban greening objectives, as two seemingly conflicting sustainability goals, can co-exist in urban development. I do so by appreciating densification as a spatial political process by which urban space is reorganized and transformed and by which land uses are redistributed. I aim to examine how

different planning approaches can contribute to addressing the challenge of planning the green and dense city, while paying attention to the power games of localized planning processes. I furthermore seek to emphasize the social implications of urban greening, by not considering urban green space as a universally beneficial public amenity, but instead as a type of land use with mixed social and ecological effects. I do so by analysing planning processes from two different European countries, namely the Netherlands and Switzerland. Hereby, I take into account differences in geographical context as well as planning cultures and systems. Through this cross-country comparison, my research findings can be of relevance to an international audience.

Based on the above, this thesis is based on the following main research questions:

1) How do the conditions of governance under which densification is implemented affect access to green spaces?
2) Under which conditions are planning approaches successful in achieving urban development that is both dense and green?

1.5 Structure of the thesis

This thesis is structured as follows. In the next chapter, I present the theoretical framework of my research. It relies on the Institutional Resource Regime, as new institutionalist approach that understands resource uses in light of the institutions that regulate the behaviour of actors in relation to the resource. I combine this literature with theories from institutional economics on the commons and on the Theory of Access. Building on these different bodies of literature, I present the main concepts that guide my research. In chapter 3, I develop my analytical framework and describe the main variables. I then present the sub-questions guiding my research, as well as the hypotheses. Chapter 4 describes the research design and presents a detailed description of the research context, the methodology, and the limitations of the research design. In the last section of this chapter, I present the four articles included in Part II, which constitute the body of this research. In Part III, I describe the key findings of my research, as well as the theoretical contributions. The last chapter of this thesis provides a conclusion and final reflections.

2 Understanding Access to Green Spaces

The underlying premise of this research is as follows: when green spaces are developed as part of densification projects, the conditions of governance under which densification is implemented affect how these green spaces are produced and for whom. Densification being a process that results in changing land uses, I am interested in identifying and analysing the conditions of governance that, by changing land uses in cities, affect access to green spaces. Naturally, the physical supply of green spaces is a necessary condition for access; however, the mere existence of green spaces in densifying cities does not guarantee its access for a wide and diverse group of users (Anguelovski, Connolly, et al., 2019; Kabisch et al., 2016; Plüschke-Altof & Sooväli-Sepping, 2022). Instead, access is not a physical quality of a space but a socially organized process through which some users, based on certain conditions, gain access, while others do not. Access also relates to broader socio-spatial patterns: if densification and green space development are linked to gentrification and social exclusion, certain user groups will lose access (Checker, 2011).

To analyse the causal relations between my independent and dependent variables, I rely on three bodies of literature (figure 2.1). *First*, I apply a new institutionalist approach, based on the Institutional Resource Regime framework, that allows for identifying the causal relations between institutions, actors, and resource uses. Based on this approach, I apply the analytical concept of Localized Regulatory Arrangements to examine the localized and context-specific planning processes of densification projects. *Second*, I draw upon literature on the commons to appraise green spaces as urban commons, being shared resources that are used and managed by different user groups based on collective governance structures. I distinguish between different types of commons to understand how exclusion and inclusion are organized for urban green spaces. And *third*, I build on the Theory of Access as developed by Ribot & Peluso (2003) to understand access to green spaces not just as physical access, but as a set of abilities conditioned by structural and political mechanisms. Combining these different approaches allows me to analyse access to green spaces as outcome of the implementation processes that shape the governance of densification. Moreover, by applying the analytical concept of Localized Regulatory Arrangements, I appraise densification as political process in which planning decisions are negotiated among actors based on uneven power relations.

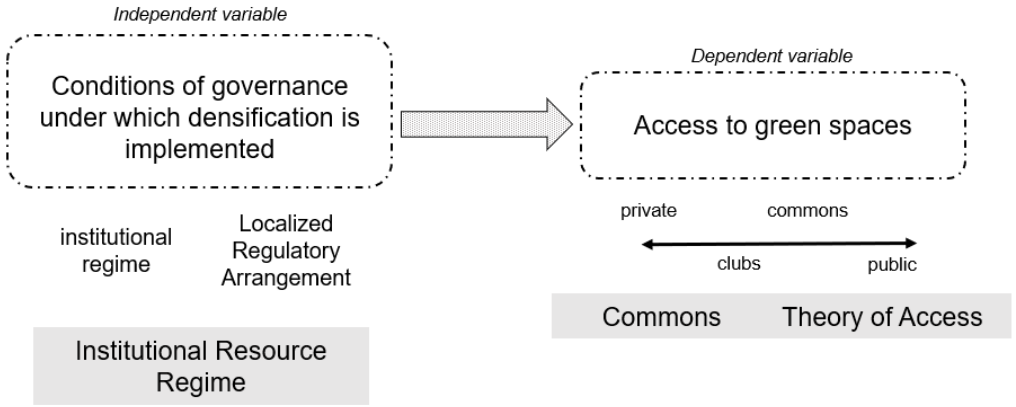

Figure 2.1. Schematic illustration of the three bodies of literature used in this research (Institutional Resource Regime, Commons, Theory of Access) and the concepts developed to understand how the conditions of governance under which densification is implemented affect access to green spaces. Own illustration.

2.1 The Institutional Resource Regime Framework

This research relies on the Institutional Resource Regime (IRR) framework to identify and understand the conditions of governance under which densification is implemented. The framework builds on a new institutionalist approach that understands resource uses in light of the institutions that regulate the resource, thereby allowing to identify the causal relations between institutional rules and resource uses. The framework allows for identifying hypotheses on how the institutional regime regulating a given resource affects the sustainable management of the resource (Gerber et al., 2009, 2020; Knoepfel, Nahrath, et al., 2007). The framework identifies the relevant institutions which explain resource uses and proposes causal relations between the institutional regime, the actor constellation, the Localized Regulatory Arrangements that result from negotiations among actors, and the condition of the resource. Being so, the main variables of the framework are: the institutional regime as independent variable, the actor constellation and resulting Localized Regulatory Arrangement (LRA) as intermediary variable, and the condition of the resource as dependent variable (figure 2.2).

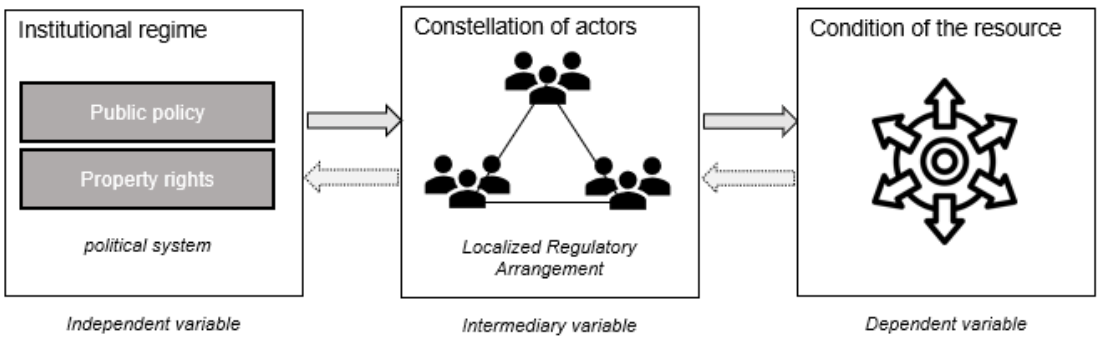

Figure 2.2. The three main variables of the Institutional Resource Regime (IRR) framework: the institutional regime as independent variable, the Localized Regulatory Arrangement (LRA) as intermediary variable, and the condition of the resource in terms of sustainability as dependent variable. Adapted from Gerber et al. (2009).

Institutions are established laws, customs and practices that produce and predict patterns of behaviour and interactions by and among actors (Lowndes & Roberts, 2013). Any given resource in society is regulated by a set of institutions that regulate the action of different actors vis-à-vis the resource, therefore determining the conditions under which the resource is used (Gerber et al., 2009). The formal institutions that regulate land uses are 1) public policies and 2) property rights. Public policy is understood as "a series of intentionally coherent decisions or activities taken or carried out by different public actors with a view to resolving a collective problem" (Varone & Nahrath, 2014, p. 238). Public policies are devised by public authorities in order to change the behaviour of a specific target group, considered to be at the root of the public problem it is trying to resolve (Knoepfel, Larrue, et al., 2007). In the case of land, land uses are typically regulated through land-use planning, as a policy that aims to allocate and distribute the various uses of land according to public interest (Gerber, Hartmann, et al., 2018). Land-use planning aims to ensure that sufficient land is available for uses necessary to the well-functioning of society, such as housing, transport infrastructure, industry, agriculture, and nature. At the same time, it aims to avoid incompatible uses to be located close to each other, for example by prohibiting the building of a polluting factory close to a residential settlement. The target group of land-use planning are the landowners, as it ultimately seeks to alter how landowners use their land. Landowners, however, are protected against state intervention by their property titles, which give landowners exclusive rights over land. The institutional regime regulating land uses thus entails three types of actors: the public actor as regulator, the landowners as target group, and the beneficiaries as end users of the resource (see figure 2.3).

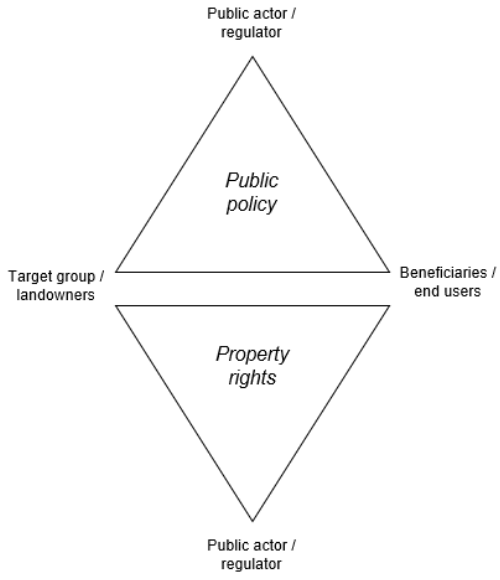

Figure 2.3. Actors at the intersection between public policy and property rights. The state implements public policy to restrict the behaviour of the target group, who are simultaneously protected by property rights. Adapted from Varone & Nahrath (2014).

There is thus an intrinsic contradiction in the institutional regime: while public policies aim to limit the freedom of landowners and change their behaviour according to public interest, property institutions upheld by the state protect landowners against state intervention. This contradiction has been recognized by planning scholars as the so-called property contradiction: "the contradiction between the social character of land and its private ownership and control" (Foglesong, 2014, p. 22). Land uses are regulated through a constant tension between public and private interests, due to "the contradictory tendency for a capitalist, democratic

society to define property as a private commodity, but at the same time to rely on government intervention to ensure the beneficial social aspects of the same property" (Campbell, 1996, p. 298). To address the contradiction between public policy and private property, the IRR framework proposes an intermediary variable, namely the actor constellation and the LRA. This variable allows for analysing how actors adapt the general institutional regime to a localized context-specific resource situation, by making formal and informal agreements regarding resource uses (Gerber et al., 2020). Ultimately, these localized agreements determine how a given resource is used, beyond the general rules as provided by the institutional regime.

2.2 Commons and Commoning

The governance of collective resources or commons has been studied extensively over the last decades, in the first place based on the New Institutional Economics approach as developed by Elinor Ostrom and colleagues (1990). Here, commons are understood as common-pool resources (CPRs) that, being used by a collective of resource users, are subject to challenges of collective action (Foster, 2011). Early economic theories understood commons as being non-excludable, i.e. goods for which it is not possible to exclude others from using it, for which commons were seen as open-access and often associated with free-rider problems and the well-known tragedy of the commons. Ostrom and colleagues, however, convincingly showed how many CPRs are in fact organized as excludable goods, as the resource is used by a defined group of users based on common rules of use and management (Cole & Ostrom, 2011; E. Ostrom, 1990; Schlager & Ostrom, 1992). This approach has been mainly interested in understanding the institutions or 'design principles' that allow for long-term sustainable management of shared resources. In practice, it has mostly been applied to study the governance of natural resources by local communities of resource users.

In recent years, however, an alternative approach to the commons emerged that recognizes the transformative power and political claims underlying the governance of many commons. In 2008, Hess argued that, increasingly, processes of commoning were emerging that did not fall into the characterization of commons as outlined by the Ostrom school (Hess, 2008). Instead, these "new commons" – including urban commons – emerged without clear institutional arrangements, rather deriving from the desire to share 'what is to be held in common' and to protect these resources from capitalist markets or state intervention (Caffentzis & Federici, 2014; Hardt & Negri, 2009). Based on this approach, a shift occurred from understanding commons as a resource to be managed as efficiently as possible, to commons as *commoning* – a process of building community and developing alternative forms of resource management, acting against

the influence of capitalist markets and for-profit development over local resources (Hardt & Negri, 2009; Hodkinson, 2012; Huron, 2017). Here, the term commons implies a political meaning: commons are those resources that ought not to be regulated by for-profit markets or capitalist states, but, being considered essential for sustaining everyday life, ought to be governed through collective decision-making processes (Foster, 2006). While CPRs as understood by the Ostrom school are typically organized based on exclusion, the new commons aim for inclusion, based on the premise that commons ought to be accessible to everyone.

2.3 Theory of Access

Beyond literature on the commons, I make use of the Theory of Access as developed by Ribot & Peluso (2003) to conceptualize access as being more than property. Ribot & Peluso sought to move beyond institutional approaches that emphasize property rights as main factor determining access to resources (Myers & Hansen, 2020). Instead, they argue that access is determined by *abilities* rather than rights, as "this formulation brings attention to a wider range of social relationships that can constrain or enable people to benefit from resources without focusing on property relations alone" (Ribot & Peluso, 2003, p. 154). If property can be understood as a bundle of rights, access relies on a bundle of *powers*, which derive from rights as well as other factors, such as a large array of institutions, social and political-economic relations, and discursive strategies. Therefore, the authors define access as "the ability to derive benefits from things".

By distinguishing between property and access, Ribot & Peluso show how it is possible to have the right to benefit (based on property) without the ability to benefit (access): for instance, a landowner who has the right to benefit from its land but is unable to do so as it does not have access to labour or capital. At the same time, it is possible to have access to a resource without having the right, in which case access is based on illicit or illegal situations. Legal rights are an important mechanism of access, but other mechanisms of access are also significant, including access to technology, to capital, to markets, and to labour. Rights deriving from informal agreements, such as rights based on custom or social identity, are another mechanism of access. Also discourses and narratives, as well as the ability to shape these, are mechanisms of access, for example in the case of discourses on 'global commons' as produced by international NGOs and their impact on access to land for local stakeholders. Understanding access as a set of abilities, Ribot & Peluso distinguish between *gaining* access, *maintaining* access, and *controlling* access. While the first refers to the general process of establishing access to a resource, maintenance relates to the process of ensuring that access is kept, and control refers to the power of regulating access by others. In sum, the Theory of Access "puts property in its

place among the many other mechanisms that shape the distribution of benefits, the landscape of incentives, and the efficiency and equity of resource use" (Ribot & Peluso, 2003, p. 173).

2.4 Concepts

Based on these three bodies of literature, I construct the independent and dependent variables of this research (see figure 2.1). Based on the Institutional Resource Regime framework, I understand the institutional regime (containing both public policy and property rights) together with the Localized Regulatory Arrangement as the independent and intermediary variable respectively. To develop the dependent variable I distinguish between property and access and make use of the concepts of club goods and commons to appraise access to green spaces as a spectrum between public and private, by which inclusion and exclusion are understood as socially-organized processes.

2.4.1 The institutional regime

Within the IRR framework, the institutional regime is considered a main variable affecting land uses, as public policies and property rights regulate the behaviour of actors vis-à-vis land. Being so, it classifies institutional regimes based on extent and coherence (Gerber et al., 2009, 2020; Knoepfel, Nahrath, et al., 2007). The *extent* of the regime relates to its scope, i.e. the number of resource uses that are regulated by the regime. Regulating institutions tend to develop as conflicts between different uses of the resource appear – as long as there is no use conflict, there is limited need for regulation. The more uses that are covered by the regime, the larger its extent. *Coherence* relates to the degree of consistency within the institutional regime, i.e. among the different institutions regulating a resource. If contradictory incentives exist between different types of institutions (such as between public policy and private property), the coherence of the regime is low. Based on these criteria, the IRR framework classifies institutional regimes as follows (Gerber et al., 2009):

- *Inexistent regime*: no institutions regulate the use of the resource (no political need for regulations);
- *Simple regime*: preliminary regulations exist which are coherent, but low in extent;
- *Complex regime*: high extent of regulations due to an increase in political intervention, but low level of consistency due to contradictory incentives;
- *Integrated regime*: an institutional regime with high extent and high coherence.

Most empirically observed institutional regimes are complex regimes, meaning that extent is

high due to an increase in political intervention, providing, however, a low level of consistency due to the extensive development of uncoordinated sectoral policies and the incoherence between public policy and the protection of private property. The IRR framework postulates that, although rare in practice, "a regime with high extent and coherence (integrated regime) is more likely to lead to a sustainable use of a given resource than a complex, simple or inexistent regime" (Gerber et al., 2009, p. 159).

2.4.2 The Localized Regulatory Arrangement

Resource uses depend not only on the institutional regime in place, but also on the localized power games within the constellation of actors. Based on the constraints and opportunities resulting from the institutional regime, actors are not only on the receiving end of institutions but apply strategies to 1) influence rule formulation, and 2) make strategic use of existing rules in order to pursue their interests to the best of their legal and political ability (Gerber et al., 2020). Because of the strategic agency of actors, public policy is almost never implemented on a one-to-one basis, but instead negotiated through localized agreements. In the IRR framework, these agreements constitute the Localized Regulatory Arrangement (LRA) as intermediary variable. An LRA is "a set of more or less formal agreements that regulate resource uses at stake with regards to specific situations" (Gerber et al., 2020, p. 160). These agreements are made to compensate for the lack of coherence within the institutional regime, adapting it to a specific localized situation of resource use. LRAs can be distinguished into four types (Viallon et al., 2019): 1) *concretization*, where public policy is fully adhered to; 2) *diversion*, where policy implementation leads to different outcomes than its original intentions; 3) *circumvention*, where policy is not enforced; and 4) *innovation*, where policy is not enforced but the outcome of the LRA still adheres to the policy goal.

Because of the leeway provided by the incoherence of the institutional regime and the subsequent negotiation of an LRA, actors have room for manoeuvre to pursue their interests in localized situations. Being so, power games among actors are an important factor influencing the condition of the resource. Landowners in particular enjoy a powerful position to resist public policy or negotiate policy regulations according to their interests. The IRR framework shows how the institutional regime offers constraints and opportunities to actors who apply strategies to influence the implementation of public policy. Through this interplay between institutions and actors, LRAs are negotiated for specific situations of resource use. Being context-specific and more flexible, these LRAs are therefore crucial to understand the governance of urban densification.

2.4.3 Property

According to the IRR framework, property as legal institution plays a crucial role in defining land uses, as part of the institutional regime. In liberal western democracies, legal property defines who owns a given resource. Whereas in medieval times property over land implied a diversity of rights and duties that overlapped and interacted based on *plura dominia*, after the French Revolution property in continental Europe increasingly became an exclusive right (Aubin & Nahrath, 2015). Property became to be considered a 'natural' right by which men appropriate and control land and other resources, in line with libertarian arguments building on the work of John Locke. As a result, legal property over land is nowadays considered an exclusive right, by which landowners have the right to exclude others from accessing and using their land. Property thus evolved into a right to exclude others, being either public or private[2]. Property is defined as such by law, for example in a country's civil code or constitution, and this right to exclude others is protected by the state. Ultimately, property constitutes a social relation between the property owner, the state, and all other members of society with the objective of organizing exclusion (Bromley, 1992; Singer, 2000).

In the case of resources shared among a group of users, however, property is not just exclusionary. Instead, different types of rights are distributed among different user groups (Bromley, 1992; Cole & Ostrom, 2011; E. Ostrom, 1990). For example, one can have the right to access and use a collective space, without, however, having the right to sell the space. Accordingly, Schlager & Ostrom (1992) divided property into five different types of rights: two operational or use rights, namely access rights (the right to enter or access a property) and withdrawal rights (the right to obtain products of a resource); and three collective-choice rights, related to decisions affecting operational rights, namely management rights (the right to regulate use patterns and to transform the resource), exclusion rights (the right to determine who is to have operational rights and how this right can be transferred), and alienation rights (the right to sell or lease either one or both of the other collective-choice rights). The owner of a resource is the only one having all rights, meaning only the owner can decide to sell or lease the resource to someone else (see table 2.1). However, other user groups equally enjoy certain rights of use, access, and management, being excluded from some rights while being included in others.

[2] In many western countries, including Switzerland and the Netherlands, no legal distinction is made between public and private property. Property owned by the state is considered public, but its legal regulations are identical to private property. Exceptions are, for example, France and Italy, where different regulations exist for public and private property (Leimbacher & Perler, 2000).

The allocation of operational and collective-choice rights among actors can be *de jure*, in which case these rights are legally recognized and protected by the state authority, for example through the celebration of contracts. Allocation can also be *de facto*, if they are based only on formal or informal agreements among resource users without being legally recognized by state authorities (Schlager & Ostrom, 1992). For example, a piece of land can be privately-owned according to the law, yet used and managed by a collective of users based on non-legal agreements. Blomley (2004) has shown how in the case of an urban garden in the city of Vancouver (Canada), users exercise operational as well as management rights, even when no legal regulation is in place that recognizes and protects these rights. Instead, the allocation of rights develops informally, through explicit and implicit agreements among users, based on who is involved in the production and management of the garden. In this case, the allocation of rights among users occurred even without involvement of the legal owner of the land, namely the city authority. These agreements, both *de jure* and *de facto*, constitute what is conceptualized as the Localized Regulatory Arrangement in the IRR framework. Hence, in the case of shared resources such as urban green spaces, the legal institution of property as either public or private is often translated into a more complex distribution of rights across different user groups through LRAs.

		Owner	**Proprietor**	**Claimant**	**Authorized user**
Operational rights	Access				
	Withdrawal				
Collective-choice rights	Management				
	Exclusion				
	Alienation				

Table 2.1. Allocation of rights according to different categories of resource users. Based on Schlager & Ostrom (1992).

2.4.4 Access

In this research, I understand access to green spaces not just as a right to physically access the space – as part of property – but rather as the ability to derive benefits from it. While legal rights are a significant factor, other mechanisms of power determine to what extent a space can be used and benefitted from, in line with the Theory of Access (Ribot & Peluso, 2003). In cities, access to green spaces does not correspond to the binary distinction between public and private, based on legal property; instead, access is located somewhere on the spectrum between fully public and fully private. Institutional economics has long recognized how many resources or goods are organized neither as fully public nor as fully private (E. Ostrom, 1990). Accordingly, resources (or goods) have been classified based on rivalry and excludability. When a good is rival, its use by one diminishes another's ability to use the good. When a good is excludable, it is

possible to exclude others from using the good. While early economic theories understood these classifications as being based on inherent properties of the good itself, with excludability and rivalry seen as a given, the work of Elinor Ostrom and colleagues showed how in fact excludability and rivalry are organized through institutions: for most goods, the extent to which other users can be excluded or not, and the extent to which its use by one diminishes its use by another, rely on social organizations based on institutions of resource management (E. Ostrom, 1990; V. Ostrom & Ostrom, 1977). A forest can be exclusive or publicly-accessible, this being dependent on the institutions in place rather than the intrinsic properties of the forest. Based on this understanding of inclusion and exclusion as socially organized processes, I classify 'access to green spaces' as being located somewhere on the spectrum between fully private and fully public, with exclusion and inclusion as socially-organized processes based on the institutions and LRAs agreed among actors. Club goods and commons constitute two examples of access regimes beyond the binary distinction between public and private.

2.4.5 Club goods

Club goods[3] are resources that are shared among a defined and restricted group of users or so-called club members (Webster & Lai, 2003). Club goods tend to form for resources that are excludable but non-rival, for which it becomes economically attractive to share the good with a defined group of other users. The concept of club good is well known in economic and rational-choice theory, with an "economic theory of clubs" developed by Buchanan in 1965. According to club good theory, many public goods in situations of overuse or congestion can be provided more efficiently through the formation of clubs. Examples are shared swimming pools, private hospitals, and private schools. If access to public goods is constrained, private actors may opt to join a club in order to enjoy exclusive access. The good is then shared among members of the club only, who pay a membership fee for management and maintenance of the resource. The basic premise of club good theory is that as long as the benefits of club membership outweigh the costs, club formation is an attractive alternative to fully private or fully public goods (Webster & Lai, 2003). However, clubs can only form where exclusion is possible: when non-members cannot be excluded from consuming said good, clubs are not attractive as no benefits are derived from joining the club. Exclusion is therefore an essential element of club formation, club good theory being sometimes described as a theory of optimal exclusion (Buchanan, 1965; Webster & Lai, 2003).

Club formation is a typical phenomenon of dense cities, where overuse and congestion of

[3] The conceptualization of club goods is further developed in article 2 in part II.

public resources are constant and everywhere. Club good theory has been used to explain developments such as gated communities (Glasze, 2003; Glasze et al., 2006; Le Goix & Webster, 2016), enclosed public spaces (Webster, 2007), and private business districts (Warner, 2011). The formation of club goods in the urban environment is in fact closely linked to processes of privatization of public space (Low & Smith, 2006). Mainly in gentrifying neighbourhoods, many green spaces become to rely on private management and exclusion through surveillance strategies, being organized as forms of club goods (Pearsall & Eller, 2020). Exclusion, then, is not only a form of efficient resource management, but can also be directly used as selling point of urban development, providing exclusive access to amenities for local residents (Marquardt et al., 2013).

2.4.6 Commons

To understand how inclusion and exclusion are organized when green spaces are considered as commons, I distinguish between the CPR approach as developed by the Ostrom school and more recent understandings of commons as new commons[4]. Based on case studies of existing and long-lasting common-pool resources, the Ostrom school recognized a close-knit and bounded community as a necessary condition for sustainable management (Foster & Iaione, 2019; E. Ostrom, 1990). Here, exclusion mechanisms are based on a clear division of rights of use and access among the community of commoners, distributing operational and collective-choice rights according to predefined criteria, as well as a clear distinction between commoners and non-commoners. New commons are, however, conceptually different from the commons studied by Ostrom and colleagues, and more meaningful to understand the urban commons (Foster, 2011; Foster & Iaione, 2019). In cities, commons are often governed by a highly heterogeneous group of 'strangers' that seek to work together for a common cause (Foster & Iaione, 2019; Huron, 2015). Rather than long-term stable resource management, urban commons can revolve around commoning *processes* that tend to build on collective struggles and political claims, in order to reclaim the commons and produce new types of commons (Enright & Rossi, 2018; Hardt & Negri, 2009). For this reason, many urban commons are typically not organized based on the exclusion of non-commoners, given that inclusion and equal access for all are considered prerequisites of commoning.

[4] This conceptualization of the commons is developed in more detail in article 4 in part II.

3 Understanding the Governance of Densification: An Analytical Framework

Spatial planning in many European countries and beyond has become increasingly concerned with limiting urban sprawl and densifying already urbanized areas. The implementation of densification goals, however, requires planners to play a proactive role in spatial development: due to fragmented landownership and high levels of privately-owned land typical to urban areas, planners need to act strategically to implement policy goals together with private landowners (Gerber, Hartmann, et al., 2018; Lacoere & Leinfelder, 2023; van der Krabben & Jacobs, 2013). This follows the philosophy of New Public Management (NPM), according to which the public sector ought to become more efficient, effective, and responsive by adopting management practices from the private sector. NPM has its origins in the 1980s and is closely linked to the neoliberalization of public administration, emphasizing cost reduction, efficiency, and the outsourcing of tasks to private markets (Dunleavy & Hood, 1994). The NPM paradigm resulted in a shifting role of the state also in planning processes, as planning became oriented towards achieving planning goals in close collaboration with market-based actors, requiring flexibility, compromises, and managerialism (Knoepfel et al., 2012). The governance of densification follows this paradigm, revolving around strategic approaches to plan implementation. Due to growing dependency on the private sector, planners negotiate urban development directly with market actors, while applying a range of planning instruments beyond traditional zoning plans (Holsen, 2020; Tasan-Kok, 2010; van den Hurk & Tasan-Kok, 2020). This often translates into project-based planning, being planning processes by which general plans and policies are adapted to the specific context of a development projects. Private actors holding property titles over land, are, however, in a powerful position to impose their own interests and to protect long-term investments in land (Knoepfel et al., 2012). Hereby, the governance of densification brings to the fore the inevitable tensions between public and private interests.

The strategic approaches needed to ensure plan implementation are known as land policy[5]. Following from the premise that the power of land-use planning to impact private property is limited, land policy takes into account the overall implementation of spatial objectives through other instruments. It can be defined as “the strategic combination of instruments carefully thought through by public authorities in order to impose themselves in front of other private interests and reach public planning objectives” (Gerber, Hengstermann, et al., 2018, p. 9). In this

[5] *Bodenpolitik* in German, *politique foncière* in French, *grondbeleid* in Dutch.

regard, public landownership is widely seen as a highly effective instrument to achieve spatial planning goals, as it gives planners power to implement spatial policy goals without the need to negotiate with landowners (Debrunner & Kaufmann, 2023; Hartmann & Spit, 2015; Meijer & Jonkman, 2020). In particular for densification, where urban development takes place within a tight web of interests and claims, public landownership allows the public actor to steer development through its own property rights. While in recent years Dutch planning scholars have pointed out the financial risks of mobilizing publicly-owned land in spatial development[6], in many European countries more proactive and strategic planning approaches, including the mobilization of public land, are increasingly seen as desirable (Gerber, Hartmann, et al., 2018). In Switzerland, for instance, many large cities have shifted to active land policy mainly in the context of achieving densification and imposing policy goals in relation to housing affordability (Debrunner & Hartmann, 2020; Hengstermann & Gerber, 2015). Based on these considerations, I recognize the need to zoom in on project-based negotiations in order to appraise how densification is governed, and the potential of land policy and particularly public landownership to successfully implement densification goals.

3.1 Analytical Framework and Hypotheses

Recalling the main research questions presented in chapter 1, this research asks how the conditions of governance under which densification is implemented affect access to green spaces, and based on which conditions some planning approaches are more successful than others in ensuring cities that are both denser and greener. As outlined in chapter 2, I understand access to green spaces to be significantly influenced by legal property rights, however access goes beyond legal property as urban green spaces are mostly neither fully public nor fully private. Instead, exclusion and inclusion are socially-organized processes, by which access to green spaces can be understood as a spectrum between exclusion and inclusion. Following from this conceptualization, I am interested in understanding how access to green spaces is developed and negotiated among the involved actors. The concept of Localized Regulatory Arrangements as put forward by the IRR framework allows for analysing the institutional arrangements negotiated

[6] Dutch municipalities have traditionally been an active player on local land markets, by actively purchasing land for development and speculating on land value increases. However, following the 2009 financial crisis, the financial risks involved in this type of active land policy came to light as the crisis led to an overall devaluation of land and real-estate. This showed how actively purchasing land can be risky for municipalities, particularly within existing urban environments where land prices are high and ownership structures are fragmented (see e.g. Buitelaar et al., 2022; Buitelaar & Bregman, 2016; Needham, 2014; van der Krabben & Jacobs, 2013).

among actors for a localized and time-specific situation, adapting general policies and rules into localized development processes. For densification projects in particular, these localized agreements are extremely important, as general planning regulations are often negotiated with private actors in line with project-based planning. Therefore, I argue that it is the analysis of LRAs that allows for understanding how the conditions of governance of densification projects affect access to green spaces. Mainly, it is the LRA that translates the institutional regime into different levels of access, thereby explaining the difference between legal property (as public or private) and access (somewhere between public and private) (figure 3.1).

Figure 3.1. Schematic illustration of the role of the Localized Regulatory Arrangement in translating the ownership regime (as either public or private) into the access regime (as somewhere between public and private).

Following from this understanding, this research is guided by a set of sub-questions emphasizing the role of different variables on the LRA (figure 3.2). Each sub-question is supported by a working hypothesis. Rather than testing or validating, these hypotheses are intended to clarify my theoretical position and the conceptual premises upon which this research is based. The hypotheses describe the assumptions and expectations derived from the theoretical framework, as theoretical foundations for the empirical research.

Role of actors

1. How does the involvement of private landowners affect access to green spaces in densification projects?

Hypothesis 1 – Private landownership in densification projects leads to exclusive green spaces. Although privately-owned land does not necessarily translate into private spaces, exclusive access to green spaces can be used by private developers to make densification more attractive and more profitable. If land is privately-owned, planning authorities have limited capacity to impose policy goals and enforce public access. Therefore, private landownership supports the economic interests of private actors in relation to urban densification, thereby leading to green spaces as exclusive club goods.

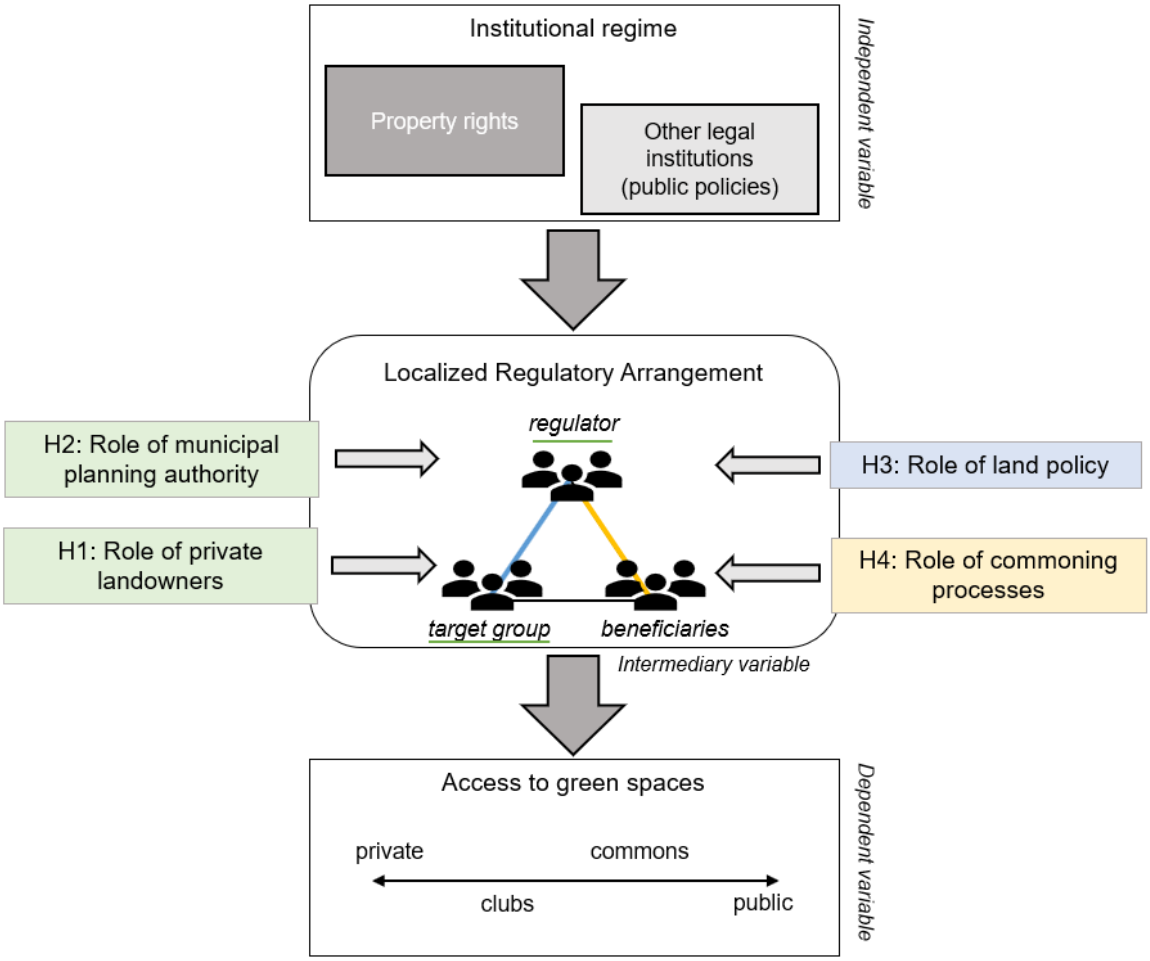

Figure 3.2. Graphic illustration of the analytical framework and the four hypotheses impacting the Localized Regulatory Arrangement negotiated among actors. H1 and H2 address the role of the target group and regulator respectively. H3 addresses the relation between the regulator and the target group. H4 addresses the relation between the regulator and beneficiaries. Own illustration.

