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Sustainable Territorial Development / Maestría en Cambio Climático, Sustentabilidad
y Desarrollo

**Urban Green Spaces, participatory governance, and urban justice: the case study of
Neerpede, Brussels**

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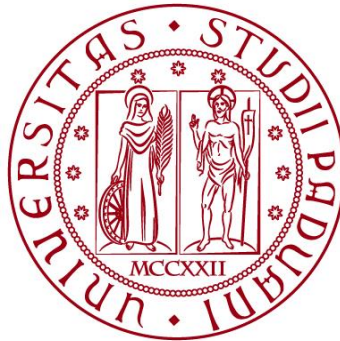


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UNIVERSITÀ DEGLI STUDI DI PADOVA
DIPARTIMENTO DI INGEGNERIA CIVILE, EDILE E AMBIENTALE
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Sustainable Territorial Development



Master Thesis

**URBAN GREEN SPACES, PARTICIPATORY GOVERNANCE,
AND URBAN JUSTICE: THE CASE STUDY OF NEERPEDE,
BRUSSELS**

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THESIS APPROVAL

I, Salvatore Pappalardo, as supervisor of the student Asia Irsara, hereby APPROVE the thesis entitled “Urban Green Spaces, participatory governance, and urban justice: the case study of Neerpede, Brussels ”.

Padova, 05/02/2025

Signature

A handwritten signature in blue ink, appearing to read 'Salvatore Pappalardo', is written below the 'Signature' label.



DECLARATION OF MOBILITY

This thesis is the result of the Joint Master's degree in Climate Change and Diversity: Sustainable Territorial Development (CCD-STeDe).

This program is offered by a consortium made up of the following universities: Università degli Studi di Padova (UNIPD, Italy), The Universidad Andina Simón Bolívar, Sede Ecuador, Universidade da Madeira (Portugal), the University of Johannesburg (South Africa) and Université Joseph Ki Zerbo de Ouagadougou (Burkina Faso).

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Asia Irsara

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2070344

*To my mother, for teaching me to find wonder in the unknown.
To my father, for teaching me the unknown lies just around the corner.*

Abstract

This thesis analyzes the dynamics of urban green space (UGS) planning in the Brussels-Capital region, with a specific focus on the case study of the Neerpede neighborhood. Considering how UGSs play a key role in climate resilience and social cohesion in cities, it analyzes how the lack of a participatory approach in urban planning can amplify socio-environmental conflicts. In particular, it is argued how the absence of active inclusion of the Neerpede community has contributed to tensions between residents, institutions, and other stakeholders. The methodology is based on participatory ethnography and includes semi-structured interviews and spatial analysis of the area. The results highlighted the limitations of top-down processes in urban green space management and, in addition, demonstrated how participatory processes can foster equitable and sustainable management of UGSs, promoting principles of urban justice and mitigating negative environmental and social impacts. In conclusion, the implications offer insights applicable in other urban contexts in both the Brussels region and other European cities.

Resumen

Esta tesis analiza las dinámicas de planificación de los espacios verdes urbanos en la región de Bruselas-Capital, centrándose específicamente en el estudio de caso del barrio de Neerpede. Considerando cómo los espacios verdes urbanos desempeñan un papel clave en la resiliencia climática y la cohesión social en las ciudades, se analiza cómo la falta de un enfoque participativo en la planificación urbana puede amplificar los conflictos socioambientales. En particular, se argumenta cómo la ausencia de una inclusión activa de la comunidad de Neerpede ha contribuido a las tensiones entre residentes, instituciones y otras partes interesadas. La metodología se basa en la etnografía participativa e incluye entrevistas semiestructuradas y análisis espaciales de la zona. Los resultados pusieron en evidencia las limitaciones de los procesos desde arriba hacia abajo en la gestión de los espacios verdes urbanos y, además, demostraron cómo los procesos participativos pueden fomentar una gestión equitativa y sostenible de los espacios verdes urbanos, promoviendo principios de justicia urbana y mitigando los impactos ambientales y sociales negativos. En conclusión, las implicaciones ofrecen perspectivas aplicables en otros contextos urbanos, tanto en la región de Bruselas como en otras ciudades europeas.

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1. Introduction

1.1 Why Urban Green Spaces matter

In recent decades, the expansion of metropolitan areas has posed new challenges to the sustainability and quality of life in cities (EEA, 2020; UN, 2021). Among the negative consequences, the increasing urbanization of European cities has often resulted in the reduction of green spaces and, consequently, also in negative effects on public health and social cohesion in cities (EEA, 2020).

Urban Green Spaces (UGS) are indeed particularly important in the urban context as they provide a range of social, economic, and environmental services that enable cities to increase their resilience in the face of climate change (Vargas-Hernández, 2023). Their management is part of a broader framework of municipal and regional policies aimed at urban sustainability. The United Nations has acknowledged several times the importance of UGSs and has promoted strategies for a sustainable urbanization (UN, 2021).

In fact, UGSs are key elements for these strategies because they mitigate the heat island effect, improve air quality and contribute to rainwater management. In addition, at the social sphere, they provide a space that promotes social integration but also help to reduce stress and, therefore, improve mental health (Sigrist, 2023; Lafrenz, 2022).

In Europe, urban densification is a key policy issue in many countries as a growing demand for housing and infrastructure pressures towards a more intensive land use, often at the expense of green space. In this context, UGS succeed in providing a range of ecosystem services that represent a multifunctional solution to different needs (Rahman, 2018; Cole *et al.*, 2017). However, the management of UGS is a complicated issue as it poses urban justice problems, pointing out relevant governance issues (Athokpam *et al.*, 2024). For example, spatial distribution is a key factor in the climate change resilience of the region of Brussels-Capital¹ and its population because there is very often an inequity in accessing UGS precisely because of an uneven distribution that tends to favour residential and upper-middle class areas at the expense of the lower socio-economic

¹ Henceforth commonly referred to as the Brussels region or just Brussels.

segments of the population (Le Texier *et al.*, 2018). Therefore, even in terms of public health, there is also an imbalance, which is hardly considered in UGS policies precisely because of its difficulties of management (Lafrenz, 2022).

Some cities have adopted innovative strategies to manage UGS that include participatory planning. For example, in Copenhagen, they have developed a system that connects the city's green areas and waterways. In this way, in addition to the improvement of landscape beauty, there is also the improvement of urban biodiversity and water resilience (Laage-Thomsen & Blok, 2021). In doing so, the right to the city was granted since inequalities in access to UGS were reduced thanks to the involvement of citizens, who were able to understand and maximize the benefits (Gulrud *et al.*, 2023).

In the specific case of Brussels, the management of UGSs fits into a complicated institutional framework since the governance level is not only municipal but, rather, it must coordinate with the regional one since the Brussels-Capital region is one of the most urbanized in Europe and the physical boundaries between the different municipalities that conform to it do not exist anymore (Lagasse, 2012; Manganelli & Moulaert, 2019). Therefore, the governance shapes into a multilevel framework in which the regional government, local governments, and a range of public and private actors work together in the territory. In this context, local communities are key actors that must be included in decision-making processes (Lagasse, 2012; Zhou *et al.*, 2023; Delphine *et al.*, 2022; Ding *et al.*, 2023).

This thesis explores the specific case of the green spaces' innovation project in Neerpede, a neighbourhood on the periphery of Brussels-Capital region characterized by the presence of agricultural areas, natural spaces, and residential areas. As a result, this area is one of the city's green lungs contributing to climate resilience (Bergers *et al.*, 2018; Wang *et al.*, 2022; Seyhan, 2024). However, the project has raised a great resistance from residents concerned about the potential negative impacts, and a strong component of NIMBYism has also emerged (Colom-Gonzalez, 2024; Webb & Dej, 2023). In fact, this case reflects a broader issue related to the lack of truly participatory decision-making processes.

Indeed, these projects are often driven by economic and institutional interests, and the views of UGS users are often marginalized. In addition, numerous questions have also been raised

about the balance between urban development and environmental conservation (Van Leeuwen, 2022; Zhou *et al.*, 2022; Wan *et al.*, 2021). Analyzing these dynamics provides insight into how a more inclusive planning can reduce the conflicts in urban contexts and, consequently, improve the planning and implementation processes of urban renewal projects.

To conclude, the present research explores the relationships among public participation, project perceptions, and decision-making processes. Indeed, the study examines residents' perceptions and governance dynamics through participatory ethnography, spatial mapping, and documentary analysis. The integration of qualitative methodologies for geospatial analyses provides insight into socio-spatial dynamics and enables the final goal of understanding and drawing useful insights for more equitable and sustainable management of UGS in similar European contexts.

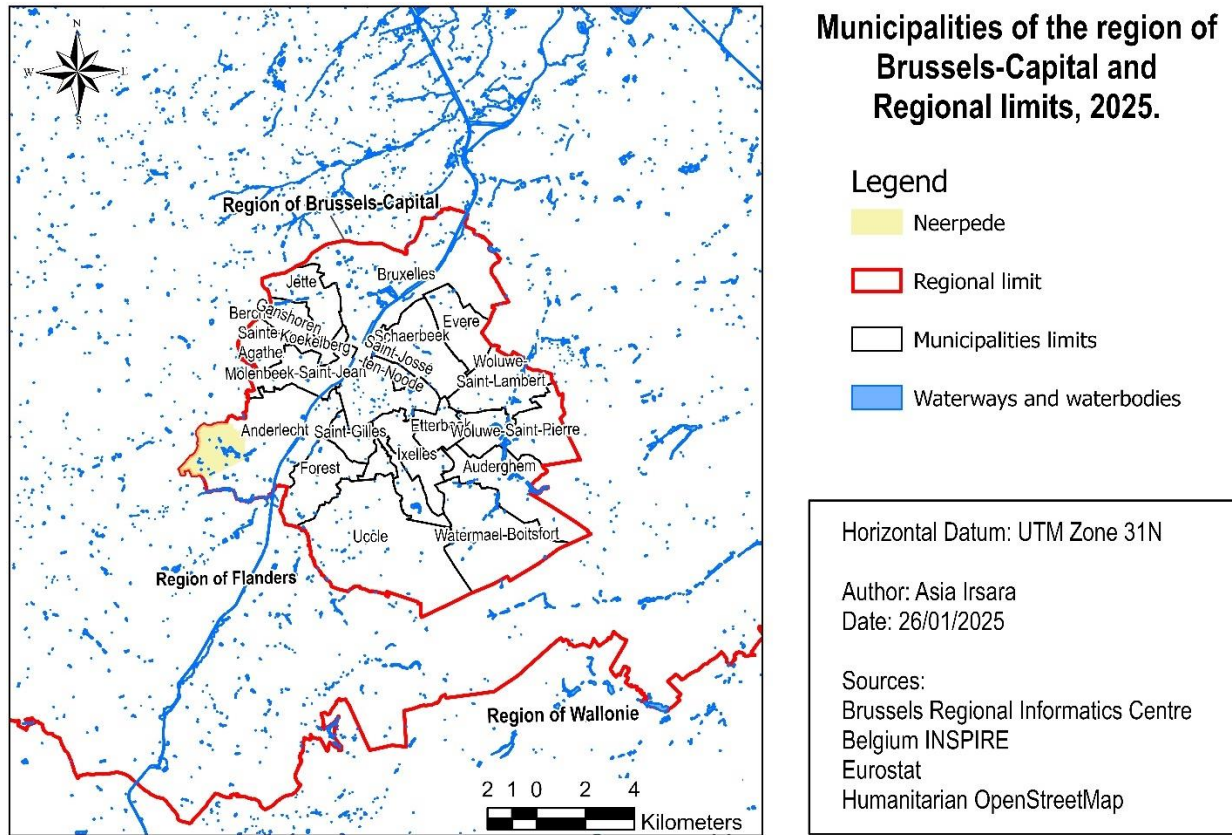
1.2 Geographical framework

1.2.1 Brussels-Capital region

The Brussels-Capital autonomous region is divided into 19 municipalities, each one with different socio-economic and environmental characteristics (Lagasse, 2012). Territorially, the Brussels-Capital region is surrounded by the Flanders Region, as shown in *Map 1*.

In the 19th century, the Brussels municipality was still surrounded by independent villages, which with industrialization and population growth in the 20th century led to urban expansion (Zitouni, 2010). This resulted in a building continuity among the different towns, eliminating *de facto* physical separations between municipalities. Despite this, institutional autonomy was preserved, in opposition to other European realities that have administratively unified their suburbs. Therefore, each municipality today maintains its own competencies in urban planning and public services. In 1989, the Brussels-Capital Region was created with the aim of providing a unified institutional framework but without completely integrating the administrative framework (Lagasse, 2012).

Map 1. Municipalities of Brussels-Capital region, 2025.

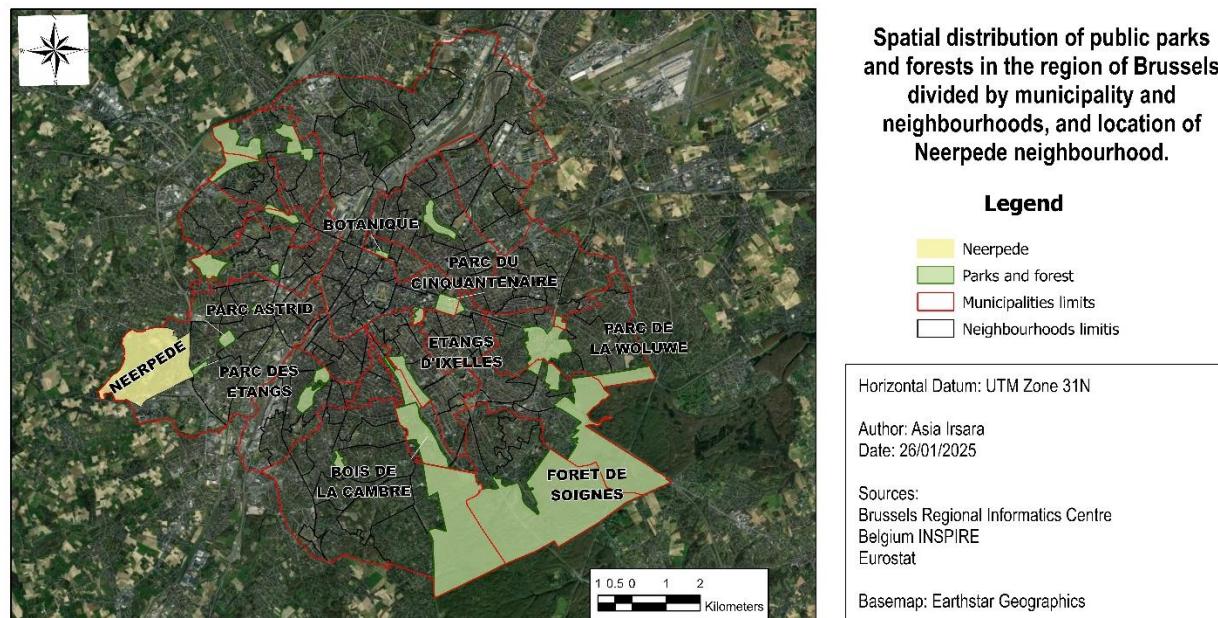


Sources: Personal elaboration based on Brussels Regional Information Centre, INSPIRE, Eurostat. Elaborated from ArcGIS Pro.

1.2.2 UGS in Brussels-Capital region

In Brussels, there are numerous green spaces distributed throughout the city, which include both parks and gardens and larger reserves, such as the Bois de la Cambre and the Sonian Forest. They are concentrated in the south and southeast of the city, where they are greater in both number and size (*Map 2*). In contrast, the north of the city is characterized by highly populated municipalities, where there are smaller green spaces with more modest vegetation.

Map 2. Spatial distribution of public parks and forests in the region of Brussels, divided by municipalities and neighbourhoods, and location of Neerpède, 2025.



Sources: Personal elaboration based on Brussels Regional Information Centre, INSPIRE, Eurostat.
 Elaborated from ArcGIS Pro.

This distribution is the result of the evolution of urban planning over the years, which has favoured the more affluent social class, typically concentrated in the south, and disadvantaged the working class, which has concentrated in the north. Municipalities with few green spaces suffer more from elevated temperatures during summer heatwaves, which then disproportionately affect the low-income and immigrant communities (Le Texier *et al.*, 2018; Van der Voorde, 2017). This lack also complements the high population density in the north of the city, especially in Schaerbeek and Saint-Josse, making it even harder for residents to find refuge during the summer months. This not only reduces the quality of life for these communities but also underlines the spatial inequalities in the access to UGS.

For example, the municipalities of Uccle, Watermael-Boitsfort, and Auderghem are considered among the wealthiest in the city and provide access to large, high-quality parks, such as the Bois de la Cambre and Woluwe Park (van der Saag, 2023). Moreover, while some UGSs are easily accessible from the centre by public transportation; others do not have direct connections. This is especially reflected in the north of the city.

In addition to accessibility, it is also worth examining the quality of green spaces. Brussels is characterized by a high degree of multiculturalism, which rarely comes into play when planning green spaces. In fact, many UGSs are designed for recreational activities such as running or cycling, but this often does not allude to the recreational practices of the migrant communities that inhabit these green spaces.

For example, Bois de la Chambre is one of the most visited parks during the summer. However, the park lacks a space that can host large family gatherings, which would then support the weekend routines of many cultural groups. In addition, the language barrier is an exclusionary factor considering the multicultural nature of Brussels, as most of the parks do not have multicultural signage and, as a result, European and non-European migrant populations, who speak neither French nor Dutch, are excluded.

1.2.3 Neerpede

Neerpede is a neighbourhood located in the western part of Anderlecht, which is one of the nineteen municipalities within the region of Brussels-Capital in Belgium (*Map 1*). This region has a particular administrative structure due to its strong transitional identity, influenced both by the Brussels capital city urbanity and the Flemish rurality.

Such features shaped Neerpede as a peri-urban zone, which is partially characterized by a semi-natural and cultivated area and partially by a residential neighborhood. Since ecological, economical, and recreational functions coexist in the area, the neighbourhood is currently subjected to specific regulations such as the ones limiting urban expansion and protecting the agricultural lands.

On the one hand, the Brussels-Capital region oversees the spatial planning, the environmental protection and mobility policies; on the other hand, the local government of Anderlecht is expected to implement such policies and ensure the regulations compliance because its location on the border requires effective cooperation between Brussels-Capital region and the Flanders. Nevertheless, the fragmentation of the Belgium governance system and the overlapping among competences create additional issues.

1.3 Research questions and objectives

Urban resilience, public health, and social cohesion in European capitals can be increased by proper management of UGS. However, the implemented top-down processes in urban planning tend to disconnect the objectives of such interventions from civil society (Tiran *et al.*, 2017). In fact, the debates are articulated exclusively by governmental and private interests, marginalizing and underrepresenting the residents.

As a consequence, considerable socio-environmental conflicts might arise since the decisions are taken with the involvement of the very people these projects are meant for. A top-down decision-making process overlooks the needs, concerns and priorities of the residents and the local communities. Therefore, this exclusion may lead to distrust toward institutions and opposition to the interventions because the affected people may perceive these projects as imposed rather than designed for their benefit (Tiran *et al.*, 2017; Niță & Ioja, 2020; Blok & Meilvang, 2015).

The primary hypothesis ruling this research is that the absence of a bottom-up participatory approach in the project design in Neerpede has been unbeneficial to the efficacy of such intervention; rather, it may have fuelled the conflict.

UGS conflicts manifest in the forms of resentment, resistance, or alienation amongst the target population, which emerges from the feelings of exclusion and the lack of dialogue regarding the project impacts among different actors (Haase, 2024; Blok & Meilvang, 2015).

Among other cases in Brussels, the Neerpede one's cut across these dynamics as it is situated in a rich area in terms of natural and social heritage, but it has been facing numerous pressures from social, economic, and environmental factors, including urban expansion, environmental conservation issues, and multiple stakeholder interests.

The hypothesis assumes that the project's lack of genuine civil society involvement, which leads to polarized views, broadens the conflict instead of reinforcing mutual understanding and enhances tensions among citizens and institutions. In the context of Neerpede, the hypothesis will be extended by examining the degree of stakeholder engagement, or its absence, and the influence of such factors on perception as well as public responses to the project itself.