2. How does the role of the municipal planning authority affect access to green spaces in densification projects?

Hypothesis 2 – Municipal planners can ensure inclusive access to green spaces in densification projects through strategic and proactive action. As the implementation of densification is done through project-based planning, in line with NPM and growth-oriented urbanism, planners negotiate urban development with private landowners. Compromises need to be found between public and private interests. Municipal planners can strengthen their position in these negotiations by taking the lead in planning processes and making strategic deals with landowners. Large municipalities are more successful, as these have more resources at their disposal to negotiate deals with private actors.

Role of land policy

3. How does land policy affect access to green spaces in the planning of densification?

Hypothesis 3 – Land policy leads to more effective implementation of policy goals. Through the strategic combination of instruments based on public- and private-law, planners can effectively enforce the implementation of policy goals upon private landowners. These instruments include, for example, private-law contracts, public-private partnerships, and ground-leases. The mobilization of publicly-owned land is particularly effective as it mitigates the incoherence of the institutional regime and allows planners to implement policy goals without the need to negotiate with private landowners.

Role of commoning processes

4. How can commoning processes in the governance of densification affect access to green spaces?

Hypothesis 4 – Commoning processes contribute to inclusive processes of both densification and urban greening. Because these are inherently based on ideas of inclusion and access to resources, integrating commoning processes in the governance of densification leads to more inclusive outcomes. In particular, it allows for including other actors, as members of commoning initiatives, in the negotiation of the LRA, ultimately contributing to more inclusive green spaces.

4 Research Design and Methodology

This research is based on a qualitative research design, by which empirical data was collected through four case studies. As outlined in chapter 3, the aim of this research is to identify the conditions of governance that allow for mutual implementation of densification and urban greening goals, focusing on access to green spaces. The research aim is thus exploratory: I seek to analyse how the working hypotheses in section 3.1 manifest themselves in practice, for which qualitative research is best suited. The four cases were selected based on a *variance-on-y* design, meaning cases were selected based on variation of the independent variables (Rohlfing, 2012). A *variance-on-y* design allows for analysing to what extent the independent variables lead to a variation in the outcome. This research design therefore supports the research questions and subsequently allows for building new hypotheses based on the causal relations identified in the case studies.

First, cases were selected across two European countries, Switzerland and the Netherlands, representing a variation of the independent variable *institutional regimes*. The two countries present some similarities, as both are liberal democratic countries located in Europe. Both countries have moreover emphasized densification or compact development as preferred form of urban development, considering environmental concerns and a general scarcity of land due to their respective geographies (Nabielek et al., 2012; Schweizerischer Bundesrat, 2012). However, the two countries differ substantially in terms of planning systems. In Switzerland, spatial planning policy developed in the second half of the 20th century as response to ongoing urban expansion and the political desire to separate buildable from non-buildable land (Knoepfel & Nahrath, 2007). The planning system has been mostly reactive, seeking to avoid undesirable land

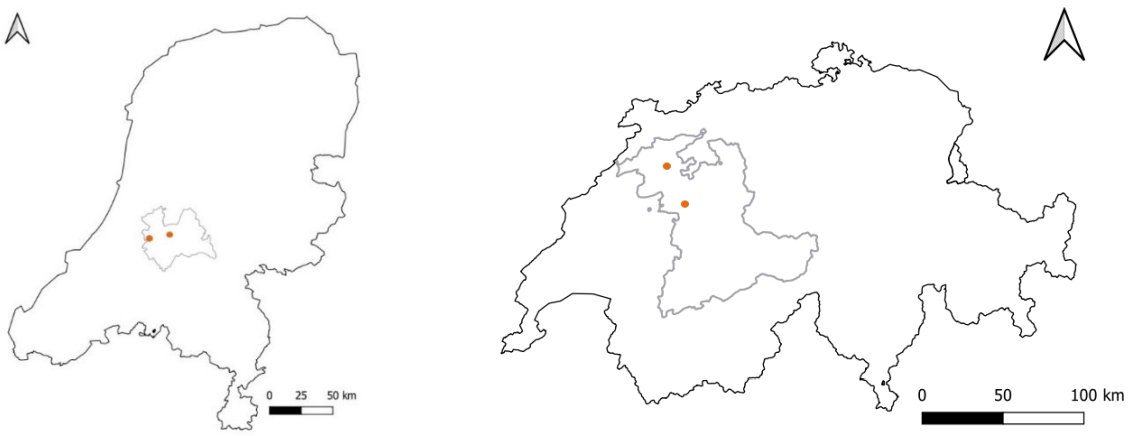

Figure 4.1. Maps showing the two countries of analysis: the Netherlands (left) and Switzerland (right), including the respective regional unit of analysis (province of Utrecht and canton of Bern) and the location of the two case studies within each region.

uses rather than steer spatial development (Hengstermann & Gerber, 2015). The revision of the federal Spatial Planning Act in 2012, however, has led to more proactive and strategic planning approaches mainly in large cities. Dutch municipalities, on the contrary, have traditionally played a particularly active role in land development (Meijer & Jonkman, 2020; Needham, 2014; van der Krabben & Jacobs, 2013). The Dutch way of active land policy implies that municipalities buy land, prepare it for development, and subsequently sell the land to housing developers, hereby maintaining control over the land development. Yet in recent years this form of land policy has become less feasible and less desirable (Buitelaar & Bregman, 2016). With spatial planning being decentralized and new planning instruments being introduced, municipalities have shifted to a more facilitating role in land development (Claassens et al., 2020; Meijer & Jonkman, 2020). Hence, the analysis of cases from these two countries allows for addressing differences across institutional regimes in the governance of densification.

All cases constitute recently-completed development projects located in cities and involving the mutual implementation of densification and urban greening goals. To facilitate the comparison across cases, for each country a regional unit of analysis was selected. This is particularly relevant for Switzerland where, due to its federalist system, planning laws and regulations vary from canton to canton (see section 4.1). The province of Utrecht in the Netherlands and the canton of Bern in Switzerland were selected for constituting growing and centrally-located regions which, however, do not present the extreme outcomes of the capital regions of Amsterdam and Zurich. In a next step, within each region two cases were selected based on variation of the *constellation of actors*, namely of landownership structures and type of municipality. Landownership structures determine the type of landowners involved in the localized planning process. Hence, for each country a project with privately-owned and a project with publicly-owned land was selected. Also, cases were selected based on variation of the municipality as planning authority, based on the expectation that larger municipalities are more powerful in the negotiations with landowners and developers (see table 4.1). The following sections provide a brief overview of the respective planning systems of each country and a description of each of the case studies, constituting the empirical background of this research.

	Large municipality		Medium-sized municipality	
Privately-owned land	Case 1	**The Netherlands**	Case 4	**Switzerland**
		City of Utrecht		City of Biel
		Project Zijdebalen		Project Jardin-du-Paradis
Publicly-owned land	Case 3	**Switzerland**	Case 2	**The Netherlands**
		City of Bern		City of Woerden
		Project Huebergass		Project Defensie-Eiland

Table 4.1. Overview of the four cases based on the selection criteria.

4.1 Spatial planning in Switzerland

Switzerland is a country located in central Europe and with a population of almost 9 million people. It is organized as a federalist state, where the 26 cantons have considerable autonomy to devise own laws and regulations. Switzerland has four official languages and is known for its semi-direct democracy system, by which the Swiss population votes to approve significant changes to existing laws or the introduction of new laws. Spatial planning was integrated into the country's legal framework during the 20th century. As a result of the construction boom experienced during and after the Second World War, there was a growing need to coordinate spatial development. In 1969 the Swiss voting population approved an amendment to the Constitution, which extended the competences of the federal state to include spatial planning[7]. Accordingly, it is competence of the federal state to set the basic principles of spatial planning in order to ensure a sustainable land use, while cantonal and municipal governments have the responsibility to implement those principles. Also in 1969, the voting population approved another amendment to the Constitution, namely an article guaranteeing the right to own property and the right to full compensation in case of significant restrictions to ownership[8]. Although this article only adopted what was already established in the country's Civil Code, it was a direct consequence of the political debates between left- and right-wing parties concerning spatial planning (Knoepfel & Nahrath, 2007). To ensure a majority for article 22 on spatial planning, an article guaranteeing the protection of property rights had to be added simultaneously (Bühlmann et al., 2011; Hengstermann & Gerber, 2015). Following the amendments of 1969, the federal state sought to formulate a Spatial Planning Act (SPA) [*Raumplanungsgesetz*] during the 1970s. Overall, it took the parliament 10 years to agree on the final version of the law, the formulation of

[7] Swiss Constitution, Art. 22quater (1969); today art. 75.
[8] Swiss Constitution, Art. 22ter aBV (1969); today art. 26.

which makes several important concessions to the federalist circles and property right lobbies. The final version of the law did not include any property-based instruments and reinforced the power of the cantons to define their own spatial planning policy, at the cost of the federal state (Knoepfel & Nahrath, 2007)[9]. Hence, the Spatial Planning Act can be considered a framework law, which, together with federal conceptual and sectorial plans, sets out a policy framework, while giving sufficient leeway to the cantons to set out their own planning regulations (Bühlmann et al., 2011). The law foresees a rather passive role of the federal state in spatial planning, to mainly mitigate the negative externalities of spatial development without, however, having the ability to actively steer spatial development. In 2000, the federal state founded the Ministry of Spatial Development [*Bundesamt für Raumentwicklung* (ARE)] to provide foundations and guiding principles to lower levels of government and to ensure coherence and integration on national level.

Each of the 26 cantons has its own spatial planning law, mostly in the form of a cantonal building code and its own planning law. Cantons are in charge of implementing the guiding principles set out by the federal state through a structural plan [*Richtplan*], which is legally-binding for all public actors, and of monitoring the implementation of the structural plan by its municipalities. Hence, the cantonal government is a crucial link between the policy goals set out by the federal state and their implementation on the ground by the municipal governments. As general rule, municipal governments are in charge of local zoning plans which require approval by the cantonal authorities. In addition to general zoning plans, municipalities can devise special land-use plans [*Sondernutzungspläne*] which are bounded to a specific area (a plot or combination of plots) and allow for deviating from or complementing general zoning regulations. Municipalities can furthermore develop their own structural plan next to the cantonal one. On top of that, all levels of government can develop conceptual plans, strategies, and visions which, despite not being legally-binding, provide guidance and coordination for public and private actors alike.

Swiss citizens have a diverse array of options to participate in the decision-making process (Bühlmann et al., 2011). In all levels of government, citizens have the legal possibility to both make a proposal for law-making (citizen initiative) or to demand a referendum to be held on any proposal made by the legislative powers. In both cases, if enough signatures are collected, a popular voting is held, the outcome of which is legally-binding. In addition, certain decisions made by local governments are also subjected to a popular vote, including significant changes

[9] An earlier version of the law which did contain several property-based instruments was rejected by a narrow majority (51,1%) of the electorate in 1976.

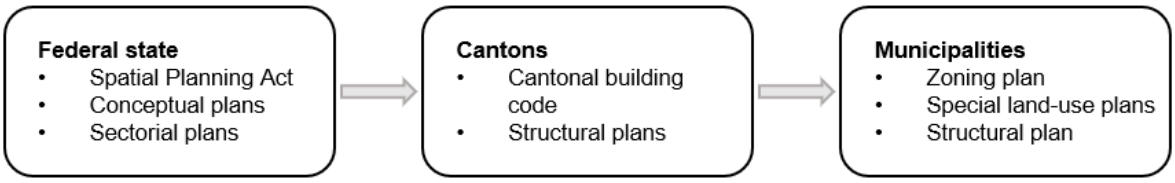

Figure 4.2. Division of power in Switzerland's planning system according to federalism. Based on Bühlmann and colleagues (2011).

4.1.1 Densification as public policy goal

As of 1 May 2014, densification or inward development was included in a revised version of the SPA, as one of the spatial goals to be pursued by all levels of government[10]. The inclusion of densification as policy goal in the federal planning law was the result of growing concerns regarding the ongoing sprawl of Swiss cities and towns into former agricultural and natural lands. The former version of the SPA, with its passive character, was increasingly seen as inapt to actively pursue strategic spatial development goals such as densification. A growing number of voices within Swiss society, including planners and policy-makers, ecologists and other advocacy groups, called for a revision of the act, which was eventually approved by the Swiss voting population in 2013. This revision was significant, as it made the power balance tilt from landowners towards planning authorities, by explicitly demanding planning authorities to pursue a strategic and active spatial planning, oriented towards a specific policy goals (Hengstermann & Gerber, 2015). Since then, all levels of government need to ensure sustainable land use by pursuing an integrated and coherent spatial planning policy, oriented towards densification, with the cantonal level having a more predominant role in controlling the municipal level.

In Swiss spatial planning, the distinction between buildable and non-buildable land is central [*Bauzonen und Nichtbauzonen*]; densification, then, is considered as the growth of settlement areas within existing buildable zones and without expansion into non-buildable zones. In other words, the main goal of densification in Switzerland (often referred to as inward settlement development [*Siedlungsentwicklung nach Innen*]) is the preservation of non-buildable zones (Bühlmann et al., 2011). The recognition of densification as a public policy goal represented a turning point, as throughout the 20th century many municipalities in Switzerland continuously expanded their buildable zones in order to facilitate new development. Currently, the policy as set out by the ARE is to 1) restrict urban development to existing buildable zones; and 2) to reduce over-sized buildable zones wherever possible (as outlined in the spatial concept currently in place [*Raumkonzept Schweiz 2012*]). Densification is therefore focused on avoiding expansion of the built environment into non-buildable zones. Yet, in practice, this is easier said than done.

[10] Spatial Planning Act Art. 1 a^{bis}

Currently, between 11 to 17% of the existing buildable zones are unbuilt (i.e. undeveloped) (Bundesrat, 2017). However, as these are mostly located in more remote, rural areas - cities having very few unbuilt buildable zones left - their development poses a number of challenges, mainly due to a lack of accessibility and centrality. Generally speaking, the available buildable zones are not located there where they are most needed (Bühlmann et al., 2011, p. 13). For this reason, rural municipalities are often asked to downzone existing buildable zones to non-buildable zones. This policy, however, often meets with high levels of resistance both from landowners and municipalities, given that downsizing results in a loss of land value.

4.2 Spatial planning in the Netherlands

In the Netherlands, spatial planning is a central part of the country's history. A large share of the territory is located below sea-level, only becoming usable after human intervention. The Netherlands can therefore be described as a nation of builders and water managers, as the Dutch are in a constant fight against water (Needham, 2014). Being so, the active involvement of different levels of government in land management and development goes back several centuries. The Netherlands is furthermore one of the most densely-populated areas in Europe, with a population of almost 18 million. Therefore, land in the Netherlands is mostly considered based on its productive value: "The Dutch find it difficult to imagine that unbuilt land, no longer needed for agriculture, could be left alone. That would be wasteful" (Needham, 2014, p. 12). The Netherlands is a decentralized state where administrative powers are distributed over three levels of government, namely the national state, the 12 provinces, and the municipalities. Planning law is devised by the national state, while the provinces are responsible for outlining regional visions and strategies of spatial development. Municipalities are in charge of land-use planning and hereby responsible for the effective implementation of spatial policy, having a relatively high level of autonomy. In addition, the country is divided into 21 water districts, the boundaries of which do not always conform to municipal or provincial boundaries. Each water district is governed by a water board [*waterschap*][11], being in charge of water management and prevention of flooding.

Spatial planning is legally regulated through a national planning act which distributes tasks across different levels of government, dictates key principles, and establishes planning instruments such as land-use plans, pre-emption right, and expropriation (PBL, 2011). As of 1

[11] The first water board in the Netherlands was established in 1196, for which Dutch water boards are among the oldest democratic entities still in existence today.

January 2024, a new Environment and Planning Act [*omgevingswet*] came into force which brings together several former laws, including planning law. The case studies in this research, however, were still regulated by the former spatial planning act, which was in force from 2008 until 2023 [*Wet ruimtelijke ordening*]. In addition to these general rules, municipal territories are covered by land-use plans that regulate land uses. These plans are legally binding for public and private actors alike. Besides land-use plans, all levels of government (national, provincial, and municipal) elaborate structural visions [*structuurvisies*] which outline visions of development and specific aspects of spatial policy. These visions are binding only to public authorities.

Spatial planning in the Netherlands is traditionally proactive: there is a clear distinction between land-use planning, as the making of plans that state which uses are permitted where, and land management, as the actual management of land by public authorities. Land-use plans are therefore seen as a tool to support land management, rather than strict regulations which can stand in the way of spatial development (Needham, 2014). For this reason, land-use plans can be changed or adapted relatively easily by municipal planning authorities: land-use plans are seen as the legal framework needed to enable development plans. Moreover, the Netherlands is known for having relatively straightforward procedures of expropriation, unlike most other western European countries (OECD, 2017a). Land can be expropriated if the proposed development is in the public interest and the current landowner is unable or unwilling to carry out this development – irrespective of whether or not the proposed development will subsequently be carried out by a public or private actor. Dutch municipalities thus have the legal capacity to expropriate land from one private actor to make it available to another private actor. This approach to expropriation is founded in a "business-like attitude to land ownership" (Needham, 2014, p. 13): private property is protected as long as it enables the most efficient and most productive form of land development.

Despite the high population density, the majority of the Dutch population lives on a relatively small share of the territory. Over 65% of the land is in fact used for agricultural purposes (OECD, 2017a). Being so, over the last decades the allocation of land for new housing development has been one of the main tasks of spatial planning. In the second half of the 20th century, this task was coordinated on national level, as the national ministry outlined housing policies and identified locations for development, based on key principles related to polycentricity and compact development. These policies resulted in high levels of urbanization mainly in the western core of the country called the Randstad [12]. During this period, entire cities were built from scratch through

[12] This mostly urbanized area is located between the cities of Amsterdam, Utrecht, Rotterdam and The Hague and contains half of the country's population and a majority of its economic activity. Roughly translated, *randstad* means "rim city" or "edge city".

greenfield development guided by national policies. In recent years, however, planning has become more decentralized (OECD, 2017b). This included housing policy, as municipalities became in charge of planning and coordinating new housing development. In recent years, however, the growing lack of (affordable) housing mainly in the Randstad has resulted in renewed calls for more intervention by the national state to coordinate the supply of new housing.

4.2.1. Densification as public policy goal

For many years, spatial development in the Netherlands has generally been linked to compact development, as ideas of compact urban form and so-called growth centres have largely defined spatial policy in the second half of the 20th century. However, in recent decades policy around densification has shifted, to a large extent as a result of decentralization: as the national state receded from spatial policy, the definition of public policy goals including densification were generally left to provinces and municipalities. Although many municipalities, particularly the large growing cities, continued to pursue densification as preferred form of urban growth, restrictions on urban sprawl and expansion were no longer imposed by the national state (Nabielek et al., 2012). What remained was a national policy on the so-called 'ladder for sustainable urbanization' [*ladder voor duurzame verstedelijking*] which, introduced in 2012, functions as a planning ordinance guiding the efficient use of land based on a prioritization of planning goals. Accordingly, urban expansion can only be pursued if the proposed development cannot take place within the existing built environment[13]. With this policy, the national government sought to promote densification while taking into account regional disparities and without imposing restrictive regulations on municipalities that could hinder development (Nabielek et al., 2012).

This shift in policy was mainly related to the already high densities of many Dutch cities together with the high costs of inner-city development (Needham, 2014). Nevertheless, many cities continued to pursue densification, focusing on the transformation of brownfields and port areas, the regeneration and subsequent densification of pre- or post-war residential neighbourhoods, and the redevelopment of areas surrounding train stations (Nabielek et al., 2012). With the introduction of the new Environment and Planning Act in January 2024, the ladder of sustainable urbanization has been integrated in the ordinance on environmental quality [*Besluit kwaliteit leefomgeving* (Bkl)] and has, as such, become a mandatory tool. Nevertheless, the ladder only establishes that the possibility of inner-city development needs to be *considered*, without making densification a mandatory policy goal.

[13] "Structuurvisie Infrastructuur en Ruimte", 2012.

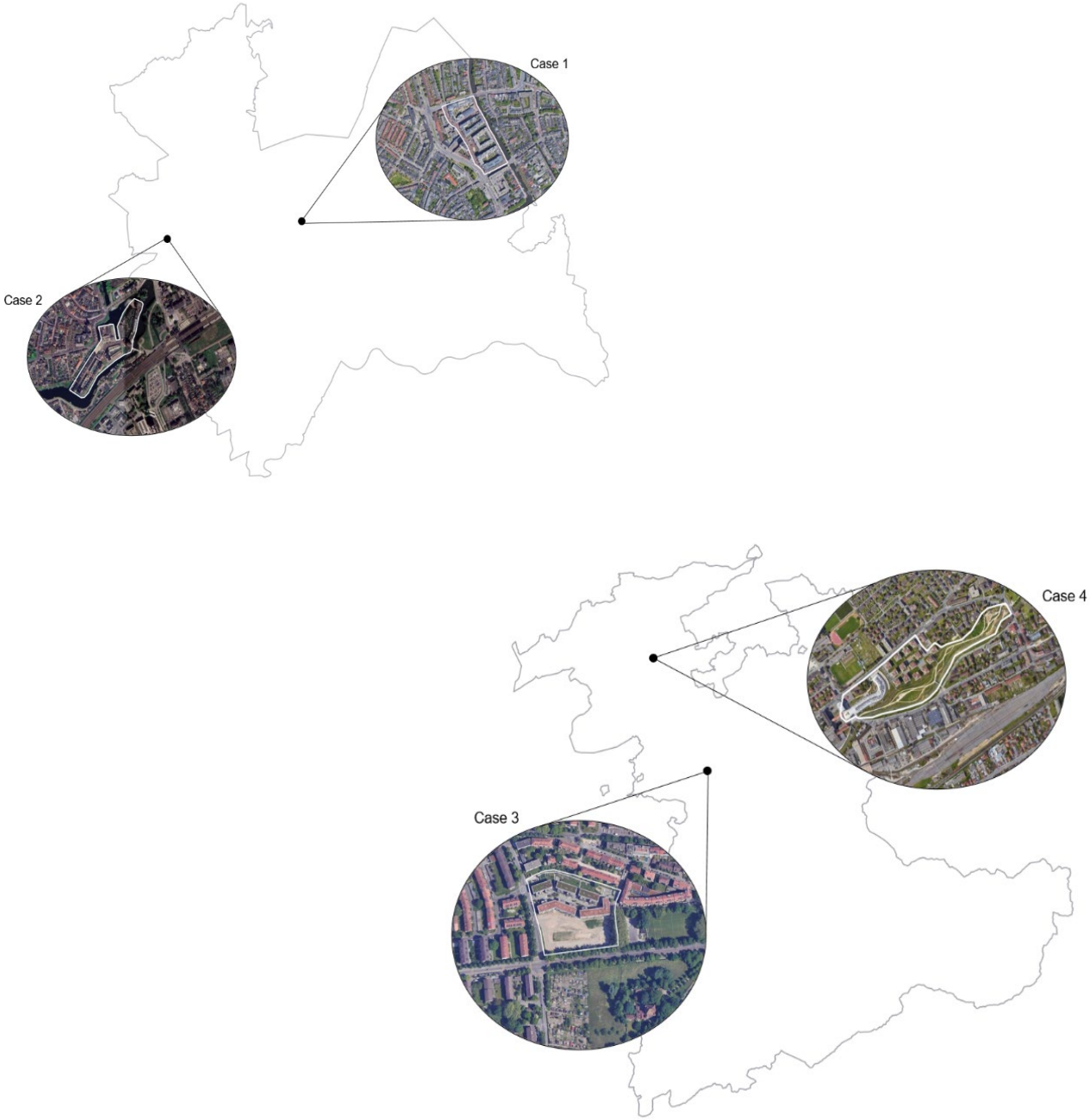

Figure 4.3 The four cases as situated within their respective regions Utrecht (above) and Bern (below).

4.3 Description of the four cases

Case 1: Zijdebalen (Utrecht – the Netherlands)

Utrecht is one of the largest and fastest growing cities in the Netherlands with approximately 375.000 residents. The city aims to absorb its population growth mainly through inner-city development. The project Zijdebalen was completed in 2019 and is located in proximity to the city's historic centre and the river Vecht. Being a former industrial site, in 2007 the city of Utrecht published a vision for transforming and redeveloping Zijdebalen into housing. In 2008 the plot was purchased by an investor. A new land-use plan was developed and approved in 2010. The investor, however, faced financial difficulties given the 2009 financial crisis, bringing the project to a halt. It was revived in 2014 after being purchased by two developers. Building on the already approved land-use plan, the new landowners renegotiated some aspects of the development through a private-law contractual agreement with the city. Construction started in 2015. Zijdebalen contains 481 housing units divided over four building blocks. Half of the units are rental units owned by an institutional investor. The remaining units are owned by individual homeowners, with a small share owned by a housing corporation for the provision of subsidized social housing. Besides the housing, the project included the reconfiguration of the waterfront, the development of new public spaces surrounding the building blocks, and the development of the buildings' inner-yards.

Figure 4.4. Aerial view of the project Zijdebalen located in Utrecht (NL). Source base map: Google Satellite (2023).

Case 2: Defensie-Eiland (Woerden – the Netherlands)

Woerden is a medium-sized town with ca 50.000 residents. Given its attractive location with good connections to most large cities in the Netherlands, pressure on the local housing market has been growing. Defensie-Eiland is located between the city's train station and its historical center, on a plot formerly used by the Ministry of Defense. As by the end of the 1990s uses were relocated elsewhere, the plot became mostly vacant and its potential for redevelopment was quickly recognized. The municipality purchased the land in 2005 and initiated a planning procedure. Due to its previous use, the soil and groundwater were heavily polluted, for which redevelopment required extensive sanitation works. This together with the high price paid for the land implied a considerable financial investment, for which the municipality sought to partner with a market actor. It launched a public tender and selected a consortium of two Dutch developers to carry out the sanitation works and develop the land. The project built on a program vision developed by the city and was made legally possible by a revised land-use plan approved in 2012. The land remained in ownership of the city until construction started. The developer built circa 200 housing units including row houses and apartments. Due to the impact of the 2009 financial crisis, the project had to be renegotiated and revised several times, leading to significant delays in the development. The project was eventually completed in 2020, providing housing as well as new cycle and pedestrian routes, access to the waterfront, and several green areas.

Figure 4.5. Aerial view of the project Defensie-Eiland located in Woerden (NL). Source base map: Google Satellite (2023).

Case 3: WBG Huebergass (Bern – Switzerland)

Bern is the capital and fifth-largest city of Switzerland with approximately 140.000 residents. As its population is growing, the city aims to increase the supply of mainly family-oriented and affordable housing within the existing city. The Huebergass project is a densification project completed in 2021. The plot is owned by the city of Bern and was formerly used for allotment gardens. Prioritizing inner-city development, the city started a planning procedure during the 2000s to remove the gardens and redevelop the land. As removing the allotment gardens faced resistance from the gardeners and surrounding residents, the city decided to develop only half of the plot and leave the remaining half for public green space provision. A project-based land-use plan was approved in 2011, after which the city launched a competition to select a developer. Given its aim to develop affordable housing, it selected a non-profit developer to provide housing based on a rent cap. Given its position as landowner, the city was able to control the development and impose regulations beyond the land-use plan. The land was given out in ground-lease to the cooperative developer, who started construction in 2019. Simultaneously, the other half of the land was given out to a neighbourhood association to develop and manage its temporary use while the new green space project was developed by the city's greening department. The association managed the land from 2019 to 2022, after which it was closed and redeveloped into a public park. The cooperative housing was completed in 2021 and provides over 100 affordable non-profit housing units, as well as several community spaces and an openly-accessible outdoor area.

Figure 4.6. Aerial view of the project Huebergass located in Bern (CH). Source base map: Google Satellite (2023).

Case 4: Jardin du Paradis (Biel – Switzerland)

Biel is a medium-sized city with a population of around 60.000 and well-known for its historic role in Switzerland's watchmaking industry. Jardin du Paradis is a housing project completed in 2018 as part of the redevelopment of the Gurzelen area. Formerly used by small industries and retail, Gurzelen was zoned for densification in the 1990s. One plot was purchased by a Swiss pension fund in 2006 with the aim to develop real-estate. In 2008, the Swatch Group announced its desire to purchase land in Biel to build its new headquarters. To enable this development, the city of Biel organized a land swap in Gurzelen involving both the pension fund and the Swatch Group. The pension fund acquired a smaller plot in exchange for increased building rights. Subsequently, the city sold a plot to the Swatch Group, earning a profit which was invested into public green space development on the remaining public land. Project-based land-use plans were negotiated for each development and approved in 2018. The plan for Jardin du Paradis regulates the outdoor spaces surrounding the housing, in order to ensure its green character and public access. A public right of way was included in the land registry after completion of the project, in order to guarantee access from the surrounding neighbourhood to the newly-developed park adjacent to Jardin du Paradis. The project contains circa 280 housing units which the pension fund rents out to secure stable and long-term revenue.

Figure 4.7. Aerial view of the project Jardin-du-Paradis located in Biel (CH). Source base map: Google Satellite (2023).

4.4 Methods of data collection

For each case study, different methods were used to collect qualitative data. Mainly, the aim of the case studies is to understand how the institutional variables, related the institutional regime, the actor constellation and the localized agreements negotiated among actors, influence the outcome of the densification project in terms of green space accessibility. Therefore, the methods for data collection included: document analysis of policy documents; semi-structured interviews with involved actors; and on-site observations of the outcome of the project. Each method is linked to a different step of the data collection process.

Step 1 - Reconstruction of the planning process: for each case, the planning process was reconstructed chronologically (see figure 4.8) through *document analysis* of policy documents, land-use plans and other zoning regulations, minutes of municipal council meetings, newspaper articles, and other relevant documents. In all cases, planning processes were initiated on initiative of the public or private landowner leading to the revision of an existing plan or the adaptation of a new plan. These plans were preceded by negotiations among the involved actors, often leading to additional agreements in the forms of contracts, strategies, or visions. Newspaper articles and minutes were analysed to understand to what extent the decisions made were controversial or conflictual.

Utrecht – Zijdebalen			
Year	Event / planning intervention	Description	Name document (if applicable)
2004	Closure of bread factory in Zijdebalen		
2007	Approval of local spatial vision by city council	Outlines planning goals by public actor and defines general spatial framework for future development	*Structuurvisie Zijdebalen 2007*
2008	Purchase of plot by real-estate investor		
2008 - 2010	Participatory process with surrounding residents		
2010	Approval of urban development program for Zijdebalen by city council	Provides the framework within which future development is to take place, including type of uses, access, infrastructure, etc.	*Stedenbouwkundig Programma van Eisen (SpvE) - Zijdebalen 2010*
2010	Approval of local land-use plan by city council	Provides the public-law framework for development, building upon the urban development program	*Bestemmingsplan Zijdebalen 2010*
2013/ 2014	Purchase of plot and project by combination of two developers		
2014	Agreement between developers and institutional investor	Institutional investor buys up over 50% of apartments to be build in Zijdebalen in turn-	

Figure 4.8. Illustration exemplifying the chronological reconstruction of the planning process of the Zijdebalen project (case 1).

Step 2 – Analysis of actors, interests, and negotiations: through *semi-structured interviews* with the actors involved in the planning process, data was collected on the objectives and strategies of actors, their respective interests in the development, and the content and extent of the negotiations among actors. The interviews were particularly useful to collect information on the role of actors and to complement the information found in the documents. For all cases, interviews were conducted with public and private actors, including, among others, planners, municipal officers, urban designers, landscape architects, developers, investors, and landowners (see complete overview in Appendix I). Interviews were mostly done in-person and conducted either in German or Dutch. All interviews were recorded with permission of the interviewee and subsequently transcribed and coded. All interview quotes used in the description of the results were translated to English, with the translation being verified by the respective interviewee to avoid mistranslations.

Step 3 – Analysis of the outcome: The outcome of the densification project was analysed based on information collected through the interviews, and complemented with data collected through *on-site observations*. I conducted these observations rather intuitively, visiting each case several times at different times of the year to control for the impact of weather and other circumstances. As observer, I made use of the outdoor spaces linked to the densification project myself and conducted observations of the use by others, writing down my insights in the form of field notes (see figure 4.9). In addition, data was collected regarding the housing provided through densification (including type of tenure, housing prices, type of residents) and other spaces (including, for example, cafés, museums, kindergartens, and cultural venues), as well as the green spaces (type of green space, type of uses provided, type of access, management structure, etc.).

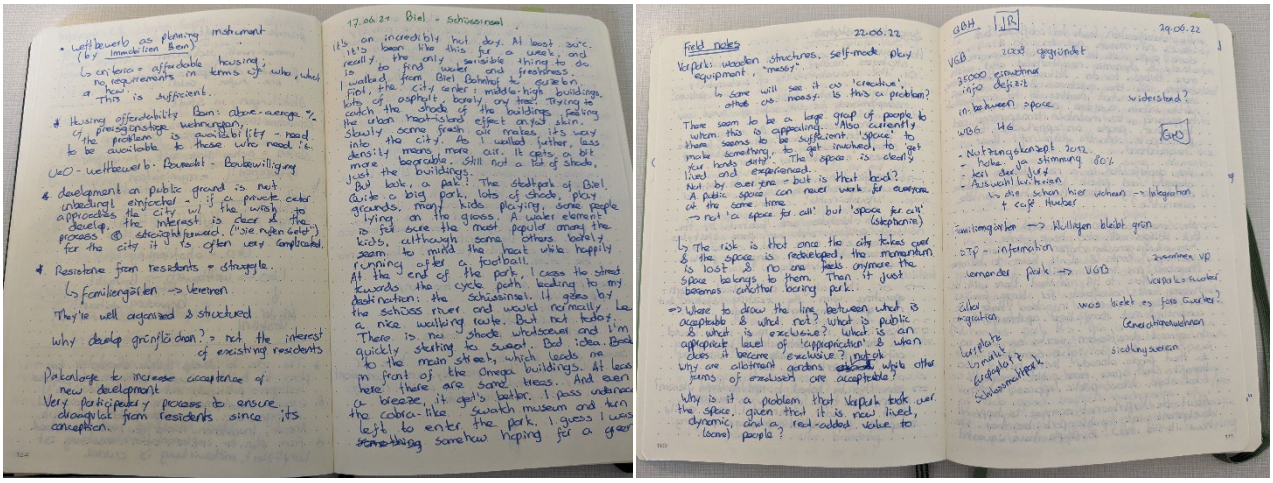

Figure 4.9. Example of field notes taken in June 2021 & June 2022.

4.5 Limitations of the research design

Given the exploratory character of this research and the aim to identify potential causal relations between variables, a research design based on case studies is best suited. Nevertheless, a typical limitation of conducting research based on case studies is the lack of generalizability: it is difficult if not impossible to formulate general conclusions based on in-depth knowledge of specific and inevitably unique cases. While this limitation can be mitigated through a thorough and transparent case selection where the selected cases are clearly linked to a variation in variables (Rohlfing, 2012), case-specific findings can hardly be converted into general truths. Yet, the value of case studies is not to proof anything but to learn something (Flyvbjerg, 2006). The detailed analysis of cases allows for bringing to light the mechanisms at play when aiming to understand how the independent variable affects the dependent variable. Based on this research design, I aim to identify to what extent the working of the variables described in chapter 3 are relevant to understand the outcome of densification projects, and based on what mechanisms these causal relations unfold.

Due to the limited number of cases selected in each of the two countries, the ability of this research to provide any interferences on how densification is planned in Switzerland and the Netherlands respectively is limited. Although the cases selected are typical rather than extreme, they were not selected to be representative of how densification takes place in each country. Therefore, while the analysis of cases from different countries allows to understand how differences in geographical context and planning system play out in the mutual implementation of densification and urban greening, this research design is not suited to make any general statements on the two countries. Instead, I aim to identify the potential role of different planning approaches for the outcome of densification and access to green spaces.

Finally, case study research is, like most research, far from a linear and straightforward process. Instead, “research inquiry is messy process, through which researchers develop their conceptual ideas as we learn through our inquiries. Research work is full of surprises, and flashes of understanding along with the potential for wrong turnings and confusion” (Healey, 2014, p. 60). Case study research in particular is an iterative process, based on a constant back-and-forth between questions, concepts, cases and data analysis. This research is no exception: throughout the data collection and analysis, problem statements were revised, research questions were reformulated, and hypothesis were reconsidered. This demands an ongoing critical assessment of one’s own positionality throughout the research project. I have done my best to address these limitations in the discussion of the results and the presentation of the findings (part III).

4.6 Organization of Part II

The body of this thesis includes four articles, which are found in part II (see table 4.2). Each article focuses on one or several parts of the research questions and hypotheses as identified in chapter 3. Although each article stands on its own, the collection of articles allows to draw conclusions on the role of the different variables as identified in my analytical framework. Moreover, it allows for answering the overall research questions presented in section 1.5. To show the contributions, each article is preceded by a brief description of the key findings in relation to the research questions and hypotheses of this research.

	Article 1	**Article 2**	**Article 3**	**Article 4**
Title	Planning The Dense And Healthy City For All - Access To Green Spaces In Densification Projects	Ensuring Public Access To Green Spaces In Urban Densification: The Role Of Planning And Property Rights	Planning The Green And Dense City: Municipal Strategies For Urban Greening In Densification Projects	Commoning The Compact City: The Role Of Old And New Commons In Urban Development
Authors	**Verheij, Jessica**	**Verheij, Jessica** Ay, Deniz Gerber, Jean-David Nahrath, Stéphane	**Verheij, Jessica** Gerber, Jean-David Nahrath, Stéphane	**Verheij, Jessica** Nahrath, Stéphane Gerber, Jean-David
Empirical basis	Case 1 (Project Zijdebalen, Utrecht – NL)	Case 1 (Project Zijdebalen, Utrecht – NL) Case 4 (Project Jardin-du-Paradis, Biel – CH)	All four cases	Case 3 (Project Huebergass, Bern – CH)
Hypothesis 1				
Hypothesis 2				
Hypothesis 3				
Hypothesis 4				
Type of publication	Book chapter	Journal article	Journal article	Journal article
Status	Published in *The Routledge Handbook of Greening High-Density Cities*. Link	Published in *Planning Theory & Practice*, Volume 24, 2023 - Issue 3. Link	Article submitted to *Landscape and Urban Planning*.	Published in *Geoforum*, Volume 152, 2024. Link.

Table 4.2. Overview of the four chapters included in part II and their contribution to the four hypotheses in chapter 3.

PART II – RESEARCH ARTICLES

Article 1: Planning The Dense And Healthy City For All - Access To Green Spaces In Densification Projects[14]

Status: Published in *The Routledge Handbook of Greening High-Density Cities* (2024). Link.

- The article develops the underlying premise of this research, namely that the conditions of governance under which densification is implemented affect access to green spaces. It focuses on the decision-making processes taking place within the Localized Regulatory Arrangement that translate public policy into on-the-ground urban development.
- The main research question asks how the governance of densification shape what type of green spaces are produced and for whom. The article zooms in on the case in Utrecht (NL) to illustrate how the theoretical assumptions work in practice.
- The article links the benefits provided by urban green spaces with the concept of access, showing how access relates to the extent to which different user groups can enjoy the benefits of green spaces.
- This is a key aspect of planning the dense and green city: in the case study, the private for-profit actors driving densification did indeed have an interest in providing new green spaces as part of their project, however as exclusive amenity for the new residents rather than as public amenities for the neighbourhood.
- The case furthermore shows how greening objectives are undermined in the project-based negotiations between the developer and municipal planners, as both actors prioritize housing development over the provision of publicly-accessible green space.
- The article highlights the tensions between densification and urban greening objectives, as creating space for publicly-accessible green environments tends to go against the interest of private developers to build high densities, seen as necessary to ensure financial return on their investment.

PLANNING THE DENSE AND HEALTHY CITY FOR ALL

Access to Green Spaces in Densification Projects

Jessica Verheij

Introduction

Cities and local governments worldwide have widely recognized the importance of greening the built environment to ensure healthy environmental conditions and the provision of ecosystem services that are crucial for the functioning and flourishing of the urban population. High-density cities are therefore increasingly engaged in urban greening practices, understanding the provision of urban green as an inherent part of urban development. Although densification, as a process by which additional land uses are added to the existing city, is often considered a threat to a city's green infrastructure (Haaland & van den Bosch, 2015; Jim, 2004; Xu et al., 2018), it can also provide great opportunities to ensure new green space development (Jim, 2013; Khoshkar et al., 2018). This way, densification projects are, in fact, a chance to add different forms of green to the city's grey infrastructure and, by doing so, to improve access to related health benefits (Koch et al., 2018; Pearlmutter et al., 2017).

Nonetheless, expanding green spaces in already congested urban areas is challenging, given the need to deal with land scarcity and the inevitable constraints of space (Haaland & van den Bosch, 2015). In dense cities, the availability of green spaces sometimes decreases in favor of new construction – even when greening policies propose the opposite (Giezen et al., 2018). Limited property rights of planning authorities and the resulting lack of power to impose greening standards on developers have been emphasized as a primary obstacle (Khoshkar et al., 2018). Furthermore, seemingly small and insignificant planning decisions can result in a continuous loss of green spaces in cities, ultimately advancing grey infrastructure at the expense of green space (Colding et al., 2020). Besides physical constraints, challenges relate to ensuring the quality and accessibility of green spaces and safeguarding the provision of ecosystem services to users in increasingly dense environments (Byrne et al., 2010). Hence, despite the need for urban greening typically being recognized in planning policies, its actual implementation often falls behind – particularly when combined with densification.

Densification thus provides both opportunities as well as challenges in terms of ensuring access to green spaces in dense urban environments, influencing to what extent health benefits in high-density cities can be enjoyed or not (Littke, 2015). In this chapter, I argue that the planning conditions under which densification is implemented shape how integrated green spaces are produced, with differentiated outcomes regarding who gains access to these spaces. I aim to go beyond an analysis of access to green spaces by making a link to the power relations and institutions that shape densification (Gerber & Debrunner, 2022). In this regard, institutional constraints have been recognized as a primary obstacle impeding the implementation of greening objectives, given that these objectives are often not translated into zoning regulations or other legal obligations for developers (Haaland & van den Bosch, 2015). If no strict requirements are set for landowners to integrate urban greening into their projects, the short-term economic perspective typically prevails over the long-term environmental perspective (Khoshkar et al., 2018). Scholars have linked the pre-eminence of economic interests in urban greening to questions of social inequality and environmental injustices, not in the least due to the gentrifying effect of new green spaces on surrounding real-estate values (Anguelovski, 2016; Checker, 2011; Haase et al., 2017). In particular in high-density cities, characterized by saturated housing markets, social inequality, and highly competitive real-estate dynamics, to understand for whom new green spaces are produced and based on what conditions of governance is crucial to enhance access to the related health benefits to a broader and more diverse group of users.

In this chapter, I focus on how integrating urban greening objectives in densification projects leads to a redistribution of access to green spaces and, in particular, to the health benefits these provide. My contribution aims not to measure or classify 'access to green space' but rather to argue that the conditions of governance under which densification is implemented affect the decision-making processes that shape how access to green spaces is produced and for whom. I aim to provide insights into the trade-offs and

compromises that emerge when implementing urban greening in high-density contexts, in order to contribute to a better understanding of how urban greening and densification can be combined in an inclusive and socially-just manner. Therefore, the questions guiding this chapter are: 1) how do the conditions of governance of densification shape what type of green spaces are produced; and 2) how do these processes influence who gains access to the health benefits of green spaces and who does not. I do so by analyzing qualitative data from a case study in the city of Utrecht, the Netherlands, as a particularly interesting context to analyze the implications of implementing densification together with urban greening in a high-density neighborhood.

Access to the health benefits of urban green spaces

Urban green spaces are essential due to the ecosystem services these provide, defined as the benefits people derive from functioning ecosystems that directly or indirectly contribute to human wellbeing (Costanza et al., 2017). These services are typically classified as provisioning (services related to providing products such as food or fuel), regulating (benefits associated with the regulation of ecosystems such as climate or water regulation), cultural (related to social benefits such as recreational opportunities or aesthetic quality), or supporting services (services necessary for the production of all other ecosystem services such as soil formation) (Millennium Ecosystem Assessment, 2005). Literature on urban greening and its benefits focuses mainly on cultural ecosystem services, as particularly relevant for green spaces in urban settings. Regulating ecosystem services are linked to the environmental function of urban green spaces and mostly indirect, meaning that simply being in proximity to urban nature is sufficient to enjoy enhanced environmental quality, not requiring active use of the space. Mainly, benefits are related to 1) the cooling effect of green spaces and the positive contribution to thermal comfort (Burger et al., 2021; Erlwein & Pauleit, 2021); 2) the capacity of green spaces for stormwater management and rainfall infiltration (Vilhar, 2017); 3) the positive effect on air quality and the capacity of trees to capture air pollution and CO2 emissions (Samson et al., 2017); and 4) the contribution of green spaces to biodiversity. Cultural ecosystem services relate to benefits deriving from the socio-cultural and economic functions of green spaces. The former provides benefits in terms of human wellbeing and health resulting from the positive contribution to mental health and stress relief, physical health, perceived wellbeing, social relations, and physical activity (Carrus et al., 2017; Dadvand et al., 2016; Dadvand & Nieuwenhuijsen, 2019). In addition, green spaces play an important role in promoting social cohesion and strengthening place identity and local community (O'Brien et al., 2017). The economic function is linked to the potential of urban parks and gardens to attract visitors, therefore providing benefits in terms of tourism and local economic development. The effect of green spaces on housing prices is widely acknowledged, as proximity to parks raises property prices, sometimes considered an economic opportunity to further expand and improve green spaces (Daams et al., 2019; Mell et al., 2013). However, at the same time, this effect has been scrutinized in the context of gentrification and subsequent implications for social justice (Garcia-Lamarca et al., 2019; Haase et al., 2017).

Table 33.1 Conceptualization of the functions and benefits provided by urban green spaces in relation to physical attributes. Categorization based on Millenium Ecosystem Assessment (2005), Konijnendijk et al. (2013) and Pearlmutter et al. (2017).

Type of ecosystem services	**Function of urban green spaces**	**Type of benefits**	**Examples of physical attributes and design**
Regulating ecosystem services	Environmental function	Cooling effect	Trees, water elements, unsealed areas
		Water management and rainfall infiltration	Trees, unsealed areas
		Air quality	Trees, open spaces
		Biodiversity	Diversity of flora and fauna species

Cultural ecosystem services	Socio-cultural function	Health and wellbeing	High levels of vegetation, contact to nature, physical access points, opportunities for recreation and physical activity, high level of maintenance
		Social cohesion and place identity	
	Economic function	Tourism and local economy	Aesthetic quality, unique or identifying features, exclusivity
		Housing prices	

Overall, there is robust evidence that urban green spaces contribute to human health and wellbeing, either through benefits enjoyed by just being close to nature or through the enjoyment of socio-cultural benefits related to the use of the space (Konijnendijk et al., 2013). Table 33.1 presents an attempt to distinguish functions of and benefits deriving from urban green spaces, based on existing literature. Necessarily, these functions and benefits are interrelated and interconnected, meaning that, for example, an increased cooling effect of tree coverage has a positive effect on all other types of benefits (Pearlmutter et al., 2017). In all cases, spatial access to the green space as well as the physical attributes and design features, are defining factors influencing to what extent different population groups are able to enjoy these health benefits. Moreover, the morphological design of the surrounding area and the integration of green space in its physical environment significantly affect how accessible green spaces are to nearby residents and other users (Ståhle, 2010). Mainly, through the conceptualization presented in Table 33.1, I aim to highlight how the physical design of the green space determines what type of benefits can be enjoyed and by whom, underlining the fact that the mere existence of a green space does not automatically translate into health benefits for all (Borelli et al., 2021). Ensuring access through physical design is an essential aspect to be considered, along with effectively adding new green spaces to the urban environment. Planning *and* design are, therefore, fundamental pieces of the puzzle to enhance access to health benefits in high-density cities.

Integrating urban greening in densification projects

Densification or compact city development is a process by which additional land uses are intentionally added to the existing built environment in order to promote inward urban growth and prevent sprawl. However, the planning of densification is rather complex given the diversity of interests at stake and, most importantly, the existing land ownership structures (Buitelaar & Segeren, 2011). Local planning authorities, therefore, make use of a wide range of planning instruments, based both on public and private law, to seek control over inner-city urban development, in particular when land is in private hands (Gerber et al., 2017; van der Krabben & Jacobs, 2013). Moreover, the negotiation of project-based planning regulations through more flexible instruments, such as contracts, project-based zoning plans, or public-private partnerships, is increasingly common practice for densification projects (Gerber, 2016; Holsen, 2020; van den Hurk & Tasan-Kok, 2020). Planning authorities have often shifted from a role as regulators to one of the mediators by which public policy is implemented together with private actors (Gerber, 2016). The outcome of densification, therefore, can be understood as a result of the negotiation process between the public actor or planning authority and the involved private actors, such as landowners or developers. It is through this negotiation process that (possibly conflicting) public and private interests are negotiated, and compromises regarding the outcome of densification are found (Debrunner et al., 2020).

Yet negotiations do not take place in a vacuum. Instead, they are based on the institutional framework that precedes urban development. Institutions are the rules in use that influence the behavior of actors (Gerber et al., 2009). Institutions shape the decision-making and negotiation processes among actors and, as such, affect the physical outcome of urban development (Buitelaar & Segeren, 2011; Tennekes et al., 2015). On the one hand, property rights have a central role, given that, due to the power deriving from these rights, landowners enjoy a particularly strong position to defend their interests and influence densification processes (Gerber et al., 2018). Developers and investors, in particular, are the main actors in urban development, given their capacity for investment and willingness for risk-taking behavior. Planning

regulations, on the other hand, seek to limit and restrict the behavior of private actors by setting obligations aimed at protecting the public interest. Although these institutions do not determine the outcome of densification, they make some outcomes more likely than others (Tennekes et al., 2015).

In this chapter, I analyze densification as a planning process based on the negotiation of interests among actors whose behavior is influenced by the institutional framework in place (based on Gerber et al., 2009; Knoepfel et al., 2007). Through densification, new green spaces are added to the urban environment, or existing green areas are redeveloped. As such, densification can enhance access to health benefits by improving access to green spaces. However, as argued in the previous section, to what extent access is effectively improved and what type of benefits a given green space provides is directly dependent on the physical attributes and design of the area. Therefore, the planning and negotiation of densification and the related decision-making processes defining green space development affect the type of benefits these green spaces provide to whom (Figure 33.1). By making visible how these variables shape the planning and design of green spaces, this approach allows for not only showing how urban greening can sometimes lead to uneven outcomes but, more importantly, for showing how and by whom these decisions are made. In the following section, I draw upon empirical insights from a case study in Utrecht, the Netherlands, to illustrate my argument.

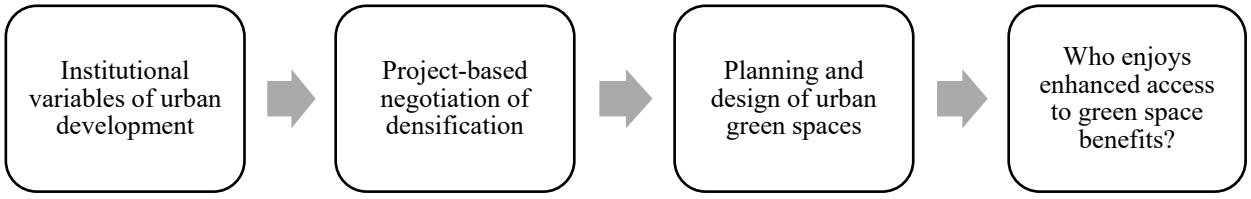

Figure 33.1 Analytical framework illustrating the relation between the conditions under which urban development is implemented and the extent to which different types of user groups can access the produced benefits. Source: own figure.

Case-study: densification and greening in Utrecht's inner-city

The following sections provide insights based on empirical data collected through a case study of a densification project in the inner city of Utrecht, the Netherlands, named after the silk factory that was located in this area in the 16th and 17th centuries: *Zijdebalen*. It is a housing project containing around 480 housing units, developed by a private actor and completed in 2019. The case was selected for illustrating well how the theoretical relations identified in the previous section work in practice: the outcome of the project was a direct result of the institutional framework in place and the resulting negotiations between the municipality, as planning authority, and the respective developer and landowner – resulting in the development of both housing and new green spaces. Utrecht is one of the fastest-growing cities in the Netherlands, for which it has identified densification or inner-city development as main strategy to absorb the predicted population growth over the next decades without expanding spatially (Gemeente Utrecht, 2021). Besides housing development, the city is investing in mobility infrastructure, public services, and additional urban green spaces. Given that the city of Utrecht already presents one of the highest population densities in the Netherlands (CBS, 2020) and that the municipality has clearly recognized densification as the main strategy for urban development in the next years, it is a particularly interesting context to analyze the implications of implementing densification and greening in high-density environments.

Methodology

I have collected qualitative data by analyzing all available documents related to the planning process conducted by the municipal planning department and the respective landowners (see overview in Table 33.2). I have interviewed the actors involved to collect further insights into how and based on what grounds decisions were taken and by whom. The interviews represented a valuable source to better understand how the decision-making processes unfolded. Furthermore, I have conducted on-site observations in two different moments of time after residents moved in to understand the actual use of the spaces after completion of the project.

Table 33.2 Overview of data collection.

Overview planning process Zijdebalen		***Type planning document (city of Utrecht)***	***Actors***	***Interviewees***
2004	Closure of last industrial use			
2007	Publication of municipal planning vision	Spatial vision Zijdebalen Greening policy (city-wide) Housing policy (city-wide)	City of Utrecht / municipal planning department	Municipal planner 1 Municipal planner 2
2008	Purchase of plot by investor		Real-estate investor	
2010	Approval of urban design program followed by project-based zoning plan	Urban design program Zijdebalen Land-use plan Zijdebalen	Landowner, architects, landscape architects, local residents	Landscape architect
2014	Purchase of plot by developers		Consortium of two developers	Developer
2014	Celebration of private-law contract between city and landowners	Contract could not be accessed due to confidentiality		
2014	Involvement of institutional investor as future homeowner	Letter to municipal commission on progress of Zijdebalen	Institutional investor	Institutional investor
2015	Start construction			
2019	Completion		End users	

The development of Zijdebalen

Zijdebalen is located on a former industrial site occupied by small-scale industry, including a bread factory that closed its doors in 2004. This being the last industrial use on-site, the city of Utrecht recognized its potential for development given its central location near the historic city center and the main train station. The city decided not to purchase the plot despite having the possibility of exercising its pre-emption right (first option to buy). Instead, in 2008 the plot was purchased by an investor interested in developing housing. At the same time, the first steps in the planning process were taken, given the need to rezone the plot from industrial use to housing. At the time, the plot was part of a neighborhood-level zoning plan. The municipal planning department initiated the elaboration of a new project-based zoning plan for Zijdebalen - based on the landowner's development plans. Yet as in 2009 the financial crisis unfolded in the Netherlands, the landowner faced financial difficulties, eventually leading to a default for which the project came to a standstill. Finally, in 2014 the plot was purchased by a combination of two developers, who revived the planning process and started a new round of negotiations with the city. The two parties anchored their mutual agreements in a private-law contract. Construction began in 2015, with the last building block being completed in 2019. Today the project contains 481 housing units divided over four building blocks and is located in what is now one of the city's densest neighborhoods. Together with the development of housing, the project included the reconfiguration of the waterfront, including a main cycle route into the city center; the development of new public spaces adjacent to the building blocks; and the development of the inner yards of each building. By

transforming an underused industrial area into housing, Zijdebalen is a typical example of brownfield development, adding many newly-built housing units to a centrally-located part of Utrecht (Figure 33.2).

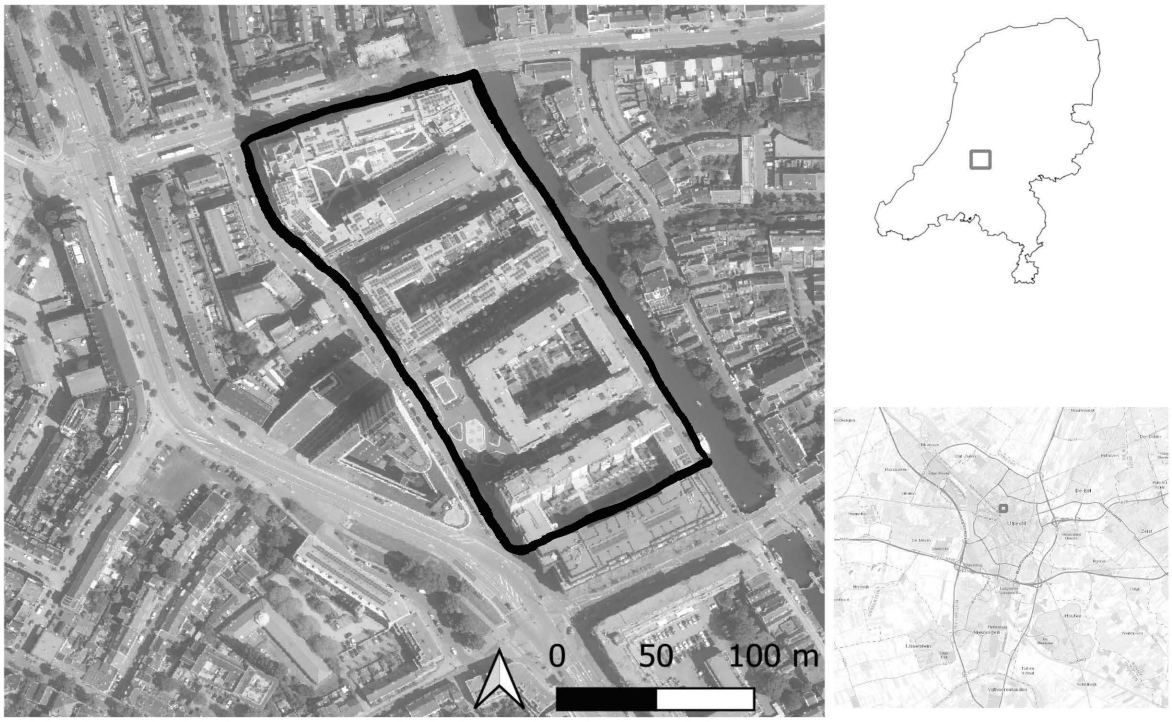

Figure 33.2. Aerial view of project Zijdebalen located in the city of Utrecht. Source base images: PDOK Kadaster (2021), BRT Top Grenzen.

The institutional framework: property rights and public policy

The municipal planning department made a deliberate decision not to purchase the plot, as due to its prime location, it counted on the interest of private actors to develop the site (interview planner 1, 2021). The investor who purchased the plot in 2008 represented the real-estate branch of a Dutch bank interested in developing housing as an investment asset. Given the location of Zijdebalen in a centrally-located part of one the largest cities in the Netherlands and adjacent to the waterfront of the Vecht River, the project was seen as a stable and profitable investment strategy (interview developer, 2021; interview institutional investor, 2021). When in 2014 ownership over the plot was transferred to the new developers, the investment strategy remained the same. As is typical in the Dutch context, the role of the developers was to develop and build housing, after which the housing units were sold to third parties. Over half of the units are today owned and rented out by an institutional investor, consisting primarily of small to medium-sized apartments; the remaining units (including regular apartments as well as multiple-story units and several penthouses) are owned by individual homeowners. A small share of units is owned by a housing corporation for the provision of social housing. Each building is managed by a homeowner association, of which the institutional investor is the primary member. The spaces surrounding the four building blocks were in the ownership of the developer during the planning and construction phase, after which they were transferred into municipal ownership.

For the city, the housing development was a central policy goal, considering it to be a more efficient and desirable type of land use than its former industrial use (interview planner 2, 2021). Furthermore, the housing development was seen to be adding to the area's livability by allowing for additional neighborhood services, such as local shops and businesses, additional public spaces, and additional urban green (Gemeente Utrecht, 2010). Already in 2005, the municipal planning department started to draft a first vision for future development with housing as the primary land use. As the plot was purchased by a real estate investor, this vision was further developed into concrete project plans together with the now landowner. The resulting zoning plan was approved by the municipal council in 2010. Besides a change in land use, the plan also included relatively detailed regulations regarding the type of housing (including size and volume as well

as rent levels) and the design and use of the public spaces. Among others, the zoning plan stipulated that, given a deficit of urban green spaces in the surrounding neighborhood and the objectives outlined by the city's greening policy of 2007, the development must contribute to providing additional urban green to the neighborhood in order to compensate for the negative impact of increased built and population density for surrounding residents (interview planner 2, 2021). The solution given in the zoning plan is to make publicly accessible the green inner courtyards of some of the housing blocks (Gemeente Utrecht, 2010).

Negotiating the provision of housing and urban green spaces

After a first round of negotiations took place between the city and the first landowner when elaborating the new zoning plan, these negotiations continued after the new landowners purchased the plot in 2014. This led to the renegotiation of, for example, the built volume of the project and the type of rent level – each with a decisive impact on the financial feasibility of the development (interview municipal Planner 1, 2021; interview developer, 2021). Besides, a significant part of these negotiations related to the development of the project's public spaces, including its green spaces. Although having recognized the importance of public spaces to contribute to the neighborhood's liveability, due to financial considerations, the city did not develop these spaces itself (interview planner 1, 2021). Instead, the developer was in charge of creating the public spaces, after which ownership was transferred to the city. The developer was interested in controlling the design of surrounding public spaces to ensure that its quality would contribute to the attractiveness of living in an inner-city high-density environment (interview developer, 2021). Given its inner-city location, there was a trade-off between, on the one hand, maximizing use density to ensure financial return on the high land prices and, on the other hand, ensuring that the project is attractive enough to secure interest from tenants and homebuyers. Integrating high-quality public spaces and access to urban green was therefore considered an essential factor for the project's success and profitability (interview developer, 2021; interview institutional investor, 2021).

Resulting from these negotiations, two types of spaces were integrated into the project: the public areas surrounding the four building blocks, and the green inner-court yards of each building block, two of which were to be publicly accessible. The latter was a deliberate demand from the municipal planning department, given that the project would reinforce the low availability of green space in the neighborhood (interview planner 1, 2021; interview planner 2, 2021; Gemeente Utrecht, 2010). Nonetheless, the inner yards remained in private ownership of the condominium; for the city, it was not feasible to gain ownership over the inner yards of privately-owned residential buildings (interview planner 1, 2021). Therefore, the inner yards were developed as *de facto* public spaces, while legally being private property. Despite the ambiguity of this agreement, the municipal planning department understood this to be the best possible solution to simultaneously solve the lack of access to green spaces while also supporting the interest of the developer to build high densities (interview planner 2, 2021). Whereas the areas surrounding the building blocks were designed by a landscape architecture office that, although contracted by the developer, worked in close collaboration with municipal planners and designers, the green courtyards were designed separately by the architectural office in charge of the design of the residential buildings (interview municipal planner 2, 2021; interview landscape architect, 2021). As a result, they were not designed as public spaces: the guidelines for public space design used by the city did not apply to the courtyards. Instead, they were designed as semi-private spaces, serving as amenities for the residents of the respective buildings. The sales catalog for one of the buildings - of which the inner yard was *planned* to be publicly accessible - confirms this, as it refers to the courtyard as an extension of the private home, a garden to be shared with neighbors, without mentioning its supposed publicness: "the inner-yard is an extension of your luxury apartment in Zijdebalen" (sales catalog Zijdebalen, 2017, p.72; own translation).

Green spaces of Zijdebalen: what types of benefits are provided to whom?

Although densification is stated as the primary goal of Zijdebalen's planning process, its zoning plan equally affirms the need for urban greening to contribute to the neighborhood's livability (Gemeente Utrecht, 2010). The plan recognizes the city's objective of transforming the Vecht waterfront into a green corridor, as described in the city-wide greening policy of 2007, underlining, however, the lack of space and subsequent challenges to add substantial levels of green structure. The plan continues by recognizing the limited

availability of playgrounds and public green space in the neighborhood *and* in the project of Zijdebalen itself. This ambiguity illustrates the complex challenge of densifying while also adding new green spaces to the built environment, even when stated as a policy goal (Haaland & van den Bosch, 2015; Khoshkar et al., 2018). After completion, Zijdebalen includes two different types of urban green spaces with distinctive types of access: the public spaces surrounding the four building blocks and including the square in front of building two, and the green courtyards of each of the building blocks. The public spaces, however, present relatively low levels of green structure as these are mostly sealed. These spaces perform many functions simultaneously (such as traffic, parking, waste management, play areas, seating space, and rainwater management) for which its design, which needed to ensure this functionality, presented a complex task (interview municipal planner 2, 2021). Trees and other types of vegetation are distributed across small patches adjacent to the buildings. On the square, green features were added in small and dedicated patches, providing some benefits in terms of shading and thermal comfort but without being an integrated part of the design. The canal in one of the streets provides a water element but is not linked to any green features, therefore having quite an artificial and man-made character. In general, the area is quite solidified and can hardly be considered *green* (interview planner 2, 2021; interview landscape architect, 2021; own observations). Hence, the open spaces, as well as the green elements and the integration of water, contribute to some health benefits; however, the overall environmental function of these spaces is low. Instead, the addition of green structures was done mainly to ensure the aesthetic quality of the spaces in order to contribute to their attractiveness for residents as well as visitors. Primarily, these spaces were designed with the socio-cultural function of green spaces in mind, providing opportunities for social interaction and cohesion and place identity. Overall, public spaces mainly convene the *idea* of urban nature (Angelo, 2021) rather than providing concrete environmental benefits to its users.

For the green courtyards, despite the zoning plan stipulating public access to at least two of the four gardens, public entrances were closed as soon as residents moved into the buildings (Figure 33.3). These spaces are not open to the public, against the agreement made between the city and the developer. The decision to close the entrances was taken by the respective homeowner associations after safety concerns had been raised by residents, among others, due to the occurrence of burglary. This decision was not challenged by the city as, even though the public accessibility of these spaces was foreseen by the zoning regulations, it did not wish to interfere with the residents' right to protect private property (interview planner 1, 2021; interview planner 2, 2021). Given the closed entrances, I was unable to access the courtyards. Yet satellite images and renderings included in project-related communications, show a high level of greenery and vegetation, providing multiple health benefits through its environmental function.

Moreover, the gardens provide users with opportunities to be in contact with nature and offer spaces for relaxation and recreation. These benefits are intended outcomes of the design of the courtyards, aimed at contributing to the aesthetic quality and attractiveness of living in a high-density urban environment. The gardens were deliberately conceptualized and designed for the everyday use of residents of the building block, their design as inner-court yards surrounded by the buildings and physically delimited from the street functioning as the main obstacle for non-residents to enjoy the benefits provided by these green spaces (Ståhle, 2010).

Figure 33.3. Entrance gate to the inner yard of building two, accessible only for residents. Source: own photo (2021).

Figure 33.4. Green elements in the public space are distributed across small, dedicated patches. Source: own photo (2021).

Who gains access to green spaces through densification?

The development of Zijdebalen was presumed to contribute to additional access to urban green. Yet, the only publicly-accessible green spaces are the green patches integrated into the square and the adjacent streets (Figure 33.4). The direct benefits generated by these isolated green islands are low, their main contribution is related to the aesthetic quality and attractiveness of the densification project. The buildings' courtyards contrast with these open spaces by constituting an enclosed and gated environment accessible only to a limited group of users, namely the residents. Non-residents do not have access to these spaces, and the related benefits cannot be enjoyed by the overall neighborhood, as the gardens are not even

visible from the street. This points towards prioritizing the economic function of green spaces over its other functions during the planning process (Khoshkar et al., 2018). Real-estate developers have widely acknowledged the benefits of urban green spaces, understanding urban greening to contribute to making high-density living more attractive and thus more profitable (Haase et al., 2017). Although different functions of urban green spaces can co-exist in parallel, the development of green spaces as a selling point in real estate often goes at the expense of ensuring access to the benefits of urban green to all: selling green spaces as an exclusive benefit for some is inevitably more profitable than developing public green spaces accessible to all (Garcia-Lamarca et al., 2019; Webster, 2007). Therefore, our case study shows how the prioritization of the economic function of green spaces jeopardizes access to urban green spaces for all, favoring the project's residents instead.