The assumption is that a transparent, inclusive process may add value for trust building and conflict management mechanisms to align different stakeholder views on shared goals. This research, therefore, considers conflicts associated with urban planning not necessarily given as they can be mitigated through a participatory approach. Specifically, the involvement at the very outset of residents and community organizations points of view may ensure a widespread approach, resulting in a greater consensus and less opposition to UGS projects, including the Neerpede's one, thus improving their resilience.

To assess the hypothesis, the general question guiding this research is the following one:

“What are the multifaceted dimensions of public perception, understanding, and engagement with the Neerpede project, and how do these factors inform decision-making processes?”

To answer this question, the following specific research questions are addressed:

1. *Who are the stakeholders involved in the Neerpede project, and what are their positions, expectations, and alignment regarding its impacts?*

This question seeks to identify the involved actors, including local residents, advocacy groups, different levels of governmental bodies, and environmental organizations, among others, and their expected outcomes from the project.

Moreover, it examines the stakeholders' shared or unshared social, economic, and environmental concerns of the Neerpede project by understanding their divergent or convergent views. Thus, this question aims to map potential areas of agreement or disagreement.

2. *How does the public's level of awareness of the project's objectives and its potential outcomes shape individual and collective responses?*

How well stakeholders understand the project's aims may significantly influence their acceptance, opposition, or advocacy efforts. For this reason, this question investigates the relationship between awareness and action, as well as whether increased public awareness could drive to a more informed engagement.

3. *How could a genuine participatory process impact decision-making in the Neerpede project, and what barriers and opportunities are perceived by different*

stakeholders for achieving meaningful participation?

This question circles around the word "genuine", and it assesses how each stakeholder views the feasibility and utility of participatory decision-making, identifying obstacles and recognizing potential benefits.

4. *What additional social, economic, and environmental factors are key in the perception of the project and the existence of the conflict itself?*

This question aims to identify other social, economic, or environmental factors that may influence stakeholders' project perceptions and fuel or mitigate conflicts. With the recognition of such factors, it is possible to aspire to more balanced and context-aware urban planning.

Ultimately, the goal to achieve is to provide insights about the possibilities and limitations of participatory planning in UGS conflict resolution, as well as to trace the patterns of citizen's involvement, consensus, and engagement. Moreover, the conflictual dimension is investigated by the identification of potential collaborations and the shortcomings of top-down planning, but also by assessing how different voices may be incorporated, achieving more equitable interventions in Neerpede and beyond.

2. Theoretical framework

2.1 Climate and governance challenges

2.1.1 Cities and climate change

It is widely documented that cities are both perpetrators of climate change emissions and at the receiving end of their negative effects. Over half of the population of the entire globe lives in urban areas. These areas are responsible for approximately 70% of the greenhouse gas emissions, due to the energy consumption, transportation, and industrial activity. The impacts of climate change, including the rise of temperatures and the higher occurrence of extreme weather events, disproportionately affect cities (Wei *et al.*, 2012; Sanchez-Rodriguez, 2009; McCarthy *et al.*, 2010). Indeed, the effects of climate change on human health in urban areas is truly relevant as rising temperatures and air pollution are factors that increase mortality rates among the most vulnerable, such as the elderly, children and individuals with pre-existing health conditions (Giannico *et al.*, 2024).

Low vegetation cover coupled with the abundance of heat-absorbing surfaces (e.g. asphalt) leads to the urban heat island effect, which is one of the most challenging aspects in cities today (Seyhan, 2024). Similarly, these artificial surfaces do not allow for natural water absorption, leading to higher flooding risks (Seyhan, 2024; Syros *et al.*, 2024). However, in this context, urban green spaces (UGS) are essential in promoting climate resilience as they help to lower temperatures, manage stormwater, and improve air quality (Wang *et al.*, 2022; Seyhan, 2024).

UGS provides society with more than just ecological benefits, as they also represent spaces for social well-being and community cohesion. For this reason, the built-up of UGS such as parks, forests, and green corridors in cities help to mitigate the climate change effects while also improving the quality of life (Athokpam *et al.*, 2024; Palliwoda & Priess, 2021; Heidt & Neef, 2008).

Notably, innovative projects like natural swimming ponds have emerged as multifunctional solutions in cities across Europe, combining recreation with ecological benefits. For instance, Vienna's Schafflerhofstraße natural swimming pond and London's Kings Cross Pond Club are

among the most remarkable examples of such initiatives that have further contributed to enhance the climate resilience of such cities (Nowacka-Rejzner, 2018; Ryfisch *et al.*, 2023; De Necker *et al.*, 2024; Arnberger *et al.*, 2024).

2.1.2 Governance challenges in UGS

UGS often reveals the tensions in top-down decision-making processes, in which there is a lack of community involvement. In such traditional approaches, decisions are mostly taken by a group of few public and/or private stakeholders with limited community involvement and a focus on their economic and/or aesthetic outcomes (Semeraro *et al.*, 2020; Pissourios, 2014). Although this approach can provide direct and easily reachable economic goals, it falls short in considering social and cultural dimensions of UGS in terms of accessibility, equity, and land use (Pissourios, 2014; Daniels *et al.*, 2018).

One major consequence of such decision-making processes is the perpetuation of citizens' marginalization, as sections of the public are excluded from policy-making. The lack of accessibility to decision-making spaces for several population groups is especially common in urban green space planning. As known, residents of lower-income neighborhoods tend to suffer more of such inequality as they frequently benefit from fewer and lower-quality UGS compared to the wealthier urban areas (Pinto *et al.*, 2022; Daniels *et al.*, 2018; Rahman, 2018; Kabisch & Haase, 2013).

These governance gaps are usually amplified by other urban phenomena such as green gentrification, a process in which the implementation of UGS projects leads to rising property values and to the displacement of vulnerable populations (Rahman, 2018; Cole *et al.*, 2017). Research on this topic shows that the renovation of specific green areas can increase the property values; consequently, it may displace vulnerable residents and, thus, alter the social fabric of the neighbourhood (Rahman, 2018; Cole *et al.*, 2017; Triguero-Mas *et al.*, 2022). According to Kabisch and Haase (2013; 2014), UGS accessibility in European cities is often inversely proportional to income levels. Among the causes of this systemic inequity, there are historical patterns of urban segregation, land use policies, and unequal resource allocation. For this reason, disparities have perpetuated over decades.

Furthermore, there have been documented worldwide cases in which UGS projects have faced resistance due to inadequate public consultations (Kabisch & Haase, 2014; Tiran, 2017). For example, the Superblocks initiatives in Barcelona arose because of the development of green corridors in the city; among the consequences of these projects, there were the displacement of residents and the unequal accessibility to the green spaces (Zografos *et al.*, 2020; Reixach, 2024). A second emblematic example is represented by the Queen Elizabeth Olympic Park in London, a high-profile green space developed for the 2012 Olympics and criticized for the consequential gentrification of the area and the top-down approach not considering the local communities (Dawson, 2017; Pollock, 2024).

In these cases, the imbalance of power between the decision-makers and the affected communities is one of the core issues, as public authorities and/or private stakeholders often dominate the planning process. In general, there are some institutional barriers that exacerbate this problem, including limited resources allocated for community engagement, the lack of mandatory participatory frameworks, etc. (Rosol, 2010; Campbell-Arvai & Lindquist, 2021).

To prevent these and similar situations, a governance reform prioritizing inclusive planning is needed to promote participatory decision-making processes which can actively involve the local communities during the entire project phases, from the design to the implementation and management. Moreover, policy tools such as rent control and affordable housing quotas may mitigate displacement risks (Fors *et al.*, 2015; Campbell-Arvai & Lindquist, 2021; Gulsrud *et al.*, 2023). For example, the city of Copenhagen has implemented housing policies to maintain affordable prices in areas undergoing green redevelopment and balance urban greening with social equity (Risager, 2022; Gulsrud *et al.*, 2023; Laage-Thomsen & Blok, 2021).

In fact, disregarding the needs of a neighbourhood's residents can result in their alienation, as the community perceives its concerns as undervalued. For instance, a project improving green spaces may cause mistrust, underutilization, or even an active resistance against the project itself, if there is no adequate consideration of the benefits that it can bring to local communities (Risager, 2022; Yazar & York, 2023).

Moreover, top-down governance frequently tends to focus on singular and specific objectives, such as recreation or property development, resulting in the incapacity of recognizing

the multifunctionality of UGS as providers of diverse ecosystem services simultaneously (Sotiriou & Petropoulou, 2022). For example, the Park Spoor Noord in Antwerp promotes both biodiversity conservation and recreational facilities for sports and cultural events. At the same time, it valorizes its cultural heritage of a former railway yard, and it contributes to mitigate flooding in the area by incorporating a water management system (Heynen, 2025; Flores *et al.*, 2021).

In these projects, it is fundamental to implement participatory approaches to valorize multifunctionality. However, such approaches are often hindered by institutional barriers (e.g., limited resources, lack of established frameworks for public engagement, bureaucratic inertia, etc.) that can be overcome by including participatory requirements into legal frameworks, by allocating dedicated funding and resources for participatory activities, and by implementing capacity-building activities for public officials and community representatives (e.g., training programs) (Korkou *et al.*, 2023; Toxopeus & Polzin, 2021).

To bridge the gaps characterizing these traditional models, it is necessary to implement more participatory processes through which the voices of marginalized groups can be included, listened to and valued. Thereby, UGS projects can be designed in order to be closely aligned to the social, cultural, and ecological needs of the communities they serve (Wan *et al.*, 2021).

2.2 Urban Green Spaces

2.2.1 Conceptualization

UGS are natural or semi-natural areas within an urban area that provide ecosystem services to a city and its population. UGS are commonly publicly accessible spaces such as parks, gardens, and greenways, but also wetlands, forests, and agricultural land within peripheries; in other words, UGS includes both highly managed spaces and less regulated green areas (e.g., vacant lots, informal gardens, etc.). Through the ecosystem services they provide, they also promote social and mental benefits as they represent spaces in which residents can do physical activity, reducing stress, and having community interactions; moreover, they also support biodiversity and improve the air and waterbodies quality (EEA, 2020; EEA, 2021; WHO).

According to the United Nations' Sustainable Development Goals, the UGS represent key elements for inclusive, resilient, and sustainable cities (i.e., SDG 11), and they can help to reduce health disparities and enhance urban resilience (UN, 2021).

UGS can be classified according to several factors, such as the accessibility and the functionalities, but also to their types. In particular, the last categorization is the most common. While public parks and gardens used to be planned and maintained for recreational use and community engagement, private UGS tend not to be accessible to the public, but still, they contribute to the ecological balance of the city. Moreover, urban gardens, which are publicly available, also provide important ecosystem services by fostering local food production and social cohesion in densely populated areas.

In addition, another type of green space is represented by green infrastructures such as green roofs or vertical gardens, which contribute to mitigate the heat of the city. In addition, in the peripheries of the cities frequently there are natural reserves as urban wetlands and wooded areas, which represent important habitats for wildlife (Vargas-Hernandez *et al.*, 2023; EEA, 2021; EC, 2020).

It is also possible to classify the UGS according to its development process; so, green spaces can be planned or spontaneous. For example, a city planning strategy usually includes the creation or improvement of green spaces to fulfil recreational or ecological objectives, which are thus planned green spaces; however, in underused areas, new ecosystems can arise spontaneously and provide unexpected benefits in both social and environmental spheres (Panduro & Veie, 2013; Sikorska *et al.*, 2021).

Lastly, the ecological characteristics can define if a UGS is novel or designed. The novel ecosystems are developed thanks to human influence, and consequently, they result in unique habitats quite divergent from the natural ecosystems. Designed ecosystems are also created by the human impulse, but they are intentionally created to mimic natural processes and provide specific needed services (Panduro & Veie, 2013; Klaus & Kiehl, 2021).

2.2.2 Multifunctionality

As introduced, UGS are key urban elements in providing a large number of benefits to the residents but also to wildlife. These benefits, also called ecosystem services, are usually interconnected, and so a single ecosystem can provide a multitude of services simultaneously, if there is knowledge behind the public planning policies developed (Sigrist, 2023).

UGS support the ecological balance of the city while contributing to the conservation of biodiversity as natural reserves within cities function as ecological corridors as they provide habitats for plants, birds, and insects, among others. Moreover, UGS help to mitigate the heatwaves and the urban heat island effect as they reduce the surface temperatures by shading and through the evapotranspiration, and so the quality of residents increases (Vargas-Hernández, 2023; Sigrist, 2023).

Considering the social sphere, in addition to what has already been said, UGS represent a key factor for the well-being of urban residents, as green areas reduce the stress level and encourage an active lifestyle. Moreover, in UGS there are usually organized events, cultural festivals, educational activities, etc. These activities create a sense of belonging, and so they increase the community interactions; also, the attractiveness of the UGS neighbourhood improves thanks to these dimensions and its visual quality (Sigrist, 2023; Lafrenz, 2022).

Switching to the economic sphere, this attractiveness may increase the property value, as UGS usually attract investments in the surrounding neighbourhoods. Also, they may increase the employment rate as the park users create new consumption demands (Lategan *et al.*, 2022).

2.2.3 Urban aquatic spaces

Many of the green spaces described so far generally have aquatic spaces within them, such as lakes, rivers, canals, or reservoirs. These spaces are the green ecological spaces of the city and are particularly relevant in urban planning strategies proposed to increase the resilience of cities in the face of the effects of climate change (Walczak *et al.*, 2023).

Urban aquatic environments are critical in cities because they provide ecosystem services that are particularly vulnerable and scarce in cities: supporting biodiversity, regulating the

temperatures, providing recreational spaces, and beautifying the cities. From an environmental point of view, these spaces are often part of wildlife corridors (particularly wetlands, rivers, and lakes) and, therefore, are a key resource to favour, for example, migratory birds that use these aquatic spaces as key resources. From an ecosystem service for the human wellbeing perspective, on the other hand, aquatic environments such as bioswales are created to mimic natural habitats while serving specific functions within the city like flood control and allowing for the development of chemical-free swimming facilities (Hill *et al.*, 2017; Sun & Chen, 2012).

The importance of urban water bodies is, therefore, increasingly important considering the global trend of moving more and more in cities. From the point of view of urban development, these ecosystems help prevent events such as flooding, heatwaves and droughts, since they allow for more diverse urban ecosystems. From a social point of view, they also help with the mental health of residents as spaces such as natural swimming ponds or lakes provide a space where people can swim, exercise, relax, or simply be together (Sun & Chen, 2012; Ward Thompson 2016; Pichler, 2024).

All these features have been integrated into the urban planning strategies of many European cities, making the integration of urban water spaces an important best practice for the well-being of citizens (Athokpam, 2024). In Austria, natural swimming ponds have become quite popular as novel aquatic recreation spaces seeking for a balanced human-nature relationship. Usually located in city parks and residential neighborhoods, they favour ecological and non-chemical systems to purify water, based on plants, microorganisms and other natural processes. In this way, they are not only eco-friendly but are also safe ecosystems for bathing and ecosystems that promote biodiversity of aquatic organisms. Along the Danube in the city of Vienna, for example, a number of swimming spots have sprung up that have helped make the city one of the most pioneering in terms of sustainable urban development strategies (Pichler, 2024).

Another particularly interesting case is the water spaces of Hammarby Sjöstad, a residential district in Stockholm, Sweden. Previously an industrial site, Hammarby Sjöstad was redeveloped as a mixed-use area with a canal at its core and a number of retention basins that are both visually and practically useful. Underlying the project was the goal of creating new infrastructure that could contain excess stormwater, thus preventing flooding while at the same time serving to purify the

surplus before disposing it back into the environment. However, these spaces also represent recreational spaces since it is possible to do various water sports such as swimming and kayaking but walking trails have also been laid out around them (Goel, 2013).

Ultimately, it can be said that properly designed aquatic spaces not only provide essential ecosystem services to cities but can also help balance the human-nature pair, thereby improving the quality of life in urban areas (Pichler, 2024; Goel, 2013).

2.2.4 Green gentrification

Although the characteristics of the multifunctionality of UGS can bring these benefits, it also often creates unintended consequences that can lead to socio-spatial conflicts. These include green gentrification, or the paradox whereby the creation or improvement of UGS can lead to transformations in local identity, reduced social diversity, and inequalities in access to green spaces (Gou *et al.*, 2023; Miller, 2016).

Green gentrification also involves the transformation of community-oriented to consumer-driven areas that, therefore, prioritizes outside visitors and economic activities over local belonging. This shift can create a sense of alienation even for existing middle-class or affluent residents, who may feel disconnected from their neighborhood (Colom-Gonzalez, 2024).

While these UGS interventions have been effective in providing a multitude of functionalities, they have often served aesthetic and economical objectives over the concerns of community, and they have led to a greater inequality; in fact, recent research has shown that properties within walking distance of green spaces face price appreciations (Trojanek, 2018).

An additional aspect of green gentrification is socioeconomic homogenization. The influx of new residents or even just new visitors diminishes the diversity of the socio-economic fabric, which is a vital feature of an inclusive neighborhood. As such, urban greening projects, while neutral, may unintentionally erode the socio-cultural richness of communities as well as their identity (Miller, 2017).

The key to these processes lies in the existing disconnection between policies that promote green spaces and those that support social justice. Investments in UGS tend to prioritize

economically favourable interventions that are rarely also those that most consider the wellbeing of the communities that already inhabit the neighborhood, and in this way social and spatial inequalities are accumulated. Moreover, these effects are further reinforced by the political system that excludes marginalized groups and makes green gentrification an increasingly entrenched urban development problem. Thus, the question arises as to how the role of UGS can be developed and balanced without running into gentrification processes (Miller, 2016; Cole *et al.*, 2017).

Possibly, control policies such as housing quotas, rent caps, and community land trusts could help protect these more vulnerable communities. However, there is also a need for urban planners to adopt more integrated and inclusive approaches by prioritizing the multifunctionalities of UGSs, but alongside with social equity. Through participatory governance processes, it would then be possible to minimize the negative impacts of the development of UGSs since models could be promoted that better integrate the targeted communities within the planning and management processes so as to include their needs and perspectives (Lategan *et al.*, 2022; Trojanek, 2018; Slater, 2021).

Inevitably, green gentrification also causes an inequity in access to green spaces. In fact, although UGS projects intend to improve the lives of all city residents, in the medium to long term they tend to benefit only the wealthy residents. Moreover, cultural and economic shifts within the community can create barriers to access, as spaces become less welcoming to groups that do not align with the profile of the new users (Cole *et al.*, 2017).

Consequently, green gentrification is closely related to the concept of environmental justice, understood as the equitable distribution of environmental benefits and the reduction of harm to vulnerable communities. In the specific context, environmental justice is concerned with ensuring that green spaces benefit the entire urban population equitably through the promotion of participatory governance, equitable allocation of resources, and the implementation of policies to protect against certain phenomena such as green gentrification (Anguelovski *et al.*, 2022; Cucca *et al.*, 2023).

Therefore, integrating the concept of environmental justice into national, regional and local policies allows for the redistribution of environmental benefits against a system that, instead, tends to increase inequalities. It also allows for the promotion of sustainable, more inclusive, and

resilient cities in the face of environmental inequities that affect different segments of the population differently. Indeed, the most vulnerable tend to be marginalized in areas with fewer green spaces, leading to different forms of resistance in the face of such phenomena and, inevitably, complications in urban greening initiatives (Cucca *et al.*, 2023; Anguelovski *et al.*, 2022).

2.3 Urban justice

2.3.1 Conceptualization

As introduced, environmental justice in the urban context is closely related to urban equity because while the former focuses on the inequalities in access to and distribution of UGS, the latter also includes the intersections that exist between the environmental issue and the social issue. In fact, urban justice refers to the fair distribution of resources, services, and opportunities among all citizens regardless of their socio-economic conditions so that they can benefit from urban development, including the creation and improvement of UGS (Calderon-Argelich *et al.*, 2021; Colom-Gonzalez, 2024; Van Leeuwen, 2022).

For these reasons, urban justice extends far beyond the environmental dimension since it considers space, society, and the economy as fundamental aspects of urban development considering the systematic inequities that historically have been affecting the most marginalized groups (Van Leeuwen, 2022). These inequalities have resulted in less access to public services, less developed infrastructure, and limited access to green spaces; so, for this reason, it is not only an issue of resource distribution but also of inclusion and participation in decision-making processes, which can only be achieved through the inclusion of underrepresented communities (Colom-Gonzalez, 2024).

The concept of urban justice, however, also has a spatial justice dimension since it focuses on the equitable allocation of resources in consideration of any patterns of marginalization, most often ethnic or economic. For example, addressing spatial justice might involve targeting green space development in underserved neighborhoods to mitigate environmental inequities and enhance the quality of life for their residents (Kim *et al.*, 2022).

Moreover, the distributive dimension considers not only the fair distribution of benefits but also the burdens, like exposure to pollution or risks of displacement. Therefore, policies must actively prevent green gentrification by integrating distributional justice, as they frequently result in the displacement of vulnerable populations from neighborhoods undergoing environmental improvements (Kim *et al.*, 2022).

Ultimately, it is also necessary to consider that the development of UGS must not merely serve human beings but rather must consider a broader ecosystem of which humans are. It is therefore necessary to balance human and environmental priorities, thus improving ecological health.

2.3.2. The Right to the City and NIMBYism

Promoting equitable urban transformation usually implies that forms of resistance to change will emerge. In other words, when trying to make cities more just and inclusive, it is likely that some people or groups will resist change because of conflicting interests or fear of newness. According to Lefebvre (1968), the concept of right to the city refers to an inclusive urban development based on local forms of participation, which include the marginalized groups who can then be active players in shaping the city.

Lately, the sense of right to the city has been recovered by expanding its meaning. In fact, it is not only a question of access to urban spaces, but also a matter of collective right to design and plan such spaces. Moreover, the planning that takes place within the capitalist system tends to prioritize private interests over those of society and, therefore, this leads to spatial injustice (Harvey, 2008; Harvey, 2010). Thus, efforts must be made to prioritize the needs of people who tend to be excluded from these processes, and to prevent the displacement of low-income residents (Colom-Gonzalez, 2024; Attah, 2011).

However, the Right to the City comes into tension with the concept of NIMBYism, which is the phenomenon of opposition created among residents who view a certain development or infrastructure as undesirable; it usually comes from concerns over property values, aesthetic changes, or perceived social-environmental risks (Webb & Dej, 2023).

While NIMBYism may arise from legitimate fears, very often it is associated with opposition from a group of residents who just want to preserve their status quo. For this reason, there is often a direct conflict between the concepts of right to the city and NIMBYism, as the first one advocates for equity and inclusion of all groups in urban development, while the second one frequently attacks practices that would benefit the marginalized population (Webb & Dej, 2023). Soja (2013) argues that urban transformations tend to perpetuate existing power structures and, therefore, the privileges of certain groups are also replicated at the expense of marginalized groups. It is needed that the pursuit of spatial justice should be driven both by the redistribution of resources within cities and by a participatory and inclusive decision-making process (Soja, 2013).

For example, a project about the construction of social housing in wealthier neighborhoods, which is usually aligned with the Right to the City's goal of reducing spatial segregation, often faces the resistance of those residents who fear the perceived impact on their community or on their property values. However, by reinforcing these inequalities, NIMBYism undermines the efforts done to create cities that reflect the needs of all residents (Webb & Dej, 2023; Herdt & Jonkman, 2021). In this context, the emerging opposition movements are deeply linked to the broader socio-economic inequalities; therefore, the right to the city is a fundamental political demand rather than just a planning principle (Harvey, 2008).

2.3.3 The decision-making process through a new lens

As introduced earlier, urban planning is highly designed, implemented, and managed through top-down policies and hardly ever co-constructed on the local community inputs. Consequently, it frequently fails to address the needs of diverse urban populations, creating a deeper gap in access to resources and opportunities (Zhou *et al.*, 2023).

The limitations of top-down policies become apparent if we use the lens of urban justice. In fact, the small group of policymakers designing a top-down policy tends to prioritize macro-level goals such as economic growth or city branding. As an example, urban redevelopment projects designed to attract tourists frequently result in the displacement of low-income and long-standing residents. For this reason, it is evident that the top-down policies are characterized by an exclusionary nature, which results in priorities that are misaligned and tend to reinforce existing

spatial inequalities. The result is the alienation of marginalized groups (Colom-Gonzalez, 2024; Ding *et al.*, 2023).

In addition, there is a second, sometimes less obvious consequence, which is the failure of such projects to address local needs, and, as a result, local concerns remain unaddressed. In particular, the policies implemented tend to disproportionately favour the more affluent segments of the population or the wealthier areas of cities, so distributive justice is also undermined, and they tend to prioritize economic or aesthetic issues over ecological preservation, causing ecological justice to be undermined as well (Delphine *et al.*, 2022).

For these reasons, decision processes must consider the principles of urban justice and incorporate participatory processes that involve the equitable empowerment of all segments of the population. In particular, the adopted frameworks must prioritize projects in underserved areas while not failing to strike the balance that must exist between human needs and environmental priorities. In addition, the residents usually have a deep understanding of the specific needs and dynamics of their neighbourhoods, but this expertise is overlooked by the top-down policies (Delphine *et al.*, 2022; Ding *et al.*, 2023).

In conclusion, spatial justice can only be achieved when all members of a community have a voice. For this reason, it is essential to integrate more participatory models. In this way, people are not merely passive recipients of urban development but rather active agents who, by contributing to shaping the transformations of their city, take up the ownership of public spaces (Colom-Gonzalez, 2024; Van Leeuwen, 2022; Ding *et al.*, 2023; Zhou *et al.*, 2023).

3. Methodology

This study adopts a mixed-methods approach, combining participatory ethnography, spatial mapping, and the analysis of public documentation. By drawing on methods coming from diverse fields such as geography, sociology, and environmental studies, the adopted approach allows to adopt a multifaceted perspective capturing both the spatial and the social dimensions of UGS.

This design allows for a multi-layered investigation that captures the different stakeholder perspectives, the ecological concerns, and the planning challenges. In fact, the qualitative methods provide insights to address the key research questions, while the spatial components provide an understanding of the project area and highlight spatial patterns. This combination allows the spatial data to support qualitative findings by situating social dynamics within the physical space.

While most of the qualitative data were collected on the field, geographical data are online available open sources. Below are the specific methods used to gather and analyze data, along with relevant tools and considerations for each.

3.1 Data collection

Participatory ethnography represented the main methodological approach adopted, and it provided direct engagement with civil society through dialogue and interactions. This approach was particularly important to understand the environmental values and the types of ecologism held by the various components of the civil society, as well as their views on the participatory approach adopted by the public institutions. Moreover, the participant observation through community activities and events enabled me to witness firsthand the social ongoing dynamics. Participant observation has been supported by photography, which captured the area's ecological and social landscape, offering a landscape for the data collected, serving as both evidence and illustrative tools.

Participatory ethnography has been possible as I lived and worked in Neerpede neighbourhood from January to June 2024. For this reason, I could get in touch with the residents of Neerpede daily. These informal interactions provided me with a valuable understanding of the

community's feelings in a relaxed and confidential environment. Additionally, I attended organized events on weekends, where residents participated as well as non-residents. In such a way, I could observe different stakeholder interactions in which the project of Neerpede was frequently discussed. The purpose of my observations was to capture both the everyday residents' feelings, their collective responses, and their interactions with outsiders.

Interviews conducted were semi-structured and included a diverse range of stakeholders, including residents, government officials, advocacy groups, and non-governmental organizations somehow involved in the project area. The adopted approach was a purposeful sampling method, which ensured to catch the largest range of perspectives. This method focused on the identification of the key stakeholders with direct and indirect involvement in the project; for this reason, interviewed participants were chosen after conducting a comprehensive mapping of all stakeholders involved.

Lastly, the spatial distribution of green and aquatic spaces, their accessibility, the involved actors and the potential areas of conflict were analyzed by the spatial and critical mapping. Geographic Information Systems (GIS) tools such as ArcGIS and Google Earth were used to create spatial visualizations of the Neerpede project. This spatial analysis is supported by the publicly available geospatial data that provided the baseline on the environmental, social, and economic conditions of the project area and its surroundings.

3.2 Data analysis

To analyze the collected qualitative data during the interviews, I used a thematic coding method consisting in the identification of recurring themes across the participant responses, which interviews were transcribed and lately analyzed. Moreover, I analyzed how different themes, such as environmental concerns and economic interests, related to each other in every interview. At this point, my analysis was ready to answer the research questions by integrating with the document analysis and the insights gained during the participatory ethnography.

The actors have been classified in the following categories:

- Governmental bodies: they provided the institutional framework of the research, analyzing the regulations, the institutional goals, and the environmental implications.

- Non-governmental organizations: they were chosen as they conducted independent investigations and/or have been working in Neerpede for at least 5 years.
- Local advocacy groups: they provided the insights about the organized and non-organized civic responses.
- Local enterprises: they are currently working in Neerpede or related to the project design and implementation.
- Residents: they were selected according to the degree of awareness and involvement found.

Tab 1. Interviews information.

Stakeholder			Interview		
Name	Organization	Type	Date	Duration	Place
Alexis Charles	Office of the Minister for the Environment of Brussels-Capital Region	Governmental body	19/06/2024	1h 13min	Office of Mr. Charles
Anonymous	Brussels Environnement	Governmental body	22/06/2024	47min	Neerpede
Allan Neuzy	Anderlecht City Hall	Governmental body	26/06/2024	33min	Office of Mr. Neuzy
Amendine Tiberghien	Natagora	NGO	27/06/2024	41 min	Office of Natagora
Michel Bastin	États Généraux de l'Eau à Bruxelles	NGO	24/05/2024	1h 55min	Walk along the Seine River
Paul Steinbrück	Pool Is Cool	NGO	13/06/2024	59min	Neerpede
Maud Marsin	Inter-Environnement Bruxelles	NGO	26/06/2024	47min	Anderlecht
Yannick Laurent	Sauvegardons Neerpede	Advocacy group	23/06/2024	1h 38min	Neerpede
Anne Lenain	Fondations pour la Vallée de Neerpede et du Vogelzang and Planète Verte Fondations	Advocacy groups	25/06/2024	1h 15min	Neerpede
Clara Dinéty	Ferme du Chaudron	Local enterprise	06/06/2024	52min	Ferme du Chaudron
Zofia Zaniewski	Smala	Local enterprise	28/06/2024	1h 22min	Smala

Marie R.	Visitor 1	///	17/06/2024	28min	Neerpede
Nicolas D.	Visitor 2	///	21/06/2024	43min	Neerpede

Geospatial data were recollected since the beginning of the research as they provided the framework of my investigation. They include economical characteristics, social conditions, demographic conditions, and environmental features. In fact, Google Earth Pro and Geographic Information Systems (GIS) were used to visualize the spatial patterns. In particular, the conducted analysis used both publicly available data and geospatial data personally gathered. These tools were employed to combine unique features and create detailed critical maps illustrating key territorial characteristics.

3.3 Ethical considerations

The research has been guided by the idea to produce a high-quality investigation. For this reason, all data collected and analyzed have been done by the methods considered the most respectful and responsible for the intent and in the consideration that the dispute is ongoing.

The whole research has been conducted under the recognition that the research bias can influence data collection and analysis, and, for this reason, the study has implemented measures to minimize such effects. Firstly, the researcher engaged in continuous reflection to prevent her own assumptions or background from influencing the outcome of the findings. Secondly, the procedures for data collection and analysis were standardized to avoid errors arising from personal interpretations such as during the interviews. In addition, to prevent interviewees to be influenced by preconceived notions, certain details were concealed.

Moreover, the research adopted a transparent approach to all interactions to foster trust with the interviewed people. Whenever it will be possible and it seems the case to, findings will be shared with participants and community groups, allowing them to benefit from insights that may inform local initiatives.

Specifically, semi-structured interviews posed important ethical issues in terms of confidentiality and informed consent. First, it was asked to all interviewed participants to provide consent before every interview, and, moreover, each participant was provided with detailed

information about the study purpose and the used methods. If requested, anonymity was provided to protect the privacy of the participant, and so all identifiable information was anonymized in transcripts, notes, and any published material.

During every interview, it was ensured the participant was provided with a clear explanation of the study purpose, methods, and objectives in advance; participants were also allowed to stop the interview at any time and to ask questions whenever they felt needed. In such a way, informed consent was ensured.

4. Results

4.1 UGS in Brussels-Capital Region

4.1.1 Distribution, quality and accessibility

A relevant factor to understand the current conditions of the UGS in Brussels is the perception of safety. This can change radically depending on the area and the target audience. The Botanique Park, bordering the Saint-Josse-ten-Noode City Hall is considered one of the most unsafe neighbourhoods by most of the population of Brussels; but this perception changes when considering the frequenters themselves. Indeed, the park has become one of the meeting points of the racialized communities that are particularly concentrated in the Saint-Josse-ten-Noode City Hall. So, while for some people the Botanique Park is a symbol of Brussels' multiculturalism, for others it is synonymous with insecurity and a place to avoid.

The specific case of study, the park of Neerpede, is situated in the municipality of Anderlecht, which is one of Brussels' largest ones; it is also one of the most densely populated and includes people from quite different economic and social backgrounds. Alongside low-income households and migrant communities, there are the upper-middle class. Therefore, Anderlecht territory is characterized by this bipolarity.

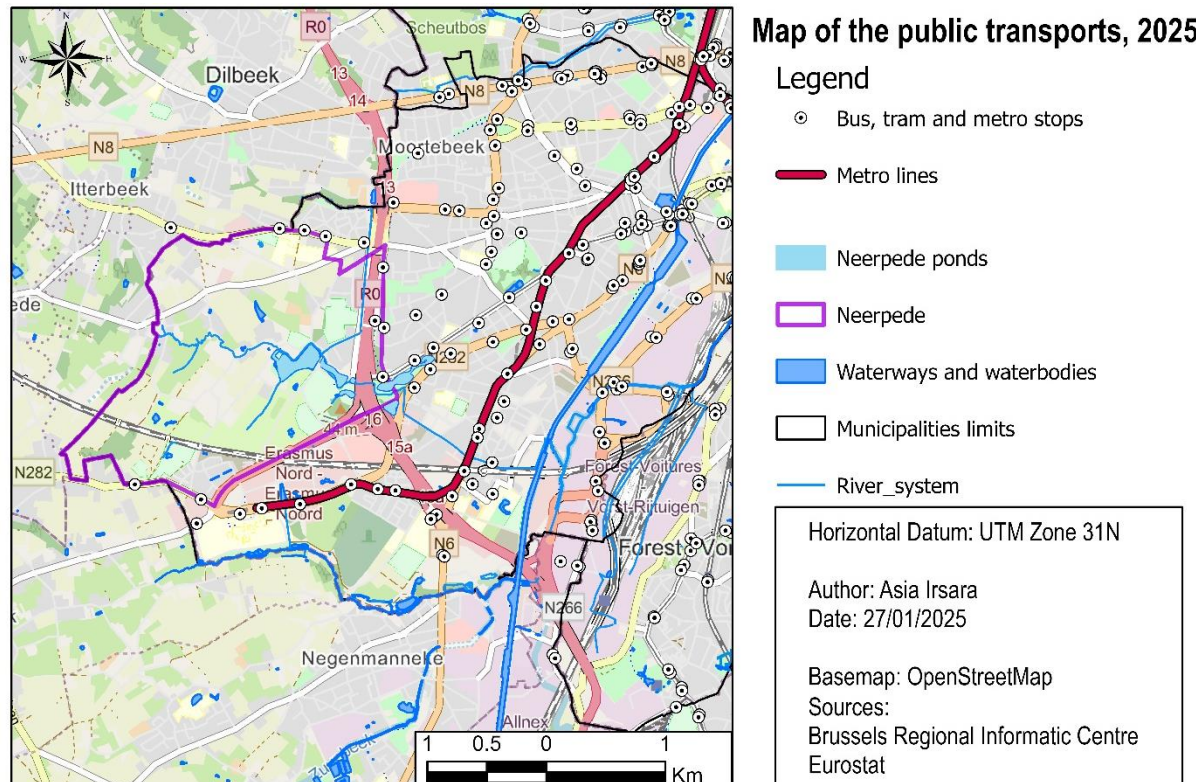
Within the boundaries of the municipality there are some truly relevant UGS, such as Parc Astrid, but they suffer from poor maintenance. The few essential facilities suffer from poor care, which makes the park unattractive to visitors.

This situation is reflected in most of Anderlecht's parks and is coupled with a general difficulty in accessing green areas due to a lack of nearby public transportation or unfavourable connections. As a result, residents' demand for public green spaces to relax and enjoy themselves cannot be met; hence, environmental inequalities increase.

The Neerpede area also suffers from similar conditions: most of the citizens and especially the low-income groups do not enter comfortably into the park because of poor public transportation options, a general lack of infrastructure, and the feelings of unsafety. Moreover, the green spaces of Neerpede are usually thought of as less accessible or more isolated compared to those coming

from richer neighborhoods. As a result, this park is rarely visited by lower-income families or disadvantaged groups.

Map 3. Public transports stops nearby the neighbourhood of Neerpede, 2025.



*Sources: Personal elaboration based on Brussels Regional Information Centre, INSPIRE, Eurostat.
Elaborated from ArcGIS Pro.*

4.1.2 The “Plan Climat”

Among the most relevant elements to consider for the study of urban green spaces in Brussels are Brussels Environnement/Leefmilieu Brussel, the Plan Air-Climat-Energie bruxellois (Bruxelles Environnement, 2023). Commonly called just the Plan Climat, it provides the overarching framework for climate action in Brussels as it sets out the policies to reduce emissions and adapt to climate impacts.

The strategy is thus coordinated and implemented by Brussels Environnement/Leefmilieu Brussel, as the leading public authority on environmental policy and urban ecological management in the region. It is responsible for ensuring that the objectives of the Plan Climat are harmonized;

for example, Brussels Environnement oversees its urban greening projects launched, ensuring that they align with the climate adaptation and mitigation targets outlined in the Plan Climat, while also addressing local ecological and social priorities.

To go into more specifics, Brussels Environnement is the governmental body responsible for managing environmental policies in the region, including those related to urban green spaces considered of regional importance, and it is responsible for ensuring that green spaces are not only ecologically sustainable but also socially inclusive.

Green spaces in the city considered to be of regional importance fall under the authority of Brussels Environnement. These are generally large areas, and the most important ones are the Parc de Brussels, the Bois de la Chambre, and the Parc du Cinquantenaire. In addition, also areas considered biodiversity hotspots, such as the Sonian Forest, are protected.

In contrast, local parks and neighborhood gardens are managed by municipal authorities. In all cases, it falls under municipal responsibility the daily maintenance, including rubbish collection, small repairs, and the landscaping. In addition, municipalities often use green spaces for events, workshops, or urban agriculture projects. For example, the Neerpede area is managed by Brussels Environnement as it represents a key biodiversity hotspot, but the responsibility of overseeing the small-scale maintenance services and event organizations lies with Anderlecht City Hall.