The decision to design the gardens as inner courtyards is significant. As Marquardt et al. (2013) argue after examining new-build luxury developments in Berlin, detachment from the neighborhood through physical design and security features are framed as desirable features raising the attractiveness of living in this type of project. The green spaces of Zijdebalen were evidently produced for its residents, the courtyards designed as an extension of the private home to be shared with direct neighbors *only*. As several interviewees stated, the design resulted in a clear physical delimitation between the public realm and the inner gardens, contributing to a feeling of invasion and unsafety by residents as soon as non-residents used the gardens. Integration into the surrounding street network being a significant factor for accessibility (Ståhle, 2010), the courtyards could hardly have functioned as *de facto* public space. Although these issues became apparent during the planning process, it was deemed impracticable to reconsider the design without jeopardizing the entire project, given the necessity to build high densities to ensure financial feasibility (interview municipal planner 2, 2021). While public policy affirmed the need to provide public access to additional green environments in Zijdebalen, the negotiated solution turned out to be impracticable and ineffective once implemented. In fact, the design of Zijdebalen and its inner gardens as closed environments was not an unintended outcome but, instead, a necessary compromise to ensure the profitability of densification in a high-density urban context characterized by high land prices.

Green spaces were produced in the first place as instrumental to the project's attractiveness instead of being an integral part of densification. Here, the role of the city as a public actor was significant. Due to financial constraints, the municipal planning department intentionally counted on the private sector to develop both housing and green spaces in Zijdebalen, taking up the role of regulator. As private actors are increasingly aware of the importance of investing in the quality of public and green spaces, particularly in contexts of densification, this does not in itself lead to privatization and exclusion (Van Melik & Van Der Krabben, 2016). Nonetheless, the influential role of the developer as landowner allowed for the prioritization of the economic function of urban green, supporting its principal interest in the densification project. Simultaneously, the city of Utrecht had a clear interest in ensuring feasibility and implementation, given its policy goal to develop housing and considering the challenging start of the project. Its role in the planning process can be described as mainly managerial and market-oriented, supporting the private actor while strategically finding compromises between the public and private interest, in line with the rationale of New Public Management (Gerber, 2016).

Moreover, the negotiation process was decisive in determining the project's outcome, with the ability to be flexible and to find compromises as "success factors" highlighted by the interviewees. The decision to renegotiate specific planning regulations with the new landowner through a private-law contract allowed for finding pragmatic solutions for the sake of implementation in order to "keep the project going" (van den Hurk & Tasan-Kok, 2020). As our empirical insights show, the city of Utrecht approved a development plan which ultimately favored the private interest of the developer to provide urban green spaces as exclusive services to residents instead of enforcing public access. A "demise" of public green spaces can thus occur despite public policy aiming for the contrary (Colding et al., 2020; Giezen et al., 2018). Besides, our case shows how the urban greening of high-density cities is an intrinsically political process, where economic development interests are juxtaposed with environmental and social concerns (Debrunner et al., 2020; Garcia-Lamarca et al., 2019; Haase et al., 2017).

This chapter provides evidence of the complexity of integrating urban greening in the densification of high-density cities while enhancing access to green space benefits for all. My findings illustrate how the institutional framework and negotiations that govern densification and the related power relations shape the decisions that determine what type of green spaces are produced for whom, underlining the challenge of ensuring that access to green spaces is distributed evenly among the urban population. The health benefits

provided by the green spaces of Zijdebalen are limited and mainly enjoyed by its residents, failing to enhance access to green spaces for the surrounding neighborhood. As I argue, this outcome can be explained through the prioritization of the economic function of green space over its environmental and sociocultural functions, where green spaces were designed mainly for their aesthetic quality to contribute to the project's profitability. Densification shows great potential to advance urban greening in high-density contexts and contribute to healthier urban environments. However, for green space benefits to be accessible to all instead of just the lucky few, planning authorities must stand their ground and strategically enforce the public interest vis-à-vis the private interest of developers, investors, and landowners. Furthermore, planning needs to acknowledge that different governance structures suit other functions of urban green spaces: when urban greening is outsourced to the private sector, compromising the public interest becomes, although not inevitable, indeed more probable.

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Article 2: Ensuring Public Access to Green Spaces in Urban Densification: The Role of Planning and Property Rights[15]

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- This article focuses on the role of private landownership in the governance of densification and urban greening, and on the role the municipal actor of land policy instruments in the successful implementation of policy goals. It hereby addresses hypotheses 1 and 3.
- It further develops hypothesis 1 by arguing that the involvement of private for-profit landowners in densification projects leads to exclusionary green spaces in the form of club goods, given that landowners have a financial incentive to do so.
- The article is based on the analysis of the case studies in Biel (CH) and Utrecht (NL) where densification was led by private for-profit actors.
- Based on the empirical data, it shows how private landowners indeed have an interest in providing green spaces as club goods; however, municipal planning authorities are not helpless in the face of private interests.
- The results show how planners can strategically intervene in private-led densification processes to counteract club formation, namely by restricting property rights, actively monitoring implementation even after the planning phase, and ensuring an open physical design that enables the public use of green spaces.

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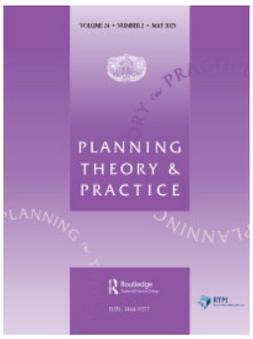

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Ensuring Public Access to Green Spaces in Urban Densification: The Role of Planning and Property Rights

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ABSTRACT

Implementing densification while ensuring green space accessibility is a crucial planning challenge. The powerful role of private for-profit actors densification projects mean that green spaces are at risk of being co-opted by private interests and transformed into club goods. Using a new-institutionalist approach, we analyse the implementation of densification and urban greening based on two case-studies in Switzerland and the Netherlands. We ask what planning strategies are successful in ensuring public access to green spaces in private-led densification. To counteract club formation, planners need to restrict property rights, actively monitor implementation of planning objectives, and ensure an open physical design.

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Densification; green spaces; club good; project-based planning; institutional resource regime

Introduction

Densification is a widely pursued goal by planning authorities, as it results in a more efficient and therefore more sustainable use of land (Broitman & Koomen, 2020; Neuman, 2005). However, its implementation is complex, given that it aims to increase urban density within the existing built environment. Challenges relate to fragmented landownership, high land values, and the need to deal with a large variety of interests in cities (Buitelaar, 2010; Holman et al., 2015; Khoshkar et al., 2018). For this reason, implementing densification objectives involves many trade-offs (Burton, 2000) and often leads to compromises which may affect the liveability and sustainability of dense environments (Neuman, 2005; Westerink et al., 2013). In particular, the relation between densification and green space availability is paradoxical: as cities become increasingly dense, the provision of sufficient public and green spaces is a fundamental element of developing liveable urban environments. Yet, densification often leads to the opposite: a decrease in the availability of public green spaces (Colding et al., 2013; Giezen et al., 2018) and overuse or congestion of existing ones (Arnberger, 2012). Ensuring sufficient supply of public green spaces is therefore a crucial piece of the puzzle to achieve densification that effectively contributes to more sustainable cities.

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Adding another layer of complexity, the implementation of densification is highly dependent on the involvement of private actors as landowners, investors, and developers, who enjoy a powerful position to determine the outcome of densification processes (Debrunner et al., 2020; van der Krabben & Jacobs, 2013). The need for planning administrations to collaborate closely with private actors is further reinforced by a general paradigm shift to New Public Management (Gerber, 2016; van den Hurk & Tasan-Kok, 2020). In practice, this leads to closer collaboration between the public and the private sector, in the context of project-based and more flexible forms of planning. Public responsibilities are outsourced to private actors, while planning authorities take up the role of facilitators and mediators among a diverse landscape of market-oriented actors (Tasan-Kok, 2010).

In terms of green space accessibility, however, the involvement of private profit-oriented actors in implementing densification raises significant challenges. The provision of public spaces by private actors has been questioned for potentially contributing to the development of spaces of commerce and consumption in the public realm (Madanipour, 2019; Van Melik & Van Der Krabben, 2016). Urban greening in particular has been mobilized by developers and real-estate investors to increase the value of their investments (Garcia-Lamarca et al., 2022). Being so, private governance of urban space has, in some cases, led to the rise of "gated communities" where neighbourhood amenities are accessible only to residents (Glasze, 2003; Glasze et al., 2006). Furthermore, the phenomenon of privately-owned public spaces (POPS) has been widely discussed: although contributing to additional supply of public space, the private interests of landowners often become prioritized (see e.g., Lee, 2022; Van Melik & Van Der Krabben, 2016). Ultimately, the private provision of public space can, in that sense, contribute to the formation of club goods, accessible only to a limited group of "club members" through the instalment of exclusion mechanisms such as the payment of a fee (Webster, 2007; Webster & Lai, 2003). Hence, densification projects led by private for-profit actors and integrating green space provision raise important questions. Due to their crucial role in safeguarding environmental quality and liveability in dense neighbourhoods, green spaces are a particularly relevant aspect of any densification process. When provided by private actors, it is critical to understand to what extent these green spaces are accessible and inclusive.

In urban contexts full of rivalry over public goods, economic theories related to club good formation assert that these goods can be more efficiently provided when organized as club good, based on the clear delineation of access rights between user groups (Webster & Lai, 2003). Due to congestion and use conflicts resulting from densification, there may in fact be demand for some level of exclusion. Accordingly, in this paper we ask to what extent club good formation is an inevitable outcome of densification led by private for-profit actors, who may seek to cater to a demand for exclusive access to green space. However, we do not assume club good formation to take place in a policy vacuum; hence, we also ask what strategies planning authorities successfully implement to ensure public access to green spaces in private-led densification. Our research is based on empirical data collected through two in-depth case studies in Switzerland and the Netherlands. In both countries urban densification is a main policy goal of spatial planning (Nabielek et al., 2012; Schweizerischer Bundesrat, 2012) and, correspondingly, the role of private actors in planning processes is becoming stronger (Buitelaar, 2010; Knoepfel et al., 2012; van den Hurk & Tasan-Kok, 2020). The two cases therefore represent two comparable planning contexts.

The article proceeds by developing an understanding of club good theory in the context of densification and urban greening. We then present our analytical framework combining

institutional economics with public policy analysis, emphasizing the implementation of densification as a negotiation process among actors. Our empirical evidence shows how in both cases private actors sought to transform green spaces into club goods by making access exclusive, despite legal agreements foreseeing public access. Planning interventions are most successful when affecting property rights of private actors. At the same time, the implementation of planning objectives requires active monitoring in the post-planning phase, when residents move in and use conflicts arise. Finally, the institutional design for public access needs to be aligned with physical design supporting an open and public character.

The Governance of Densification and the Provision of Green Space

Green Spaces in Densifying Cities as Exclusive Club Goods?

Many cities have anchored densification as a main planning goal, seeking to prevent urban sprawl. Yet as additional land uses are added to the existing built environment and cities become more dense, public spaces and green spaces in particular become increasingly prone to congestion and use conflicts (Arnberger, 2012; Haaland & van den Bosch, 2015). Access to green spaces is crucial for those living in dense urban environments, among others to reduce the sense of overcrowding and to provide access to important ecosystem services (Kabisch, 2015). Yet, congested and overused green spaces, resulting among others from densification, quickly lose quality and attractiveness (Arnberger, 2012). Densification can, therefore, contribute to the demand for more exclusive access to these spaces.

In cities, where rivalry over and congestion of public goods is part of everyday reality, it is sometimes considered desirable to delineate access rights more clearly in order to solve congestion problems. Economic theory related to club good formation asserts that, in the case of congested public goods, its users will demand more exclusive access to the good based on the payment of a fee or any other mechanism of exclusion (Buchanan, 1965; Webster, 2007; Webster & Lai, 2003). Accordingly, if users of a given publicly-accessible green space experience situations of overcrowding, congestion, or rivalry over the space, developers and landowners have an interest in providing green spaces only to a limited group of users to improve its quality and accessibility for "members of the club." These dynamics are clearly visible in, for example, gated communities, where residents are willing to pay a fee to gain exclusive access to certain neighbourhood amenities, including parking, green spaces, playgrounds, or swimming pools (Glasze, 2003; Glasze et al., 2006). Other forms of exclusion imply imposing rules of use or behaviour, as is the case when certain user groups such as dog owners or skateboarders are banned. Club good theory, then, is a particularly relevant framework to help explain the dynamics around green spaces in densification contexts: due to increased demand for the use of green spaces, actors will seek to restrict access rights and make use of the space more exclusive to ensure its quality for a limited group of users.

In cities, many public goods primarily serve a limited group of local users (as is the case for urban green spaces), for which demand typically falls off with distance (Webster, 2007; Webster & Lai, 2003). These therefore entail a certain level of exclusion without explicit mechanisms being in place, for the simple fact that a neighbourhood park is mostly used by those living in the neighbourhood. However, if demand for use of the park exceeds its supply, for example due to densification, developers and landowners can, in the case of privately-owned spaces, impose additional forms of exclusion by restricting access for certain user groups. Exclusion is

thus a necessary condition for club good formation, club good theory having been described a theory of optimal exclusion and inclusion (Buchanan, 1965; Webster & Lai, 2003). However, as a former public good becomes available only to a limited and more exclusive group of "club members," club formation compromises the collective and inclusive nature of public space (Warner, 2011). Being based on exclusion, club formation inevitably reinforces existing inequalities, contributing to the divide between members and non-members (Glasze, 2003, 2005). Nevertheless, there being a demand for exclusivity, provision of exclusive green spaces particularly in densification projects can increase a project's profitability, given that some users may be willing to pay for gaining exclusive access to green space – on the condition of enjoying a well-maintained and congestion-free space (Glasze, 2003; Webster, 2002).

The Governance of Densification and Access to Green Spaces

Densification is a process by which the existing built-environment is intentionally redeveloped or transformed to achieve a higher density in terms of population, land use or both. Based on a new institutionalist approach, we understand densification to be governed through a set of institutions that shape how the involved actors change the use of land and related resources (Gerber et al., 2020). Our approach builds on the Institutional Resource Regime (IRR) framework, developed as an analytical framework to understand the institutional mechanisms that result in sustainable use and management of resources, including land (Gerber et al., 2009, 2020; Knoepfel et al., 2007). Based on a combination of institutional economics and public policy analysis, this approach highlights the causal relations between the institutions at play, the constellations of actors involved and the (un)sustainable condition of the resource (Blake et al., 2020). The IRR framework has previously been applied to understand the institutional mechanisms shaping densification processes both in the Netherlands (Bouwmeester et al., 2023) and in Switzerland (Debrunner et al., 2020).

The processes of densifying and greening cities are governed by two types of institutions that interact most closely with one another: public policies, including land-use planning, and property rights. Land uses are publicly regulated to ensure that sufficient land is available to the well-functioning of society and to determine what land uses are desirable where. Land-use planning regulates, for example, where and how to densify or where to provide additional green spaces. These policies aim to safeguard the public interest in urban development, when needed by limiting the freedom of landowners (Jacobs & Paulsen, 2009). However, property rights are a crucial institution protecting interests in land (Gerber et al., 2009; 2018). Through their property rights, landowners enjoy a powerful position to resist or change the solution imposed by public policy. For this reason, empirical evidence shows that the implementation of land-use planning objectives is often challenging (Knoepfel et al., 2012). Ultimately, planning is "about finding ways to deal with power grounded in strongly protected property rights" (Gerber et al., 2018, p. 3). The role and power positions of actors are, therefore, crucial in understanding how public policy is implemented.

Actors strategically activate and implement the rules defined by public policy, as they are not only on the receiving end of institutional determinants but also: 1) apply strategies to influence rule formulation; and 2) make strategic use of existing rules to pursue their interest to the best of their legal and political ability (Gerber et al., 2009, 2020). For example, developers and investors may seek to negotiate with planning authorities the allowance of increased densities in a given urban setting, or local citizens may appeal against a densification project to protect the

quality of their neighbourhood. The implementation of public policy, therefore, is dependent on more or less formal agreements negotiated among actors that produce case-specific rules. Within the IRR framework, these rules constitute an intermediary variable designated as Localized Regulatory Arrangement (LRA) – defined as "a set of more or less formal agreements that regulate resource uses at stake with regards to specific situations" (Gerber et al., 2020, p. 160). In urban development, LRAs relate, for example, to project-based planning, including project-specific land-use plans, contractual agreements, and property relationships. LRAs are, however, not only based on formal rules, but can also consist of rather informal ones, sometimes outside the legal framework. The LRA allows actors to adapt existing policy frameworks by: 1) complementing existing rules through the negotiation of specific agreements; 2) circumventing the existing rules; or even 3) diverting from the existing rules, for example when seeking to achieve different objectives than those originally foreseen by policy (Gerber et al., 2020). Given the flexibility and adaptability it provides to deal with the complexity of inner-city development, we recognize LRAs as a major variable influencing the governance of densification and access to green spaces.

Densification as Negotiation Between Public and Private Actors

As made visible by the IRR framework, public policies are often not implemented fully due to the powerful position of private actors. Relying on their property rights, they can resist implementation efforts by public actors. For planning to be effective, its objectives need to be translated into the private-law reality of property rights to ensure coherence between different institutions (Knoepfel et al., 2007). In addition, planning authorities increasingly make use of private-law instruments including contractual agreements and public-private partnerships (Buitelaar et al., 2022; van den Hurk & Tasan-Kok, 2020). As such, planners seek to implement planning goals *together* with private actors (Buitelaar, 2010; Knoepfel et al., 2012; van der Krabben & Jacobs, 2013). These dynamics relate to a general shift towards New Public Management, by which project-based planning and an increasingly managerial and entrepreneurial role of planners have become common practice (Gerber, 2016). Planners strategically combine instruments based both on public and private law to enjoy more flexibility and the possibility to negotiate in great detail the implementation of urban development (van den Hurk & Tasan-Kok, 2020). Therefore, in order to appraise the outcome of densification, understanding not only how densification is negotiated among actors but also how the public actor makes strategic use of the available planning instruments to control its implementation is a key element of our analysis.

Research Questions and Hypotheses

Based on the above, this paper aims to answer the following questions:

Research Question 1

To what extent is club good formation an outcome of densification when led by private for-profit actors?

Hypothesis 1: In the context of densification and potential congestion of urban spaces, there is an economic incentive for developers to provide green spaces as club good. Selling these as exclusive amenity drives up rental prices and real-estate values, therefore increasing profitability.

It is therefore in the interest of for-profit actors to "clubify" green spaces by installing mechanisms of exclusion, making club good formation an expected outcome of private-led densification.

Research Question 2

What strategies by planning authorities are successful in ensuring public access to green spaces in private-led densification?

Hypothesis 2: As densification does not take place in a policy vacuum, it can be prevented through effective planning interventions. However, given the complexity of densification, planning authorities cannot only rely on public-law planning instruments, but must strategically combine them with other types of interventions when negotiating planning agreements as part of the Legal Regulatory Arrangement - namely the use of private-law instruments and instruments that allow for restricting property rights according to planning objectives to ensure coherence within the institutional regime.

Research Design

Our research draws on qualitative data collected through two case-studies of private-led densification projects, one in the Netherlands (Utrecht) and one in Switzerland (Biel). The two countries present similarities, mainly in relation to the overall scarcity of land and corresponding densification goals (Nabielek et al., 2012; Schweizerischer Bundesrat, 2012). In both countries, project-based and more flexible forms of planning have gained ground over the last years, with local planning authorities playing an important role in strategically and proactively seeking to implement planning goals. In the Netherlands, municipalities continue to have a particularly active role in Dutch land policy despite a shift towards more passive planning in the years after the financial crisis of 2009 (Meijer & Jonkman, 2020; van der Krabben & Jacobs, 2013). In Switzerland the implementation of land-use plans has traditionally been mostly reactive; however, the revision of the Spatial Planning Act in 2012 has prompted a move toward more proactive and strategic planning interventions especially in large cities (Hengstermann & Gerber, 2015). On top of that, both countries have experienced a shift towards more entrepreneurial forms of governance, linked with a closer involvement of private actors in urban development (Gerber, 2016; Knoepfel et al., 2012; Tasan-Kok, 2010). Analysing private-led densification projects from both countries allows us, therefore, to better understand the outcome of planning for urban green spaces in densifying cities in contexts of land scarcity and project-based planning.

The two case-studies were selected, first, for presenting typical ownership structures of private-led densification in their respective countries: in Utrecht, densification was led by two large developers who owned the land and later sold the completed units to other parties; in Biel, the land was purchased by an institutional investor who developed and still owns the project, providing rental housing. Second, in both cases the negotiation of access to green space was a significant part of the planning process, allowing for our hypotheses to be discussed. Data was collected in 2021 after both projects were completed and delivered. First, relevant documents were analysed, including planning legislation and project-related visions, strategies and plans (see Appendix I for an overview). Second, semi-structured interviews were conducted with all actors involved in the planning process of each project. Our interviewees include those representing the public actor/municipal planning department (2 for each case), the landowner and

developer (3 for Biel; 2 for Utrecht), and a landscape architect (1 for each case) (see Appendix II for an overview). Most interviews were conducted in person taking approximately one hour. Two interviews were conducted online. All were transcribed and coded afterwards. Based on the data collected, we reconstructed the planning process and related negotiations between the public and private actor, allowing for an understanding of their interests and strategic positions. Finally, on-site observations were conducted to understand the outcome of the densification project, focusing on the accessibility of the related green spaces.

Results

Densification in Utrecht, The Netherlands – Project Zijdebalen

Zijdebalen is an inner-city housing project completed in 2019, containing 481 rental and for-sale units divided over four building blocks. It is located on a former industrial site close to Utrecht's historic centre, facing the waterfront of the river Vecht. Utrecht is the fourth-largest city in the Netherlands, and its population of approximately 350.000 is predicted to grow significantly over the next decades. In 2007 the city council approved a spatial vision (*structuurvisie*) for the redevelopment of Zijdebalen, formalizing its intention to change land use from industry to housing. As the plot was purchased by a real-estate investor in 2008, a planning process was initiated to change the land-use plan accordingly. Between 2008 and 2010, several participatory processes with residents were organized on initiative of the landowner, after which a project plan complemented by a new local land-use plan (*bestemmingsplan*) were approved by the city council in 2010. The land-use plan not only allowed a change from industry to housing, but it also outlined detailed regulations regarding the type and size of housing to be provided as well as its urban design. However, due to the financial crisis the project was suspended. Only in 2014 did Zijdebalen receive a second chance, as the plot was now bought by a combination of two large Dutch developers. As is common in the Netherlands, the developers owned the land until construction was completed, being both landowner and developer. The completed project was then sold off to third parties, namely an institutional investor, individual homeowners, and a housing corporation (see Appendix I for an overview of the planning process) (Figure 1).

In 2014, new rounds of negotiations between the new landowners and the municipal planning department took place. The new agreements did not require a change of the already-approved land-use plan, being instead formalized through a private-law contract (*anterieure overeenkomst*) between the landowner and the city. Also in 2014, an institutional investor entered the stage by purchasing a large share of the housing units in "turn-key" format, providing financial certainty to the developers. Construction work began in 2015, with the last building block being completed in 2019. The remaining housing units were sold to individual homeowners, a small share being transferred to a housing corporation for the provision of social housing. Nowadays, all four buildings of Zijdebalen are managed by a homeowner association, constituted by the institutional investor as main owner and the remaining individual homeowners.

All interviewees confirmed that, for an inner-city development like Zijdebalen, entering negotiations as early as possible is crucial to ensure cohesion and transparency. For example, the definition of maximum built density as well as the revision of the city's housing affordability policy were critical aspects conditioning the financial feasibility of the project

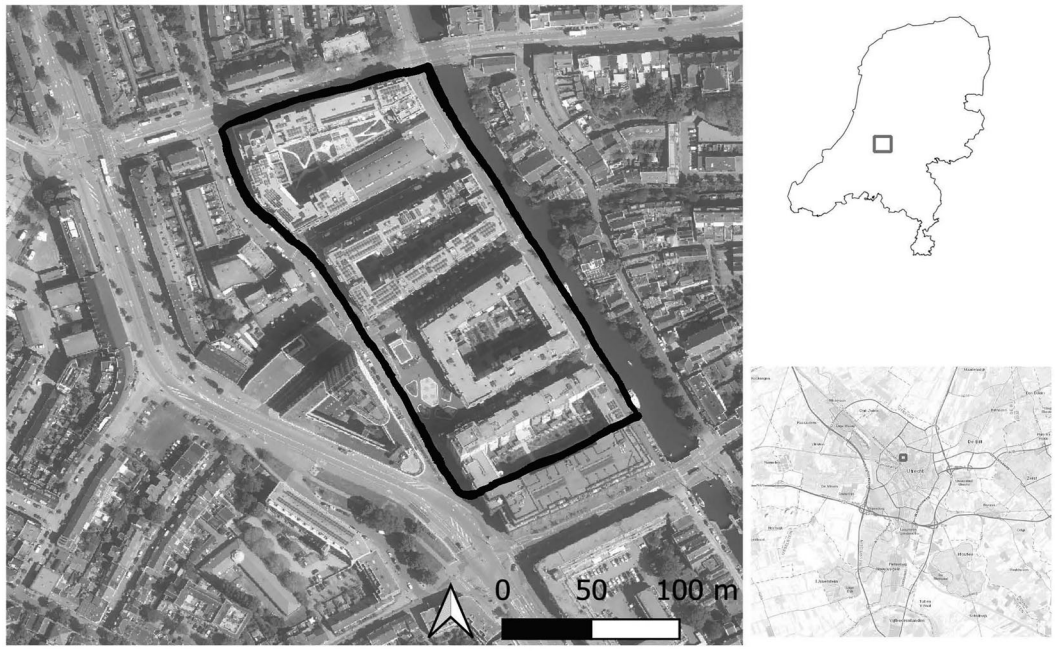

Figure 1. Map of the project area of Zijdebalen (Utrecht). Sources: PDOK Kadaster, BRT Top Grenzen.

(interview developer Utrecht). Based on these negotiations, the obligation to provide a predefined share of social (subsidized) housing was replaced by the obligation to provide medium-priced rental housing (supplied by the institutional investor), given negative market perspectives in 2014 (interview developer Utrecht; interview planning department Utrecht 1). Another aspect of the negotiations was the provision of public green spaces. Due to a low share of green spaces in this part of the city, the additional provision of urban green as well as an improved supply of public space targeting a "heterogenous" population were included as main planning objectives in the land-use plan of 2010 (interview planning department Utrecht 2; Gemeente Utrecht, 2010). Planners negotiated two solutions with the developers: 1) the development of the spaces surrounding the four building blocks as public spaces, containing a neighbourhood square, a playground, two cafés, and several spaces that "invite to stay"; and 2) public access to the inner-yards of two of the four buildings, providing access to additional green areas to balance the lack of green in the public realm. The developer understood the quality of these spaces to be important factors for the success (and profitability) of the project, for which it agreed with the solutions proposed by the city, hiring a landscape architecture office to design the public spaces in collaboration with municipal planners and designers. The inner-yards, however, were designed by the buildings' architects (interview developer Utrecht).

The obligation to grant public access to the inner-yards was included in the land-use plan and later in the private-law contract signed between the developer and the city. However, the land-use plan uses ambiguous wording in setting this requirement, stating that "it is the *intent* that at least two inner-yards are to be publicly accessible" (Gemeente Utrecht, 2010, p. 32 own translation; emphasis added). Besides foreseeing these yards to be used as "play and community space" (Gemeente Utrecht, 2010, p. 32), it does not set any further requirements regarding their

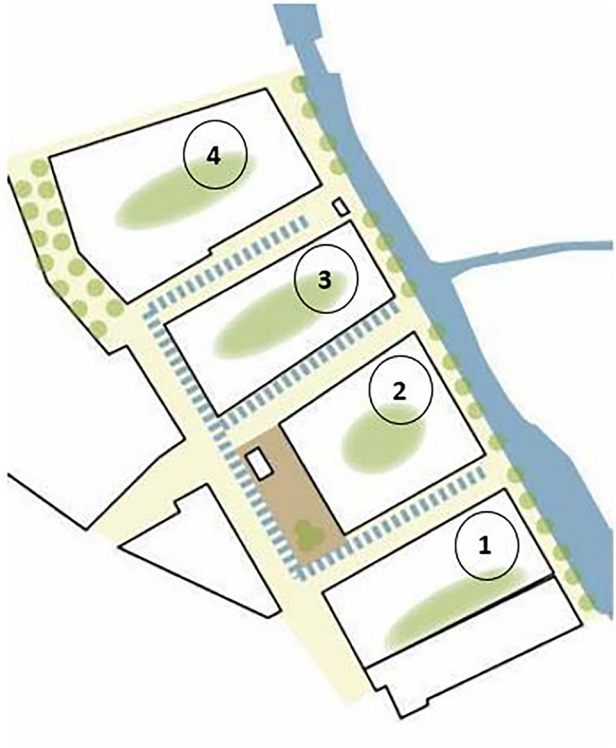

Figure 2. design plan of the green spaces in Zijdebalen. The four building blocks are surrounded by low-traffic streets, some of which contain canals. One side of the project faces the Vecht waterfront. The other side is oriented towards a neighbourhood square, developed in front of building 2. The green elements in the public space are complemented by the green inner-yards, two of which are publicly accessible (building 2 and 4). All canals except the one between building 3 and 4 were removed in later plans to ensure financial feasibility. Source: Gemeente Utrecht (2010).

design. The inner-yards remained in full private ownership of the condominium, and their design and semi-private character emphasizes a clear divide between these gardens and the surrounding public spaces (Figure 2).

Quickly after residents moved into the completed buildings, entrances to the inner-yards were closed off for the public, being accessible only for residents of the respective building. The closing-off resulted from safety concerns, including reports of burglary. While some interviewees, namely the landscape architect and the municipal planners, showed disappointment, the developer and the institutional investor understood the closure of the inner-yards as an almost inevitable outcome without major impacts for the quality of the project. The developer recognized having anticipated that the inner-yards would not function as actual public space, their design giving them a semi-private character - to enter, one needs to go through a gate and up a few steps, clearly delimiting this space from the street:

> "But once you access one of these inner-yards, and you are not from there, you do get the feeling as if, even though being semi-public, you are entering one's private domain. The place cannot really be compared to public space. So I have always had my doubts about it [for the inner-yards to be public]" (interview developer Utrecht).[1]

The institutional investor, as main member of the respective homeowner associations, agreed with closure of the gates in order to protect the interest of its tenants:

> "Yes, what we also took into consideration was, that in the end you want to keep your tenants satisfied. And what you see a lot in this type of places, is that there is indeed nuisance, burglary and so on." (interview investor Utrecht).

The green spaces thus function as exclusive amenity or club good for residents. As explained by the interviewees, enforcing public access was not feasible for the city, despite its agreements with the developer, mainly because ownership had been transferred to the investor and individual homeowners who, based on their safety concerns, had a legitimate reason to protect their private property. As acknowledged by a municipal planner (interview planning department Utrecht 2), although the potential problems of this arrangement became apparent during the planning process, reconsidering it would jeopardize the entire development, as providing additional green spaces outside the buildings clashed with the need to build high densities to safeguard the project's financial feasibility. The inner-yards of Zijdebalen nowadays function as effective club good, being a semi-public good shared among a restricted group of users and not accessible for non-members. The yards are managed and maintained by the respective homeowner associations, each homeowner paying a recurring fee. The public spaces surrounding the four buildings were transferred into public ownership as soon as development was completed, being therefore managed and maintained as public space. Here, however, interviews and on-site observations indicated a lack of green elements, being this a rather solidified and artificial space. Public access to urban green space is thus lacking (Figures 3–5).

Figure 3. in front of building 2, a public square functions as main elements of the public space. Source: own photo.

Figure 4. A closed gate and a Difference in height sets the inner-yards of the buildings as separate from the street. Source: own photo.

Figure 5. An open space between building 3 and 4 provides an additional meeting point, with a café and public benches. The street is complemented with a canal along building 4. Source: own photo.

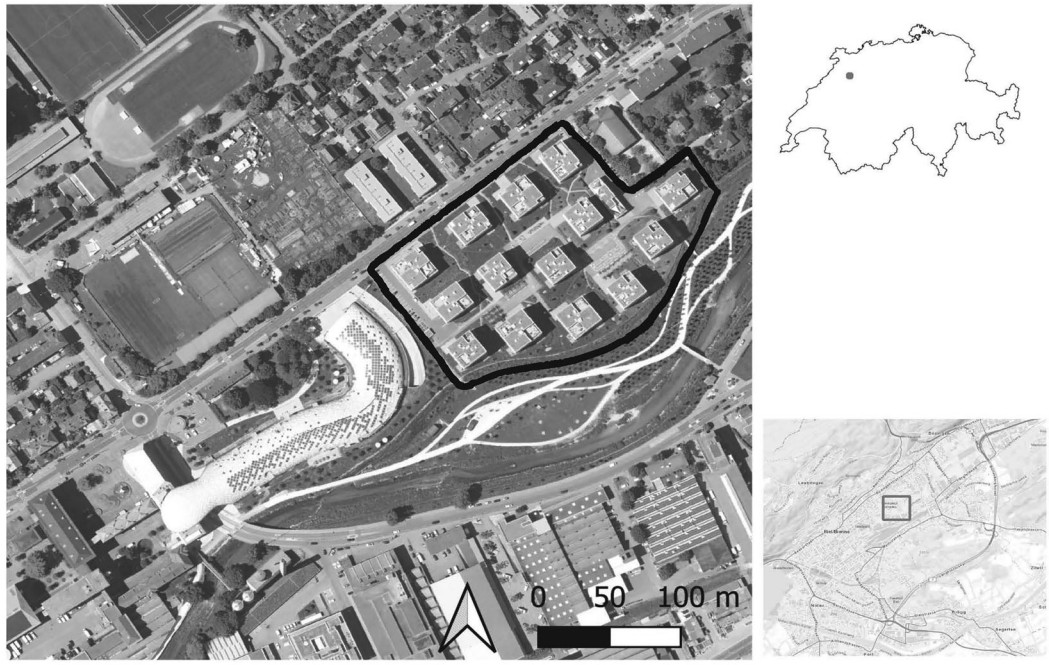

Figure 6. Map of the project area of Jardin du Paradis (Biel). Sources: ESRI Topo, swissTLMRegio.

Densification in Biel/Bienne, Switzerland – Project Jardin Du Paradis

The Jardin du Paradis is a housing project completed in 2018 and containing 279 rental units, developed by a Swiss pension fund on former industrial grounds in the eastern part of Biel/Bienne. Being a medium-sized city with a population of around 60.000, Biel is known for its key role in the development of Switzerland's watchmaking industry. Until today, it is home to some of the world's largest watchmaking brands. However, being hard hit by several global financial crises, by the end of the 20th century Biel was a shrinking city with clear signs of degradation and vacancy. In the 2000s, having a long tradition of land policy, the city turned its fate around, mainly by mobilizing its own land to attract businesses and new investments (Figure 6).

Jardin du Paradis is located in a former industrial area which, in 1999, was included in a so-called "zone with planning obligation" (*Zone mit Planungspflicht*). This type of zoning, established by cantonal law, allows for municipalities to have greater influence over future development within the zone by making a detailed land-use plan (*Überbauungsordnung*) mandatory before development can take place. In 2006, an institutional investor purchased a plot in this area to develop real-estate. However, the planning process effectively started in 2008, when the Swatch Group, with its headquarters in Biel, announced its wish to invest in a new office building next to the already-existing Omega buildings, neighbouring the plot in ownership of the institutional investor. The planning department had a clear economic interest in fulfilling this desire and advanced with a comprehensive planning process for the area, involving, at this point, three actors:

1. The municipal planning department, interested in ensuring high-quality housing development and economic functions, in order to increase the utility and attractiveness of a former industrial area;

2. The Swatch Group, interested in purchasing a plot adjacent to its Omega plot, in order to develop a new Swatch building;
3. The institutional investor, interested in developing housing as an investment asset.

The planning department proposed a land swap with both actors, by which the city exchanged land with the investor in order to sell a plot to the Swatch Group. One plot adjacent to the Schüss river remained in ownership of the city, to be developed as public green space. The land swap enabled the development plans of all three actors and resulted in a profit of 7.6 million Francs for the city of Biel, which was later invested in the park (see Appendix I for an overview of the planning process) (Figure 7).

Simultaneous to the land swap, the city negotiated with each landowner a detailed land-use plan *(Überbauungsordnung)* for their new plots, containing project-based rules and regulations. The land swap as well as the respective detailed land-use plans were approved by referendum in 2008, the land-use plans coming into force in 2010. The detailed land-use plan for Jardin du Paradis contains precise and extensively-negotiated regulations, including an increase of maximum floor space density by 15% to compensate for the fact that, after the land swap, the plot owned by the investor was smaller than its original plot (interview planning department Biel). Moreover, the investor was allowed to provide less outdoor spaces (including playgrounds and green spaces) then the minimum defined by cantonal planning law, due to the project's

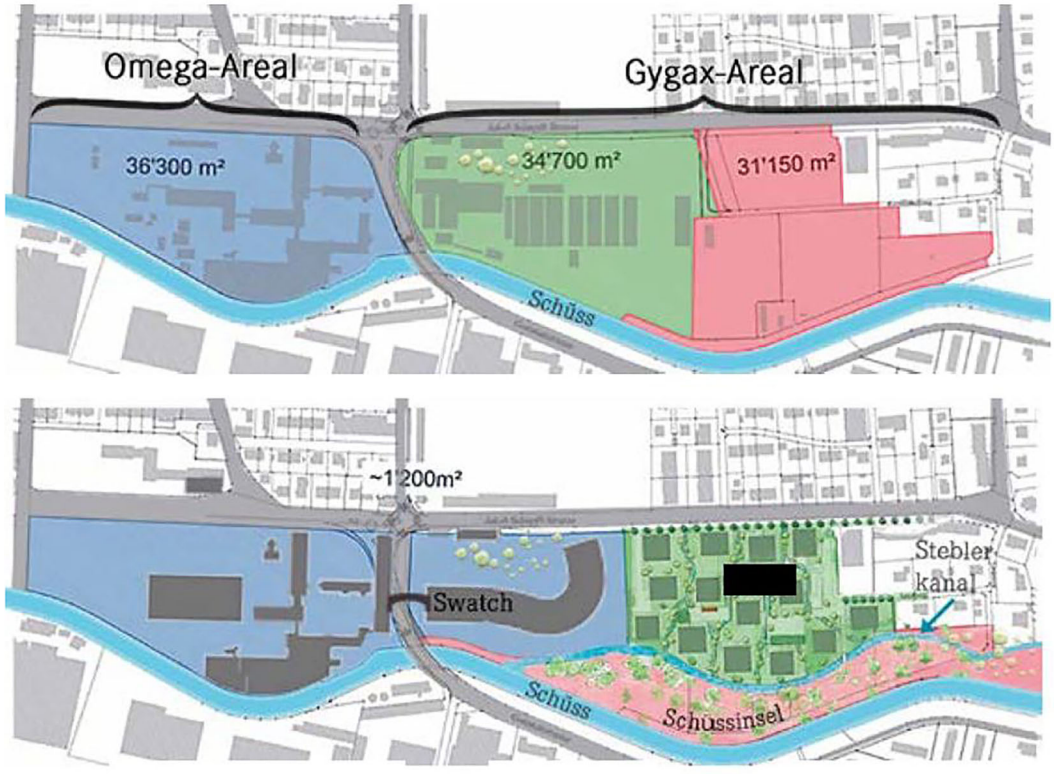

Figure 7. Ownership structures before (above) and after (below) the land swap. Blue: land owned by the Swatch group; green: land owned by the pension fund; red: land owned by the city of Biel. Source: Stadt Biel (2017).

proximity to the new public park (interview landowner Biel 2). The negotiation of the detailed land-use plan was, however, challenging as, according to one interviewee, "the devil is in the details" (interview landowner Biel 3). Besides the above-mentioned adjustments, the planning department made a number of additional demands regarding the design and use of the green spaces surrounding the housing. Based on an urban design concept (*städtebauliches Konzept*) developed in 2008, the planning department intended Jardin du Paradis to function as a link between the street and the public green space, seeking to ensure public access through the privately-owned housing. The planning department furthermore sought to avoid any fencing or gating practices in Jardin du Paradis, to ensure an open and accessible environment and to prevent the idea of a "gated community" – using the detailed land-use plan to legally anchor these aspects of the urban design plan:

> "We introduced a lot of details in the detailed land-use plan [*Überbauungsordnung*]. For example, that the terraces and gardens on the ground-floor could not be privatized, not fenced. That was really based on this idea of transferring the quality shown in the urban design concept [*städtebauliches Konzept*] into the detailed land-use plan. That was a main instrument to ensure quality and to enter negotiations with [the institutional investor]" (interview planning department Biel).

In the end, the detailed land-use plan regulates that the green spaces of Jardin du Paradis are to function as "community space," serving the residents while simultaneously being publicly accessible. Public access was registered as public easement in the land register, including the obligation for the landowner to maintain these public pedestrian paths, which provide easy access to the public green space from the main road. After residents moved in, however, maintaining an open space proved to be more difficult. Despite the legal regulations, the new residents started to "privatize" green spaces by putting up fences and other forms of gating. This clashed with the city's intention to maintain an open and accessible character. Although the landowner was aware, it waited to explore the reaction of the city, having an interest in providing residents with the possibility to delimitate their own private terraces (interview landowner Biel 1). Mainly, the landowner sought to defend the residents' interest of privacy and exclusion:

> "I do understand the city, why they wanted it like this, for the appearance and the perception. But for us that [no privatized terraces] was a problem, as many tenants did not want to be so exposed … because it's also a crossing to the Schüssinsel [public green space] (…) Many are disturbed by this, so that was a potential conflict between the city and us. So we had to work it out." (interview landowner Biel 1).

The planning department, however, quickly demanded the landowner to ensure that fencing structures were removed, as these did not comply with regulations. As a result, a new round of negotiations took place, resulting in a compromise: only removable and temporary structures such as plant pots or pallets are now allowed to fence off terraces. Despite these challenges, the green spaces of Jardin du Paradis function as foreseen during the planning process: access to the plot is public, however the uses provided are oriented towards residents only – as indicated by a sign, the picnic tables are for exclusive use by residents of Jardin du Paradis. Small terraces surrounding ground-floor dwellings are demarcated for private use, but using only removable items. In Biel, the city ensured additional provision of public green space through a greening project on its own land. At the same time, it aimed for ensuring public access to the green spaces of Jardin du Paradis, as extension of and connection between the park and the street. Nevertheless, and despite proximity to the public park, we identified an interest of the landowner to provide green spaces as exclusive amenity for its tenants, in order to enhance the attractiveness of living in Jardin du Paradis (Figures 8–10).

Figure 8. The public green space with the buildings of Jardin du Paradis in the back. Source: own photo.

Figure 9. An open space in the Middle of the housing project provides a playground and several benches. Source: own photo.

Figure 10. Only temporary structures are allowed to demarcate private outdoor spaces in Jardin du Paradis. Source: own photo.

Discussion

In this article, we firstly asked to what extent club good formation is an outcome of densification when led by private for-profit actors. Our hypothesis is confirmed, as both case-studies show how landowners and developers have an interest in providing a certain level of exclusiveness in relation to green spaces, to cater towards residents (or, in these cases, customers). In both cases, private actors recognized a demand for privacy and exclusive access in "this type of places" (interview investor Utrecht): more or less dense urban areas where many non-residents ("strangers") make use of the space. Even though in Biel the city ensured sufficient supply of public green space, residents of Jardin du Paradis showed a desire to fence off the space adjacent to their housing units from passers-by. As urban spaces become congested or use conflicts arise, users seek to adapt and reorganize access rights to the space and to install more explicit exclusion mechanisms to "clubify" the space (Webster, 2007). In line with club good theory, our cases show how densification can contribute to increased use conflicts and, consequently, a growing demand for exclusive access to green spaces – in particular when residential spaces become used by non-residents.

In both cases, the respective planning authorities implemented strategies aiming to ensure public access to privately-provided green spaces. These strategies were used in the negotiation of project-based and context-specific planning rules, underlining the importance of the Local Regulatory Arrangement (LRA) as variable to understand how public policy is translated into specific densification projects (Blake et al., 2020). The negotiation process provided room for manoeuvre to the involved actors (both public and private) to adapt general planning regulations to their own case-specific interests: for example, in Biel maximum floor space density was increased to ensure the landowner's acceptance of the land swap, and in Utrecht the obligation to provide social housing was adapted to ensure financial feasibility and thus implementation of

the development. As our cases show, the negotiation of the LRA ensures flexibility but also provides leeway to deviate from public policy goals.

In our second hypothesis, we argued that for planning interventions to be successful in ensuring public access to green spaces in private-led densification, planners need to go beyond public-law instruments by using private-law instruments such as contracts and instruments that allow for engraving planning objectives in property rights. The hypothesis is partially confirmed - both cases show that, considering the complexity of implementing densification, the strategic use of a variety of instruments is necessary to ensure the successful integration of public policy goals. Legally anchoring these project-based agreements is a crucial part of the planning process (van den Hurk & Tasan-Kok, 2020; van der Krabben & Jacobs, 2013). In Biel, this was done mostly through the detailed land-use plan; in Utrecht, the land-use plan was complemented with a contract. However, as our findings confirm, anchoring a rule through legal instruments is not enough to ensure its actual implementation (Gerber et al., 2018). This was most evident in the case of Zijdebalen, where the (ambiguous) obligation to provide public access to the inner-yards did not suffice to ensure *de facto* public access. The homeowner associations were able to make use of the leeway resulting from the incoherence between public policy and property rights: while the public-law instrument imposed public access, the inner-yards remained in full private ownership and the freedom of the landowner to exclude others from making use of its private property was not restricted. This incoherence resulted in failed implementation. In the case of Jardin du Paradis, the registration of public easement on private land – directly restricting private property in the land register - guaranteed public access to the privately-owned green spaces, despite the interest of the landowner to provide these spaces as exclusive amenity for its tenants.

Moreover, our findings show that the LRA goes beyond negotiating legal rules (Gerber et al., 2020) – rather, it involves a constant revision of the rules and their application, and informal ad-hoc agreements once densification is implemented. Agreements on public access to private spaces require monitoring of compliance and a continuous revision of the LRA in the *post*-planning phase, as this is when the spaces become used and, inevitably, use conflicts start to emerge. In Jardin du Paradis, residents sought to delineate parts of the green spaces for private use, the landowner not intervening until the planning department did. The public and open character of these spaces – as foreseen by the detailed land-use plan – was ensured only by the active monitoring role of the planning department after implementation. The fact that Jardin du Paradis was still under ownership of the same actor, facilitating renegotiation of former agreements, seems to have contributed to the successful intervention by the city of Biel.

Finally, what distinguishes our cases is their design and morphology: while Jardin du Paradis was intentionally designed as open space based on a design concept developed on behalf of the city, Zijdebalen was designed as closed space with its inner-yards clearly delineated from its already dense surroundings. As emphasized by Webster (2007), physical design needs to be aligned with the carrying capacity of the space: in Zijdebalen, an exclusionary design led to an exclusionary space. Some interviewees argued that the inner-yards of Zijdebalen could not have functioned as truly public space, serving the building's residents in the first place. Indeed a study in Berlin showed that, even if publicly accessible, inner-yards clearly connected to the surrounding private property "effectively seal them off from the rest of the neighbourhood" (Marquardt et al., 2013, p. 12). The inner-yards of Zijdebalen echo many of the challenges related to privately-owned public space (POPS): they are often not designed for public access and use, but instead made as private and uninviting looking as possible (Lee, 2022). The interest

of the private owner of the space is, first and foremost, to serve a limited group of users, such as the building's residents or employees. Critiques to this type of configuration are wide-spread and its implications for accessibility and inclusiveness well-known (Lee, 2022; Németh, 2009; Van Melik & Van Der Krabben, 2016). Hence, the fact that this design was approved without the necessary changes to property rights provided sufficient leeway to the homeowner associations to "clubify" these spaces. Being so, in dense cities, where use conflicts are always imminent (Madanipour, 2003), ensuring *de facto* public access to green spaces in private-led densification projects requires a strategic combination of planning instruments affecting property rights of the landowner, ongoing monitoring of enforcement and compliance even after the planning phase, and an appropriate open design that enables the public character of the space.

Conclusion

Green spaces are crucial infrastructures in cities, in particular in dense residential areas. While some benefits derive from the mere presence of urban green, such as its cooling effect, potential for rainwater infiltration, and positive effect on air quality (Haaland & van den Bosch, 2015), many ecosystem services require accessing and making use of green spaces – as is the case for effects on well-being, stress reduction, and thermal comfort (Kabisch, 2015; O'Brien et al., 2017). Despite the importance of green space accessibility, our empirical evidence shows how private actors have an economic interest in providing green spaces as club goods. To counteract club formation, planners need to go beyond a narrow approach towards planning based only on public-law instruments. Instead, three additional types of interventions prove to be essential in contexts of densification and land scarcity: 1) planners need to restrict and intervene in property rights to translate planning objectives and ensure coherence among institutions; 2) they need to actively monitor the implementation of planning objectives over time, including in the post-planning when use conflicts arise; and 3) they need to ensure physical design that enables the public character of green spaces. Mainly, our research provides empirical evidence of the discrepancy between planning objectives and effective implementation within a context of private property. The complex process of implementing densification requires ongoing negotiation of interests among actors. Analysed as an intermediary variable between the institutional regime and effective implementation (LRA), this negotiation process provides flexibility and adaptability to the actors involved (Bouwmeester et al., 2023; Gerber et al., 2020). All interviewees highlighted the importance of compromising and finding common ground in densification projects. However, the more flexibility and room for manoeuvre the LRA provides, the more leeway developers and residents have to shape the outcome of densification according to their private interest. In our cases, this was made visible by the effort of the respective landowners to circumvent negotiated agreements in order to make access to the green spaces more exclusive and, as such, jeopardize public access. The translation of *de jure* public access into *de facto* public access needs therefore to be accompanied by appropriate and strategic planning interventions.

By analysing two cases from Switzerland and the Netherlands, we have provided empirical evidence of the challenge to ensure public access to green spaces in private-led densification in contexts where project-based and more flexible forms of planning are gaining ground, and where for-profit private actors have a prominent role in determining the outcome of densification. It is when residents move into the newly-completed projects that use conflicts arise, potentially triggering the instalment of mechanisms of exclusion on behalf of "members of the club." However, club formation is not an inevitable outcome of densification. Rather, it is the outcome

of a political process, based on the negotiation of public and private interests – in which certain interests are compromised on behalf of others. In contexts of land scarcity, providing public access to privately-owned green spaces can be seen as a cost-effective solution to the lack of urban green in the public realm. However, to what extent the private provision of green spaces presents a sustainable solution to an overall lack of green space accessibility in the public realm can be questioned. Finally, while our research has focused on the issue of *access* to green spaces, future research should address how the *quality* of new green spaces developed by for-profit actors is affected by private interests, and how this affects what benefits are provided to what types of user groups.

Note

1. Interviews were conducted in Dutch and German. The English translation of all quotes were verified by the respective interviewees.

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Appendix I.Overview of planning process of case-studies

	Biel – Jardin du Paradis		
Year	Event / planning intervention	Description	Name document (if applicable)
2004	Closure of bread factory in Zijdebalen		
2007	Approval of local spatial vision by city council	Outlines planning goals by public actor and defines general spatial framework for future development	*Structuurvisie Zijdebalen 2007*
2008	Purchase of plot by real-estate investor		
2008–2010	Participatory process with surrounding residents		
2010	Approval of urban development program for Zijdebalen by city council	Provides the framework within which future development is to take place, including type of uses, access, infrastructure, etc.	*Stedenbouwkundig Programma van Eisen (SpvE) - Zijdebalen 2010*
2010	Approval of local land-use plan by city council	Provides the public-law framework for development, building upon the urban development program	*Bestemmingsplan Zijdebalen 2010*
2013/ 2014	Purchase of plot and project by combination of two developers		
2014	Agreement between developers and institutional investor	Institutional investor buys up over 50% of apartments to be build in Zijdebalen in turn-key format	
2014	Agreement between developers and city council	Private-law contract including legal agreements complementing the land-use plan	*Anterieure overeenkomst*[1]
2015	Commission letter on the progress of Zijdebalen	Letter by responsible councilman to municipal commission 'City and Space'	*Commissiebrief voortgang Zijdebalen – 5 Maart 2015*
2015	Start construction		
2019	Completion		
	Biel – Jardin du Paradis		
1999	Approval of zone with planning obligation for Gurzelen	Type of zoning making mandatory the approval of a detailed land-use plan before development takes place	*Zone mit Planungspflicht – Gurzelen ZPP 4.1 / 4.2 / 4.3*
2006	Purchase of plot by institutional investor		
2008	Announcement by Swatch to build new headquarters in Biel		
2008	Jury selection of urban design plan for Gurzelen	Public competition for urban design plan, to serve as (non-binding) basis for development of the three plots in Gurzelen	*Rapport final du comité d'experts - Solutions pour l'élaboration des conditions-cadre du plan de quartier "Aire Gygax" (Stadt Biel, 2008)*
2008	Approval of land swap by voting majority	Land exchange organized by city of Biel with institutional investor and Swatch Group	*01-0811 Abstimmungsbotschaft_28-30 November 2008*
2008	Approval of detailed land-use plans by voting majority	Detailed land-use plans following the obligation set by the 'zone with planning obligation'	*Überbauungsordnung "Gygax-Areal Ost" (ZPP 4.3, Teilzone 4.3.2)*
2010	Coming into force of detailed land-use plans		
2013			

(*continued*)

Continued.

	Biel – Jardin du Paradis		
Year	Event / planning intervention	Description	Name document (if applicable)
	Approval of credit for public green space by voting majority		*02-1404 Plan_Gesamtprojekt_ Schuessinsel; 05-1704_Prix_FlaneurOr*
2014	Start construction Jardin du Paradis		
2014	Introduction of public easement into land register	Introduction of obligation to provide public access to privately-owned land in Jardin du Paradis	*Grundbuch_9480_Auszug-Biel-Bienne-371-9480*
2015	Start construction public green space		
2017	Inauguration of public green space		
2018	Completion of Jardin du Paradis		
2019	Inauguration of Swatch headquarters		

[1]Due to its confidential nature, this document could not be accessed. Information on its content is therefore solely based on interviews.

Appendix II. Overview of interviews

	Biel – Jardin du Paradis		Utrecht - Zijdebalen	
Type of actor	Role of interviewee	Reference	Role of interviewee	Reference
Public actor	Planning department Biel (project manager)	(interview planning department Biel)	Planning department Utrecht (project manager)	(interview planning department Utrecht 1)
	Planning department Bern (expert on greening)	(interview planning department Bern)	Planning department Utrecht (urban designer)	(interview planning department Utrecht 2)
Private actor	Landowner and developer (current manager)	(interview landowner Biel 1)	Developer (former manager)	(interview developer Utrecht)
	Landowner and developer (former manager)	(interview landowner Biel 2)	Investor and landowner (current manager)	(interview investor Utrecht)
	Landowner and developer (external consultant)	(interview landowner Biel 3)		
External	Office for urbanism and landscape architecture	(interview landscape architect Biel)	Office for urbanism and landscape architecture	(interview landscape architect Utrecht)

Article 3: Planning the Green and Dense City: Municipal Strategies for Urban Greening in Densification Projects[16]

Status: Article submitted to *Cities*.

- This article focuses on the role of the municipal actor in strategically affecting the integration of urban greening in densification projects, and on the potential of land policy instruments to ensure policy implementation. It thus addresses hypotheses 2 and 3.
- The article is based on the analysis of all four cases, allowing to take into account the role of different institutional regimes across the Dutch and the Swiss cases, as well as the role of public and private landownership.
- Taking these variables into account, the article's main research question asks what municipal strategies are successful for integrating urban greening in densification projects, hereby addressing the second main research question of this thesis (chapter 1).
- Based on the IRR framework, the article hypothesizes that these strategies are successful when making use of the opportunities provided by the institutional regime, as well as the leeway and flexibility within the LRA. Hence, strategies can focus on (1) the mobilization of public land, (2) the strategic combination of land policy instruments, (3) facilitating private investment, and (4) building public-private partnerships.
- The findings show that these strategies are successful as long as these enhance the coherence of the institutional regime, contribute to the convergence of public and private interests, and ensure legal public access to green spaces.

[16] This is a preprint version of an article submitted to the journal *Cities* in September 2024.

Planning the Green and Dense City: Municipal Strategies for Urban Greening in Densification Projects

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ABSTRACT

Many cities worldwide aim to simultaneously increase density and green space provision in line with urban sustainability. To integrate urban greening in densification projects, however, is highly challenging given the difficulty to ensure implementation in cities characterized by fragmented landownership and a general scarcity of land. Building on a new-institutionalist approach that recognizes the critical role of public policy, landownership, and project-based negotiations for urban development, we ask what municipal strategies are successful in integrating urban greening in densification projects. We rely on four case studies of densification projects in the Netherlands and Switzerland, as two countries where inner-city development and urban sustainability are high on the agenda of growing municipalities. Through our analysis, we provide insights into the conditions of success that increase the capacity of planning authorities to achieve two seemingly contradicting policy goals in contexts of land scarcity. We identify four planning strategies: 1) the mobilization of public land; 2) the strategic combination of land policy instruments; 3) facilitating private investment; and 4) building public-private partnerships. These strategies are successful as long as these enhance the coherence of the institutional regime and contribute to the convergence of public and private interests. Finally, to ensure that urban greening is not integrated solely based on its economic value, legal public access to green spaces needs to be guaranteed.

INTRODUCTION

Urban sustainability requires cities that are both compact and green. Therefore, many cities worldwide aim to simultaneously increase density and green space provision. In reality, however, combining both sustainability goals is challenging. As land in cities is scarce, densification often goes at the expense of existing green space, resulting in a decline of green space availability in densifying cities (Balikçi et al., 2022; Giezen et al., 2018; Xu et al., 2018). Densification can moreover lead to the fragmentation of green infrastructures, which significantly impacts the provision of ecosystem services (Madureira & Monteiro, 2021). Even when policies are in place that require an increase in green space supply, densification goals tend to be prioritized by planners who emphasize high-density mixed-use development (Giezen et al., 2018). In particular in contexts where land is mainly owned by private actors, planners fail to effectively enforce green space regulations in densification processes (Erlwein et al., 2023; Khoshkar et al., 2018; Verheij et al., 2023). Despite the need to develop cities that are dense *and* green, little guidance is available to planners on how to successfully navigate the spatial trade-offs between densification and urban greening (Artmann et al., 2019).

Densification does not inevitably happen at the expense of green spaces. In fact, a study in Berlin has showed how densification and urban greening can be combined, as over the last decades the city experienced an increase in both vegetation cover and population density across its neighbourhoods (Wellmann et al., 2020). This, however, raises important social concerns. Above all, greening processes as part of urban growth and neoliberal urbanism have been linked to gentrification, as the enhanced

environmental quality of new green spaces drives up housing prices in the surrounding neighbourhood (Béal, 2017; Checker, 2011; Quastel, 2009). Indeed, developers and real-estate actors have long recognized the economic value of green spaces, mobilizing urban greening to increase land rents (García-Lamarca et al., 2022). As a result, green spaces are developed by private actors based on exclusion and surveillance, which significantly compromises the public accessibility of green spaces (Pearsall & Eller, 2020; Verheij, 2024). Even when urban greening is integrated in densification projects, this does not guarantee equal access to green spaces. Therefore, in this article we aim to contribute to a better understanding of planning approaches that allow for combining densification and greening policies in the context of growing cities and subsequent land scarcity. We do so by focusing on the outcome of recently-completed densification projects in relation to access to green spaces.

The implementation of spatial planning goals in cities is generally challenging, due to fragmented landownership in urban areas and the need to navigate a tight web of interests and power relations (Davy, 2012; Khoshkar et al., 2018). Planners need to negotiate with landowners who, based on their property rights, are in a powerful position to resist public policies (Knoepfel et al., 2007). Strategic and proactive approaches are therefore needed to navigate diverging interests and ensure the implementation of policy goals (Bouwmeester et al., 2023; Lacoere & Leinfelder, 2023). Given land scarcity, however, the mutual implementation of densification and greening goals requires navigating not only conflicting public and private interests, but also conflicting public policy goals. There is a general lack of knowledge on how to manage urban green space provision in growing and densifying cities (Balikçi et al., 2022; Haaland & van den Bosch, 2015; Khoshkar et al., 2018). This research focuses on the strategies followed by planning authorities to ensure green space provision in densification processes. We ask what municipal strategies are successful in achieving green space provision and access, taking into account the importance of project-based negotiations and strategic action to understand policy implementation. Hereby, we aim to contribute to a better understanding of how planning can achieve urban development that is both compact and green Our research builds on four densification projects in the Netherlands and Switzerland, as two countries where inner-city development and urban sustainability are high on the agenda of growing municipalities. Based on our analysis of two different planning contexts, we provide insights into the conditions of success that increase the capacity of planning authorities to achieve two seemingly contradicting policy goals in contexts of land scarcity. We identify four strategies across our cases: 1) the mobilization of public land; 2) the strategic combination of land policy instruments; 3) facilitating private investment; and 4) building public-private partnerships.

PLANNING FOR DENSIFICATION

Statutory planning instruments aim to allocate and distribute land uses according to public policy objectives, for example through zoning plans. This, however, is a rather passive approach as it allows for restraining and restricting spatial development without effectively enforcing the implementation of what is deemed politically desirable. Passive planning is effective mainly to preserve the status quo and avoid any undesirable land use in the future (Needham, 2014). To achieve planning goals and steer spatial development, a more active approach is needed. This entails working with landownership structures through land policy, defined as the strategic combination of traditional planning instruments with other instruments, such as property-based

instruments or financial incentives, to proactively steer spatial development (Davy, 2012; Gerber et al., 2018). Landowners have a powerful role in spatial development given that their interests are well-protected by property titles (Gerber, 2012; Knoepfel et al., 2007). Therefore, planners need to work together with landowners, particularly in cities defined by fragmented and mostly private landownership. Broadly speaking, spatial planning goals cannot be implemented without the collaboration or coercion of the respective landowners. The strategic approach of land policy can thus lead to more effective implementation of planning goals as it strengthens the position of planners beyond statutory planning.

In cities, these strategic planning approaches typically translate into project-based planning and a more entrepreneurial role of planners, who seek to collaborate with private actors while applying a range of instruments beyond regular zoning plans (Debrunner & Hartmann, 2020; Holsen, 2020; Tasan-Kok, 2010). Densification in particular is regulated by, for instance, project-specific land-use plans, private-law contracts, and informal agreements. As these instruments allow for flexibility, the details of urban development can be extensively negotiated between public and private actors. Being so, it is on the level of specific development projects that urban greening can be combined with densification. We therefore analyse how municipal strategies can affect these negotiations and resulting planning agreements, in order to ensure the effective implementation of densification and urban greening. To analyse these strategies, we rely on the Institutional Resource Regime (IRR) as analytical framework that allows for identifying potential conditions of success. Moreover, we build on the concept of Local Regulatory Arrangements (LRAs) to examine to what extent strategies affecting these project-based negotiations result in effective policy implementation.

ANALYSING PLANNING STRATEGIES FOR DENSIFICATION AND URBAN GREENING

The IRR framework builds on a new institutionalist approach, where resource uses are understood through the respective institutional regime (Gerber et al., 2009; Knoepfel et al., 2007). Institutions are established laws, contracts, norms, and customs that produce and predict patterns of behaviour and interactions by and among actors. Any given resource in society is regulated by institutional rules which regulate the behaviour of actors in relation to the resource. In the case of land, resources uses are regulated by public policies and property rights (Gerber, 2012). Public policies are understood as “a series of intentionally coherent decisions or activities taken or carried out by different public actors with a view to resolving a collective problem” (Varone & Nahrath, 2014, p. 238). Policies make use of instruments to change the behaviour of the policy’s target group. For land-use planning, the target group are the landowners, as planning instruments seek to regulate how landowners can make use of their land. Yet landowners are protected through their property titles. While public policy aims to change the behaviour of landowners, property titles protect private interests in land. This incoherence of the institutional regime often results in the incomplete implementation of spatial policy goals. In practice, implementation is context-dependent and mostly negotiated among actors. These case-specific negotiations result in what is termed the Localized Regulatory Arrangement (LRA), as contextual and time-specific rules developed by and among actors through self-organization mainly to adapt the institutional regime to a localized situation (Gerber et al., 2020; Viallon et al., 2019). The

LRA is thus the outcome of the selective activation of general policy rules (Bouwmeester et al., 2023).

According to the IRR framework, the institutional regime and the Localized Regulatory Arrangement are key variables to understand the implementation of spatial planning goals. It is therefore a useful framework to analyse the strategies used by planners to implement urban greening objectives in densification processes, as it stresses not only the role of institutions as well as the strategic agency of actors. Following the IRR framework, we understand strategies as the strategic action taken by the municipal planning authority to influence the Localized Regulatory Arrangement in order to achieve policy goals related to densification and urban greening. We hypothesize that these strategies are successful when making use of the opportunities provided by the institutional regime, as well as the leeway and flexibility within the LRA. Hence, strategies can focus on (1) the mobilization of public land, (2) the strategic combination of land policy instruments, (3) facilitating private investment, and (4) building public-private partnerships (Figure 1). Based on this conceptualization, we seek to identify the conditions of success that increase the capacity of planning authorities to simultaneously achieve densification and urban greening goals.

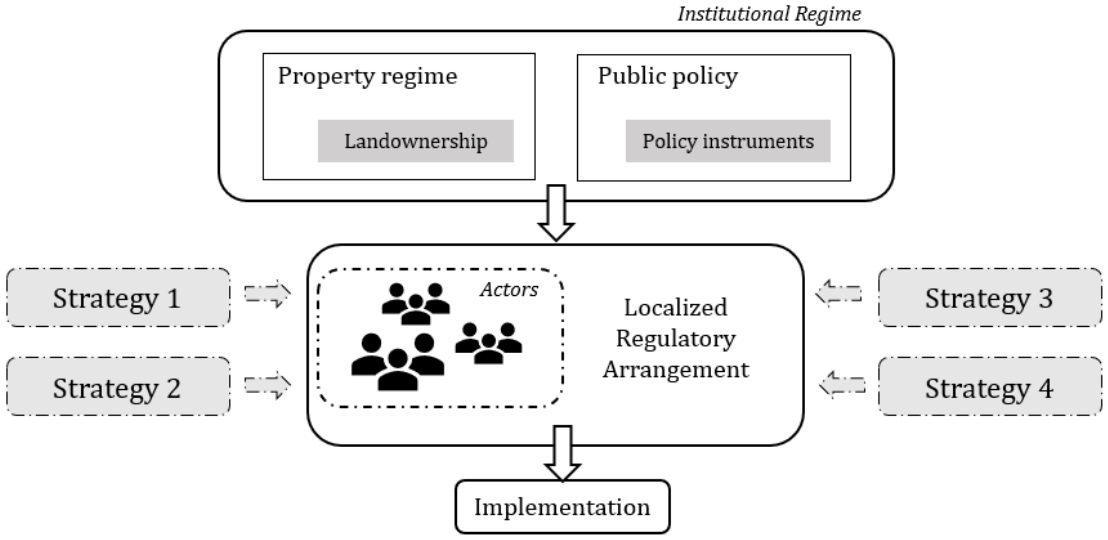

Figure 1. Schematic figure showing the analytical framework based on the IRR and the role of municipal strategies: the mobilization of public land (strategy 1); the strategic combination of land policy instruments (strategy 2); facilitating private investment (strategy 3); and building public-private partnerships (strategy 4). Through these strategies, planners can influence the LRA to achieve policy implementation.

Strategy 1 – Mobilization of public land: Public landownership enables planners to implement spatial planning goals without the need to negotiate with private landowners. Publicly-owned land therefore mitigates the incoherence of the institutional regime, as land is owned by the public actor who is also in charge of formulating public policy. It can thus be mobilized to achieve desirable land uses, including densification and public green spaces.

Strategy 2 – Strategic combination of land policy instruments: Planners that combine a variety of planning instruments beyond traditional zoning plans and regulations are more successful in achieving plan implementation, as this strengthens their position in negotiations with private actors. Instruments can range from financial incentives and

public investment to private-law contracts. Instruments that affect the property rights of landowners are most successful, as these increase the coherence of the institutional regime.

Strategy 3 – Facilitating private investment: Planning regulations such as increased density allowances and development rights make inner-city development more profitable and therefore attract private investment in the built environment. Planners can use this momentum of private-led development to require investments in green space provision, making use of the leeway provided by project-based negotiations.

Strategy 4 – Building public-private partnerships: Through partnerships, planners can invest in long-term collaborations with private actors in urban development and hereby negotiate the integration of urban greening goals, for example through combined public and private investments. PPPs are extensive Localized Regulatory Arrangements that allow for ongoing collaboration between public and private actors, while simultaneously enabling flexibility to negotiate green space provision in densification projects.

RESEARCH DESIGN & METHODOLOGY

This article builds on four in-depth case studies of densification projects in the Netherlands and Switzerland, as two countries where growing municipalities tend to prioritize urban sustainability and inner-city development. In both countries, the overall scarcity of land related to its respective geography have led to densification being generally emphasized as preferred form of urban development (Nabielek et al., 2012; Schweizerischer Bundesrat, 2012). Nevertheless, the two countries differ substantially in terms of planning systems and cultures. In Switzerland, spatial planning policy developed in the 1960s and 1970s as response to ongoing urban expansion and the political desire to separate buildable from non-buildable land (Varone & Nahrath, 2014). The planning system has been mostly reactive, seeking to avoid undesirable land uses rather than steer spatial development. The revision of the federal Spatial Planning Act in 2012, however, has led to more proactive and strategic planning approaches that favour densification (Weilenmann et al., 2017). Dutch municipalities, on the contrary, have traditionally played a particularly active role in land development (Meijer & Jonkman, 2020; Needham, 2014; van der Krabben & Jacobs, 2013). The Dutch way of active land policy implies that municipalities buy land, prepare it for development, and subsequently sell the land to housing developers, hereby maintaining control over land development. Yet in recent years this form of land policy has become less feasible and less desirable (Buitelaar & Bregman, 2016). With spatial planning being decentralized and new planning instruments being introduced, municipalities have shifted to a more passive role, favouring initiatives from market-based actors (Buitelaar, 2010; Meijer & Jonkman, 2020). Based on these differences, comparing cases from both countries allows us to analyse different types of municipal strategies and interventions while simultaneously locating these differences within the broader context of the respective planning system.