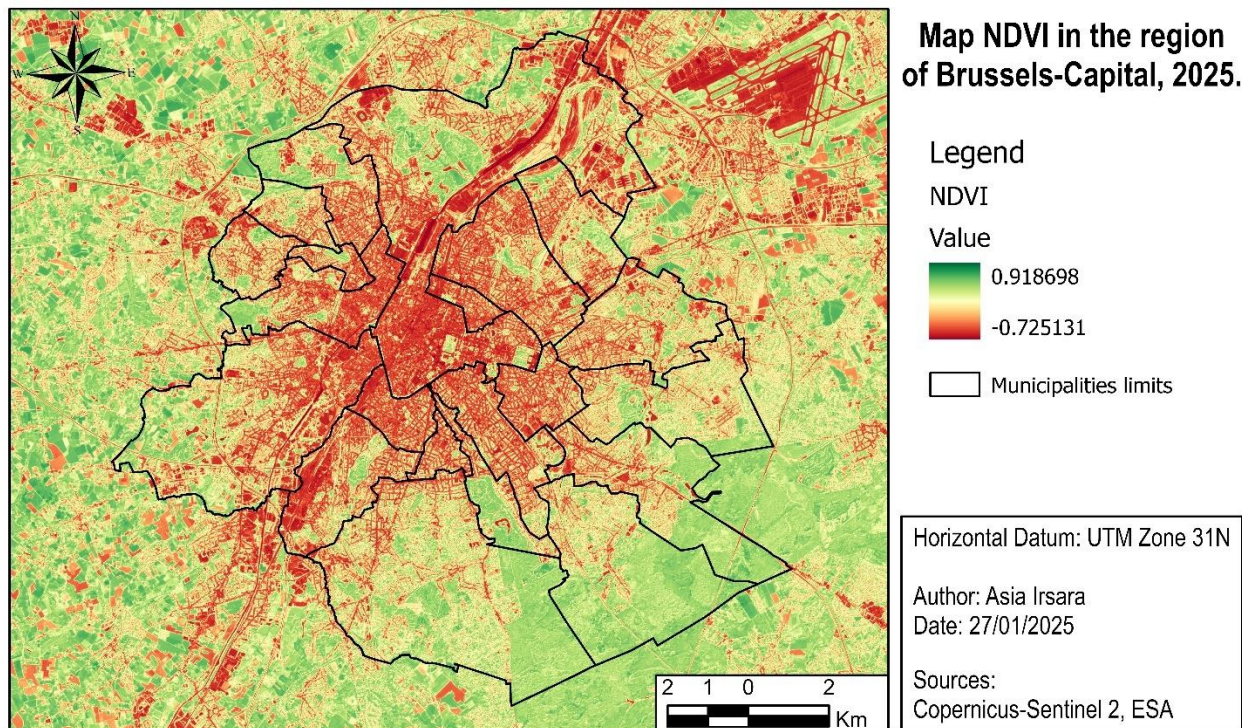
The Plan Climat is an environmental regional strategy focusing on reducing the carbon footprint of the region while implementing mitigation measures. The Plan's great aim is carbon neutrality for the region by 2050. To reach this goal, it focuses on three key areas: energy, mobility, and circular economy, all while considering the need to build green, inclusive, and resilient urban environments. In this context, it is important to integrate green infrastructure into urban development as key tools for mitigating the impacts of climate change in the city.

The guidelines promote the creation of new parks and the expansion of the existing ones, their quality improvement, and the financial support for green roofs and walls. Through these, it is hoped to help mitigate the urban heat island effect.

A Normalized Difference Vegetation Index (NDVI) map visualizes the distribution and health of vegetation in a specific area using satellite imagery. It shows also the smaller green areas, and it represents vegetation density on a scale from -1 to +1 (Strashok *et al.*, 2022). As in *Map 4*, in red and orange there are the non-vegetated areas such as bare soil, water, or urban zones, in yellow the sparse or stressed vegetation, and in light and dark green the healthy and dense vegetation.

Observing *Map 4*, it is evident that some neighborhoods in the region need more green spaces. The deep red central part of the region is highly urbanized with an almost complete absence of significant vegetation. The outlying areas show a transition to higher NDVI values and, therefore, reflect the presence of suburban and agricultural green areas. The larger green areas in the south of the region serve as urban lungs, while the small green ones surrounded by areas of deep red are critical for social cohesion and public health, but they are unevenly distributed. Therefore, it can be seen from the map that densely urbanized areas have limited access to green spaces compared to suburban areas, contributing to the amplification of spatial injustices.

Map 4. Map NDVI in the region of Brussels-Capital, 2025.



Sources: Personal elaboration based on Sentinel-2, ESA. Elaborated from ArcGIS Pro.

In addition, this policy prioritizes the creation of UGS in underserved areas, which are usually also the low-income neighborhoods, to achieve a fairer distribution of green infrastructure. In this way, all residents can have access to high-quality green spaces regardless of their socioeconomic background.

This approach aligns with urban justice principles as it addresses some of the environmental inequalities by promoting social inclusion through access to nature; moreover, by involving the local communities in the planning of UGS, the Plan identifies the local residents voice in shaping the green spaces that directly affect their lives.

Lastly, it also considers the conservation of urban biodiversity through the restoration of habitats, the improvement of the UGS functions, and the creation of wildlife corridors.

4.2 Neerpede

4.2.1 Historical context

Historically, Neerpede has been an agricultural area where small landowners were engaged in self-consumption production of grains, vegetables, and animal husbandry. Population density was extremely low as there were only a few scattered villages and isolated farms (Declève *et al.* 2020, Bergers *et al.*, 2018). These features are reflected both scenically in fields, ditches, and small streams and culturally in the deeply agricultural roots, as visible in the *Map 5 (1944 and 1950)* (Manganelli & Moulaert, 2019; Declève *et al.*, 2020).

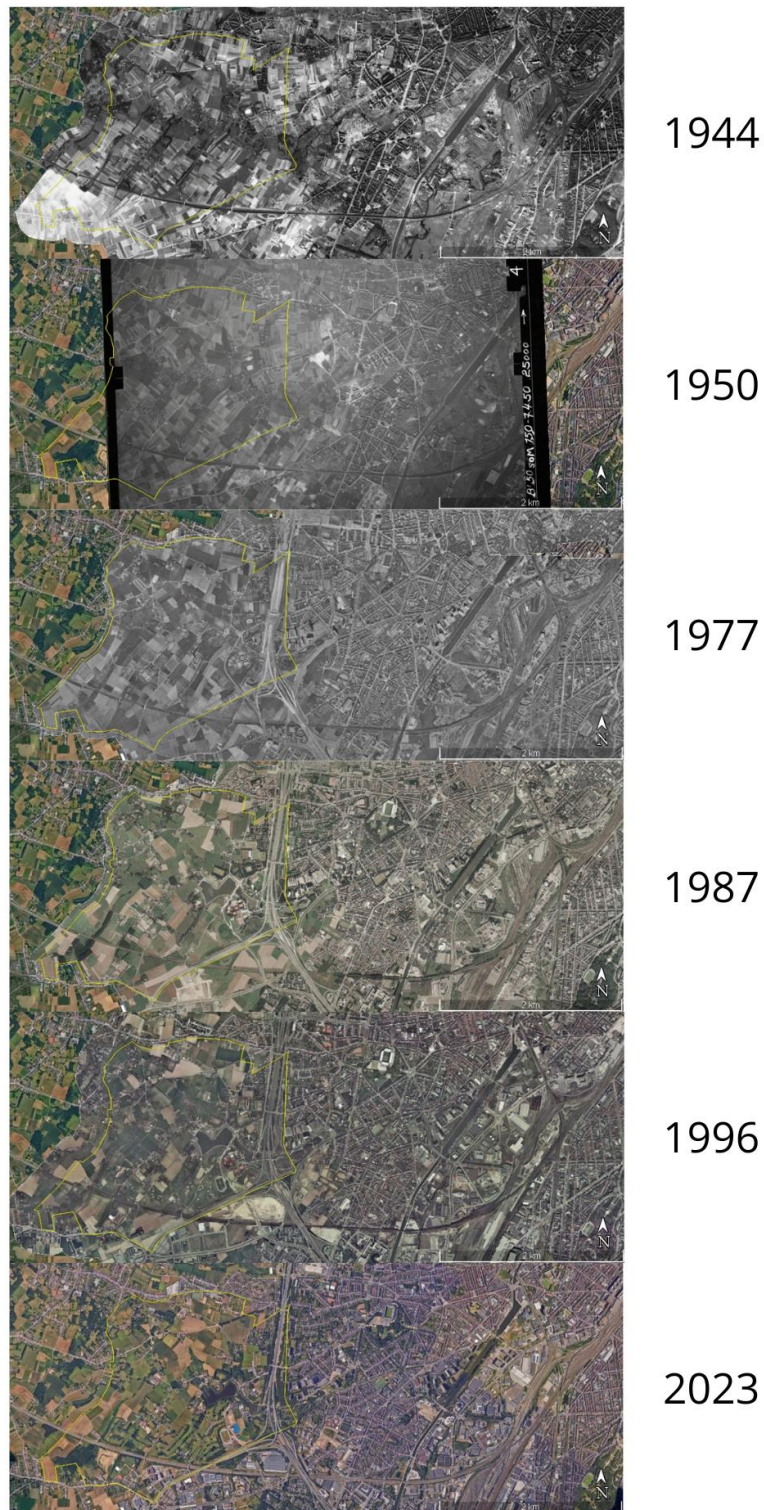
In the 19th century, the centre of Brussels expanded rapidly, as did the centre of Anderlecht. The latter faced great industrial expansion. However, the Neerpede area remained rural until the mid-20th century, when it was gradually incorporated into urban dynamics through the expansion of road and rail infrastructure (Bergers *et al.*, 2018).

Trade with the deeply urbanized areas of Anderlecht thus intensified, and it was accompanied by residential development in Neerpede in the late 20th century. As a result, agricultural land began to shrink and with the arrival of new residents, who had no direct ties to agriculture, the social fabric got transformed. However, in the 1970s and 1980s, regional policies were introduced to protect peri-urban areas, and, because Neerpede was one of them, it got valued

as a city's green lungs (Bergers *et al.*, 2018). As appreciable in the *Map 5 (1977)* also a highway was constructed at the Eastern part of the neighbourhood.

Since the late 20th century, urban pressures have brought the land to a critical point between preservation and development (Bergers *et al.*, 2018). Construction expansion, increasing demand for green space, and new infrastructure have led Neerpede to transform from a rural to a peri-urban area (*Map 5, 1987 and 1996*) (Manganelli & Moulaert, 2019).

Map 5. Change of the urbanization of Neerpede between 1944 and 2023.

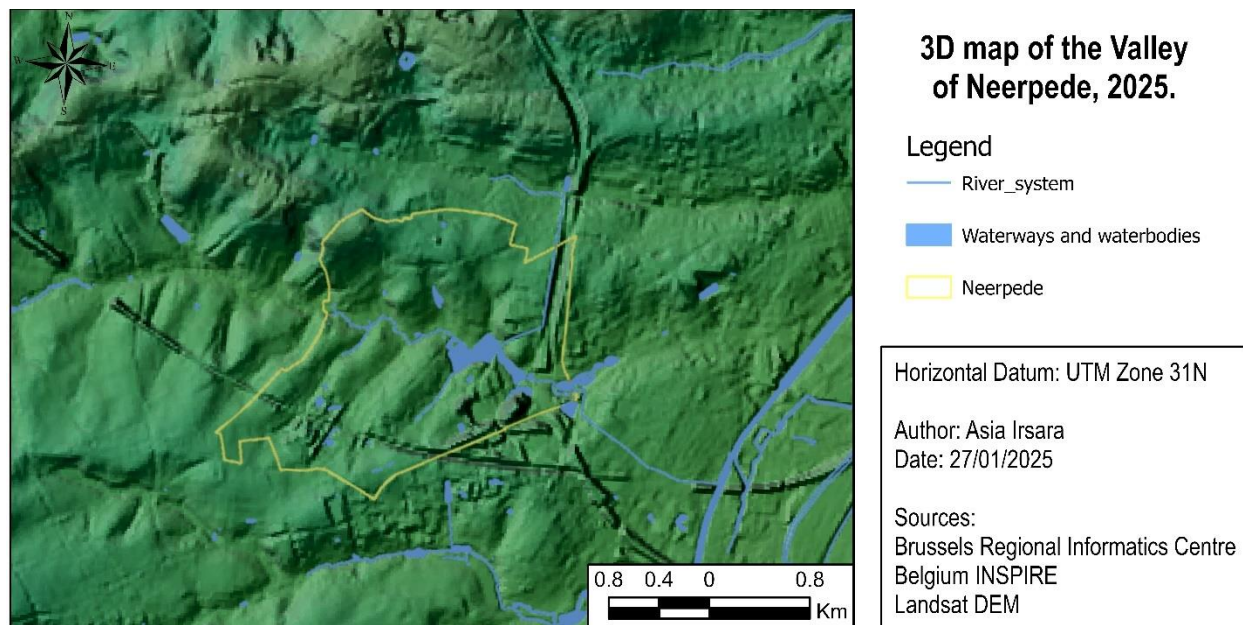


Sources: Personal elaboration in Google Earth Pro. Aerial images of the Archive of the National Geographic Institute of Belgium (1944, 1950, 1977, 1987, 1996); Maxar Technologies (2023). Elaborated from Google Earth Pro.

At present, Neerpede represents the last rural landscape in the Brussels region, making it not only a physical place but also a cultural symbol. The local community has maintained a strong connection to the land, as evidenced by the presence of small farms and farmers' markets. Its landscape shows the coexistence of man and nature, and the balance between productivity and environmental preservation (Bruxelles Environnement, 2024).

Finally, the Neerpede ponds, called also Pede ponds, on the contrary to what may be assumed, have a recent origin since they date back to the late 1970s (*Map 5, 1987*). They were created as catch basins to temporarily hold rainwater. As visible in *Map 6*, Neerpede is a valley crossed by the Neerpedebeck, a stream belonging to the Seine basin, and it has faced temporary flooding issues during the last century due to its difficulty to manage rainwater. The collateral and unexpected effect, however, was to transform the area into a natural habitat with significant ecological potential.

Map 6. 3D map of the Valley of Neerpede, 2025.



Sources: Personal elaboration based on Brussels Regional Information Centre, INSPIRE, Eurostat, Landsat DEM. Elaborated from ArcGIS Pro.

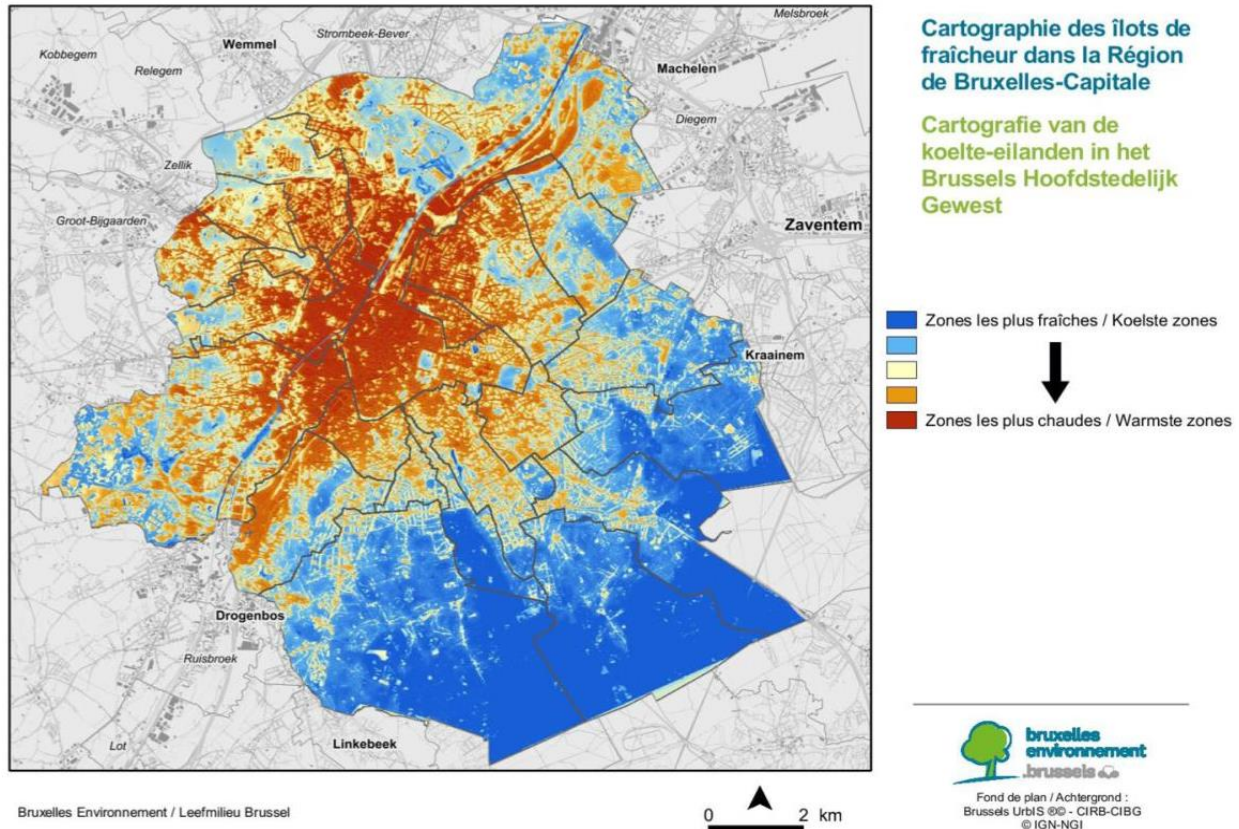
4.2.2 Territorial characteristics

4.2.2.1 Ecological characteristics

The area is part of the broader Seine Valley system, and it has some small watercourses draining through. For this reason, historically, agriculture used to be a key economic activity, shaping its own landscape over the years. Nowadays, it is possible to observe a high variety of ecosystems, including agricultural fields, grasslands, wooded areas, urban ponds and streams. therefore, it is currently regarded as one of the most biologically active areas in the entire region (Bruxelles Environnement, 2024).

In fact, it contributes to sustain the wildlife diversity, including species of conservation interest, among which there are endangered species (e.g., migratory birds and amphibians) (Bruxelles Environnement, 2024). Moreover, wetlands, ponds, and grasslands prevent urban flooding by absorbing excess rainwater, an ecosystem service that has become increasingly vital because of climate change (Krivtsov, 2022). Moreover, as in *Map 7*, Neerpede is the only urban green space to contribute to the mitigation of the urban heat island effect in the Southwest of Brussels.

Map 7. Urban heat island effect, 2018.



Source: Bruxelles Environnement/Leefmilieu Brussel, 2018.

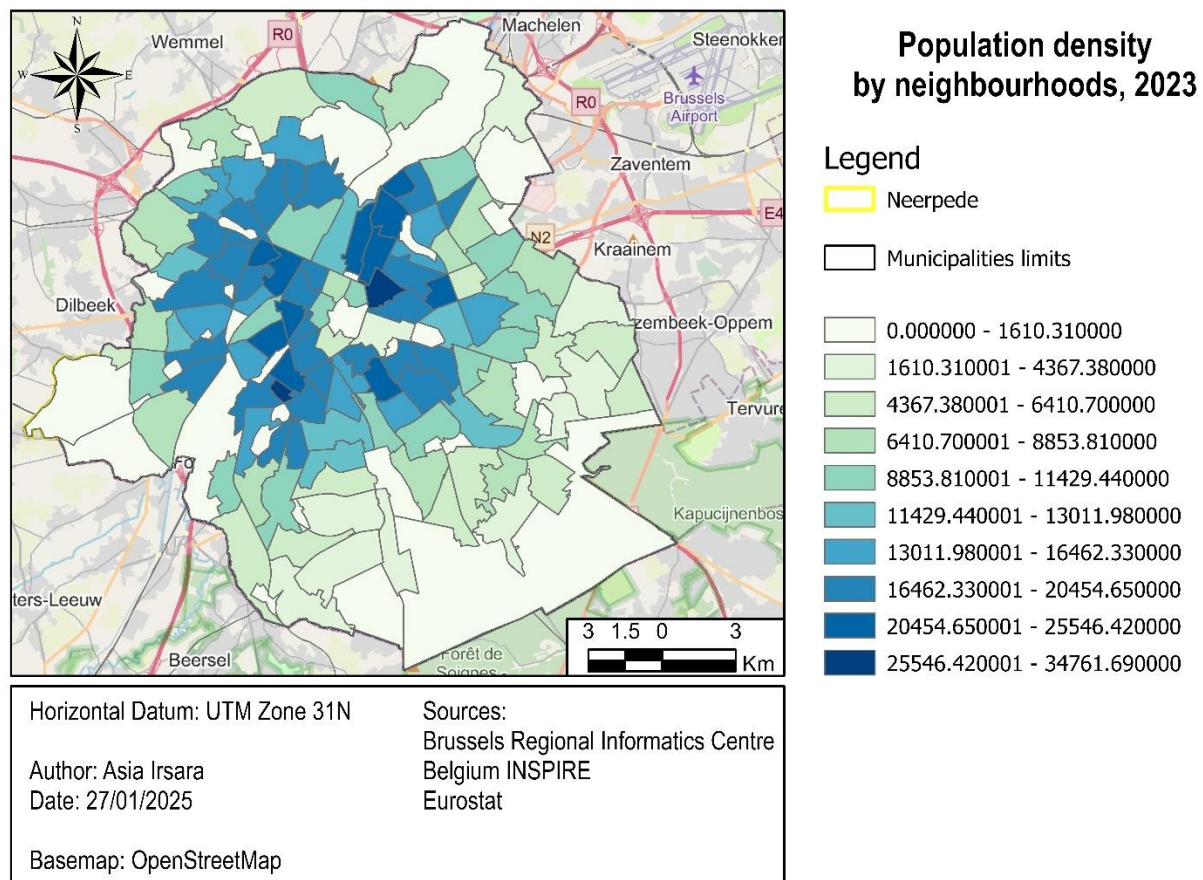
For these reasons, it is considered a key point to intersect the policies of urban planning and climate resilience of the city and the region. Nevertheless, it has been under threat from urban sprawl and agricultural pollution, which are gradually reducing the ecosystem biodiversity and the capacity of the territory to provide such ecosystem services.

4.2.2.2 Socio-economical characteristics

In the city of Anderlecht, there is a high variety of population in terms of the cultural, social, and economic profile of its residents. In fact, it is one of the most ethnically and culturally diverse municipalities in Brussels, and its residents used to be long-standing local families, migrant communities, and young professionals attracted by the rent affordability (Vryza, 2020; Garrone, 2020).

Working-class families and migrant communities often reside in the most urbanized zones, where housing affordability and accessibility to public services are critical concerns (Vryza, 2020). Meanwhile, in Neerpede, there is a concentration of farmers, who are in a leading position. However, at the same time, Neerpede is becoming a residential neighborhood precisely because of its proximity to both the city and nature. Nevertheless, it is still less densely populated than the surrounding neighborhoods as evident in *Map 8*.

Map 8. Population density by neighbourhoods, 2023.

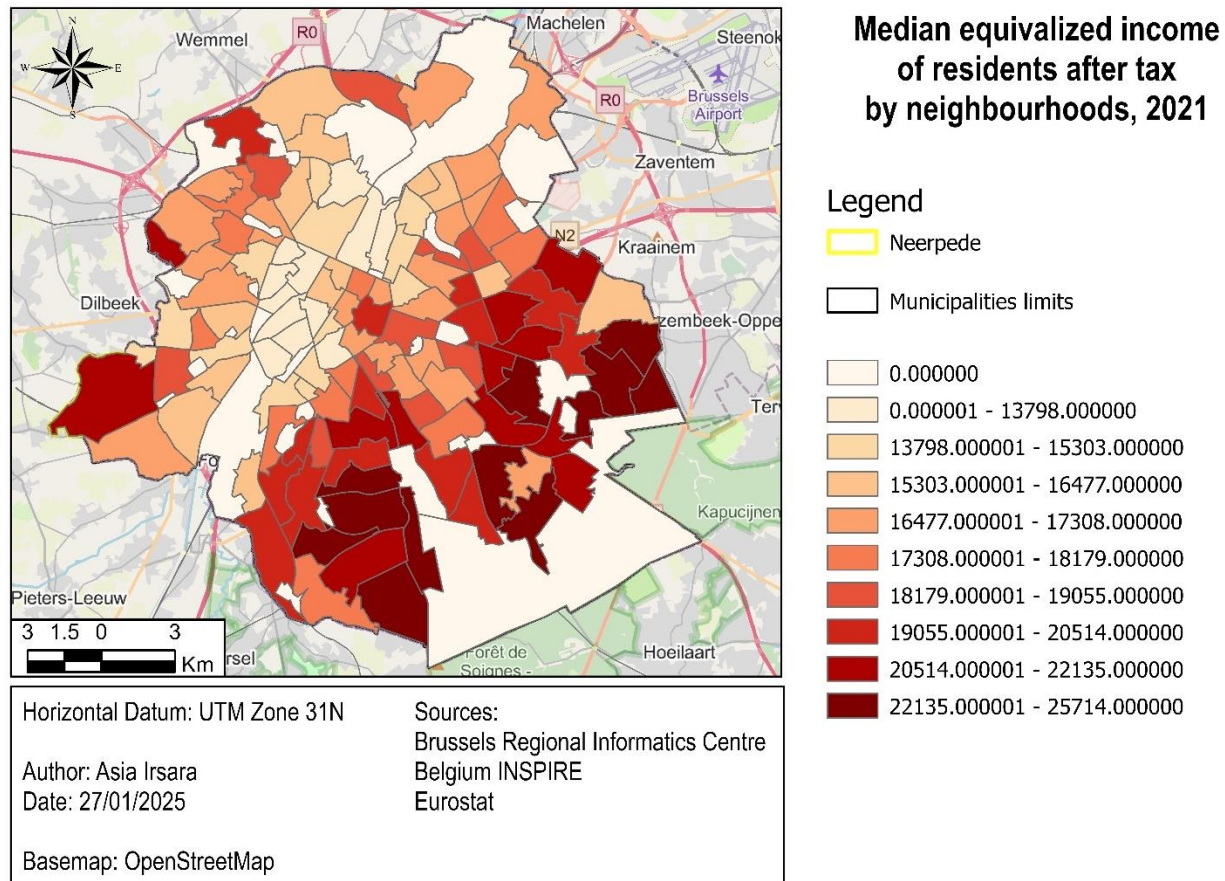


Sources: Personal elaboration based on IBSA, Brussels Regional Informatic Centre, Belgium INSPIRE, Eurostat, OpenStreetMap. Elaborated from ArcGIS Pro.

In addition, Neerpede stands out as one of the wealthier areas in Anderlecht, with a higher median equivalized income compared to the more urbanized neighborhoods (*Map 9*). This is partly due to the increasing residential appeal of the area as there is an availability of larger properties,

lower population density, and access to green spaces. As a result, socio-economic disparities within Anderlecht are further accentuated.

Map 9. Median equivalized income of residents after tax by neighbourhoods, 2021.



Sources: Personal elaboration based on IBSA, Brussels Regional Informatic Centre, Belgium INSPIRE, Eurostat, OpenStreetMap. Elaborated from ArcGIS Pro.

The maps 8 and 9 illustrate a clear socioeconomic contrast within the municipality. Areas with low population density and high median income stand in contrast to the rest of the municipality, where high population density correlates with lower income levels. The white areas on the maps represent industrial zones, thus they are neighbourhoods with little to no residential population and data available cannot be considered in the present analysis. When viewed at the regional scale, these high-income neighborhoods are among the wealthiest in Brussels despite they are located outside the traditionally affluent neighbourhoods, which are in the south.

Despite his diversity enriching Anderlecht's cultural landscape, there are also significant socio-economic disparities on the territory, as the unemployment rate is remarkably high, and it is associated with a high-income inequality rate. As a consequence, the access to resources across the neighbourhoods is highly variable, as well as the living standards rates, which are strictly connected with the urban challenges faced by the city, i.e., the limited access to quality housing, high educational disparities, and infrastructure gaps in specific neighbourhoods (Garrone, 2020; Vryza, 2020). Inevitably, the most vulnerable segments of the population face the highest risks.

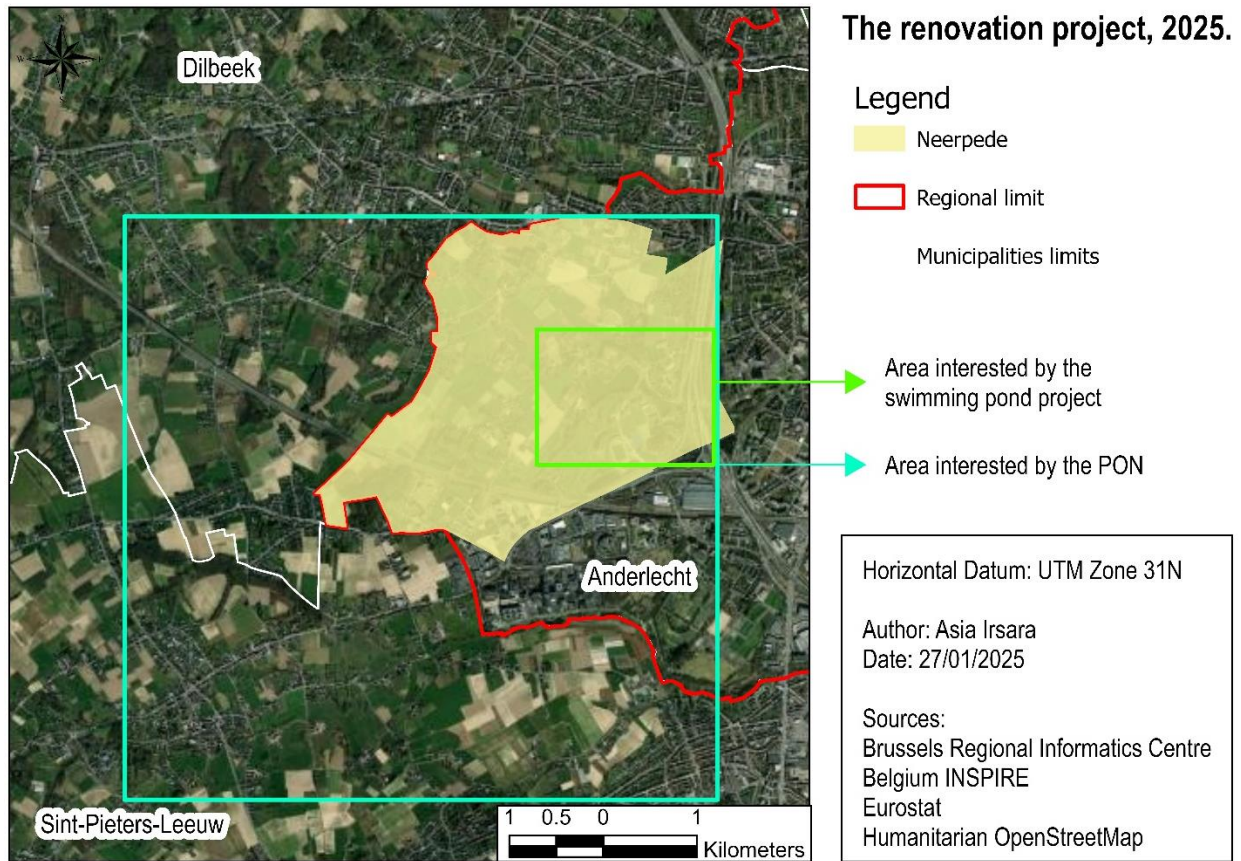
In this framework, the case of Neerpede presents sustained differences. The contrast existing between urbanized areas and semi-rural spaces emphasizes different priorities: while urban neighbourhoods focus on economic development and social sustainability, Neerpede focuses on environmental conservation and agricultural sustainability. A key feature to understand this difference is that the socio-economic conditions influence how stakeholders engage with urban planning and on the purposes of UGS projects.

4.3 The renovation project

4.3.1 Plan Opérationnel de Neerpede (PON)

The renewal of the peri-urban area of Anderlecht is framed within the “Plan Directeur Interrégional pour Neerpede- Vlezenbeek- Sint Anna-Pede”. It focuses on the three interconnected areas of Neerpede (Anderlecht, Brussels-Capital Region), Vlezenbeek (Sint-Pieters-Leeuw, Flanders) and Sint Anna-Pede (Dilbeek, Brussels and Flanders). This Plan aligns with the recent Plan Climat as it promotes nature restoration and urban climate resilience initiatives. Since its goal is to coordinate sustainable development and management of green areas between Brussels and Flanders, the Plan Directeur involves not only the Brussels-Capital Region but also the Flemish authorities (Bruxelles Environnement, 2024).

Map 10. Localization of the renovation project and the PON.



Sources: Personal elaboration based on Brussels Regional Informatic Centre, Belgium INSPIRE, Eurostat, OpenStreetMap. Elaborated from ArcGIS Pro.

The Plan Directeur Interrégional pour Neerpede- Vlezenbeek- Sint Anna-Pede is the strategic framework that is embodied in specific actions at the local level through the Plan Opérationnel de Neerpede (PON). For example, when the Plan Directeur identifies the urgency of creating ecological corridors to support biodiversity, the PON intervenes directly with environmental restoration measures (Bruxelles Environnement, 2024).

The main pillar of the PON is to maintain the rural identity of Neerpede, supplemented, however, with recreational and community spaces. Therefore, the goal is to enhance the agricultural identity of the area by defending all the territories currently dedicated to agricultural and natural uses. The goal intends to be reached by following three directions: biodiversity, agriculture and recreational spaces.

Firstly, the PON promotes agroecological practices that combine food production with biodiversity protection. Therefore, policies are implemented that support local farmers, both historic and non-historic, and promote short-supply chain farmers' markets. Secondly, the creation of new green corridors, which support the continuity of both terrestrial and aquatic habitats is promoted. In particular, wetlands are receiving special attention with the improving of the soil capacity to retain water and promoting aquatic biodiversity. Thirdly, the development of leisure areas, such as pedestrian and bicycle paths, with environmental education initiatives are implemented. The goal is double: on the one hand, it aims to foster social inclusion by providing spaces and activities that are accessible to everybody; on the other hand, it aims to transform Neerpede into an open-air laboratory, a place where people can reconnect with nature and understand the value of sustainable urban development.

Moreover, the plan considers collaboration between public authorities and civil society as one of its key action points, because the Neerpede project is seen as an opportunity to create a replicable model of integrated land management. However, it also recognizes that balancing public and private interests remains a challenge. Therefore, numerous debates have been generated on priorities such as economic development versus ecological preservation.

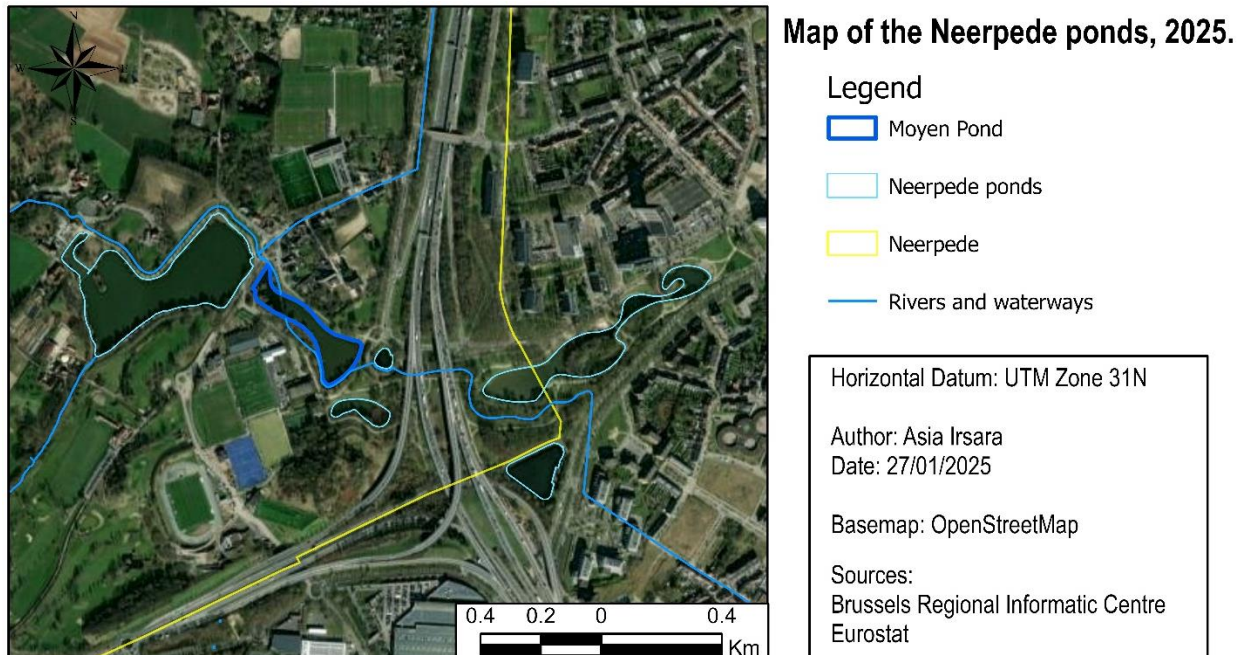
4.3.2 The swimming pond initiative

The natural swimming pond project, locally known as “swimming pool”, is one of the most relevant interventions planned under the PON. It aims to create an innovative facility that integrates environmental sustainability with the recreational needs of the Anderlecht population. Thus, the goal is to provide both recreational and environmental education space that respects biodiversity and strengthens the bond between residents and the territory.

The natural swimming pond is designed as an ecological alternative to traditional swimming pools. It consists in transforming Neerpede's Moyen pond into a swimming area thanks to a biological filtration system that can ensure adequate water quality without the use of chemicals, such as chlorine. The filtration system is based on purification through aquatic plants, microorganisms of several types, and mineral substrates that act as biological filters. In this way, an ecological balance is maintained in the aquatic environment, and it will be monitored regularly (Bruxelles Environnement, 2024).

As shown in *Map 11*, the pond covers an area calculated of 14,184 m², while the bathing area will include an area between 4,800 and 5,000 m², with a maximum depth of three meters. The maximum planned capacity is 225 people. The access area will include the creation of a pier and a relaxing area.

Map 11. Map of the Neerpede ponds, 2025.



Sources: Personal elaboration based on Brussels Regional Informatic Centre, Belgium INSPIRE, Eurostat, OpenStreetMap. Elaborated from ArcGIS Pro.

Since 2018, feasibility studies and consultations have been done among various stakeholders to concretize the choice of Moyen Pond (Bruxelles Environnement, 2020). The results of these studies have proven to have a positive impact on the environment. In particular, the natural filtration system will help reduce pollution in the surrounding waterways and, as a result, improve habitat quality.

From a socio-cultural perspective, the natural swimming pond will provide a gathering place for the well-being of both the residents of Anderlecht and visitors from the Brussels-Capital region. Around the pond, in addition to the facilities necessary to ensure the bathing, there will also be facilities dedicated to environmental education.

The project proposal claims that the bathing facilities will be seamlessly integrated into the existing Neerpède landscape and, therefore, the semi-natural character of the area will be maintained, without damaging the wildlife (Bruxelles Environnement, 2022). However, the wildlife impact represents one of the two macro-controversies underlying the current urban conflict, along with the risk of transforming Neerpède into a potentially overcrowded recreational area. The different priorities of the various stakeholders, at times conflicting, have been leading to longstanding tensions.

4.3.3 The opposition movement

The project has seen significant resistance, particularly because of concerns about environmental and gentrification risks. Residents, in fact, have shown both concerns about the risk of irreversibly altering the local ecosystem and concerns about visitors from other parts of the city and region. This last concern was coupled with the lack of clarity about infrastructure management and maintenance.

Figure 1. Manifests of residents supporting Sauvegardons Neerpède, 2024.



Sources: Fieldwork activity.

The spokesperson of the residents opposed to the natural swimming pond initiative is Sauvegardons Neerpède, a local association formed precisely with the goal of giving residents a voice. Sauvegardons Neerpède has initiated several initiatives to publicize its campaign with the goal of creating awareness about the possible impacts of the project through media campaigns on social networks. To block the project a petition was also launched.

Public consultations were organized through workshops and public meetings between 2018 and 2023. However, Sauvegardons Neerpède, in addition to claim the higher negative environmental and social impacts than those supported by the feasibility studies, denounces the lack of listening to the local community, which was not felt adequately involved and informed.

These tensions have led to legal challenges about hypothetical violations of environmental and urban planning regulations and on the insufficiency of the participatory process. As a result, there has been a polarization of the local community as well as of the various public and private institutions involved.