Our case studies are based on recently-completed densification projects that involved some form of urban greening, be it through the supply of public or private green space. Two cases are located in the Netherlands and two in Switzerland. Rather than constituting a representative sample of densification projects, cases were selected for comprising a diversity of variables: for each country we selected one case of public and

one of private landownership; one in a large urban centre and one in a medium-sized town (Table 1). Our empirical data builds on the analysis of planning and policy documents for each case; semi-structured interviews with actors, including municipal planners, developers, investors, (landscape) architects, and planning consultants (see appendix I for an overview); and on-site observations to identify and assess the outcome of each project in terms of green space supply and access. Data was collected during a period of three years (2021 – 2023) and subsequently coded and analysed according to our analytical framework. Although the sample is inevitably limited, the empirical data provide relevant insights into the strategic approaches followed by municipalities and, importantly, the implications of these strategies for access to green spaces.

	Huebergass (Bern, CH)	**Jardin du Paradis (Biel, CH)**	**Zijdebalen (Utrecht, NL)**	**Defensie-Eiland (Woerden, NL)**
Type of city	Large central city	Medium-sized city	Large central city	Medium-sized city
Former land use	Allotment gardens	Garden center and sport fields	Small industry and retail	Military warehouse
Initiative	Municipality	Institutional investor	Private developer	Municipality
Completed	2021	2018	2019	2020
Current landowner	Municipality	Institutional investor	Institutional investor, housing corporation and individual homeowners	Individual homeowners, housing corporation
Housing	103 cost-rent cooperative units	279 market-based rental units	481 units: 50% mid-level rental units, 40% owner-occupied, 10% social housing	201 units: 75% high-priced owner occupied, 15% rental, 10% social housing
Green space	Public green space	Private green space with public right of way; public green space	Privately-owned court yards	Private gardens and public green space

Table 1. Overview of the four case studies and relevant variables.

FOUR CASES OF URBAN DENSIFICATION IN THE NETHERLANDS AND SWITZERLAND

Case A: WBG Huebergass (Bern – Switzerland)

Bern is the federal capital and fifth-largest city of Switzerland with approximately 140.000 residents. As its population is growing, the city aims to increase the supply of mainly family-oriented and affordable housing within the existing city. The Huebergass project is a densification project completed in 2021. The plot is owned by the city of Bern and was formerly used for allotment gardens. Prioritizing inner-city development, the city started a planning procedure during the 2000s to remove the gardens and redevelop the land. As removing the allotment gardens faced resistance from the gardeners and surrounding residents, the city decided to develop only half of the plot and leave the remaining half for public green space provision. A new land-use plan was approved in 2011, after which the city launched a competition to select a developer. Given its aim to develop affordable housing, it selected a non-profit developer to provide housing based on a rent cap. Given its position as landowner, the city was able to control the

development and impose regulations beyond the land-use plan. The land was given out in ground-lease to the cooperative developer, who started construction in 2019. Simultaneously, the other half of the land was given out to a neighbourhood association to develop and manage its temporary use, during which a green space project was developed by the city. The association managed the land from 2019 to 2022, after which it was closed and redeveloped into a public park. The cooperative housing was completed in 2021 and provides over 100 affordable non-profit housing units, as well as a kindergarten, a café, community spaces, and a shared outdoor area.

Case B: Jardin du Paradis (Biel – Switzerland)

Biel is a medium-sized city with a population of around 60.000 and well-known for its historic role in Switzerland's watchmaking industry. Jardin du Paradis is a housing project completed in 2018 as part of the redevelopment of the Gurzelen area. Formerly used by small industries and retail, Gurzelen was zoned for densification in the 1990s. One plot was purchased by a Swiss pension fund in 2006 with the aim to develop real-estate. In 2008, the Swatch Group announced its desire to purchase land in Biel to build its new headquarters. To enable this development, the city of Biel organized a land readjustment in Gurzelen involving both the pension fund and the Swatch Group. The pension fund acquired a smaller plot in exchange for increased building rights. Subsequently, the city sold a plot to the Swatch Group, earning a profit which was invested into public green space development on the remaining public land. Project-specific land-use plans were negotiated for each development and approved in 2018. The plan for Jardin du Paradis regulates the outdoor spaces surrounding the housing, in order to ensure its green character and public access. A public right of way was included in the land registry after completion of the project, in order to guarantee access from the surrounding neighbourhood to the newly-developed park adjacent to Jardin du Paradis. The project contains circa 280 housing units which the pension fund rents out for stable and long-term revenue.

Case C: Zijdebalen (Utrecht – the Netherlands)

Utrecht is one of the largest and fastest growing cities in the Netherlands with approximately 375.000 residents. The city aims to absorb its population growth mainly through inner-city development. The project Zijdebalen was completed in 2019 and is located in proximity to the city's historic centre and the river Vecht. Being a former industrial site, in 2007 the city of Utrecht published a vision for transforming and redeveloping Zijdebalen into housing. In 2008 the plot was purchased by an investor. A new land-use plan was developed and approved in 2010. The investor, however, faced financial difficulties given the 2009 financial crisis, bringing the project to a halt. It was revived in 2014 after being purchased by two developers. Building on the already approved land-use plan, the new landowners renegotiated some aspects of the development through a private-law contractual agreement with the city. Construction started in 2015. Zijdebalen contains 481 housing units divided over four building blocks. Half of the units are rental units owned by an institutional investor. The remaining units are owned by individual homeowners, with a small share owned by a housing corporation for the provision of subsidized social housing. Besides housing, the project included the reconfiguration of the waterfront, the development of new public spaces surrounding the building blocks, and the development of gardens in the buildings' inner-yards.

Case D: Defensie-Eiland (Woerden – the Netherlands)

Woerden is a medium-sized town with ca 50.000 residents. Given its attractive location with good connections to most large cities in the Netherlands, pressure on the local housing market has been growing. Defensie-Eiland is located between the city's train station and its historical centre, on a plot formerly used by the Ministry of Defence. As by the end of the 1990s uses were relocated elsewhere, the plot became mostly vacant and its potential for redevelopment was quickly recognized. The municipality purchased the land in 2005 and initiated a planning procedure. Due to its previous use, the soil and groundwater were heavily polluted, for which redevelopment required extensive sanitation works. This together with the high price paid for the land implied a considerable financial investment, for which the municipality sought to partner with a market actor. It launched a public tender and selected a consortium of two Dutch developers to carry out the sanitation works and develop the land. The project built on a program vision from the city and was made legally possible by a revised land-use plan approved in 2012. The land remained in ownership of the city until construction started. The developer built circa 200 housing units including row houses and apartments. Due to the impact of the 2009 financial crisis, the project had to be renegotiated and revised several times, leading to significant delays in the development. The project was eventually completed in 2020, providing housing as well as new cycle and pedestrian routes, access to the waterfront, and several green areas.

MUNICIPAL STRATEGIES FOR URBAN GREENING IN DENSIFICATION PROJECTS

Strategy 1 – Mobilization of public land

The strategy of mobilizing public land was used in three of the four cases. First, the city of Bern mobilized its own land to achieve the development of housing and public green space within a residential neighbourhood (case A). Through public landownership, the city was able to exercise a high level of control over the development by acting both as planning authority and landowner. Hereby, public green space was integrated in a densification project. The integration of a green space project was done mainly to ensure public acceptance of the densification plan, given that the removal of the allotment gardens was faced with significant public resistance (interviews A1_Planner; A2_Planner; A4_Landscape)[1]. This ultimately led to the decision to develop only half of the plot into housing. In line with the need to provide affordable family-oriented housing, the municipal planning authority selected a non-profit developer. Yet instead of transferring publicly-owned land into private hands, the city made use of a long-term ground-lease contract, including additional use regulations complementing the land-use plan, while maintaining ownership over land. Hereby, the city remained in control.

The case in Woerden (case D), however, shows how the city became dependent on a private developer despite public landownership. Lacking the resources to carry out the development and related sanitation works, the city partnered with a private developer to ensure plan implementation. The 2009 financial crisis significantly jeopardized the financial feasibility of the project, as demand for new-built housing plunged. This resulted in a renegotiation and revision of the initial plan, which compromised policy goals related

[1] See appendix I for an overview of interview references.

to housing affordability and public green space supply (see also strategy 4). The city as landowner being dependent on the developer to build the project and carry out the sanitation work, it was unable to enforce policy goals despite public landownership. Finally, while the case in Biel (case B) was led by private initiative, the municipal planning department nevertheless mobilized public land to achieve its policy goals. Following the interests from both the Swatch Group and the pension-fund, the city organized a land readjustment, which not only enabled the development plans of both private actors, but also resulted in a profit for the city which was reinvested in the development of public green space. Through the land readjustment, the city created for itself a powerful position to negotiate and impose the implementation of policy goals by the private actors (see also strategy 2).

Public landownership enables control over urban densification as it allows the public actor to steer development through its property rights. Nevertheless, in recent years the mobilization of public land to achieve spatial development goals has been criticized as municipal strategy by planning scholars in the Netherlands (see e.g. Buitelaar et al., 2022; Buitelaar & Bregman, 2016; Needham, 2014; van der Krabben & Jacobs, 2013). Many Dutch municipalities faced significant financial difficulties in the context of the 2009 financial crisis. With municipalities typically being an active player on land markets – purchasing land with the intention to develop it and capture land rents – the financial risks involved in this type of active land policy came to light as the crisis led to an overall devaluation of land and real-estate. The Dutch case shows how actively purchasing land is risky, particularly for urban densification due to high land prices and fragmented ownership structures (van der Krabben & Jacobs, 2013). Yet the case of the Huebergass project in Bern is fundamentally distinct from the Dutch experience: rather than pursuing short-term gains, the city mobilized publicly-owned land to ensure long-term control over its development. The ground-lease contract provides control beyond the regulatory power of zoning, as the city remains landowner and has the possibility to revise land uses in the future.

Strategy 2 – Strategic combination of land policy instruments

All four cases show how municipal planners combine a variety of land policy instruments to steer and regulate densification projects and the subsequent supply of green space (Table 2). All projects are enabled by project-specific land-use plans which legally enable densification. In Switzerland, most municipalities have in place a standard zoning plan that covers the entire municipal territory, while project-specific land-use plans [*Sondernutzungspläne*] allow to deviate from or complement the standard zoning regulations for specific areas or plots. Allowing for flexibility, this type of land-use plan is a preferred instrument for densification projects (Kanton Bern, 2018). In most Swiss municipalities, new land-use plans and changes to the overall zoning plan require approval by the municipal voting population, for which public acceptance plays a significant role in densification projects. In the Netherlands, land-use plans typically focus on a specific area within the municipal territory and are seen as tool to support land management, rather than strict planning regulations (Needham, 2014). For this reason, land-use plans can be changed or adapted relatively easily by municipal planning authorities, although requiring approval by the respective municipal council. In all four cases, the project-specific land-use plan was the main public-law planning instrument used to regulate densification.

	Case A (Huebergass)	Case B (Jardin du Paradis)	Case C (Zijdebalen)	Case D (Defensie-Eiland)
Public-law instruments	Land-use plan Public competition	Land-use plan	Land-use plan Structural plan	Land-use plan Public tender
Private-law instruments	Ground-lease	Land readjustment Public right of way	Contractual agreement Financial incentive	Contractual agreements

Table 2. Overview of public-law and private-law instruments used in the four cases.

The land-use plans used in our cases allow for negotiating almost any detail of the development, including deviations from general policy rules. These plans are reinforced or complemented by the use of other instruments, based both on public- and private-law. For instance, the city of Biel (case C) made strategic use of property-based instruments to steer the development of the Jardin du Paradis project. First, the city negotiated a land readjustment with the two development actors, exchanging plots with the pension fund and subsequently selling part of it to the Swatch Group. Although land readjustments against the will of the landowner are possible in Switzerland, in reality this rarely happens (Hengstermann & Götze, 2023). Instead, the city of Biel involved both actors in negotiating the land readjustment as well as the new land-use plans enabling each development. For the Jardin du Paradis, the plan included among others an increase of 15% of the floor space density in comparison to standard regulations. It also regulated common access to and use of the outdoor spaces, not allowing any private appropriation beyond the immediate vicinity of ground-floor dwellings. Hereby the city sought to ensure the project's integration in the surrounding neighbourhood (interview B1_Planner). Moreover, the city aimed for public access through the project to increase the accessibility of the new public park for the surrounding neighbourhood. It did so by regulating the pedestrian paths in the plan as publicly accessible. In addition, a public right of way was registered in the land registry in 2014, directly affecting the property title of the landowner. As a result, the privately-owned outdoor spaces of Jardin du Paradis are publicly accessible. The city of Biel followed a land policy strategy to directly affect ownership structures and property rights of the respective landowner, to ensure the implementation of policy goals in a private-led densification project.

Strategy 3 – Facilitating private investment

Our four cases show how private actors are generally interested in investing in densification projects, given the possibility of capturing land rents. The city of Utrecht (case C) recognized this potential for private investment in an inner-city neighbourhood: rather than exercising its pre-emption right on the Zijdebalen plot, it provided space for private initiative (interview C1_Planner). The project included the construction of the four building blocks as well as the development and design of the surrounding outdoor spaces. Our interviews give evidence of the role of outdoor spaces and its aesthetic quality as an important selling point for densification projects, for which private developers are willing to invest in urban greening (interviews C3_Developer, C4_Investor, C5_Landscape). For the Zijdebalen project, both public and private outdoor spaces were supplied by the developer, after which ownership of the public spaces was transferred to the municipality. In addition, the project's land-use plan stipulates that, given a general lack of public green in the neighbourhood, the inner-yards of two buildings were to be developed as publicly accessible green spaces (Gemeente Utrecht, 2010, p. 32). Despite the foreseen public character of these spaces, the inner-yards were

not transferred into municipal ownership as these were an integrated part of the privately-owned buildings.

The city of Utrecht thus used the momentum of private investment in the built environment to increase the supply of publicly-accessible green spaces, by negotiating with the developer public access to the green inner-yards. Besides the land-use plan, this regulation was anchored in a private-law contract with the developer in 2014. Nevertheless, as is common in Dutch development projects, after completion the housing units were sold to third parties, namely an institutional investor, a housing corporation, and individual homeowners. The buildings are managed through condominium ownership, with the respective association of homeowners being responsible for the maintenance of the inner-yards. Quickly after residents moved in, public access to the inner-yards was revoked given instances of vandalism and burglary. The semi-private character of the inner-yards did not sustain public access, as spaces were enclosed and not inviting to the general public (interviews C2_Planner; C4_Investor). Although these issues became clear already during the design process, the city did not intervene: given the need to build high densities within an already compact neighbourhood, there was no space available for additional green outside the buildings (interviews C2_Planner; C3_Developer).

In the Netherlands, it is common for planners to fix agreements with developers in private-law contracts rather than using statutory planning instruments, as these contracts allow for high levels of flexibility (Needham, 2014; van den Hurk & Tasan-Kok, 2020). Importantly, these contracts often function as tool to sustain relationships between the planners and the developer, rather than to penalize contract parties (van den Hurk & Tasan-Kok, 2020). In the Zijdebalen project, a contract was used to complement the land-use plan, defining among others the provision of public access to the privately-owned green inner-yards. The contract, however, provided sufficient room for manoeuvre to deviate from this rule, as these spaces remained in private ownership. At the same time, the city of Utrecht prioritized the development of a high-density housing project over the provision of sufficient public green spaces. By facilitating private investment rather than purchasing the plot itself, the municipal planning authority succeeded in achieving some policy goals at the expense of others.

Strategy 4 – Building public-private partnerships

Our case in Woerden (case D) shows how the city followed a strategy of building a public-private partnership (PPP) to achieve densification. The city purchased the plot with the aim to exercise control over its development, while recognizing the potential for capturing land rents due to its central location. Based on these aims, the high price paid for the land (and the related financial risks) were considered acceptable (interview D1_Planner; D3_Planner). Yet due to the need for large-scale sanitation works, the city decided to partner with a market-based actor selected through public tender. The program for the tender was developed based on the overall policy goals of the city: the supply of housing, the creation of cycle and pedestrian connections, and the provision of new public (green) space. Housing supply, however, was prioritized as it directly conditioned the financial feasibility of the project. As the developer was selected, the housing program and the urban design plan were further elaborated, leading to the revision and renegotiation of some aspects. The PPP was legally structured through numerous private-law contracts, which distributed tasks and responsibilities (interview D3_Planner). This form of multi-

actor governance is typical for PPP's, where the boundary between public and private responsibilities tends to become blurred (Tasan-Kok, 2010).

The 2009 financial crisis significantly impacted the development of Defensie-Eiland, as market conditions changed drastically and demand for new-built housing plunged. These changing conditions generated new rounds of negotiations and the revision of the project, including a revised land-use plan approved in 2017. Mainly, the developer sought to provide more ground-floor dwellings with private gardens at higher prices to ensure the financial feasibility of the project (interview D4_Developer). At this point, the city of Woerden was forced to navigate opposing interests: to ensure financial gains and the continuation of the project, or to enforce policy goals related to housing affordability and public green space. This "heterogeneity of interests" (Buitelaar et al., 2022) proved increasingly challenging for the city, with policy goals gradually being watered down as development progressed. Targets related to affordable housing were revised in favour of more expensive housing, while private gardens were prioritized over public green space. Although the project is generally celebrated for its architectural quality (Blauwdruk, 2021), the city of Woerden failed to exercise control – despite public landownership.

The financial dependency of the city of Woerden vis-à-vis the private developer played an important role in the PPP, as the municipal planning department lacked financial resources to prioritize the implementation of policy goals over the financial interests behind the project. Given the delays in the project, the city faced a growing financial loss, eventually building up to over 16 million euros (Gemeente Woerden, 2019). As one interviewee admitted, the planners were subjected to "the big boys", not having the power to make stronger demands to the developer (interview D1_Planner). Hence, this case stands in contrast with our case in Biel (case B), where the city mobilized its own land to gain a profit on the land readjustment, which it subsequently invested to ensure the provision of public green space. In the case of Defensie-Eiland, however, the high financial risk taken by the city of Woerden to purchase the land, the cost of extensive sanitation works, and the impact of the financial crisis placed the city in a position of dependency rather than a position of control.

DISCUSSION

As the four cases show, municipal planners combine different strategies to define and influence the Localized Regulatory Arrangements (LRAs) that regulate densification projects. These LRAs result from the continuous negotiations of public and private interests, as municipal planners seek to find compromises with private actors. Based on the IRR framework, we analysed how the municipal actor sought to influence the negotiation of the LRA by mobilizing public land, strategically combining land policy instruments, facilitating private investment, and building public-private partnerships. Based on the conceptualization of these four strategies and the analysis of our case-studies, we argue that these strategies are successful in the implementation of urban greening goals in densification projects if contributing to the following conditions: coherence of the institutional regime, convergence of public and private interests, and legal public access.

Condition of success 1: Coherence of the institutional regime

The project Defensie-Eiland in Woerden (NL) presents a typical case of Dutch active land policy, where the municipality was willing to make a significant financial investment in purchasing land for redevelopment, aiming to capture land rents on the short-term. It

shows the financial risks involved in this strategy, resulting in a significant deficit and a situation of dependency vis-à-vis the developer. This is precisely why active land policy has lost some of its glamour in the Dutch context (Buitelaar & Bregman, 2016; Needham, 2014). Instead, municipalities have shifted towards a more facilitating role, as is illustrated by the case in Utrecht (NL) where the city deliberately decided not to purchase the land, instead providing space for private investment. The two Swiss cases, however, show how the mobilization of public land can be a successful strategy as long as it enhances the coherence of the institutional regime (Knoepfel et al., 2007; Varone & Nahrath, 2014): with property rights being in hand of the public actor, these can support the implementation of spatial policy goals. Biel and Bern used their own land not to capture land rents on the short-term, but instead to ensure long-term control over land development, making use of a land readjustment and a long-term ground-lease respectively. Hereby, municipal planners mobilized publicly-owned land in the implementation of public policy, achieving not only inner-city housing development as well as the provision of public green space. These cases show how the mobilization of public land leads to successful implementation as long as it contributes to the coherence of the institutional regime.

Condition of success 2: Convergence of public and private interests

Our analysis shows how project-based rules and regulations define to what extent urban greening is integrated in densification projects, for instance through project-specific land-use plans. Negotiating these plans is a crucial step in the planning of the green and dense city. Therefore, municipal strategies are successful if enabling the convergence between public and private interests. Given that the implementation of densification projects is highly dependent on private actors (even when land is not privately-owned), planners need to act strategically to find agreements with private actors. In Biel, the public investment in a new park not only ensured the implementation of the city's own policy goals, but also significantly boosted the attractiveness and success of the housing project. This strengthened the negotiation power of the city to impose additional regulations in relation to the project's outdoor spaces. Although it made use of planning instruments to legally anchor these rules, implementation was only possible because of the landowner's collaboration. The convergence between public and private interests, however, risks placing economic interests in the centre of planning processes, being the main driver of private investments in urban development (Knoepfel et al., 2012). Because project-based planning allows for negotiating almost any detail of the development, private actors can make use of this leeway to ensure the promotion of economic interests at the expense of others, for example in relation to green space accessibility (Pearsall & Eller, 2020). As the cases in Woerden and Utrecht show, if economic interests dominate urban development, it becomes increasingly difficult for municipal planners to ensure the effective implementation of both densification and urban greening goals.

Condition of success 3: Legal public access

The four cases show how private actors are generally interested in integrating urban greening in densification projects, as these recognize the economic value of urban green space. In Utrecht, the developer was willing to develop and design green outdoor spaces to increase the attractiveness of the project. In Biel, the development of public green spaces contributed significantly to the success of the Jardin du Paradis project. And in Woerden, gardens were used to increase the overall profitability of the project. A common challenge, however, relates to ensuring the public character of these green spaces. Our

analysis shows how green spaces as part of densification projects risk being developed as amenity to be consumed in order to increase land rents, rather than as public good to be enjoyed by all (Pearsall & Eller, 2020; Verheij et al., 2023). Even in Bern, where the non-profit housing ensured affordability, urban greening was integrated in the first place to ensure public approval of the removal of allotment gardens. Greening processes, then, are mobilized to support the growth-oriented and mostly profit-driven agenda of densification, while the social and ecological value of green spaces is undermined (García-Lamarca et al., 2022). To avoid the integration of urban greening only for economic purposes, planners need to ensure public access to green spaces either through public landownership or as public right of way. Based on legal public access, the public character of the green spaces can be ensured even when buildings are sold to third parties and residents start moving in. This, however, typically requires the public actor to make direct investments in green space projects, as private for-profit actors are less likely to provide green spaces as public good. The case in Biel shows how publicly-accessible green spaces can be ensured, even when densification is led by profit-oriented actors.

CONCLUSION

In cities where land is scarce, the integration of urban greening in densification projects presents a critical planning challenge. Our analysis shows how the municipal actor can act strategically to influence the project-based negotiations that shape densification projects, hereby ensuring the implementation of urban greening goals. Strategic action can rely on the mobilization of public land, the combination of land policy instruments, facilitating private investments, or building public-private partnerships. These strategies are successful as long as these enhance the coherence of the institutional regime and contribute to the convergence of public and private interests. Importantly, for urban greening to be integrated in densification projects not just based on its economic function, planners need to guarantee legal public access to urban green spaces. This not only mitigates the role of urban greening in gentrification processes, as it ensures equal access to urban green spaces in increasingly dense cities.

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APPENDIX I

Case A: Huebergass (Bern, CH)			Case B: Jardin du Paradis (Biel, CH)		
Role of interviewee	**Reference**	**Date**	**Role of interviewee**	**Reference**	**Date**
Municipal planning department (project manager)	A1_Planner	June 2021	Municipal planning department (project manager)	B1_Planner	August 2021
Municipal planning department (planner)	A2_Planner	October 2022	Municipal planning department (urban greening)	B2_Planner	May 2021
Municipal planning department (real-estate)	A3_Planner	July 2022	Landowner and developer (current manager)	B3_Landowner	August 2021
Municipal landscape architect	A4_Landscape	June 2022	Landowner and developer (former manager)	B4_Landowner	August 2021
Local district office	A5_District	June 2022	Landowner and developer (external consultant)	B5_Landowner	July 2021
Developer	A6_Developer	June 2022	Landscape architect	B6_Landscape	August 2021
Housing cooperative	A7_Cooperative	October 2022			

Case C : Zijdebalen (Utrecht, NL)			Case D: Defensie-Eiland (Woerden, NL)		
Role of interviewee	**Reference**	**Date**	**Role of interviewee**	**Reference**	**Date**
Municipal planning department (project manager)	C1_Planner	July 2021	Municipal planning department (external consultant)	D1_Planner	October 2023
Municipal planning department (urban designer)	C2_Planner	October 2021	Municipal planning department (planner)	D2_Planner	October 2023
Developer	C3_Developer	October 2021	Municipal planning department (real-estate)	D3_Planner	November 2023
Investor and landowner	C4_Investor	October 2021	Developer 1 (project manager)	D4_Developer	October 2023
Landscape architect	C5_Landscape	October 2021	Developer 2 (project manager)	D5_Developer	October 2023
Landscape architect (consultant)	C6_Landscape	March 2022	Urban design office	D6_Designer	October 2023
			Architect	D7_Architect	November 2023

Article 4: Commoning the Compact City: The Role of Old and New Commons in Urban Development[17]

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- The final article addresses hypothesis 4 in relation to the role of commoning processes to develop more inclusionary processes of urban development. Providing a detailed case study of the project in Bern (CH), it also addresses the role of land policy instruments, as per hypothesis 3.
- It builds on the theoretical distinction between commons as efficient form of organizing shared resources, and commons as commoning, or as process of reclaiming commons and producing new types of commons. Commons being a process of governance, the article argues that supporting processes of commoning during the negotiation phases of densification allows for more inclusive outcomes, both in terms of green space access and in terms of housing.
- It provides an in-depth analysis of the case in Bern, which constitutes two parallel processes of urban transformation, providing both housing and public green space.
- It develops the argument that densification leads to a process of redefining and renegotiating Localized Regulatory Arrangements, changing land uses and rules of use and access. It is precisely in these phases of transition that commoning initiatives can shape the new 'rules of the game' and, by so doing, contribute to more socially-inclusive outcomes.

[17] Verheij, J., J.-D. Gerber, and S. Nahrath. (2024) 'Commoning the Compact City: The Role of Old and New Commons in Urban Development'. *Geoforum* 152: 104019. https://doi.org/10.1016/j.geoforum.2024.104019.

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Commoning the compact city: The role of old and new commons in urban development

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ABSTRACT

Although densification is generally seen to contribute to more sustainable urban development, it is often linked to market-oriented and for-profit development, contributing to the enclosure of urban space. We analyse how densification can take a different path through processes of commoning. We particularly aim to understand how commoning initiatives can contribute to new institutional arrangements that counteract enclosure and commodification in densification. We furthermore aim to contribute to conceptual clarity in the debate on urban commons by emphasizing the different roles of so-called 'old' and 'new' commons in urban development. Our analytical framework builds on a new institutionalist approach which stresses the analysis of localized and temporary institutional arrangements negotiated among actors in a given situation. We rely on a detailed case-study of a densification project in the city of Bern (Switzerland), where publicly-owned land was redeveloped into cooperative housing and urban green space. Our findings show how densification leads to a transition phase in which institutional arrangements defining land uses and allocating access and use rights are renegotiated. These are crucial moments where processes of commoning can shape the outcome of densification, although not independently from the supportive action of the public actor. We underline the potential of new commons, even when typically transitional, unstable, and temporary. Contrary to old commons, their potential lies not so much in the ability for long-lasting resource management, but rather in the capacity to change the conditions of governance during the transition between land uses, advancing more socially-sustainable outcomes in a key moment of the urban redevelopment process.

1. Introduction

Urban densification is a main policy goal of many city governments, as it is considered to improve the efficiency of urban land use, reduce resource consumption, and therefore contribute to sustainable urban development. However, densification changes not only the environmental performance of a city, but also its social dynamics (Burton, 2000; Dempsey et al., 2012). Among others, densification processes affect the social composition of neighbourhoods, often favouring specific types of households over others (Götze & Jehling, 2022). Densification can result in an increase in housing prices for new housing units (Götze et al., 2023; Rosol, 2015) as well as for the surrounding area (Cavicchia, 2022). As housing becomes less affordable, existing residents are sometimes displaced at the expense of wealthier households (Cavicchia, 2022; Debrunner et al., 2020). Densification can furthermore cause the decline or overcrowding of green spaces (Arnberger, 2012; Colding et al., 2020; Giezen et al., 2018). At the same time, however, densification can lead to new green space production as part of urban transformation (Verheij et al., 2023). Indeed, the policy agenda on densification is closely linked to growth-oriented and neoliberal urbanism, through which eco-efficiency has become a powerful argument of city branding, promoting densification and urban greening at the expense of housing affordability (Angelo & Wachsmuth, 2020; Garcia-Lamarca et al., 2019). Here, green space production is subjected to for-profit strategies by developers who tend to prioritize aesthetic quality and 'green image production' to boost real-estate sales, rather than its everyday use by a diversity of users (Kumnig, 2017; Tappert et al., 2018). Through this "commodification of urban life" (Bresnihan & Byrne, 2015), urban resources necessary for everyday life, including housing and urban green spaces, become co-opted by the logics of profit and financial markets. Hodkinson (2012) has referred to these processes as "the new urban enclosures", stressing how through transformation

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and redevelopment urban resources increasingly become appropriated by market forces.

This article aims to explore institutional alternatives to enclosure and commodification. It relies on the premise that commons can play an essential role to this end. Indeed, urban commoning initiatives may have the potential to contribute to distributional justice in the context of densification by providing institutional forms of organization beyond state and market (Haarstad et al., 2022). Commons are collectively-used resources, produced and organized through forms of self-governance by resource users, who promote social practices leading to a sense of community (e.g., sense of belonging, commitment, identity), as pre-requisites for resisting processes of commodification and enclosure (Caffentzis & Federici, 2014; Foster, 2011; Huron, 2015). Commoning practices can thus play a transformative role in counteracting the loss of access to urban space as a result of urban regeneration and densification (Bresnihan & Byrne, 2015). As commoners emphasize non-profit collective social infrastructures, they promote forms of organization that allow for shifting away from the market-oriented and for-profit logics that typically shape inner-city development (Haarstad et al., 2022).

Recognizing the risks of enclosure and commodification in densifying cities, we ask: How can commoning initiatives counteract these processes? More specifically, how can commoning initiatives contribute to the emergence of new institutional arrangements guaranteeing an inclusive and not-for-profit management of urban resources in densifying cities? The literature on urban commons does not provide an immediate answer to these questions because of the fundamental tensions between the understanding of commons as, on the one hand, vehicles for transformative change and, on the other hand, a way to ensure long-term stable management of shared resources. While the former approach emphasizes openness and inclusiveness of the commoners' community to ensure access to resources necessary for everyday life (the so-called 'new commons'; see Hess, 2008; Huron, 2017), the latter approach, in line with the Ostrom school, argues for a clearly-defined and bounded community based on self-governance, whose exclusive nature enables sustainable management of a resource system, within existing institutions and capitalist economies (Ostrom, 1990). These tensions demand for increased conceptual clarity in the discussion of urban commons. To make a step in this direction, we build on the concept of Localized Regulatory Arrangement (LRA) such as introduced by scholars working with the Institutional Resource Regime (IRR) framework (Gerber et al., 2020; Knoepfel et al., 2007; Viallon et al., 2019).

The urban environment is dense not only in physical terms, but also in terms of rules and regulations. Densification projects thus take place in a tight mesh of rights and duties originating from property rights, public policy stipulations, contracts, technical norms or decision-making procedures. Localized Regulatory Arrangements refer to the *rules in use* that users of a given resource agree upon. More precisely, they are context-specific institutional arrangements that define the rules (formalized or not) for the use and management of a given resource (Gerber et al., 2020). Each intervention in the urban fabric leads to the (partial) redefinition of these rules, as new arrangements are crafted and agreed upon by the actors involved, resulting in a new LRA. In this article, we build on the analytical concept of the LRA to hypothesize that *commoning initiatives have a role to play during this transformation, by contributing to more inclusive institutional arrangements and by counteracting the tendency towards enclosure and commodification.* By examining these new institutional arrangements resulting from densification, we aim to understand the role of urban commons in densifying cities. To do so, however, we need to address the theoretical – and normative – challenges resulting from the above outlined tensions within the literature on the urban commons. Bringing together literature on both the 'old' and the 'new' commons, we examine the creation of a new LRA in a densification project in the city of Bern (Switzerland). Our case-study integrates two parallel processes of transformation, one related to housing development, the other to urban greening. Our in-depth analysis of both processes over time, as densification objectives were defined and implemented, allows us to draw conclusions on the role of commons in urban development.

This article proceeds by introducing the concept of LRA as a key analytical element of the IRR framework. We highlight the central importance of this stage where new formal and informal rules are defined to manage an urban resource, that is itself redefined based on a new set of land-use regulations. We proceed by defining the urban commons, at the meeting point between the so-called 'old' commons (Ostrom, 1990) and 'new' commons (Hess, 2008). We then present our case-study, distinguishing between three different phases of urban development. Our findings show how densification leads to multiple steps in the renegotiation of the LRA. These are crucial moments where commoning initiatives can support more inclusive outcomes, although not independently from the supportive action of the public actor. We show how the role of new commons in urban development is inherently distinct from the one of old commons, as new commons are typically transitional, unstable, and therefore temporary. Their potential lies not so much in the ability for long-lasting resource management, but rather in the capacity to change the conditions of governance during the transition between land uses, advancing more socially-sustainable outcomes in a key moment of the urban redevelopment process, where private actors are otherwise striving to implement profit-maximizing strategies. In a nutshell, our case study shows how new urban commons can advance social sustainability in densification processes.

2. Densification as a process of redefining localized regulatory arrangements

The Institutional Resource Regime (IRR) framework allows for analysing the institutional arrangements that regulate resource uses and contribute to sustainable resource management (Gerber et al., 2009, 2020; Knoepfel et al., 2007). The framework has previously been used to understand the implementation of land use changes based on the interplay between public policy and property titles (Bouwmeester et al., 2023; Varone & Nahrath, 2014; Viallon et al., 2019). Accordingly, the regulation of resource uses depends on the interaction between public policy, providing regulations based on public interests, and property rights, protecting the private interest of the resource owner. In the case of urban development, property rights exist over land and protect the private interest of landowners. However, land uses are regulated and restricted by public policy, for example through zoning plans that limit land uses and define building restrictions. The institutional regime thus integrates both public policy and property rights. Yet due to incoherence within the regime — aiming to limit the freedom of landowners while simultaneously protecting their private interests — public policy objectives are rarely implemented on a one-to-one basis. Instead, implementation is negotiated among actors and adapted to context-specific circumstances based on uneven power relations.