In Brussels-Capital region, a public inquiry is mandatory for most of the urban project development. A public inquiry is a legal procedure that allows citizens to express their opinion on projects or decisions that could have a significant impact on the territory of their community. It applies to urban planning projects, environmental permits, and land development plans (CoBAT, 2004).

The public inquiry into the creation of the natural swimming pond occurred between March 14, 2023, and April 14, 2023. During this month there were numerous citizens appeals against the project which, therefore, led to the closure of the public inquiry without unanimous opinion. The public institutions in charge of expressing such opinion were the Anderlecht City Hall and the Brussels region. While the former expressed opposition to the project, the latter gave its approval under conditions.

The proposal was modified in view of the survey results and was resubmitted again on January 19, 2024. As a result, the Brussels region approved the project by disbursing the urbanism and environmental permits required for implementation.

The urbanism permit, which was dispensed on February 26, 2024, saw appeals in two directions: one was from the Anderlecht City Hall and one from the private citizens. The Anderlecht City Hall appealed through the College of Urbanism and the regional government, which, however, did not reach a decision. Therefore, the matter was placed before the State Council and is currently under trial. As well, private citizens have appealed directly to the State Council; the feedback is still awaited as well.

The environmental permit was issued on April 9, 2024. Similarly, there were several appeals from the Anderlecht City Hall and private citizens. Both parties initially turned to Brussels Environment, which, however, rejected both appeals. Subsequently, they turned to the regional government, which is currently still investigating.

Tab 2. Resume of the legal processes since 2024.

Date	Object
14/03/2024	Start of the public inquiry.
14/04/2024	Conclusion of the public inquiry.
27/03/2023	Response from the Consultation Committee stating that a unanimous decision cannot be reached.
19/01/2024	Amended dossier delivered by Brussels Environnement.
<i>Urbanism permit</i>	
26/02/2024	Granting of the urbanism permit
19/03/2024	Appeal by the Anderlecht City Hall to the College of Urbanism and, subsequently, to the regional government.
15/11/2024	Appeal of the Anderlecht City Hall to the Council of State.
03/05/2024	Appeal of citizens to the Council of State.
<i>Environmental permit</i>	
09/04/2024	Granting of the environmental permit.
22/05/2024	Appeal of citizens to the College of the Environment.
22/05/2024	Appeal of the City Anderlecht City Hall to the College of the Environment.
26/08/2024	Appeal of the Municipality of Anderlecht to the Regional Government.
29/08/2024	Appeal of citizens to the Regional Government.

4.4 Stakeholders' mapping

The project got the attention of a wide range of actors, from the macro to the micro level. Their profiles range from upper-middle-class residents and farmers to public authorities of local and regional levels, advocacy organizations, and active political citizens. Based on the researcher's selection and the availability of each representative, the following individuals were interviewed as representatives of their respective organizations. To properly present each one, they have been divided into diverse groups according to the types of organization (Bendtsen *et al.*, 2021).

4.4.1 Governmental bodies

4.4.1.1 Office of the Minister for the Environment of the Brussels-Capital Region

The Office of the Minister for the Environment of the Brussels-Capital Region coordinates environmental policies at the regional level in such a way as to ensure that they conform to the strategic objectives of the regional government as well as the national government. The Office is closely interdependent with Brussels Environnement to provide the policy guidelines to be translated into action plans; it is then responsible for implementing the Minister decisions at the technical and practical level, meeting the region's goals and priorities. In addition, the Office is responsible for overseeing the work of Brussels Environnement, which, in turn, conducts feasibility studies, monitors progress, and proposes solutions for project implementation.

The Cabinet representative was Mr. Alexis Charles, an advisor to ECOLO, the Belgian Francophone ecologist political party, and an expert in political ecology and water governance. During the interview, it emerged how the Office of the Minister has been following the Neerpede project with a focus on issues of sustainable project management, biodiversity protection, and local community welfare.

The main interest that emerges is to ensure that the project remains accessible to all, a principle he stressed repeatedly during the discussion, specifying how access should be of a reduced rate “[...] 1€ for children up to 10 years old. [...] 2€ for adults” aimed only to finance the management of the facility: “It's just to allow us to pay for the management”. This issue is strongly linked to the need not to fall into overcrowding conditions: with a maximum of 225 people and about 22 m² per person, Mr. Charles enthusiastically stated that the area will be ten times more

spacious than a traditional pool: “That leaves 22 m² per person. That's huge”. An advance reservation system limited to one hour will be introduced to ensure compliance.

In addition, fears about overcrowding brought up an additional point of contention, which is the mode of access to the area that could make the area extremely trafficked. However, Mr. Charles explained that access by car to the swimming area will not be possible: “People will have to walk 5-6 minutes from the car parking to get there”. Despite criticism from some who would prefer direct access by car, this measure was taken strategically to limit the environmental impact.

At the same time, Mr. Charles stressed the importance of preserving the environment surrounding the bathing area. He emphasized that access to the water will have to take place without compromising the ecosystem, and, therefore, it was decided to install non-invasive physical barriers that allow access to the bathing area but also ensure that no damage is created to the aquatic and nonaquatic ecosystem.

In conclusion, a marked frustration with the political criticism received emerged during the interview, as well as claims that the project would be too ambitious and massive to be managed in a sustainable way. However, Mr. Charles claims that the facilities themselves are designed to minimize visual and environmental impact. He explains as an example: “There will be a small building for showers and dressing rooms. Very small”. In addition, the building could be removed during eight months of the year, with the possibility of being reassembled only in the summer months, so as to limit the permanent impact on the area: “The building will be removable [...] and will be reassembled for four months”.

4.4.1.2 Brussels Environnement/Leefmilieu Brussels

As previously mentioned, Brussels Environnement is the environmental agency of the region of Brussels-Capital. It is responsible for planning and implementing policies related to sustainability, biodiversity, and urban planning.

In the specific case of Neerpede, it is a key actor since, together with Anderlecht City Hall, it is one of the main actors that proposed the project. In fact, the Neerpede area, as the only remaining semi-rural area in the region, is a key space for the Plan Climat regional initiatives.

The boost from the key role of this agency meant that the project itself was closely anchored in the vision of ecological conservation balanced with the need for new community-oriented spaces. Hence, an attempt was made to eliminate the gap that exists between growing urban pressures and the need for high-quality green space availability.

An interview was conducted with a representative of Brussels Environnement, but she specifically asked to remain anonymous because of her direct involvement in the project. This person contributed greatly to the present research as she was able to clarify the motivations behind the idea of creating the project, as well as the effort of resources and time that the agency put into making biodiversity conservation one of the key pillars. As stated: “We had to invest significant resources to ensure that biodiversity was not just a secondary goal but the beating heart of this initiative”.

In addition, a special focus arose on the Neerpede ecosystem of wetlands and farmlands, as well as the need to maintain consistency in the future toward the semi-rural nature of the area, which is especially relevant considering how much of the cover land in this region is cemented. The representative emphasized: “The Neerpede area is a perfect example of how we can preserve nature in an urban context, especially in an area where soil sealing is advancing rapidly”.

During the interview, the desire to promote increasingly participatory decision-making paths also emerged through the involvement of the population before, during, and after the implementation of initiatives. In this regard, the representative said: “We are convinced that only active community involvement can lead to lasting and shared solutions. That’s why it is crucial that citizens are an integral part of every stage of the project”.

In this specific case, Brussels Environnement involved numerous public and private stakeholders to address the community concerns over accessibility and inclusivity. They also acknowledged some of the obstacles encountered, mainly due to resource constraints and because of the difficulty in finding a meeting point between different social, economic, and environmental needs: “It is never easy to reconcile all expectations, but we are convinced that continuous dialogue between the various actors involved is the key to overcoming these obstacles, [...]”.

In spite of this, the representative was optimistic about the examinations of the consultations as well as on the implementation of the project, reiterating the importance of multifunctionality as a guiding characteristic: “[...] multifunctionality is essential, not only to serve the environment but also for citizens. This is the basis for ensuring the success of the project.”

4.4.1.3 Anderlecht City Hall

The Brussels Region requires all municipalities to align with regional strategies such as that of Plan Climat. In the case of Neerpede, the municipality of Anderlecht is responsible for the practical management of green areas, local events, and the minor maintenance, as well as for adapting the regulatory framework to its local realities. In addition, the municipality also acts as a bridge between residents and other government institutions, thus facilitating community participation.

Mr. Allan Neuzy is the municipal councillor for ecological transition and green space management in the municipality of Anderlecht. He is part of the ECOLO party, with which he shares the desire to integrate ecology into local policies and to strengthen the role of communities in protecting and enhancing the environment.

One of the main critical issues in the design phase was the management of the inflow of people into the area, a defining issue in the conflict. Residents' fear was that the area might become a point of attraction for visitors to the point of creating a demographic pressure that would compromise the nature of the neighborhood and its residents: “Initially, there was a fear that many people from other parts of Brussels would come, and then people living in the area would no longer be able to enjoy the public space as they do today”. The fear was that the project might turn into a tourist attraction that would attract visitors all the time: “There was this fear that a lot of people would come, regardless of where, and that this would create problems. Now, what they say is that the project is bad for biodiversity, but that is not the case. The problem is that if people come too much, a problem arises there”.

A second major concern that emerged during the interview was the preservation of biodiversity. As it turned out, some community members fear that the area, while boasting “important biodiversity,” could turn into a facility overrun by large numbers of people, negatively

impacting the ecosystem. However, Mr. Neuzy's opinion clearly disagrees: “For biodiversity, it's clearly something that is positive, and they recognize that (residents opposed to the project), because they say that if there was no swimming, they would be in favour of the project, because that would improve biodiversity. But they are really afraid that the pond will become a swimming pool [...] with a huge amount of people, and that there will be some inconvenience as a result”. Thus, a clear concern for maintaining the ecological balance emerges from here.

A final key point concerns the inclusion of the local community in the decision-making process. Mr. Neuzy pointed out that during the public consultation, the biggest objections came from people living in the Anderlecht area, not from residents of other Brussels municipalities. Specifically: “There were very few people outside of Anderlecht who were against it, [...] it was mainly people who lived nearby, but also people who don't live directly in the area but know the place, [...] because everyone knows Neerpede. In view of the fact that the residents of Neerpede are the people who live in the area on a daily basis and, therefore, will live with the social and environmental impacts of the project, it is important that public consultation, prior to the official decision, is guaranteed and pushed until an agreement is reached among the various stakeholders.

4.4.2 Non-Governmental Organizations

4.4.2.1 Natagora

Natagora is a Belgian environmental organization whose focus is biodiversity conservation and management of natural habitats, particularly in urban and semi-urban areas. It promotes projects for restoration of natural habitats of endangered species and monitoring of ecosystems in Belgium. It is also involved in environmental education and promotes citizen science workshops to collect data and raise public awareness, involving them in workshops and educational days.

The representative of the organization, Amandine Tiberghien, is one of the project managers in Brussels.

As expected, the organization has expressed the protection of Neerpede habitats as a top priority for the project and, because of this, has been particularly critical since the first proposal. Introducing infrastructure, Ms. Amandine explains, is an intrusive action that can affect the

environment: “the construction of small bridges in sensitive areas which, while useful for reconnecting spaces, could significantly impact natural habitats”.

However, the organization is also aware of the need to strike a balance between recreational uses of green spaces and their ecological role, even with the difficulties it entails: “[...] urban densification poses significant challenges, but halting improvements to green spaces to avoid an increase in visitors is not an acceptable solution”. Therefore, more careful management of green spaces closely informed by monitoring the impacts of human activities such as events and sports becomes necessary to consider the species present.

According to Natagora, it is currently exceedingly difficult to fully understand the implications of the changes in the usage of green spaces because monitoring processes are weak and fail to truly determine the sustainability of initiatives. For these reasons, co-creation processes with nongovernmental entities and the population itself should be introduced into structural policies.

Although Brussels Environnement has complied with regulatory requirements and even introduced additional participatory tools, Natagora believes that “the current model of participation does not enable true co-creation.” Currently, the trust between citizens and institutions is low, and to improve it, earlier and more structural involvement in projects should be introduced: “If you want to build something worthwhile, you have to include all actors from the early stages to build trust and ensure quality results.”

Finally, a final key pillar for Neerpede's project is environmental education to foster cohabitation between citizens and nature. Raising awareness about the impact of one's actions is crucial, as “[...] connecting with nature means paying attention to what you do and the impact you have on the living.” Proposals include increasing educational initiatives, such as workshops on responsible behaviour in the park and training park rangers to become figureheads for visitors.

4.4.2.2 États Généraux de l'Eau à Bruxelles (EGEB)

The organization États Généraux de l'Eau à Bruxelles (EGEB) promotes sustainable water management in the Brussels region. Its main focus is on raising public awareness on sustainable water management, and it actively participates in the public consultation process in regional

management plans. For this reason, the association particularly stands out for its participatory approach, which makes it a key player in the Brussels context to promote citizen participation in decision-making processes.

Mr. Michel Bastin, one of the association's employees, has a technical background in the urban water sector. He is currently involved in outreach activities and collaborates with researchers and public institutions.

Neerpede is home to an important network of aquatic and terrestrial ecosystems, which Mr. Bastin believes are assets to be preserved and enhanced. The ponds there are important both for local biodiversity and because, to date, they are one of the few urban areas in Brussels where the water cycle can still regenerate naturally.

The ponds, fed by rainwater and springs, manage the water runoff and contribute to the mitigation of the urban heat island phenomenon. However, Brussels ponds, including those in Neerpede, are often exposed to contamination due to the infiltrations caused by the lack of separation between sewage and rainwater. In addition, rainwater picks up chemicals such as fertilizers, pesticides, and microplastics during its runoff. Therefore, Michel also draws attention to the need “to improve water quality through concrete measures [...]”.

The territory of Neerpede is important to maintain a balance between human needs and those of nature: “The site has great ecological potential, [...] it must be integrated into urban planning.” However, this human-nature balance, now severely compromised, is at the root of the current conflict in the Neerpede area. The transformation of one of the ponds into a swimming area, on the one hand, creates a new accessible recreational space, but on the other, it raises concerns because “[...] even for human well-being, we need peaceful places, not crowded recreational spaces”.

According to the interviewee, these concerns have been coupled with a marginal space given to the local community in decision-making processes. For this reason, he proposes concrete involvement in planning landscape proposals: “[...] collaborative mapping allows local knowledge to be integrated with scientific and technical knowledge, creating projects that respond to the specific needs of the territory”.

Mr. Bastin thus promotes a more participatory approach in which local and regional authorities, associations, and citizens work together to develop solutions that are simultaneously ecological, socially inclusive, and sustainable overall.

4.4.2.3 Pool Is Cool

Pool Is Cool is a nonprofit organization established with the goal of reintroducing outdoor swimming to the city of Brussels. It aims to improve the quality of life for citizens by promoting a healthy lifestyle, moments of gathering, and greater connection with the environment. Pool Is Cool is responsible for the design and implementation of the swimming pond in Neerpede. The interviewee is Paul Steinbrück, an architect and water recreation expert of Pool Is Cool.

Mr. Steinbrück emphasized throughout the interview how vital ensuring social accessibility is in all Pool Is Cool projects. This is rooted in the belief that outdoor swimming facilities should be a common good, not reserved for a privileged segment of the population.

Social accessibility refers not only to the economic sphere but also to the physical and cultural sphere. In practice, this means designing spaces that do not require prohibitive costs and are easily accessible by public transportation, since “[...] we believe that outdoor swimming spaces should be for everyone, not just those who can afford private pools or travel to the sea”. The goal is to enable people of different ages, abilities, and socioeconomic backgrounds to access a beneficial activity like swimming.

“It's not just about swimming; it's about giving everyone a space to relax, meet new people, and feel part of something bigger, [...]”: this focus reflects a vision of Neerpede's project as a tool for democratizing public spaces, with the intention of reducing inequality in terms of recreational opportunities and well-being. The goal is then to directly impact the well-being of people and the communities that inhabit the city.

In particular, the community dimension is crucial because well-being is achieved not only through an individual vision but through a collective vision; that is why the sense of belonging and appropriation of public space becomes crucial “We want people to feel like they belong, [...]. It is about building connections”.

For this purpose, urban regeneration is the vehicle that institutions can implement to bring out the latent potential of the urban fabric. Outdoor swimming spaces thus become the catalyst for a broader transformation: from marginal places to centres of aggregation, social life, and cultural regeneration. Redevelopment is not only physical, but also symbolic, as: “The city has so many forgotten spaces, [...]” that need to be returned to the city to become community landmarks”.

Considering the theme of environmental sustainability, the project was developed to make green spaces not only a place of recreation but also a means of raising community awareness of environmental protection. The innovative element emerging from the project, according to the interviewee, is the ability to reinterpret the relationship between the city and nature by creating a connection between citizens and their surroundings.

Finally, collaboration between institutions, local partners and the community becomes the method for success in addressing the complex challenge of social consensus. Building an effective dialogue is seen as the secret to turning an idea into a concrete reality: “This is not just a project; it's a movement. To succeed, we need architects, urban planners, environmentalists, and, most importantly, the community”.

4.4.2.4 Inter-Environnement Bruxelles (IEB)

The Inter-Environnement Bruxelles (IEB) is an association operating on various issues such as social empowerment, urban democracy, and solidarity, bringing together neighborhood committees, associations, and collectives. It acts as a force for reflection, information, proposal, and contestation, fostering debates, critical analysis, and alliances with other social actors.

Ms. Maud Marsin is a journalist and project manager at Inter-Environnement Brussels. She works in the environmental hub, one of IEB's three hubs, along with the urban and mobility ones. She focuses on cross-cutting issues such as the right to the city and environmental justice, and she has collaborated closely with local committees and authorities to evaluate public projects.

The interviewee's main concern revolves around the social inclusion of urban projects. In the specific case of Neerpede, she spoke in favour, but with the condition that access be “open to everybody,” without any economic barrier. This position reflects a commitment to making public infrastructure truly inclusive, emphasizing that “accessibility should not be a financial constraint”.

In Brussels, it is impossible to talk about the right to the city without considering the strong inequalities between the city's different neighborhoods. However, this issue often clashes with the mobilization of citizens against urbanization projects, which is often accompanied by the argument of biodiversity conservation. However, Ms. Maud pointed out that this argument can sometimes be instrumentalized to mask individual interests, such as maintaining neighborhood quiet.

Preserving urban biodiversity is a principal issue for a region as densely urbanized as Brussels. In the case of Neerpede, the pond area is characterized by critical ecological issues, such as “cemented banks and the presence of toxins”. Despite this, the project has been favourably evaluated. Ms. Maud expresses confidence in the official assessment of the project's impact and believes in the fact that it suggests that it “will not have a huge impact on biodiversity, in fact, it can improve it”.

One of the pillars of Ms. Maud's work is environmental justice intricately linked to the right to the city. This translates into efforts to ensure that public spaces are accessible to all, regardless of any starting conditions. She stressed that IEB works so that “the voice of the inhabitants reaches the ears of the public authorities” and, at the same time, that “the will of the authorities is translated for the inhabitants” when technical issues are complex. This is intended to bridge the trust gap between inhabitants and institutions by promoting a two-way dialogue.

This theme is also one that recurred during the interview because of practices perceived as greenwashing. Ms. Maud explained that in the case of the natural swimming pond project, Brussels Environnement “tried to be transparent by making documents available and organizing information sessions.” However, behind this distrust, there may be a long history of lack of transparency in previous projects. To recover a sense of confidence, she believes that the administrations should put more effort into contrasting greenwashing in both public and private projects.

4.4.3 Local advocacy groups

4.4.3.1 Sauvegardons Neerpède

The Sauvegardons Neerpède collective was formed in 2021 to give voice to people opposed to the proposed transformation of one of the Neerpède ponds into a bathing pond. This group is made up of residents and regular users of the park.

Its representative, Ms. Yannick Laurent, introduces Sauvegardons Neerpède as an environmental and social advocacy actor, representative of the concerns of all Neerpède residents and committed to community awareness. The group has organized many public meetings for this purpose, and it has participated as a proponent party in legal proceedings to block the project. Also, it organized a petition to show the people's concern and request the regional government to cancel the swimming pond initiative.

During the whole interview, she stressed out how using the word “swimming pool” is more correct than “swimming pond.” Therefore, the term she requested will be used in this subchapter.

Recognizing the particularity of Neerpède in the context of Brussels-Capital region, the main point of criticism raised around the issue of biodiversity protection. The ponds, originally created as reservoirs for flood control, have been “re-ensauvagés” (rewilded) by nature.

The proposed project involves significant alterations to the landscape. According to members of the collective, the swimming pool would “[...] destroy the already well-established living ecosystems to create new biotopes”, a process that could take decades to achieve equivalent results. Ms. Laurent argue: “Why destroy what is already alive and functional to gamble on something that might take 20 or even 40 years to develop?”.

The key concern underlying these fears is the possible overcrowding of the park, seen as an inevitable consequence of the project itself. The collective believes that the creation of a pool could attract enough visitors to exceed the capacity of the site, causing irreversible damage to habitats and undermining the quality of the experience for regular users: “Managing large crowds in an open site is impossible. Thousands of visitors would make the park unliveable and create

frustration for those unable to access the swimming facilities”. Also, the lack of adequate parking and public transportation infrastructure will further exacerbate the problem.

In addition, the public accessible area would be transformed into a partially privatized and regulated space. According to the plan, some areas would be designated exclusively for bathing, with access limited by “turnstiles” and mandatory reservations. This, according to the collective, would undermine the inclusive character of the park: “Nature is our first home. It must remain accessible in its simplest form, without consumerism or barriers to entry”. Currently, the park is currently accessible to everybody.

The collective complains about the public consultation process and claims there was no community involvement in the planning of the project. It mentions the manipulation of feasibility survey results and the absence of in-depth research on the needs of the population: “The project is based on unverified assumptions. There is no data on what citizens want-sports swimming, recreational swimming, or something else entirely.” This lack of dialogue has led to a feeling of frustration and distrust of institutions.

As an alternative, the group promotes the idea of developing swimming pools in urbanized or degraded areas because “[...] building infrastructure in areas already impacted is the most logical and environmentally respectful solution.”

4.4.3.2 Fondations pour la Vallée de Neerpède et du Vogelzang and Planète Verte Fondations

The informal group of Fondations pour la Vallée de Neerpède et du Vogelzang is concerned with nature protection and has strongly opposed development projects proposed by various public agencies. They argue that a proper approach to ecology and sustainable development should be to preserve and restore existing natural spaces, rather than destroy them to build new “artificial” environments.

The informal group Planète Verte Fondations is dedicated to both nature education through walks and workshops and species monitoring through citizen science tools. Graduate in natural sciences, Anne Lenain dedicates to environmental education by organizing walks and educational workshops in green spaces in the Brussels region during her free time.

Ms. Lenain considers Neerpede an irreplaceable resource, describing it as an extraordinary place rich in biodiversity. The most recurring theme during the interview is the condemnation of the degradation caused by the mismanagement of natural resources. Ms. Lenain, in fact, openly criticizes institutions and politicians who, according to her, favour economic interests over environmental protection and claim that the project is just greenwashing: “They claim the project will improve biodiversity, but it's pure greenwashing. Biodiversity thrives when nature is left untouched, not when trees are cut, and habitats are replaced with infrastructure”.

This lack of care causes her to feel distrust of institutions, which are so perceived as neglectful.

She also criticizes the lack of community involvement in decision-making processes and believes in the need of more participative governance: “Local committees and associations should have a more active role in decision-making. Current policies are top-down, ignoring the voices of those who truly understand and care for these spaces”.

Ms. Lenain pays special attention to the protection of threatened plant and animal species; in particular, she mentions wild orchids. The Neerpede Valley, with its unique biodiversity, is described as a natural sanctuary in danger of being destroyed by urban pressure: “The human pressure is too strong [...] this ecosystem is at risk if you bring in a recreational park.”

Ms. Lenain proposes concrete environmental education solutions in Neerpede ponds. These include, for example, the “House of Nature,” a space dedicated to fauna and flora observation, educational programs for children. She also thinks that certain areas, including Neerpede, should be “sanctuarized.” This idea is inspired by the concept of “sanctuarying” proposed by Francis Hallé, who suggest the creation of untouchable areas to preserve the entire ecosystems.

4.4.4 Local enterprises

As shown in *Map 12*, the local enterprises interviewed are the Ferme du Chaudron and Smala.

Map 12. The two local enterprises are situated nearby the ponds of Neerpede, 2025.



Sources: Personal elaboration based on the interviews. Elaborated from Google Earth Pro.

4.4.4.1 Ferme du Chaudron

La Ferme du Chaudron is a farm near the ponds that dates to the 19th century. It has been abandoned for years and is now part of an innovative project thanks to a 10-year concession obtained in 2021 through a Brussels Environnement call. The project aims to promote agroecological production, support new producers and create short new distribution circuits.

La Ferme advocates a social vision of agroecology, opposing an elitist and privatizing perspective.

The interviewee, Ms. Clara Dinéty, has lived in Brussels since 2016 and has been coordinating the Ferme project since 2021. As the Ferme is still under renovation, Clara Dinéty currently works from Maison Verte et Bleue.

Ms. Dinéty perceives the Neerpède area as a territory crossed by conflicting dynamics between urbanization, agricultural pressures, and biodiversity conservation. These three macro-areas become the centre around which the interview takes place. She also believes that the swimming pond project sets in an already compromised socio-economic context and, therefore, concerns about the ecological impact of this single initiative must be relativized. The picture that arises is one of a series of contrasts.

The creation of the swimming pond is seen as an opportunity to improve access to green spaces, especially for the most vulnerable, as “it's time to make places of beauty and greenery accessible to poor people, not just those who are privileged.” In addition, Ms. Dinéty points out that many of the objections against the project come from an elitist view of ecology, which privileges conservation for its own sake rather than sustainable and inclusive management. Hence, it arises the vision of a popular ecology that integrates environmental and social needs, seeking to democratize access to UGS.

While thus acknowledging that more visitors will arrive, the impact of these on biodiversity is considered incredibly low when contextualized in the environmental conditions of the Neerpède area. In fact, Ms. Dinéty identifies the main causes of biodiversity loss as pesticides used by local farmers and increasing concrete: “The biggest problems in terms of biodiversity [...] have been farmers who used pesticides, which pollute the water and the air [...] and urbanization that has encroached heavily in recent years. If I had to focus on biodiversity issues in Neerpède, it would certainly not be on a small pond at the foot of the ring road, but rather on the use of glyphosate in monoculture fields”.

4.4.4.2 Smala

The Smala organization integrates sustainable agricultural production and creative cooking. In 2018, Smala Farming was founded with Zofia Zaniowski, the first farmer, who started cultivating in a Neerpède field thanks to a Brussels Environnement call.

After a degree in computer science, Ms. Zaniewski radically changed her life and has been the farm production manager since 2019.

Ms. Zaniewski considers Neerpede a unique area, characterized by a rare balance between nature and urbanization, which deserves to be protected. She believes that the Neerpede swimming pond is an opportunity to valorize the identity of this territory. Therefore, he believes this initiative helps raise awareness among both residents and non-residents about the value of the area. The various initiatives of the project could attract people living in more urban neighborhoods and, thus, recreate the contact with nature that city residents have lost.

In particular, Ms. Zaniewski enthusiastically supports the natural swimming pond as she sees it as the key element to the success of this land redevelopment initiative: “There are no swimming areas in Brussels, so I think this project is a great idea [...], it can attract people and promote environmental education”.

However, she acknowledges the concerns of some residents related to the risk of overcrowding and the impact on the tranquillity of the area. She believes, however, that proper management will be able to draw benefits for both residents and outside visitors: “I think the main fear is not so much for biodiversity, but for the loss of quiet. But with a reservation and restriction system, it would be possible to balance the needs”.

Revitalizing Neerpede therefore becomes an environmental initiative that manages to go hand in hand with the social. Also, protecting rural areas becomes a preventive measure toward urban overbuilding since it prevents their current and future erosion: “[...] it is important to maintain agricultural and natural areas and prevent any risk of real estate projects that could compromise the land”.

4.4.4 Visitors

4.4.4.1 Visitor 1

Ms. Marie R. has been a resident of Neerpede for over 30 years. She attended a meeting organized by Brussels Environnement and signed the Sauvegardons Neerpede petition. She is a regular visitor of the park.

She considers herself an informed person about the project. Turning the pond into a swimming area would result in the loss of the area's natural identity because “These ponds are delicate ecosystems, inhabited by animal and plant species that would be disturbed, [...]” For this reason, she has confidence in Sauvegardons Neerpède's efforts.

Moreover, she also expresses fear of having the Neerpède area disrupted, as she fears there will be a disproportionate increase in traffic, especially due to the lack of efficient public transportation connections, which will turn Neerpède into a crowded place. She is also afraid that the semi-rural nature of the area will “remain just a memory. and she states: “I am afraid that (the project) will bring more traffic and degradation, and that we will lose the natural, wild beauty that makes us unique.”

A feeling arising during the entire interview is that she also does not feel represented by the institutions; on the contrary, she argues the local community is not properly listened to: “I have attended a couple of meetings, but I often feel that decisions are already made.”

Therefore, Ms. Marie claims that “everyone in the neighborhood has opposed the project from the beginning [...]” and that everybody supports Sauvegardons Neerpède.

4.4.4.2. Visitor 2

Mr. Nicolas D. is an occasional visitor to Neerpède Park; he resides in downtown Anderlecht and works in the northern part of the region. He visits the park from time to time, to relax, but is not particularly involved in discussions about the project.

The first issue that arises during the interview is the difficulty of reaching the park, in the words of Mr. Nicolas: “There is only a tramway that comes 10 minutes from the park [...] and the metro stops on the other side (at Erasmus). For me, getting to Neerpède by public transport takes at least 40 minutes [...], I usually prefer to come by bike”. This aspect limits his frequency of visiting and, indeed, is an obstacle for many other residents of Anderlecht and Brussels more generally.

Mr. Nicolas is willing to come all the way to Neerpede Park since he claims it is quieter than the other parks near his home: “I like coming here because it is different from the other parks, where there are always a lot of people”.

When I ask him if he is familiar with the Neerpede redevelopment project and, in particular, the natural swimming pond, he explains that he found out about the initiative from the posters displayed throughout Neerpede. However, he does not consider himself sufficiently informed to express an opinion on the overall impacts of the project, but he positively welcomes the idea: “[...] being able to swim outdoors is great. It would be nice to have such an option here in Anderlecht”.

The key aspect, however, remains the accessibility of the park to everyone: “There are many families in Anderlecht who live in disadvantaged economic conditions, and an area like this can become very important for families, [...] it is important for them, [...] public transportation also needs to improve”.

5. Discussion

5.1 Which are the stakeholders' alignments?

The interviewed actors can be grouped according to their priorities in view of their results (Bendtsen *et al.*, 2021).

From the perspective of government institutions, there is a contrast between the favourable opinions of Brussels Environnement and the Brussels-Capital Region, and the unfavourable opinion of Anderlecht City Hall. The former adopt an approach directed at balancing ecological sustainability and usability, so they invest significant resources to ensure that biodiversity is a cornerstone, as well as public accessibility to the swimming pond. On the other hand, Anderlecht City Hall takes a more critical stance as it is concerned about the transformation of Neerpède into an overcrowded and ecologically overburdened gathering place.

NGOs and advocacy groups can be divided into three clusters: those in favour, those in a hybrid position, and those in disfavour. The first one includes Natagora, IEB and Pool Is Cool but with substantial differences regarding the focus of analysis. In the case of Natagora, the support given to the project comes from its potential contribution to the conservation of Neerpède habitats; however, recreational use may cause negative impacts on the project and, therefore, Natagora strongly claims a monitoring system. IEB and Pool Is Cool, on the other hand, see precisely recreational use as the cornerstone reason behind their support.

The hybride cluster includes EGEB (États Généraux de l'Eau à Bruxelles). It stands against the project as it believes that the excessive anthropogenic impacts would be incompatible with a vision of environmental conservation, since the Neerpède area is already on the brink of ecological collapse. However, he recognizes the need to improve urban green spaces for human enjoyment of such spaces, as well as the need to create benefits for Neerpède. Despite this, he does not believe that the swimming natural pond in Neerpède can conciliate the two spheres.

Finally, among the unfavourable actors three advocacy groups were interviewed: Sauvegardons Neerpède, Fondations pour la Vallée de Neerpède et du Vogelzang and Planète Verte Fondations. The priority of the three sets in nature conservation, while they consider the

social benefits as being secondary. Their opinion is totally against the project because they believe the impacts would be destructive to the species inhabiting Neerpede. In addition, they believe that urban green space development projects should be done in heavily urbanized areas, such as old town centres. Instead, they should not increase the influx of people to territories that are considered ecologically significant, as they inevitably involve the destruction of such ecosystems.

In particular, Sauvegardons Neerpede represents the organized voice of the local community that has emerged against the project. Residents aligned with this view, who are the majority, openly criticize the project because it will ruin the rural character of the area and because they are worried about the risk of overcrowding and of poor infrastructure management. However, there are also residents in favour and who support the project because of the opportunities it will provide for families, both residents and non-residents. Yet, they have failed to organize collectively to voice their views.

Historic farmers are represented by the two groups of residents, and they are polarized between favourable and unfavourable. In fact, those in favour see the natural swimming pond as an economic opportunity since it would attract many new consumers. Those unfavourable, on the other hand, are tied to the Neerpede tradition and fear change.

The local businesses interviewed, Smala and la Ferme du Chaudron, are newly established and represent citizens who do not reside in Neerpede but only work there. Both support the project because they see it as a tool for promoting social integration, but they believe it is crucial to maintain the rural identity of the area while protecting it from side effects such as gentrification. Environmentally, they both believe that Neerpede has significant and long-standing problems resulting primarily from long-time farmers who have used chemicals extensively.

Finally, outside visitors have less organized views, but still with a predominantly recreational interest. Expectations, in fact, are more oriented toward using the area as an accessible and well-managed recreational space. Moreover, they recognize the significance of Neerpede in terms of bird biodiversity but argue it is a space that suffers from its proximity to the city and, therefore, is already highly compromised.

Tab 3. Resume of the stakeholders' priorities.

Type	Stakeholder	Priority
Supporters		
Public body	Brussels-Capital Region; Bruxelles Environnement	Balance between social and environmental sustainability
NGOs	Natagora	Environmental conservation
NGOs	IEB, Pool is Cool	Social sustainability
Residents	Non organized actor	Recreational use
Local enterprises	Smala; Ferme du Chaudron	Social inclusion; economic benefits
Non-supporters		
Public body	Anderlecht City Hall	Maintaining the rural and quiet character
NGOs	EGEB	Environmental conservation
Advocacy groups	Sauvegardons Neerpède; Fondations pour la Vallée de Neerpède et du Vogelzang; Planète Verte Fondations	Biodiversity conservation; Maintaining the rural and quiet character
Residents	Represented by the advocacy groups above	///

It is possible to argue that there is a common point of convergence among all actors, namely the recognition of Neerpède's ecological value.

This arises from the unique socio-cultural significance that sees Neerpède as the last rural landscape in one of the most cemented regions of the European Union (UN, 2018). It inevitably becomes the last symbol of coexistence between people and nature, shaping its identity in deep historical roots defended by residents and non-residents as well. This aspect strongly influences the position of some stakeholders, such as the Ferme du Chaudron, which sees the project as a threat to its agricultural heritage but also as an opportunity to valorize it.

Consequently, there is also an economic dimension that takes over in the deep motivations behind this polarization. The project can be one of the economic drivers to support agricultural actors and small local traders. However, the risk of green gentrification becomes an element of

doubt that requires robust monitoring. This discussion results in a polarization between those who believe it is impossible to regulate it, and those who claim that institutions can adopt measures to prevent it. This also translates into social consequences as the inability to control gentrification can lead to the destruction of the social fabric of Neerpede.

However, the project can also benefit the social sphere, as IEB and Pool Is Cool point out. In fact, the accessibility to the swimming pond can become an emblematic example of social inclusion and, as a result, can strengthen the sense of community and social cohesion. In addition, environmental education initiatives associated with the informed use of green spaces can bridge the existing gap between social and environmental priorities.

Precisely, these two spheres are often seen to be in opposition. In fact, while institutions strive for balance, other actors tend to always make a choice about which one should be prioritized.

The focus on the environmental sphere is highly polarized by pro and con actors. While Natagora, an environmental organization, supports it, advocacy groups strenuously argue against the project because it may lead to negative environmental consequences. Institutions such as Bruxelles Environnement and the Region, on the other hand, are driven by the need to comply with regional and global climate goals, which explains their close commitment to biodiversity and sustainable infrastructure. However, this perspective does not always align with more immediate local concerns. Finally, Anderlecht City Hall sides with the advocacy groups believing the Neerpede area would be excessively changed by the project.

A final factor to be considered is the perception of involvement or non-involvement in the decision-making process. As expected, institutional actors claim that the participatory process has been implemented through workshops, informational meetings, and the provision of materials. Local advocacy groups, however, assert that this is not the case. Furthermore, there are actors such as IEB who emphasize the risk of ecological and social imbalances related to planning perceived as too top-down oriented. Indeed, the lack of genuine participation breeds distrust in institutions that leads the local community to feel unheard, as explicitly acknowledged by Natagora. This divergence has resulted in a delay in the project's progress due to legal appeals and the lack of unanimity in decisions.

Tab 4. Summary overview of converging priorities among groups and the relative critiques emerged.

Converging priority		Critique emerged
Biodiversity conservation	→	In the project, the recreational use overrides the environmental protection
Need for balancing conservation with the recreational use		
Conservation of cultural and rural heritage	→	Risk of green gentrification
Need for environmental education initiatives	→	Crowding and inadequate access management
Importance of public accessibility		
Importance of community involvement	→	Ineffectiveness of the participatory process
		Perception of exclusion from decision-making processes

Finally, there are alliances among the distinct groups, which can be more or less explicit. For example, the Minister's Office, institutionally joined by Brussels Environnement, is supported by Natagora. Another case is Sauvegardons Neerpède, representing residents opposed to the project, which is backed by the other local advocacy groups that were not established for the only purpose of opposition to the project. Pool Is Cool also represents an indirect connection with pro-visitors, as it promotes a project that would make Neerpède usable for all Anderlecht residents.

In conclusion, the picture of a conflict with a high degree of polarization arises. On one side, institutions and NGOs support the project as an innovative example of urban sustainability; on the other side, opposing residents express a strong distrust of the institutions, driven by a perception of exclusion from the decision-making process. This lack of collaboration has exacerbated the existing tensions, proving that participatory and inclusive governance is essential to ensure balance and overcome decision-making blockages.

5.2 How does the public's level of awareness of the project shape individual and collective responses?

This section analyzes how the understanding and the knowledge of the project influence the behaviour of individuals and groups. In addition, it aims to understand whether and how the opposition to the project is motivated by a lack of information or ineffective communication by institutions.

Interviews and participatory ethnography work have revealed how many residents demonstrated partial knowledge of the project's objectives. This can be attributed either to a lack of involvement in decision-making processes (Tiran, 2017) or to a difficulty in sourcing clear and accessible information. Thus, it is determined by a communication problem by institutions (Campbell-Arvai & Lindquist, 2021). This condition has increased doubts and distrust towards the institutions and has, consequently, contributed to the polarization between favourable and unfavourable residents. In the latter case, there is an absolute reliance on the work of Sauvegardons Neerpède. As few residents have done in-depth individual research, the information they have is already filtered through the vision of Sauvegardons Neerpède.

Similarly, residents of other neighborhoods in Anderlecht consider only the recreational aspects, thus demonstrating a more superficial knowledge of the project. This point of view demonstrates their difficulty of the Brussels region and Brussels Environnement to communicate effectively with citizens.

On the other hand, actors such as the NGOs and the advocacy groups showed a deeper view on the topic during the interviews. Moreover, they demonstrate a long-standing interest in the area and the PON, thanks to the direct involvement during the public consultations. However, even in these cases, criticisms on information transparency emerge as the groups complain about the access to a more comprehensive information. In fact, they denounce insufficient public documentation and insufficient updates on the project's progress.