A third variable is therefore proposed by the IRR framework: the Localized Regulatory Arrangement (LRA), which entails all case-specific regulations for a given resource negotiated through either formal or informal agreements (Blake et al., 2020; Gerber et al., 2020; Viallon et al., 2019). An LRA requires adapting the institutional regime to local time-specific situations, through (often temporary) arrangements that aim to implement policy goals, mitigate the incoherence between public policy and property titles, or fill regulatory gaps (Viallon et al., 2019). These arrangements can deviate from or circumvent policy goals, or prioritize one goal over another, for which they constitute a crucial analytical step in understanding resource use regulation. In the case of urban development, LRAs are, for example, project-based land-use plans which, although based on the overall zoning policies in place, are negotiated with landowners and other involved actors for a specific development project. These land-use plans are critical as they (re)define the type of land use and, by doing so, change access and use rights over land. Importantly, through these case-based negotiations, power games

are played out among actors who seek to defend their often-competing interests, making the transition from general policy stipulations to localized implementation rules a highly political process. In this article, we hypothesize that densification, as a process of development or transformation, inevitably leads to a redefinition or renegotiation of the LRA, by changing land uses and rules of use and access. Given current neoliberal trends in urban development, these new LRA's tend to be shaped by privatization and enclosure. We however argue that it is precisely in these phases of transition and changing institutional arrangements that *commoning initiatives* can shape the new rules of the game and, by so doing, contribute to more inclusive and socially-balanced outcomes of densification (see Fig. 1).

3. The role of commons in urban development

Based on different approaches, tensions exist in how we define and think about the commons. In this article, we distinguish between so-called 'old' and 'new' commons, where old commons relate by and large to the approach developed by the Ostrom school while new commons refer to neo-Marxist understandings of commons as existing outside of capitalist markets (Enright & Rossi, 2018). For the former, commons are conceptualized as common-pool resources (CPRs). According to this stream of literature, commons are (mostly natural) resources managed by common-pool institutions (CPRI) (Ostrom, 1990). They are neither managed through private property and market mechanisms, nor top-down by public actors, but instead through a common property regime defining use, access, and management rights among a group of resource users based on self-governance. This institutionalist approach has mostly been concerned with understanding the institutions and 'design principles' of CPRIs that allow for long-term sustainable resource management, focusing on the distribution of rights among resource users (Schlager & Ostrom, 1992). It furthermore explicitly recognizes a close-knit and bounded community as a necessary condition for sustainable resource use, arguing that without clear rights of use and access, including a clear definition of who is excluded from these rights, the sustainability of the resource cannot be guaranteed over time (Foster & Iaione, 2019; Ostrom, 1990). Thus, this more historic 'old' type of commons is characterized by: 1) a clear and often formalized institutional framework defining the rules for resource use; 2) a clearly-defined group of resource users with high barriers to participation; and 3) a prioritization of stable long-term maintenance and sustainable resource use for members of the commons.

A more recent stream of literature conceptualizes the commons mainly by emphasizing their political meaning and potential for transformative change (Caffentzis & Federici, 2014; Fournier, 2013; Hardt & Negri, 2009). More than a decade ago, Hess (2008) recognized that, increasingly, processes of commoning were emerging that did not fall into the characterization of commons as outlined by the Ostrom school. Instead, these 'new' commons — including many urban commons — emerged without clear institutional arrangements, rather deriving from the desire to share 'what is to be held in common' and to protect these resources from capitalist markets or state intervention (Caffentzis & Federici, 2014; Hess, 2008). Thus, a shift occurred from understanding commons as a resource to be managed as efficiently as possible, to commons as commoning – a *process* of building community and developing alternative forms of resource management, acting against the influence of capitalist markets and for-profit development over local resources (Hodkinson, 2012; Huron, 2015). Commoning, then, is a process that enables communities to produce and govern the resources they need for everyday life (Foster & Iaione, 2016), while implying a certain level of transformative and emancipatory change (Bergame et al., 2022; Caffentzis & Federici, 2014). Whereas the 'old' commons are defined in the first place by collective management through self-governance embedded in existing institutions and capitalist economies, the 'new' commons aim for transformative change beyond the group of commoners. These new commons favour inclusive communities over a rigid definition of rights (Nightingale, 2019). Hence, the 'new' commons are characterized by: 1) a loosely-defined or rather flexible institutional framework defining rules of use and access of the resource; 2) an open and inclusive group of resource users with low barriers to participation; and 3) a prioritization of transformative and emancipatory change, aiming for spillover effects beyond the group of commoners.

Though both approaches to the commons emphasize collective management and self-governance in relation to shared resources, they present fundamental differences that demand for conceptual clarity when discussing the commons. As Foster & Iaione (2019) have argued, the design principles put forward by the Ostrom-school cannot do justice to the inherent complexity of urban environments and are therefore not always helpful to understand commons in cities. Being mostly human-made, urban commons provide the possibility to produce new commons through acts of commoning, which relate to collective struggles and political claims rather than the need to manage resource scarcity (Enright & Rossi, 2018; Hardt & Negri, 2009). Moreover, in the case of anti-capitalist commons that aim for transforming social relations, inclusion and equal access to the commons for all becomes a requirement to prevent the reproduction of social inequalities (Caffentzis & Federici, 2014). Yet it is precisely due to its inclusive and flexible nature that new commons are often transitory and unstable (Nightingale, 2019). Cities bring together highly heterogeneous groups of potential resource users. For urban commons that are dependent on the collective action of a heterogeneous group of 'strangers' (Huron, 2015), maintaining the commons over longer periods becomes challenging. Here, the close-knit community and boundedness as proposed by Ostrom can prevent the potential disengagement of commoners over time, supporting long-term maintenance and stable management.

There is thus a fundamental tension between the 'old' and the 'new' commons. While the 'old' commons can ensure sustainable use and management of commons resources, the underlying institutional arrangements often reproduce social inequalities through a clear

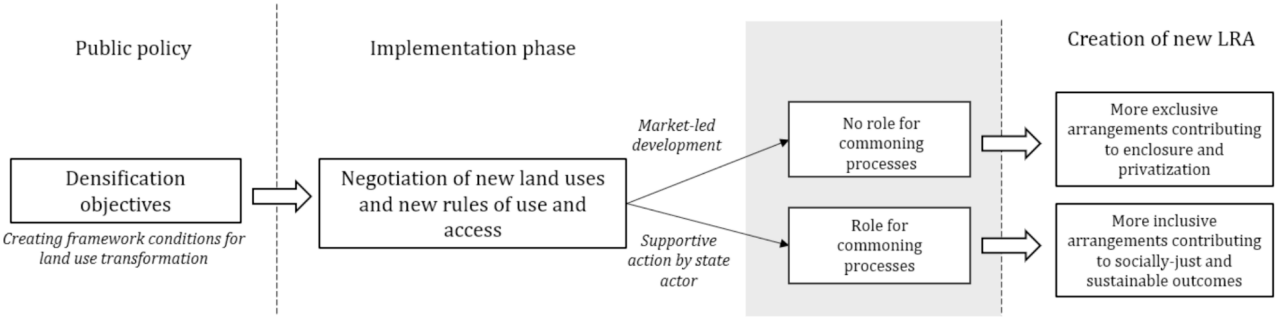

Fig. 1. Schematic visualization of the causal relations between densification as public policy, the implementation phase, and the resulting LRAs. We hypothesize that when commoning processes have a role to play during implementation, densification can lead to more inclusive institutional arrangements. Own visualization.

distinction between commoners and non-commoners, transforming common-pool resources into club goods. The 'new' commons, however, appear rather provisional and unstable, and therefore inapt to ensure the long-term perpetuation of the resource. Yet they constitute significant forms of political resistance. In this article, we recognize this multifaceted nature of the commons and the implications for our analytical approach. Although the distinction between 'old' and 'new' is by no means exhaustive of the full and rich body of literature on the commons, we argue that these two types are critical to understand the different roles of commons in urban development. We apply the concept of LRA to analyse what role different commoning processes have in our case study. By so doing, we hope to contribute to conceptual clarity in the discussion on the potential roles of commons in urban development.

4. Research design and methodology

We rely on a detailed case-study of a densification project in the city of Bern (Switzerland) to analyse how institutional arrangements allocating use and access rights over land changed over time and to understand the role of urban commons in shaping these outcomes. The city of Bern is a so-called secondary capital city (Kaufmann et al., 2016), being Switzerland's *de facto* capital without being its primary economic centre. With a population of 134.000 within the municipality and 420.000 in the agglomeration (as of 2022), it is the fifth largest city in the country and capital city of the canton of Bern. Switzerland is a federal state where cantonal and municipal authorities have relatively high autonomy and decision-making powers. For instance, spatial planning is mostly a municipal competence where the federal state provides a framework law while planning regulations and instruments vary from canton to canton (Ingold & Nahrath, 2023). Switzerland is furthermore known for its multilingualism with four official languages being used by the administration. The city of Bern as well as most of the canton of Bern are German-speaking. Switzerland has traditionally been a right-wing country; however, the large cities including Bern are mostly dominated by progressive left-wing politics similar to many other European cities (Antoniazza et al., 2023). Left-wing parties have dominated Bern's city council over the last century, unlike its neighbouring municipalities and cantonal government (Antoniazza et al., 2023; Kaufmann et al., 2016).

Although at a slower rate than cities like Zurich and Geneva, Bern's population has been growing over the last decades mainly due to processes of reurbanization and economic growth (Rérat, 2019). This has led to increased pressure on the local housing market resulting in a general increase in housing prices and a lack of suitable inner-city housing mainly for families. The city of Bern therefore prioritizes inner-city development in its spatial strategies (Stadt Bern, 2016). This goal was reinforced by the 2014 review of the Swiss Spatial Planning Act which stresses inner-city development as main planning goal and minimizes the possibility of urban expansion (RPG 2014; Art. 1). As the population of Bern is predicted to continue growing (Stadt Bern, 2022b) and with limited possibility for spatial expansion, densification is at the core of Bern's spatial development. At the same time, the left-wing municipal government actively pursues affordable housing policies, mostly by supporting housing development by non-profit cooperatives. It furthermore seeks to secure and enhance its public spaces, including urban green spaces, based on a 'careful consideration' of interests towards urban spaces (Stadt Bern, 2022a). This, however, has gone at the expense of some traditional allotment gardens, which need to give way to more efficient, multifunctional, and accessible green spaces (Stadt Bern, 2018; see also Tappert et al., 2018). The city's growth-oriented strategies and densification policies have thus resulted in increased pressure over urban land, requiring a continuous renegotiation of land uses and distribution of resources.

Given the complexity of our research aims, a single case-study is best suited as we expect our in-depth and context-dependent knowledge to contribute to a nuanced understanding of how our theoretical propositions work in practice (Flyvbjerg, 2006). Our case-study is located in the neighbourhood of Holligen, Bern's fastest growing neighbourhood undergoing several processes of densification. We focus on one of them, namely a project on publicly-owned land developed between 2007 and 2021. We selected this case study as the project not only resulted in 103 new housing units but also included a process of green space production, hence presenting multiple processes of land use transformation. Based on our research aims, we analysed the case by examining changing land uses as densification happened, recognizing densification as a *process* containing different phases, each leading to a new LRA. Our data is based on the analysis of relevant policy- and planning documents of the project and 12 semi-structured interviews with involved actors, including people working in different municipal departments, the developer, residents of the housing project, as well as neighbourhood residents involved in the green space project, the allotment garden association, and local neighbourhood organizations (some interviewees have overlapping roles; see overview in appendix A). The interviews were crucial to understand not only how the densification process unfolded, but also the motivations and interests of each actor as well as their roles in the related negotiation processes. All interviews except one were conducted in-person, and recorded with permission of the interviewees. Following transcription, we coded the interviews deductively based on our analytical framework. All quotes from the interviews were translated from German to English and translations were verified by the interviewees. We furthermore conducted several rounds of field observations between 2020 and 2022 with the aim of understanding how use of and access to the spaces has been changing over time. These observations partly happened as part of our interviews, as we visited the project site with our interviewees. In addition, the first author visited the site on a regular basis during 2020 and 2021 both as user of green space and as researcher. Throughout data collection, our position was one of independent researcher linked to the university and resident of the city of Bern, not having any personal ties to the project or related initiatives.

5. Case description

The Huebergass project is a densification project on publicly-owned land, used for allotment gardens since the 1950s (Fig. 2). It is located in Holligen, a residential neighbourhood built mostly in the 1940s and 1950s. It is a middle-income neighbourhood with mainly rental housing owned by institutional investors, private individuals, and non-profit organizations. The share of population with a migrant background (30 %) is slightly above average in comparison to the overall city (25 %) (Stadt Bern, 2022b). In 2007, the city of Bern started to develop plans for housing development on the plot, responding to growing demands for the provision of family-oriented housing within city boundaries. To pave the way for densification, the municipal planning department initiated a procedure to change the zoning regulations from non-buildable to buildable land. The new land-use plan was approved by the municipality's voting population in 2011. As a result, the allotment gardens were removed. After a motion for housing affordability was approved by the city council in 2016 (Gemeinderat Bern, 2016), the supply of affordable housing became a main goal of the project. Housing was developed by a non-profit developer based on a long-term ground-lease. In many Swiss cities, non-profit developers play a significant role in housing affordability policies, with municipalities such as Basel, Zurich, and Lausanne giving out public land in long-term ground-leases to non-profit developers who supply housing based on cost rent (Balmer & Gerber, 2018). The developer was selected after a public competition launched by the city of Bern. The land being owned by the city, it was in a powerful position to control development, both through the public competition and through the succeeding ground-lease contract.

The winner of the competition was a newly-founded cooperative ('*Wir Sind Stadtgarten*'; henceforth WSS) closely linked to one of Switzerland's largest for-profit developers. Recognizing a market gap for

Fig. 2. Aerial photos showing land-use changes of the plot in Holligen: allotment gardens in 2009 (left), gradual removal of the gardens in 2018 (centre), and completion of the housing in 2021 (right). Source: Swisstopo (2022).

affordable cooperative housing, the for-profit developer invested human resources and financial capital in the WSS cooperative and participated as such in the Huebergass competition. Although the WSS cooperative did not make any profit (as it was legally not allowed to do so), the for-profit developer did earn the right to develop the housing and made a profit as any other contractor would have made (developer, interview [15.06.22]). In 2018, WSS selected the first round of residents for the Huebergass project based on pre-defined criteria. The selected residents were required to buy shares of the cooperative, by which ownership of the cooperative was transferred to the actual residents. The total of shares corresponded to the total of building costs. The residents, now co-owning the housing, changed the name of the cooperative to '*Wohnbaugenossenschaft Huebergass*' (henceforth WBG Huebergass). The housing was completed in 2021 after which residents moved in. Besides 103 housing units, the project includes several shared spaces, a café, an externally operated kindergarten, some vegetable gardens, and an openly accessible inner yard (Fig. 3).

Simultaneously, the other half of the land was developed into public green space (Figs. 4 and 5). The initial landscape project was designed as part of the public competition, after which the project was further

Fig. 4. Overview of the Huebergass plot with green space (front) and housing (back). Source: own photo (2022).

Fig. 3. The housing project Huebergass completed in 2021. Source: own photo (2021).

Fig. 5. The green space adjacent to the housing project developed by the VorPark. Source: own photo (2021).

developed by the city's greening department. The city's main goal was to develop a neighbourhood-oriented public green space. To ensure active involvement of the local population in the design of the park and to go beyond the typical top-down planning approach, temporary use of the land was given to a local association during the development phase. In exchange for management rights, this association, called *VorPark*, was tasked with testing out different uses of the space in order to collect feedback from residents, and to develop a new place identity for the land that had been used as allotment gardens for almost seven decades. The VorPark managed the green space from 2019 to 2022, after which the land was developed into a municipal park by the city's greening department.

6. Results

6.1. Phase 1: Allotment gardens (1950s-2016)

During the 1940s and 1950s, Holligen transformed from a predominantly low-density neighbourhood on the fringe of the city to a residential area with urban character. New residents coming mostly from rural areas took up gardening on the vacant land surrounding the Holligen castle. In Switzerland, as in many other European countries, allotment gardens emerged throughout the 20th century as rural populations migrated to cities. Gardening was a subsistence activity that supported household incomes for rural populations living in cities. Until today, the composition of gardeners mostly reflects this history, with Swiss nationals above 50 years old making up the largest share, followed by immigrants from southern- and eastern European countries (Tappert et al., 2018). Over the years, the allotment gardens in Holligen were institutionalized through lease contracts with the city as landowner, and through membership to the respective association of allotment gardens. Based on these institutional arrangements, gardeners were given the right to garden their respective allotments in exchange for a yearly fee paid to the city. Each allotment is allocated to an individual gardener. Hence, although certain tools and infrastructures are shared, gardening activities are mostly organized on an individual basis. However, each gardener is member of the respective association, which collectively governs the allotment gardens and makes collective rules – for example in relation to watering or waste disposal. Many allotment and community gardens therefore present a highly varied degree of collectivity, where – despite collective management – most gardening practices happen on individual level (Rogge & Theesfeld, 2018) (see Table 1).

Bern's urban development strategy of 1995 recognized allotment gardens as "important green connections to be maintained and preserved" (Stadt Bern, 1995). However, the following decades, as the city's population started growing and densification became a planning priority, these gardens became increasingly seen by planners as inefficient and undesirable land uses (Tappert et al., 2018). Being typically fenced-off and closed to the general public, the classic allotment gardens no longer fitted policy goals related to green space accessibility and multifunctionality (Stadtgrün Bern, 2020). Moreover, the land being publicly owned, the city of Bern understood the potential for the gardens to be transformed into more desirable land uses. As a landscape architect from the municipal greening department stated:

> "*the allotment gardens, they are of course a monofunctional space, and somehow they are closed off. It's a very specific group of people who has access and they are actually not public. And so we had to remove the allotment gardens in this area.*" (landscape architect 2, interview [17.06.22]).

Table 1
Characteristics of first LRA related to phase 1.

Type of land use	Allotment gardens
Institutional framework	Formal framework based on lease contracts and collective membership rules; rights of use and access defined by membership
Community of commoners	Closed group of commoners; exclusion of non-members
Objective	Maintenance of resource over time

The transformation of the allotment gardens was a direct result of the city's densification strategy. In 2011, 65 % of the municipal voting population approved the new detailed land-use plan of Holligen allowing housing development and implying the removal of the allotment gardens.

6.2. Phase 2: Densification (2017–2021)

After a first round of public participation organized already before the approval of the detailed land-use plan, the municipal planning department decided to develop only half of the Huebergass plot into housing, leaving the other half open for green space. Hence, the land was developed through two parallel processes of transformation: one related to housing, the other to greening. Still, in 2017, the city launched a single competition for the entire plot, including both housing and green space development. The city of Bern being a stronghold of left-wing and progressive politics, in 2016 the municipal assembly had approved a motion for housing affordability demanding the city council to proactively promote the development of "very affordable housing" (Gemeinderat Bern, 2016). Subsequently the planning department decided to make the Huebergass an example of "affordable densification" (planner 2, interview [21.10.22]). The competition imposed requirements to ensure the non-profit nature of participants as well as a rent cap. Once the winner was selected, a ground-lease contract was celebrated between the city and the selected developer, which provided an additional instrument for regulation. The contract, celebrated for a period of 80 years, is also an instrument for decommodification, as it prevents housing stock to be sold and speculated on (planner real-estate, interview [11.07.22]). The selected developer, however, was not a typical housing cooperative, having been founded by the employees of a for-profit developer. The underlying interest of the cooperative *Wir Sind Stadtgarten* (WSS) was linked to its parent company, as it gained the building contract for the project and made a profit as any other contractor would have made.

Among others, the WSS cooperative was responsible for selecting the first round of residents for the newly-built housing. The city itself did not impose any selection criteria beyond the need to take demographic mixing into account when selecting new tenants. One municipal worker explained this as follows:

> "*They [*the cooperatives*] also need their freedom when allocating [*housing*]. And when we as city determine everything, then we should do it ourselves. Yes, I think it's a balance and I mean, the life there also needs to function. When we tell them whom they have to rent the apartments to, and then the community doesn't function well, then we didn't win anything*" (planner 2, interview [21.10.22]).

Subsequently, selection criteria were mostly defined by the WSS cooperative after having collected feedback from different local stakeholders, including the local district office. Criteria included maximum household wealth and minimum occupation rate of the units, while also ensuring diversity in age groups. Nevertheless several of our interviewees stated that the selected residents for the Huebergass project presented a rather homogenous group: residents were mostly Swiss and German-speaking and, as recognized by one interviewee, most households could not be considered low income. While no official statistics on project-level are available, neighbourhood-level statistics indicate that from the 433 new residents moving in Holligen in 2021, 80 % was Swiss – above the neighbourhood's average of 70 % (Stadt Bern, 2022b) (see Table 2).

Table 2
Characteristics of second LRA related to phase 2.

Type of land use	Non-profit cooperative housing (WSS cooperative)
Institutional framework	Rigid and formal framework based on detailed land-use plan, competition program, and ground-lease contract
Community of commoners	Closed community; exclusion of non-members, selection criteria defined by cooperative founders
Objective	Increasing supply of affordable and decommodified housing; increasing market share of parent company

The initiative for the VorPark was led by the city's greening department in collaboration with the local district office, based on the idea that temporary management of the space by an association of local residents would, first, allow for testing out different uses and functions of the space and, second, allow for developing a bottom-up place identity (Stadtgrün Bern, 2018). Although a project had been developed as part of the competition in 2017, the city sought to develop it in an organic and flexible way. As stated by a municipal landscape architect:

> "*When we build the park, then don't build it completely. Instead, it should still have some areas that can still be developed together with people on site. People should look at the space, bring ideas on what can be done, and then develop the ideas there*" (landscape architect 2, interview [17.06.22])

Those who became actively involved in the VorPark had been engaged in neighbourhood initiatives before (VorPark, interview [20.09.22]; district office, interview [29.06.22]). They developed the green space based on ideas of citizen engagement and self-determination, aiming to improve the social function of the park for the surrounding neighbourhood. Being so, the VorPark organized many activities over the years, targeting many different age groups. Based on a contract with the city, the VorPark had the right to develop the park and to add different functions and uses of the space; however, it was also responsible for maintaining the space, including tasks such as mowing the grass. This proved to be hard work for those involved. As stated by our interviewee of the VorPark, despite the park being open to everyone, it was difficult to find people willing to get involved on a regular basis (VorPark, interview [20.09.22]). In 2021, as residents moved into the newly-completed Huebergass project, many started to make regular use of the VorPark and some also became actively involved. This as well as the spatial proximity between the park and the housing increasingly contributed to a sense that the VorPark was an extension of the Huebergass housing rather than a neighbourhood park. As stated by one interviewee, "*we did get feedback from people living further up, that yes, this is the park for the Huebergass. Indeed, right now it's the case, because it's built right next to it*" (district office, interview [29.06.22]). Our interviewees from the neighbourhood association furthermore suggested that for their members, being mostly elderly people, active participation in the development and management of the VorPark was not feasible as it required physical work. Given the lack of heterogeneity among Huebergass residents, one municipal landscape architect argued:

> "*the problem is that these people [*the VorPark*] are not representative for the whole neighbourhood. These are no elderly people, no people with disability, also no, I'll say, bourgeois* [bürgerlich] *people – hence they represent just one group of park users*" (landscape architect 2, interview [17.06.22]).

Importantly, this reality developed despite the open and flexible nature of the VorPark. The space being publicly accessible, those involved in the association were responsible for maintaining the land but did not impose any explicit rules of use or access. Residents from the Huebergass stated they did not see the park as 'theirs' as it was open to all. Mainly, the VorPark aimed to provide a free and open space to counteract the typical high level of regulation of public space. It was, however, still perceived as an exclusionary space by some neighbourhood residents (see Table 3).

6.3. Phase 3: Cooperative housing and public green space (2021-…)

Residents moved in as the housing project was completed in 2021. After having been selected by the WSS cooperative, the residents became members of this cooperative themselves and bought the cooperative

Table 3
Characteristics of third LRA related to phase 2.

Type of land use	Community green space (VorPark)
Institutional framework	Loose framework based on contract between city and association, but without pre-defined rules of use and access
Community of commoners	Open community with low barriers to participation; access and use rights for non-members; implicit mechanisms of exclusion
Objective	Self-determination and self-governance of neighbourhood spaces; resident engagement; development of place identity

shares. A transition process started by which the mostly top-down organization of the initial WSS cooperative was replaced by new, more horizontal forms of governance. However, given the origins of the cooperative, founded by the developer rather than its residents, this process proved exceptionally challenging. As stated by one resident of the Huebergass, information and know-how on the operation of the cooperative was lacking (resident 1, interview [10.10.22]). The new residents were faced with many decisions that had been taken by WSS without their involvement. Instead of building their cooperative from the ground up, they were given an already-established structure. The challenging transition process contributed, among others, to the decision to change the name to *Wohnbaugenossenschaft Huebergass* to distinguish the 'new' cooperative from the original one. Processes in relation to allocating housing, use of shared spaces, and financing were developed anew by the residents. Among others, a working group was created to redefine the selection criteria when allocating housing units to ensure more social mixing, as residents not only recognized the homogeneity of their group but also acknowledged the social function of the cooperative housing. As one resident explained, "*now we have developed a concept on how to aim for this social mixing. And how we would like it to be. And now there's a working group that really explicitly takes care of selecting who takes over when a unit becomes available*" (resident 1, interview [10.10.22]). Nevertheless, the same resident also recognized that "*at the moment we think many of us are academics and we want a bit less of that. But these are also the ones that do a lot of voluntary work in commissions and the board*". As several residents described, managing a housing cooperative requires time and energy, and not everyone is willing or able to be an active member. Furthermore, use and access rights to shared spaces, including the outdoor spaces and inner yard, were reconsidered. Today, the cooperative includes several neighbourhood-oriented functions, including a non-profit café, a cooperative food store, and a space for cultural activities (see Table 4).

The VorPark was closed in 2022 as the municipal greening department proceeded with developing the final and definitive version of the green space. The closure of the VorPark was not without conflict, as some people resisted the city's decision to 'take back control'. For the city, it became increasingly important to clearly distinguish the green space from the Huebergass project:

> "*It [*the VorPark*] will just be changed as it's now very provisional. It will become more definitive and comply to common standards for public space, so that also people in wheelchairs can access and everyone recognizes the purpose of the space. At the moment it doesn't meet these standards, but it has character, an informal character which is certainly very attractive to some people. But other people stay away precisely because of this character"* (landscape architect 2, interview [17.06.22]).

Hence, the city started to redevelop the park according to its own standards, aiming to make the space more welcoming for the neighbourhood. Nevertheless, as our interviewees as well as own field observations confirmed, the VorPark did play an important role in creating a new place identity and in transforming the land from allotment gardens to a neighbourhood-oriented and community-based space. Despite its temporary character, it allowed for developing contact between old and new resident in a neighbourhood undergoing several densification processes (VorPark, interview [20.09.22]). Some of the features of the VorPark, such as the public fireplace and the youth shed, were integrated into the final plan of the park. Hence, the community space contributed to the development of a new place identity after the removal of the allotment gardens, outside the dynamics of market- or profit-oriented development. Still, some interviewees showed disappointment at the fact that the space was completely redeveloped; as one interviewee suggested, the city could have used the momentum of the VorPark while simultaneously improving its physical accessibility (resident 2, interview [09.10.22]) (see Table 5).

7. Discussion

Analysing three different phases of a densification project in the city of Bern, our results show how the same plot of land, in municipal ownership, underwent several transformations. Each phase resulted in new Localized Regulatory Arrangements. First, the rules governing the allotment gardens were rather formal and made a clear distinction between members and non-members, gardeners and non-gardeners. Despite collective governance of the shared spaces, each gardener was responsible for cultivating an individual allotment. Because of these diversified practices of green space management and different degrees of collectivity, allotment gardens are considered to enhance the bio- and cultural diversity of cities (Colding & Barthel, 2013; Rogge & Theesfeld, 2018). Yet at the same time, these gardens involve high barriers to participation and clearly distinguish between members and non-members (Murphy et al., 2022). Providing access to land to some at the expense of others, allotment gardens are typically enclosed spaces (Bergame, 2023). The formal and exclusionary character as well as the clear delimitation of individual allotments make the allotment gardens in phase 1 resemble the old commons, as conceptualized by the Ostrom school. They constitute a stable, formalized form of governance, in which rights and duties are clearly distributed among gardeners, allowing for maintaining the resource over a long period of time; the allotment gardens in our case-study persisted for many decades until the city decided to develop the land.

In Bern as well as in other Swiss cities, allotment gardens are more and more transformed or even removed to make space for more efficient and multifunctional uses, including housing and publicly-accessible green space (Jahrl et al., 2022; Tappert et al., 2018). For the Huebergass plot, this shift in public policy objectives resulted in a transformation process, starting with the approval of a detailed land-use plan in 2011. Throughout this process, new land uses and new rules of use

Table 4
Characteristics of fourth LRA related to phase 3.

Type of land use	Non-profit cooperative housing (WBG Huebergass)
Institutional framework	Rigid and formal framework based on ground-lease contract and statutes of the cooperative
Community of commoners	Closed community based on clear divide between members and non-members; high barriers to participation based on selection criteria; access and use rights to some spaces for non-members
Objective	Provision of affordable housing to cooperative members; maintenance of the resource over time; social mixing

Table 5
Characteristics of fifth LRA related to phase 3.

Type of land use	Public park
Institutional framework	Rigid and formal framework based on detailed land-use plan, project plans, and building permits determining green space uses and functions
Community of commoners	Public access; decision-making by public authorities based on participatory processes and democratic procedures
Objective	Provision of urban green space as public resource

and access were negotiated, creating space for different actors to redefine the regulatory arrangements in line with their interests. The city had a powerful role as both regulator and landowner. Its decision to give out land to a non-profit housing developer and a bottom-up greening initiative was significant, as it created the conditions for commoning initiatives to play a role in the renegotiation of the new LRA's. Considered in light of the left-wing progressive political context of the city of Bern, the supportive action of the state appears crucial. Nevertheless, while this commoning approach allowed for more inclusive arrangements, the evolution of the VorPark also indicates a strategy of using commoning to 'test the waters' before committing to a final solution.

The involvement of the housing cooperative was highly regulated through the detailed land-use plan, the competition, and, subsequently, through the ground-lease contract, setting rules regarding land uses and building regulations, but also regarding the type of housing to be provided and the maximum rental fee. These rules constituted the basis for the project developed by the WSS cooperative. The non-profit nature of the cooperative as well as the ground-lease contract contributed to a logic of decommodification, creating housing stock outside of the market and allocating it based on its use rather than exchange value (Balmer & Gerber, 2018; Ruiz Cayuela & García-Lamarca, 2023). Still, the cooperative was founded by the employees of a for-profit company who did not intend to live in the housing themselves. Despite the political claims behind new commons, many urban commons do not aim to overthrow capitalist systems, but instead exist alongside and sometimes within the system (Amin & Howell, 2016; DeVerteuil et al., 2022). This is certainly true for housing cooperatives, which are embedded in existing institutions. Barriers to participation are high, as the "cementing" of property relations (Nightingale, 2019) – even if collective – is inevitable to govern the housing stock. Like the allotment gardens, the housing cooperative therefore resembles the old commons.

The selection criteria of the actual residents were mostly not defined in the regulatory framework, apart from aiming for "social mixing". The first group of residents appeared rather homogeneous, being mostly Swiss, German-speaking and working in academia or related areas. Our interviewees recognized the lack of heterogeneity among residents, but also recognized the need for a certain commonality among members given the need to successfully work together over a long period of time (Huron, 2015). Once this first group of residents took over the ownership of the cooperative, the nature of it changed. While still operating within the same legal framework, the residents aimed to change and redefine some of the organizational processes, for example in relation to the allocation of housing to new residents. Besides maintaining the housing stock for its residents, the reinvented WBG Huebergass cooperative also aimed for integration and more inclusive arrangements, among others through a more inclusive selection procedure. While still being governed through a rigid and formal framework with high barriers to participation, the new cooperative intended to strengthen its role in producing spillover effects beyond its own members; resembling characteristics of both old and new commons.

At the same time, management rights over the other half of the plot were allocated to the VorPark association. Here, the process of defining land uses and creating new rules was rather flexible. Instead of formally defining what types of uses are to be developed by whom, the VorPark allowed for an organic transformation process based on the needs and desires of those willing — or able — to participate in the co-production of the resource. Except some formal rules defined by the land-use plan and the contract celebrated with the city, the green space was governed through informal arrangements between those involved. The VorPark constituted a rather open and loose form of governance, not imposing a distinction between members and non-members and with barriers to participate and join the co-production being fairly low. This commoning process counteracted the top-down decision processes that typically shape urban development and provided a space for resident engagement and self-determination. Still, while not imposing any restrictions in terms of access and use to others, the active involvement of Huebergass residents in the development of the green space seems to have cultivated a sense of ownership among those involved (Blomley, 2004). Although collective and not necessarily exclusionary, this sense of ownership was also signalled to 'outsiders', for which some neighbourhood residents did not perceive the new green space as a publicly-accessible space (see also Bergame, 2023). At the same time, however, our VorPark interviewee emphasized the high level of work involved in maintaining the park, and the difficulty of finding people willing to dedicate time and energy to it. This points towards what we understand as a seemingly insolvable balancing act in regard to the commons (Bergame et al., 2022; Huron, 2015; Nightingale, 2019): how to ensure the material existence and maintenance of the urban commons by a dedicated group of commoners, while simultaneously ensuring its open and inclusive character to all?

Our case-study shows how the transformation of urban land involves different types of commoning initiatives through support by the public actor. From the allotment gardens to the housing cooperative and the VorPark, it is the municipality that enables these collective forms of governance. It does so to ensure public participation, self-governance, and more inclusive arrangements of urban development. At the same time, however, the city understands these commoning processes as instrumental to achieving its public policy goals: more accessible and multifunctional green spaces, and more affordable housing. The VorPark was deliberately unregulated and flexible, functioning as a type of new commons: the objective was not to ensure stable maintenance over decades, but rather to 'test the waters' and to shift the logics of urban development. Those who invested their work in the production of the space did so based on the enactment of a political claim towards the land (Caffentzis & Federici, 2014). In the process, as the land was co-produced by commoners, this group of people seem to have developed a sense of ownership to it. Still, the land remained publicly accessible. Although the VorPark was inherently temporary and provisional, it allowed for promoting a sense of self-determination and self-governance among those involved, shifting green space development towards the everyday needs of its users.

The distinction between old and new commons is relevant to our case study as it brings to light how various commoning initiatives operate differently in terms of institutional framework, community, and objective. By making this distinction, we have sought to contribute to some conceptual clarity, analysing commons as forms of governance that ensure long-term stable management of shared resources and as vehicles of transformative change. To be both is a critical challenge of the urban commons (Huron, 2015; Nightingale, 2019). Many commoning initiatives in urban environments, however, are situated somewhere in between the old and the new commons, being essentially *processes* rather than things, something that is *done* rather than is. The commons are contested terrains with ambiguous relations to capitalist markets, the state, as well as to non-commoners (Enright & Rossi, 2018).