For example, the three advocacy organizations have complained about the use of unactualized and no science-based data to support the arguments reported by the institutions in favour of the project.

Therefore, they denounce the difficulties in accessing relevant data to fully assess the impacts of the project.

Consequently, a disparity in the level of awareness arises in the analysis. It was evident that a low level of awareness favoured the dissemination of filtered arguments by the actors considered the most informed.

In the case of residents who oppose the project, it shows the concerns which are filtered through Sauvegardons Neerpede's reports: consequently, they result in uncritical and poorly supported by objective facts. This happens because the lack of information often leads to emotional responses based on prejudices or fears, and, therefore, residents may perceive the project as a threat to their traditional way of inhabiting the territory.

On the other hand, organized actors can evaluate the project more consciously as their comprehensive knowledge has enabled them to consider critical issues and opportunities. Therefore, they are in the position of taking an active role in the conflict.

The level of awareness also affects social cohesion, as suggested by Wan *et al.* (2021). A shared awareness among all stakeholders could create a common ground of understanding and agreement on the project; moreover, it would allow for the establishment of greater collaboration among different groups, who would begin to feel part of the initiative itself as they play an active role in shaping it.

Currently, differences in the quantity and quality of information received by various groups have generated misunderstandings. Residents have superficial information and react on fears that are usually not grounded; institutional stakeholders perceive residents and their representatives as “uncooperative” without considering the root of their concerns. This inequality in the level of awareness is, therefore, one of the causes of the fracture between institutions and citizens.

This loss is expressed through residents' perception of a lack of inclusiveness by institutions. Although the documents available for the consultation are extensive, there is a sense of non-transparency that has increased. This may be caused by the lack of detailed information that can also be considered easily understandable, easily accessible, and easily verifiable.

In addition, a participatory process, in which citizens do not feel heard, results in a feeling of exclusion from decision-making processes. For example, the creation of the dialogue forums was not effective because many people perceived those decisions had already been made and the meeting was only a facade. As a result, when citizens did not feel included, even the last remaining bastion of trust in the institutions and their intentions failed, regardless of the validity of the project itself. This has increased the tensions and the difficulty of finding solutions shared by the parties as all the participatory processes implemented seem merely symbolic instead of real opportunities.

Finally, NGOs need to be considered separately, as their characteristic of having sufficient resources allows them to understand even complex and more difficult-to-find documents. This is demonstrated through the ability to identify the existence of the institution-citizen gap because of a participatory process that, historically, has demonstrated major weaknesses. In the specific case, it has been one of the causes of polarization both between residents and institutions, but also within the same groups of residents, namely those in favour and those against.

The level of awareness of these organizations, therefore, appears to be high but it is also rarely able to consider the social and environmental spheres as deeply connected. In fact, all the NGOs assume an analysis that either prevails in environmental conservation (Natagora, EGEB) or strongly in the benefits of recreational use (Pool Is Cool, IEB). In both cases, the other sphere assumes a marginal role and the two are rarely put into dialogue.

In conclusion, the level of awareness about the objectives, impacts and available analyses of the Neerpede territory, as well as the possibility of accessing and critically understanding their content, is a factor that influences the response of both individuals and organized groups. As analyzed, lower awareness tends to result in higher levels of polarization compared to the case of higher awareness. When confronted with this picture, institutions should ensure that information is conveyed in simple language that is understandable to different segments of the population. In addition, as suggested by Ding *et al.* (2023), closer collaborations with other local partners, such as NGOs, may be a key point in achieving a successful involvement of citizens both as individuals and as organized groups.

5.3 How could a genuine participatory process impact decision-making in the Neerpede project, and what barriers and opportunities are perceived by different stakeholders for achieving meaningful participation?

To successfully implement a genuine participatory process, it is important to involve the entire local community during the design and implementation phases. This increases citizens' trust in institutions and, therefore, it succeeds in mitigating a potential conflict (Van Leeuwen, 2022). The involvement does not only include consultations, but also the provision of tools that allow citizens to contribute to decision-making processes (Zhou et al., 2022) actively and informally.

In the case of Neerpede, a true involvement may be decisive in increasing acceptance among residents opposed to the project. For this reason, the institutions must provide adequate materials to their citizens. However, public consultations must include all segments of the local community, as well as the future users of the project, which in this case are the citizens of Anderlecht. As suggested by Wan *et al.* (2021), a truly inclusive approach must also include targeted strategies to reach those who are less likely to participate, regardless of socioeconomic-cultural background. This is the only way to ensure that the project meets real needs and, therefore, reduce the current existing tensions between groups.

Integrating the perspectives of these stakeholders allows the identification of critical information that would, otherwise, be overlooked. In such a way, the proposed solutions will be more adapted to the area in which residents and non-residents live (Wan *et al.*, 2021). In addition, the perception of being genuinely considered can promote a sense of community and collective responsibility among residents, encouraging participation among diverse groups (Attoh, 2011).

Various participatory methods such as public consultations and workshops have been adopted in Neerpede. Despite these tools giving specific input on some aspects of the project, they did not systematically involve all interested groups. In fact, organized sessions were often dominated by already active groups representing specific interests, leaving little room for divergent opinions or less organized voices.

As a result, the most marginalized segments of the population were not involved, just as the majority of Neerpede residents. In fact, many inhabitants, did not participate in the consultation

sessions and relied exclusively on the work of Sauvegardons Neerpède. This body perceived that consultations were not sufficient to ensure real influence on decisions and, therefore, contributed to the diffusion of this narrative among the other residents.

The direct and informed involvement of all stakeholders could have mitigated the conflict from the beginning as it could have been the key factor in restoring trust between citizens and institutions (Yazar & York, 2023). However, these limitations have jointly contributed to the widespread perception of a lack of transparency and inclusiveness. Currently, this feeling is difficult to transform. To overcome it, it is essential for parties to acknowledge mistakes and start an initiative-taking multilateral communication. In this way, they all can demonstrate their commitment toward implementing a new inclusive approach.

In a climate of polarization, new initiatives that can concretely strengthen and make genuine the participatory approach of Neerpède is a difficult challenge to address. That is why institutions need to partner with NGOs and small businesses in Neerpède.

As they have proven to be able to recognize the existence of the institution-citizen gap, they conform as actors who could play a key role in developing a more appropriate system of confrontation. Their active involvement can stimulate new creative ideas that can address the needs of the area. Indeed, these facilitators can be able to create a neutral space for fair dialogue among the sides and, therefore, can lend legitimacy to the decisions themselves. In conjunction with this, it is crucial to establish clear mechanisms for monitoring the participatory process, as well as its evaluation. In this way, inclusiveness, transparency and effectiveness can be guaranteed.

This, however, must be complemented by a new participatory process able to capture and make room for all the weaknesses of the current one. Clarity and objectivity are essential. For example, there is a need to communicate from the outset the goals and limitations of the participatory process to the targeted actors, so as to realistically manage the citizens' expectations and reduce the potential future frustrations.

This is also why it is necessary to include moments of confrontation following the made decisions. In this way, citizens understand how their inputs were heard and integrated into the final

project. Adjusting these suggestions toward the participatory approach of Neerpede could turn it into a model of inclusive participation that can be replicated in other peri-urban settings.

5.4 What addition factors are key in the perception of the project and the existence of the conflict itself?

Inequalities, environmental justice, and cultural symbolisms are cross-cutting factors that play a leading role in residents' perceptions of the project. The goal of this section is to demonstrate how these factors represent the deeper roots of the conflict itself.

Urban justice provides with two key theoretical perspectives for the present case study: the right to the city and the NIMBYism (Colom-Gonzalez, 2024).

In the context of the Neerpede redevelopment project, these two paradigms clearly clash: on the one hand, social inclusiveness, environmental sustainability, and the improved quality of life are promoted by pursuing goals that reflect the Right to the City; on the other hand, the opposition of most residents, often expressed through NIMBY dynamics, underscores personal concerns.

This section explores how the concepts of Right to the City and NIMBYism apply to the outcomes that emerged in the case study, examining the tensions between inclusiveness and local resistance.

5.4.1 Right to the City

The swimming pond project was also designed to be accessible to low-income families and migrant communities, which are groups considered historically marginalized. These, however, have been excluded from decision-making and co-design processes. On the one hand, there has been no active institutional willingness to include them; on the other hand, there has been an explicit willingness on the part of Neerpede residents to exclude and not consider them as citizens with the right to take decisions on the territory of Neerpede.

This context fails the principle of Right to the City since citizens should have the right to access urban spaces and be participants in their construction (Lefebvre, 1968). In the case of

Neerpède, the issue is linked to the access of the park space but also the swimming pond. In fact, although the interviewed actors recognize the need to improve public transportation, there is no concrete proposal that considers the major difficulties experienced, for example, by the migrant communities in Anderlecht's inner city.

This inequity ends up fuelling a sense of exclusion that clashes with the main goal of ensuring that the benefits of urban development are equally distributed (Lefebvre, 1968). The project of Neerpède promises significant improvements; however, the beneficiaries of the project, i.e., all residents of Anderlecht, do not feel as such. On the one side, many Neerpède residents oppose the project; on the other side, residents of Anderlecht do not know about the project and do not feel a sense of ownership of this green space.

The right to the city also includes the right to active participation in urban planning processes. As analyzed in the previous section, participatory initiatives undertaken so far, such as public consultations, have been criticized for their inability to systematically include all social groups. This fuelled a sense of alienation from the decisions made.

Therefore, analyzing the Neerpède context through the lens of Right to the City highlights the strong critical issues existing. In this sense, the project seems to fail in reflect the core principles of Right to the City, which call for inclusive participation as a key element in legitimizing urban projects and, therefore, also in ensuring urban justice. In Neerpède, this lack of inclusion at an early stage amplified conflict and deprived residents of the opportunity to co-construct a shared vision for the future of their neighborhood. Thus, despite its aspirations, the Neerpède project struggles to embody the Right to the City.

5.4.2 NIMBYism

The NIMBYism represents a form of local resistance to the changes perceived as undesirable (Webb & Dej, 2023). While the Right to the City promotes redistribution and inclusion, the NIMBYism protects particular interests, often objecting to developments that could benefit disadvantaged groups. This tension between inclusiveness and preservation of the status quo is central to understanding the conflict in Neerpède.

Neerpede residents have adopted behaviours and dynamics that are typical of the NIMBYism, using environmental and social concerns to protect their status quo and the character of the neighborhood. This attitude is also influenced by socio-economic differences in the municipality of Anderlecht: Neerpede is primarily inhabited by an affluent population, while Anderlecht city centre is inhabited by low-income communities, often composed of migrants. This difference accentuates the conflict as Neerpede residents perceive new visitors as a threat that could alter the current socioeconomic balance.

They stated their opposition to the project is based on the negative impacts of the project on ecosystems, and it was pointed out that the creation of a swimming area will compromise the local biodiversity, especially near the ponds. This concern is worsened by the denounce those institutions minimized the negative effects in the assessment rounds. A second key concern is the inadequacy of infrastructure (i.e., parkings, public transports, one-way roads) to oversee the expected influx of visitors. Finally, this fear is also related to the access management planning: limiting parking near the area and encouraging pedestrian and bicycle routes are measures seen as insufficient and, therefore, ineffective deterrents.

Beyond these practical concerns, the opposition movement also reflects an identity dimension: for residents, Neerpede is a symbol of the rural past that embodies the values of tranquillity and connection with nature. Consequently, the introduction of new recreational facilities is seen as an intrusion into this balance; it is a threat to historical identity that risks being diluted. This perception is also rooted in the history of the neighborhood, which has shifted from being an agricultural area to a peri-urban area subject to increasing urban pressures. This results in a series of mechanisms set in place to reassert symbolic and material ownership of the land. It becomes a means through which legitimate fears are intertwined with less rational-based resistance.

In this sense, NIMBYism is configured not only as a form of resistance to change, but also as a struggle to maintain control over a space perceived as one's own (Herdt & Jonkman, 2021). This attitude reveals, therefore, a dynamic of exclusivity in which the local community set up implicit barriers against the perceived “invasion” of non-residents. Therefore, the project is perceived as an intervention that risks disrupting the essence of Neerpede.

The use of environmental argumentations becomes the untouchable defence shield behind which that fear can be hidden. A more critical analysis of the argument proposed by Sauvegardons Neerpède reveals that their environmental concerns, while partially legitimate, have been amplified precisely to support an agenda of resistance.

For example, the transformation of Moyen Pond into a swimming pond has been described by opponents as an irreversible threat to the ecosystem, even though feasibility studies have shown that the natural filtration system could improve water quality and enhance biodiversity. This amplification of environmental concerns shows how they are used strategically to strengthen resistance. This masks much more complex fears related to the perception that the democratization of green spaces could undermine the benefits that residents currently enjoy.

Similarly, the desire to maintain Neerpède as an exclusive space for residents is reflected in concerns regarding overcrowding and loss of tranquillity in the area. This attitude turns out to be perfectly in line with the NIMBY dynamics.

Finally, the lens of NIMBYism should be used to analyze the participatory process, as suggested by Delphine *et al.* (2022). Public consultations have seen a defensive approach by residents from the beginning, regardless the fact that they have been insufficient over time. This approach has limited both the building of effective dialogue and the distrust of institutions, leading to the perception that the project favours outside interests at the expense of residents.

A consequence, it has been complicated to establish a constructive dialogue because the perception of an imminent threat led many to reject any compromise. Therefore, it limits the possibility of negotiating shared solutions. Instead, these could have balanced local needs with the goal of democratizing access to green spaces. Finally, the NIMBY attitude accentuated distrust of institutions, fuelling an “us versus them” narrative that further polarized public debate.

5.5 Limitations of the research

The research results have some limitations, which can be attributed to constraints arose during the different research phases. These limitations include both controllable factors and elements beyond the researcher's control.

The selection of an ethnographic participant method has posed relevant challenges for the role of the researcher, who is both a resident and an observer. The initial stages of the work were marked by an initial unfamiliarity with the social, economic, and political dynamics. Over time, the trust-building efforts gradually mitigated these challenges, but the complexity of conducting such methodology remained.

Moreover, as the investigation period lasted only 6 months, it was chosen to focus the research exclusively on the case of the Neerpede neighbourhood. This boundary limits the generalizability of the findings to other UGS projects in the Brussels-Capital region and/or in the country, but it represented a necessary choice as the methodology of participatory ethnography requires a sustained presence in the locality and, thus, it was unsustainable to develop a comparable investigation in such a limited period.

Time constraints also affected the extent of direct engagement with all potential stakeholders, as certain documents and data were not accessible within the research period. Time constraints also affect the possibility of capturing long-term trends and evolving stakeholder attitudes, as well as the analysis lens adopted for key events that occurred outside this window.

In addition, election timelines implied relevant bureaucratic delays during the research period, and thus it restricted the breadth of real-time data. In fact, obtaining interviews with political bodies was complex due to the time proximity with the elections and the fact that the Neerpede issue is a sensitive topic for both the region and the municipality.

Despite the interview participants being selected also in consideration of applying an intersectionality focus, some issues were insuperable. In fact, the research presents demographic limitations as ethnic marginalized groups and private stakeholders were difficult to involve both for a lack of time availability by such participants and by a lack of will. Similarly, the women segment has been included much more as civil society than as public bodies because hardly ever has it been possible to find relevant female stakeholders in this specific context.

To conclude, the methodology was designed to maximize the validity of the findings despite the strong challenges to produce relevant results for understanding participatory processes and stakeholder dynamics in UGS projects.

6. Conclusions

The case of Neerpede represents an emblematic example of UGS management in setting of divergent interests. The transformation from rural to peri-urban zones corresponds to a pattern that occurs in several European cities where the limit between urban and rural areas undergoes rapid transformations. In this context, the PON has become the centre of a broader debate linking urban justice to participatory governance. The interdisciplinary approach allowed for an in-depth understanding of the governance, the local community involvement, and the tensions that exist between the different actors involved.

The bathing pond project, if implemented, would represent an innovative infrastructure for the local and regional community. However, strong opposition risks compromising the potential benefits while decreasing the social acceptability of the project itself. Indeed, the hostility toward the project could turn into a conflicting use of the space, thereby diminishing its potential as a place of social cohesion.

On the one hand, as already introduced, the project is led by various public bodies, among which the most relevant in the decision-making process are the Ministry of the Environment and Brussels Environnement/Leefmilieu Brussel, which are strongly in favour of its realization. These institutions view the natural swimming pond highly aligned with the regional sustainability goals.

On the other hand, residents of Anderlecht and Neerpede hold deeply divided points of view. While those living in Neerpede seem concerned by the risk of transforming the area into a high-traffic recreational hub, many from other Anderlecht neighbourhoods support the project, as they believe it has the potential to improve their quality of life. Most of those fears are particularly pronounced among long-standing residents.

Similarly, farmers are polarized: while traditional farmers with a long-standing presence fear the ongoing gentrification process may accelerate after the improvement of the recreational activities, younger farmers currently enjoying the financial support of the PON, see the project as an incentive to shorten the supply chain and get spatially closer to consumers.

Moreover, the environmental organizations recognize the ecological potentiality of the project, particularly about the natural filtration systems and the efforts to increase people awareness. However, questions arise around the impact of an increased human activity toward the local wildlife, given the presence of endangered species and nesting migratory birds in the area. For this reason, the fact that the project documents identify the wildlife as a key beneficiary is controversial. Consequently, their scepticism underscores the concerns about whether the natural swimming pond's design can truly balance ecological preservation and recreational use.

However, the analysis also showed that tensions around the swimming pond project are not exclusively defined by the clash between those in favour and those against but are rooted in the broader dynamics of urban justice. Indeed, residents' concerns, although strongly expressed through negative environmental impacts, are linked to more complex dimensions. While the project implies a risk of identity loss on the part of Neerpede residents, it also represents a step toward a more socio-culturally inclusive use of UGS.

Neerpede's identity is characterized by its agricultural history and semi-rural character, which has always seen the neighborhood as a quiet place with a strong connection with nature. The residents' defensive reaction is also rooted in the fear of losing this identity, as the project could turn the area into an overcrowded spot. Therefore, it becomes clear that urban transformation is not exclusively a physical intervention but rather has emotional and cultural implications for all people who experience the area, including visitors alone.

The technical and ecological validity of a project does not determine its success, but there is a relevant social component. In fact, the legitimacy of the project is also determined by the value placed on it by the people involved. Therefore, development projects must also integrate the concepts of social and ecological justice to avoid similar conflicts in the future and achieve sustainable urban planning. This validity can only be achieved through a participatory decision-making process, which, as demonstrated, must implement more effective tools and improve communication between institutions and citizens.

The ongoing debates among these groups highlight the need for inclusive and participatory decision-making to solve the tensions surrounding this ambitious initiative. Therefore, the Neerpede case confirms that the quality of public participation is crucial to the success or failure

of an urban project. However, ongoing legal proceedings represent the most evident effects of failure to reach a satisfactory compromise.

Indeed, despite the attempts to include the residents through public consultations, the participatory process was not perceived as inclusive and transparent by a huge portion of the population. The resulting lack of trust has created a polarization that has not only delayed the project implementation but also increased costs in both economic and social terms. Then, the numerous legal challenges demonstrate a systemic distrust in the authorities' ability to meet and reconcile the interests of the wider public.

This situation shows the need to rethink the participatory governance model through the adoption of methods that are more inclusive and can adequately respond to conflict situations. Collaborative governance needs spaces for discussion as well as the involvement of local communities from the first impact assessment.

For this to happen, local communities need to be involved not only through formal consultations but also through co-creative approaches that capitalize on their knowledge and experience. In addition, it is essential to ensure that all voices, including those of underrepresented groups, are heard and integrated into the processes. Neerpede highlights the need for a more genuine process.

In conclusion, the case study has shown that public participation cannot be just a formal step but rather a central element of the entire decision-making process. Building equitable and sustainable cities requires the recognition of the social, cultural and ecological value of public green spaces. Consequently, the lesson that can be drawn from this is that urban planning cannot prescind from participatory and inclusive governance that can integrate different perspectives and build broad consensus.

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