Finally, our case-study shows how, through densification, the Localized Regulatory Arrangement governing a given resource changes continuously, based on the constant redefinition and renegotiation of the 'rules of the game' by the actors involved. This affects not only the distribution and allocation of access and use rights over land, but indeed changes land uses in themselves. Given its role as both landowner and regulator, the city of Bern was in a powerful position to steer transformation according to its public policy goals, aiming for the removal of allotment gardens for the sake of housing and green space development. Nevertheless, the details of this transformation process — who gains the right to decide how the resource changes and who benefits from this transformation — are subject to constant negotiation throughout the three different phases. This not only confirms the importance of analysing case-specific and local arrangements to understand resource uses (Viallon et al., 2019) but also the inherent impermanence and temporary dimension of the LRA.

8. Conclusion

As cities become denser as a result of compact city policies, new land uses emerge and use and access rights over land are redistributed. These transformations bear the risk of promoting a more privatized, enclosed urban space if shaped solely by market-oriented and for-profit logics. Our research shows how densification can take a different path: commoning processes can steer the outcome towards more inclusive arrangements, by promoting self-governance by users and shifting urban development towards the everyday needs of those affected. The implementation of densification leads to a transition phase in which the institutional arrangements defining who can use urban land for what purposes are redefined and renegotiated among actors. It is precisely during this phase that the conditions for commoning can be created. Yet this process is far from straightforward: while some commons such as the allotment gardens disappear, others start to thrive. Our findings confirm the importance of a supportive public actor able to create a favourable institutional framework for commoning processes to develop. Importantly, our findings give evidence of the different roles urban commons play in urban development. The new commons, based on open and flexible arrangements, are typically transitional, unstable, and therefore temporary. Contrary to old commons, which emerge from stabilized and formal arrangements, their potential lies not so much in the ability for long-lasting resource management, but rather in the capacity to change the conditions of governance during the transition between land uses, advancing more socially-sustainable outcomes in a key moment of the urban redevelopment process, where private actors are otherwise striving to implement profit-maximizing strategies. In doing so, new commons prove to be effective ways of anchoring social sustainability objectives within urban densification processes. Further research is needed to understand to what extent new urban commons can endure and thrive over long periods of time without developing into closed and exclusive communities of commoners.

CRediT authorship contribution statement

Jessica Verheij: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Visualization, Writing – original draft, Writing – review & editing. **Jean-David Gerber:** Conceptualization, Funding acquisition, Supervision, Writing – original draft, Writing – review & editing. **Stéphane Nahrath:** Conceptualization, Funding acquisition, Supervision, Writing – original draft, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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Appendix A

Overview of interviews

Type of actor	Role of interviewee	Reference
Public actor	Municipal worker (former project manager)	(planner 1, interview [16.06.21])[1]
	Municipal worker (planning department)	(planner 2, interview [07.10.22])
	Municipal worker (real-estate department)	(planner real-estate, interview [11.07.22])
	Municipal landscape architect (department of public space)	(landscape architect 1, interview [21.05.21])
	Municipal landscape architect (municipal greening department)	(landscape architect 2, interview [17.06.22])
	Representative of local district office	(district office, interview [29.06.22])
Neighbourhood	Two members of Holligen's neighbourhood association	(neighbourhood association, interview [05.10.22])
Housing development	Representative of Wir Sind Stadtgarten / developer	(developer, interview [15.06.22])
	Resident of Huebergass and member of the board WBG Huebergass	(resident 1, interview [10.10.22])
	Resident of Huebergass	(resident 2, interview [09.10.22])
VorPark	Representative of VorPark and resident of Huebergass	(VorPark, interview [20.09.22])
Allotment gardens	Allotment gardener and resident of Huebergass	(resident 3, interview [07.10.22])

[1]Although not all municipal workers work as planners, I use "planner" as reference to indicate their role representing the municipal planning authority.

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PART III – CONCLUSION

5 Key Findings

This research analyses the paradoxical relationship between densification and urban greening. While densification can sometimes cause a loss of green spaces, the four cases analysed in this research show how urban greening can indeed be integrated in densification projects. However, the analysis also shows how, in these cases, access to green spaces is affected by the conditions of governance under which densification is implemented. The green spaces as part of the four densification projects are located somewhere on the spectrum between fully public and fully private, with access being a social process resulting from the institutional conditions that regulate densification. The mechanisms that define inclusion and exclusion can be explicit, as is the case when gates, buildings, or legal rights prevent access to the green space; or implicit, when exclusion revolves around the selective involvement of some user groups in decision-making processes at the expense of others. The analysis furthermore demonstrates that access to green spaces is by and large defined by the project-based negotiations that take place within Localized Regulatory Arrangements, where uneven power relations among actors shape the outcome of densification projects. The findings of this research are relevant not only for a better understanding of urban greening processes in densifying cities, but also for shedding light on the political processes behind urban development. As densification and urban greening constitute seemingly conflicting sustainability goals, this research provides insights into who decides where and how urban development takes place. Following is a discussion of the four hypotheses as identified in section 3.1, based on the findings from the four articles in part II.

5.1 The role of private landowners

The four cases show how actors in densification projects, whether public or private, have an interest in integrating urban greening, mainly in order to increase the attractiveness and environmental quality of dense urban living. Densification is more attractive and profitable if accompanied by the supply of new green spaces, as acknowledged by nearly all interviewees in the case studies. The cases furthermore show how the type of actor that drives densification affects how urban greening is carried out: if led by for-profit actors, there is an interest to provide green spaces as exclusive amenity to the densification project, rather than a public good. The most striking example is found in the Zijdebalen project (Utrecht – NL), where the municipal planning authority intended but failed to provide publicly-accessible green spaces. The

developer, having made a substantial financial investment when acquiring the plot, aimed to build high-densities in order to ensure profitability of the project. Space for urban green was limited, for which the buildings' inner-yards were developed as shared gardens. Despite the intention to ensure public access to these gardens to compensate for the lack of green in the public realm, these green spaces were not designed as public space, but as club good to be accessed only by residents. This was also how the developer sold these spaces to its customers: "the inner-yard is an extension of your luxury apartment in Zijdebalen" (sales catalogue Zijdebalen, 2017 [own translation]). As residents moved in, the condominium owners used the power of their property rights to revoke access for non-residents.

1. How does the involvement of private landowners affect access to green spaces in densification projects?

Hypothesis 1 – Private landownership in densification projects leads to exclusive green spaces. Although privately-owned land does not necessarily translate into private spaces, exclusive access to green spaces can be used by private developers to make densification more attractive and more profitable. If land is privately-owned, planning authorities have limited capacity to impose policy goals and enforce public access. Therefore, private landownership supports the economic interests of private actors in relation to urban densification, thereby leading to green spaces as exclusive club goods.

For the project Jardin-du-Paradis (Biel – CH), the private landowner showed a similar interest in green space to increase the attractiveness of the housing, benefitting substantially from the adjacent park developed by the city. As the interviewees confirmed, the park project contributed significantly to the success of the planning process. Although providing public access to the park through the housing project was not in the interest of the landowner, it was willing to accommodate the demands from the municipal planning department, for which a public right of way was installed. Also the Defensie-Eiland project (Woerden – NL) provides an intriguing illustration of the economic interests behind urban greening. Many interviewees stated that the project would have benefitted from additional green space supply in the public realm; however, at the time urban greening was not considered a priority. The interviewees stated that, more than taking into account climate change adaptation, public space was designed to maintain and enhance the industrial character of the site. Still, many housing units on the island integrate large private gardens, in order to boost real-estate values and to ensure the feasibility of this financially-challenging project. Greening was developed not to improve access to green spaces,

but as instrumental to the financial stakes behind the development.

If densification is profitable due to an existing rent gap, integrating green spaces produces a so-called ecological rent gap, thereby increasing the profitability of the densification project (Anguelovski, Irazábal-Zurita, et al., 2019; García-Lamarca et al., 2022; Quastel, 2009). Profit-oriented actors therefore prioritize the aesthetic quality and exclusiveness of green spaces, making exclusive access regimes a likely outcome. This phenomenon is particularly evident in the cases where land was privately-owned; however, it is also visible in the public-led project in Woerden (NL). Still, exclusive access regimes in line with club goods are not an inevitable outcome of private-led densification, but instead a political decision based on the prioritization of some policy goals over others. Access to green spaces can be ensured as long as the municipal planning authority is able and willing to act proactively and strategically.

5.2 The role of the municipal planning authority

2. How does the role of the municipal planning authority affect access to green spaces in densification projects?

Hypothesis 2 – Municipal planners can ensure inclusive access to green spaces in densification projects through strategic and proactive action. As the implementation of densification is done through project-based planning, in line with NPM and growth-oriented urbanism, planners negotiate urban development with private landowners. Compromises need to be found between public and private interests. Municipal planners can strengthen their position in these negotiations by taking the lead in planning processes and making strategic deals with landowners. Large municipalities are more successful, as these have more resources at their disposal to negotiate deals with private actors.

Indeed, all four cases show how the implementation of densification is governed mostly through Localized Regulatory Arrangements (LRAs) that adapt, circumvent or revise general policies and plans according to the local context of the densification project. For the sake of implementation, policy goals related to green space provision but also density and housing affordability are renegotiated with private actors, resulting in a compromise between public and private interests. The concept of LRA allows for examining how general policy goals are translated into case-specific rules, leading to implementation, diversion, circumvention or innovation (Viallon et al., 2019). Applying this analytical concept, I have shown why policy goals are not fully

implemented (*article 1*), how the negotiation of the LRA defines the access regime of green spaces beyond legal ownership (*article 2*), how strategic action by municipal planners can increase the capacity to ensure access to green spaces (*article 3*), and how involving commoning initiatives within the LRA can lead to more inclusive outcomes (*article 4*).

In particular, article 3 describes how municipal actors across the four cases made use of different strategies to affect the LRA. These strategies relate to the mobilization of public land, the strategic combination of land policy instruments, facilitating private investments, and building public-private partnerships. Based on the conceptualization of these four strategies, I have identified the conditions that increase the capacity of planners to ensure the integration of urban greening in densification projects: landownership, finding convergence between public and private interests, and guaranteeing public access.

The power position of the city is significant in defining to what extent municipal planners are successful in the negotiations with private actors. The two large cities in the sample, Utrecht and Bern, proved more successful in attracting private investment and the involvement of private actors in densification projects. Particularly in Bern, the city was in a powerful position to steer development, mainly due to its property titles. It was thereby able to involve non-profit private actors which, as article 4 shows, contributes to more inclusive outcomes of both housing and green space supply. The case in Woerden provides an example of a medium-sized municipality that, despite public landownership, lacked the resources to exercise control over the development: while it lacked financial resources to carry out the development, it also lacked human resources and know-how to strengthen its position in the negotiations with the developer. One interviewee in this case argued that a municipality like Utrecht would have been able to make stronger demands to the developer, whereas the municipality of Woerden was subjected to “the big boys” (municipal planner, October 2023). However, in Biel – also a medium-sized city – the municipality created the conditions for investors to develop a densification project and comply with public policy goals, despite its size and dependency on private investment. The project Jardin du Paradis was kickstarted with the interest of the Swatch Group to develop a new headquarters; the city of Biel seized this opportunity to organize a land readjustment, the profits of which were invested in the development of a public green space. As our interviewees stated, it was ultimately the proximity to the park that enabled the success of the housing project. The developer stated that the park together with the new Swatch headquarters as architectural landmark gave the neighbourhood allure, contributing to demand for the rental housing (interview developer, August 2021). Thus, the public investment in a neighbourhood amenity strengthened the power position of the city vis-à-vis the developer, enabling the two actors to find agreements despite conflicting interests in terms of green space accessibility. Hence, while the power position of the

municipality is significant, this position can be enhanced by making strategic use of the leeway provided by project-based negotiations.

5.3 The role of land policy

3. How does land policy affect access to green spaces in the planning of densification?

Hypothesis 3 – Land policy leads to more effective implementation of policy goals. Through the strategic combination of instruments based on public- and private-law, planners can effectively enforce the implementation of policy goals upon private landowners. These instruments include, for example, private-law contracts, public-private partnerships, and ground-leases. The mobilization of publicly-owned land is particularly effective as it mitigates the incoherence of the institutional regime and allows planners to implement policy goals without the need to negotiate with private landowners.

In all four cases, the main planning instrument to regulate densification was the land-use plan (see table 6.1). In the Netherlands and Switzerland, the land-use plan is the main legally-binding instrument used by municipalities. Swiss municipalities typically have a standard zoning plan in place covering the entire municipal territory [*baurechtlichte Grundordnung* or *Nutzungszonenplan*], with special land-use plans [*Sondernutzungspläne*] being available to deviate from or complement standard zoning regulations for specific areas or plots. In most municipalities, changes to the standard zoning plan as well as new special land-use plans need to be approved by the municipal voting population. In the Netherlands, land-use plans are per definition confined to a specific area, and generally seen as a tool to support land management rather than a strict regulatory instrument. Therefore, land-use plans can be changed or adapted relatively easily. Municipalities have a variety of land-use plans in place, each covering a part of the municipal territory, which can be adapted if approved by the municipal council. Although public votes do not exist in the Dutch context, residents can make use of the right to appeal to contest new land-use plans.

In the context of densification, the use of special land-use plans has become more prominent in many Swiss municipalities (Kanton Bern, 2018). Standard zoning regulations as those in municipal zoning plans are often not fit for inner-city development, given the need to balance many opposing interests. Special land-use plans like those used in cases 3 and 4 allow for flexibility and the negotiation of almost any detail of the development. Being so, the standard

zoning plan is losing importance vis-à-vis special land-use plans, as nowadays many development projects are regulated through deviations from the zoning plan (Kanton Bern, 2018). This increases flexibility and allows the municipality to act strategically in line with land policy, combining the land-use plan with other instruments. All cases except case 1 made use of property-based instruments, related to property rights (public landownership), ground-leases, land readjustment, or public right of way. These instruments directly affect the distribution or scope and content of property rights (Gerber, Hartmann, et al., 2018). Thereby, landownership structures become more consistent with public policy goals, for which effective implementation is more likely.

	Case 1 (Zijdebalen)	**Case 2 (Defensie-Eiland)**	**Case 3 (Huebergass)**	**Case 4 (Jardin du Paradis)**
Public-law instruments	Land-use plan Structural plan	Land-use plan Public tender	Land-use plan Public competition	Land-use plan
Private-law instruments	Contractual agreement Financial incentive	Public landownership Contractual agreement	Public landownership Ground-lease contract	Public landownership Land readjustment Public right of way

Table 5.1. Overview of the instruments used in each of the four cases.

The Huebergass project (Bern – CH) shows how the mobilization of publicly-owned land is indeed highly effective to achieve policy goals, as it allows the municipality to steer the development through its own property rights. Hereby, the city of Bern was able to implement both affordable inner-city housing and a new public green space. The project Defensie-Eiland (Woerden – NL) equally relied on publicly-owned land as key instrument to steer development: this was precisely the reason why the city decided to purchase the land from the national government, despite the high land value. The development presents a typical case of Dutch active land policy, as the municipality was willing to make a significant financial investment in purchasing land for redevelopment, aiming to capture land rents on the short-term. It shows the financial risks involved in this strategy, resulting in a significant deficit and a situation of dependency vis-à-vis the developer. This is precisely why active land policy has lost some of its glamour in the Dutch context (Buitelaar & Bregman, 2016; Needham, 2014). Nevertheless, interviewees working at the planning department of Utrecht recognized that the city's facilitating role as observed in the Zijdebalen project is nowadays increasingly being questioned. Mainly due to the significant lack of affordable housing in cities, municipal planners are (again) recognizing the value of public landownership to ensure long-term control over urban development (Meijer & Jonkman, 2020). As one planner stated:

"*There was a long period of 'no more active land policy'; we have to set the framework, but [development] is done by private investors. That has been going*

> *on for 20 years, and now you see how the municipal council is again searching for, let's say, more active forms of land policy. That's also related to being able to steer more, for example in relation to housing affordability*." (interview municipal planner, July 2021)

In both Dutch cases, municipalities also made use of private-law contracts to legally anchor agreements with the developer beyond the land-use plan. These contracts are common in planning processes in the Netherlands, for instance to make agreements in relation to the distribution of costs, the timeframe of the development, and the distribution of responsibilities (van den Hurk & Tasan-Kok, 2020). Given that in the project Defensie-Eiland (Woerden – NL) development was outsourced to a private actor, a large array of contracts was used to legally anchor the partnership between the public and private actor. As one interviewee explained, the public tender included three large contracts, each with many annexes – "a whole lot of paperwork" (interview planner, November 2023). In the project Zijdebalen (Utrecht – NL), the contract celebrated between the city and the developer was mainly intended to distribute responsibilities and accountability, given the impact of the development project on the surrounding neighbourhood. Here, a municipal planner stated that, in inner-city development, land-use plans are mostly complemented with a private-law contract, because a land-use plan only dictates what is allowed, whereas a contract allows for making concrete agreements regarding what has to be implemented (interview municipal planner, July 2021). In both cases, the private-law contracts shift responsibilities from the public to the private sector: both municipalities were unable or unwilling to carry out the development, for which the private sector was tasked with public responsibilities, for example in relation to the provision of public space and green spaces. The agreements negotiated between the public and private actor were legally anchored in contractual agreements. These, however, mainly constituted a mechanism for accountability rather than to penalize contract parties. In both cases, when agreements were not met by the private actor, the municipality sought to renegotiate and redefine the agreements, rather than to enforce compliance (see Tasan-Kok et al., 2019; van den Hurk & Tasan-Kok, 2020).

The use of special land-use plans in Switzerland as well as the use of contractual agreements in the Netherlands signify a shift to project-based planning, where the respective instruments are used to cement what is already negotiated between the municipal planning authority and the developer. This is in line with what has been termed 'development-led' instead of 'plan-led' planning in the Dutch context (see e.g. Buitelaar et al., 2011): rather than guiding development, instruments are used to follow and facilitate development. While this can enhance the probability of implementation mainly in contexts of densification, where interests over land are manifold, it

equally increases the power of landowners to influence rule formulation (Gerber & Debrunner, 2022). In theory, any zoning regulation can be adapted to protect or support an interest in urban development. In practice, this leads to planning being increasingly guided by the economic interests of private actors, who make use of the leeway to negotiate rules accordingly (Knoepfel et al., 2012). While land policy can indeed lead to more effective implementation of policy goals, increased flexibility and project-based planning bear the risk of favouring the integration of urban greening in densification projects based on economic interests (see article 3), instead of strengthening the power position of the municipal actor to enforce inclusive and publicly-accessible green spaces.

5.4 The role of commoning processes

4. How can commoning processes in the governance of densification affect access to green spaces?

Hypothesis 4 – Commoning processes contribute to inclusive processes of both densification and urban greening. Because these are inherently based on ideas of inclusion and access to resources, integrating commoning processes in the governance of densification leads to more inclusive outcomes. In particular, it allows for including other actors, as members of commoning initiatives, in the negotiation of the LRA, ultimately contributing to more inclusive green spaces.

As discussed in article 4, the Huebergass project (Bern – CH) provides an example of how the support of commoning initiatives during densification processes can contribute to more inclusive outcomes, in terms of both housing affordability and access to green spaces. Importantly, the case study shows how densification is ultimately a process of redefining and redistributing land uses, therefore affecting who has access to the resources resulting from these land uses. In my research, this process is illustrated by the negotiations taking place within the definition of Localized Regulatory Arrangements (LRAs). Article 4 shows how it is precisely in the phases of transition between land uses and the negotiation of new rules of use and access, that commoning initiatives can play a role in producing more inclusive outcomes. In the Huebergass project, these processes are made visible by the non-profit actor developing the housing cooperative based on strict regulations of housing affordability, as well as by the VorPark association managing the green space. The involvement of these actors in the process of densification allows for shifting the logics of urban development away from profit-maximization and economic interests. This is

meaningful for urban greening, as the green space as part of this project was produced not with the intention to increase the attractiveness of the adjacent housing, but to develop into a publicly-accessible neighbourhood amenity. Above all, the public park was integrated into the densification project to compensate for the loss of allotment gardens and to enhance the environmental quality in this densifying neighbourhood. The cooperative housing adjacent to the park prevents the commodification of green space and the working of an ecological rent gap (García-Lamarca et al., 2022; Quastel, 2009) in this particular densification project. Nevertheless, as this case also shows, the housing and the green space project entail their own mechanisms of exclusion, through the selection of a homogeneous group of cooperative residents and through the cultivation of a sense of ownership by those involved in the production of the VorPark. The case study points to a critical and seemingly insolvable balancing act in regard to commoning processes: how to ensure the material existence and maintenance of the urban commons by a dedicated group of commoners, while simultaneously ensuring its open and inclusive character (see Bergame et al., 2022; Huron, 2015; Nightingale, 2019)? While my research does not provide an immediate answer, it does show how commoning processes in densification projects can steer towards more inclusive outcomes, mainly by shifting urban development towards the everyday needs of those affected.

5.5 Summary of key findings

Based on the four case studies, I have identified similar phenomena across the Dutch and Swiss context:

- Densification is mostly regulated through instruments beyond standard zoning plans.
- These instruments allow for flexibility and the negotiation of planning rules, for which project-based negotiations between public and private actors are a key factor influencing the outcome of densification.
- Because of these negotiations, the successful implementation of policy goals substantially relies on the capacity of municipal planners to strategically navigate the leeway of project-based planning and to find agreements with private actors.
- Overall, this context of flexibility and project-based negotiation reinforces the power of landowners to influence rule formulation, as these can make use of their property rights to obstruct the implementation of densification goals. In practice, this leads to planning being increasingly guided by economic interests, particularly when land is owned by for-profit actors.

- This is significant for planning the green and dense city, as urban greening becomes integrated in densification projects mainly based on its economic value. Hereby, the aesthetics of green spaces are used to ensure public acceptance and boost real-estate sales rather than to ensure everyday use by a diversity of users. The economic interests behind urban greening tend to undermine access to green spaces.

Beyond these similarities, I have also identified some important differences across the Dutch and the Swiss cases. Although the four cases are not representative of how densification is done in Switzerland or the Netherlands, the divergent outcomes of the cases can be situated within their respective planning context:

- In the Swiss cases, the mobilization of public land played a significant role, as it allowed the municipal actor to use its property rights for the sake of implementing policy goals. This, however, requires a long-term vision on behalf of municipal planners, prioritizing policy implementation over short-term gains.
- In the Dutch cases, the role of public landownership was more ambiguous, mainly due to the impact of the 2009 financial crisis. In the aftermath of the financial difficulties resulting from this crisis, municipalities increasingly relied on private investment to implement densification goals. In both cases, this resulted in compromises and trade-offs, with densification being prioritized over urban greening.

Overall, economic interests, particularly those related to the potential of land rent increase resulting from densification and urban greening, are a key factor shaping the outcome of urban development. Commoning processes have a role to play in shifting the logics of urban development away from profit-making, towards non-profit development. Giving out publicly-owned land through long-term ground-leases is a particular effective way of supporting commoning, as it allows the municipal actor to maintain long-term control. Urban commons can thus play a key role in sustainable urban futures, not in order to ensure long-term and stable collective management of resources but rather to support inclusionary processes in the governance of urban transformation.

6 Theoretical Contributions

The contribution of this research to the theoretical framework developed in chapter 2 is twofold. First, it allows for discussing the conceptualization of access to green spaces beyond legal institutions. Second, it contributes to an innovative understanding of the role of the Localized Regulatory Arrangement in the implementation of conflicting policy goals.

6.1 Access to urban green spaces in densifying cities

The main contribution of Ribot & Peluso's Theory of Access (2003) is the understanding of access as determined by a number of structural mechanisms, of which legal property is just one among others. Having legal access to a shared space does not guarantee one's ability to benefit from and enjoy this space. Legal property rights first and foremost organize exclusion: based on property titles over land, landowners can exclude others from making use of the land, with the state typically protecting this right to exclude. This conceptualization of access as going beyond legal property allows for appraising the social dynamics that constitute access to urban green spaces. Combining this approach with the Institutional Resource Regime (IRR) framework emphasizes the role of Localized Regulatory Arrangements (LRAs) in translating the legal institution of property into a more complex distribution of rights and abilities. The findings of my four cases indeed show that, although legal property is significant, access goes beyond legal institutions through the definition of LRAs (table 6.1). This is particularly evident in cases 1 and 4, as the two cases where densification was led by a private for-profit actor. In both cases, the municipality sought to ensure public access to privately-owned green spaces. In the Zijdebalen project (Utrecht – NL), the regulations as part of the LRA did not affect the property titles of the owners. Instead, public access was regulated through the land-use plan and contractual agreements. As a result, the condominium owners enjoyed sufficient power to act against the regulations, not providing public access. The municipal actor, lacking legal titles, did not have the power to enforce compliance. In the project Jardin du Paradis (Biel – CH), the municipal actor successfully negotiated public access to privately-owned outdoor spaces, making clever use of the available instruments. Hence, public access was legally anchored through a public right of way, at the same time that outdoor spaces were designed as open and accessible spaces. Article 1 and 2 (part II) have described how the design features and physical attributes of a green space significantly influence to what extent the space can be accessed by a variety of users. In Biel, the municipal planning department understood the need to design open spaces without clear

delimitations and privatized terraces beyond installing a legal public right of way, in order to convey the publicness of the space to outsiders. The open design thus complemented the legal public right of way to ensure public access.

The vast body of literature on the commons is valuable to understand access to resources as a socially-organized process among commoners. This social organization can be rather formal, as is the case with most common-pool resources studied by Ostrom and colleagues (1990), but can also be informal, as gradually developed among a non-defined group of resource users (Nightingale, 2019). The Huebergass project (Bern – CH) provides a good example of the social organization of inclusion and exclusion in relation to green spaces. Although the land remained in ownership of the city of Bern, rights of use and access shifted as urban densification was implemented: first, the gardeners made use of the land to garden their allotments; then, local residents co-produced a new neighbourhood space as the VorPark; and finally, the city developed the land into a public green space. In this case, access to the green space was defined not by legal ownership but instead by the negotiations taking place among actors to define and regulate land use changes. The example of the VorPark shows how exclusion can be organized not only informally but even unintentionally. Although those involved in the development of the VorPark did not have the intention to exclude others from making use of the space, some neighbourhood residents perceived the space as 'belonging' to the cooperative housing. The case shows how those involved in the cultivation and production of a green space are commonly perceived as the 'owners' of the space, even when not legally recognized as such (see also Blomley, 2004).

	Case 1 (Zijdebalen)	Case 2 (Defensie-Eiland)	Case 3 (Huebergass)	Case 4 (Jardin du Paradis)
Legal ownership	Condominium ownership	Public and private	Public	Public and private
Localized Regulatory Arrangement	Public access to green inner-yards	Public spaces and private gardens	Ground-lease to cooperative developer; temporary management rights to VorPark	Public access to private outdoor spaces; open character and design
Type of access	Exclusive for residents; club good	Public and private	Public access; urban commons	Public access to private outdoor spaces

Table 6.1. Overview of the four cases in relation to legal ownership of and access to urban green spaces. The Localized Regulatory Arrangement is key for translating legal ownership into access.

While this case shows how access can go beyond the legal institution of property, it equally demonstrates the critical role of the public actor. As article 4 (part II) concludes, the role of the

state is crucial for supporting the urban commons and for enabling a logic of decommodification within the urban realm. On the contrary, the two cases where densification was led by private for-profit actors give prove of the difficulty to develop inclusionary processes of urban greening where development is guided by financial interests. Although exclusion and inclusion are socially-organized beyond legal ownership, public landownership is key to ensure inclusive green spaces in line with urban commons, particularly in densifying cities.

6.2 The role of the Localized Regulatory Arrangement for implementing conflicting policy goals

The IRR framework aims to identify the institutional rules that can guarantee the sustainable use of land. It stresses the role of public policy and property rights as main formal institutions defining land uses (Gerber et al., 2020; Knoepfel, Nahrath, et al., 2007). Beyond these formal institutions, the IRR framework also emphasizes the role of actors in adapting, circumventing, and complementing formal rules through Localized Regulatory Arrangements (LRAs) (Viallon et al., 2019). These arrangements provide the 'rules in use' for localized and time-specific situations, making use of the leeway resulting from the institutional regime. As my research shows, these LRAs are key to understand the governance of densification, in particular when combined with urban greening.

The LRAs as part of the governance of densification are created or redefined intentionally by the involved actors, in order to change the rules of the game and allow for urban transformation. In fact, as the empirical data in this research illustrates, actors *expect* to be able to adapt and change general policy regulations according to their interests. The implementation of densification, per definition taking place within the already-built environment and involving many use conflicts, requires the successful negotiation of localized agreements as put forward by the concept of LRA. Being so, municipal planners need to negotiate with private actors and aim for agreements that allow for converging public and private interests. If policy goals are not enforced, this is not because the planning authority lacks the instruments or know-how to do so; rather, finding agreements with private actors is a condition for the implementation of densification goals.

The analysis of cases where densification was combined with urban greening processes contributes to an innovative understanding of the role of the LRA in the implementation of conflicting policy goals. Although densification and urban greening can indeed be achieved simultaneously, both policies require a scarce resource, namely available land in cities.

Therefore, the mutual implementation of densification and greening goals constitutes inevitable trade-offs and use conflicts. These trade-offs are often not recognized in public policies (Artmann et al., 2019; Balikçi et al., 2022), pointing towards an incoherent policy framework. Subsequently, these trade-offs are negotiated within specific development projects by the actors involved; to what extent urban greening goals are integrated in densification projects is ultimately dependent on the agreements negotiated among public and private actors within the context of a specific development project. Given the importance of the project level, the role of LRAs is fundamental to understand policy implementation. While LRAs have been classified based on their capacity to achieve a policy goal through the activation of instruments as foreseen by the respective policy (see Viallon et al., 2019), my research shows that the LRAs lead to the achievement of some policy goals but not all, based on the activation of certain intentionally selected instruments that allow for successful agreements. Therefore, the LRA regulating a densification project can be considered successful for some policy goals while failing to achieve others.

Importantly, the constellation of actors is significant in defining which policy goals are prioritized: if land is owned by profit-oriented actors, the public actor is more likely to prioritize densification goals in line with economic interests, in order to find agreements with the landowner. In this case, urban greening goals can only be achieved if the respective landowner can be pursued to implement these. This is dependent on whether or not these goals do, in any way, align with the interests of the landowner. Hereby, ensuring the supply of new green spaces is less challenging than ensuring its public access, as the former serves economic interests whereas the latter does not. If land is publicly-owned, however, the public actor enjoys freedom to decide which policy goals to prioritize, with the potential to mutually implement (affordable) housing and public green space, as case 3 illustrates. In sum, in the case of conflicting policy goals, the resulting trade-offs are navigated by the involved actors in the definition of LRAs; which policy goals are achieved through which instruments relies on the constellation of actors and the potential to find agreements based on converging interests.

7 Conclusion

While cities worldwide understand densification or inner-city development as the solution to many problems related to urban growth, densification policies have been criticized for undermining urban sustainability, among others due to its paradoxical relationship with urban green spaces. Green spaces play a critical role in mitigating the UHI effect in densifying cities, for which *access* to green spaces is not just a 'nice to have' but rather a vital part of sustainable urban futures. Therefore, this thesis has focused on the question of how to plan for cities that are both compact and green. Understanding urban transformation as an intrinsically political process, I have focused not just on the physical supply of new green spaces in densification projects, but rather on access to green spaces. Hereby, green space projects are not considered as universally beneficial, instead producing both inclusion and exclusion. This research therefore asked how the conditions of governance under which densification is implemented affect access to green spaces, and under which conditions some planning approaches are more successful than others in achieving urban development that is both dense and green.

Densification and urban greening policies tend to overlook the inherent spatial trade-offs involved in the mutual implementation of both policy goals, for which planners lack guidelines on how to navigate these trade-offs and deal with the scarcity of space within cities. As a result, use conflicts between densification and urban greening policies are negotiated on project level, among the public and private actors involved in densification projects. Particularly when densification is led by for-profit actors, it is likely that densification goals, directly linked to financial interests, are prioritized over the provision of urban green spaces. To strengthen the position of planners in these project-based negotiations, concrete measures and regulations are needed that address trade-offs between densification and urban greening. These can include a minimum amount of publicly accessible green spaces in densification projects; a minimum level of tree canopy in projects; or a minimum share of green space and/or tree canopy in public spaces. Too much flexibility and leeway to renegotiate, redefine, or adapt these regulations is likely to undermine greening policies. Given the crucial role of green spaces in cities, now and in the future, the provision of sufficient publicly accessible green spaces in densifying cities cannot rely merely on the ability and competence of planners to successfully negotiate greening measures with private actors.

To ensure public access to green spaces based on inclusive processes, public landownership is key. Only through property rights can long-term public access to green spaces be guaranteed. Moreover, public landownership tilts the power balance in urban development away from profit-oriented actors, towards the municipal planning department. Long-term visions

in line with land policy and supported by public landownership as well as the strategic use of land policy instruments are needed to successfully address the complex challenge of planning the green and dense city.

Densification and urban greening are, like any other processes of urban transformation, shaped by profound politics and power games. The outcome of these processes needs to be analysed in light of these politics, going beyond measuring urban form or the physical supply of green spaces. Without attending to politics, urban development bears the risk of continuously prioritizing densification based on economic interests, over the provision of green spaces as indispensable public good in cities.

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APPENDIX I: OVERVIEW INTERVIEWS

Case 1 – Zijdebalen (Utrecht, NL)		
Type of actor	**Role of interviewee**	**Date**
Public actor	Municipal planning department (project manager)	July 2021
	Municipal planning department (urban designer)	October 2021
Private actor	Developer	October 2021
	Investor and landowner	October 2021
	Landscape architect	October 2021
	Landscape architect (external consultant)	March 2022

Case 2: Defensie-Eiland (Woerden, NL)		
Type of actor	**Role of interviewee**	**Date**
Public actor	Municipal planning department (external consultant)	October 2023
	Municipal planning department (planner)	October 2023
	Municipal planning department (real-estate)	November 2023
Private actor	Developer 1 (project manager)	October 2023
	Developer 2 (project manager)	October 2023
	Urban design office	October 2023
	Architect	November 2023

Case 3: Huebergass (Bern, CH)		
Type of actor	**Role of interviewee**	**Date**
Public actor	Municipal planning department (project manager)	June 2021
	Municipal planning department (green space planner)	June 2021
	Municipal planning department (planner)	October 2022
	Municipal planning department (real-estate)	July 2022
	Municipal landscape architect	June 2022
	Local district office	June 2022
Private actor	Developer	June 2022
	Housing cooperative	October 2022
	'VorPark' association	September 2022
	Neighbourhood association	October 2022
	Association of allotment gardens	October 2022

Case 4: Jardin du Paradis (Biel, CH)		
Type of actor	**Role of interviewee**	**Date**
Public actor	Municipal planning department (project manager)	August 2021
	Municipal planning department (urban greening)	May 2021
Private actor	Landowner and developer (current manager)	August 2021
	Landowner and developer (former manager)	August 2021
	Landowner and developer (external consultant)	July 2021
	Landscape architect	August 2021