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Green spaces as places for inclusion: Inclusive governance in six urban green spaces in the Netherlands and Spain☆

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ABSTRACT

This study analyses how the governance of urban green spaces can foster social inclusion in cities affected by globalisation and inequality. To address the question of which institutional governance configurations are most effective in promoting social inclusion, an ethnographic approach was combined with a multiple-case study design in the Netherlands and Spain. Through participant observation, semi-structured interviews, and document analysis, cooperative processes and tensions were identified in various urban green spaces that differed in property regimes and scale. The findings show that agreements on access and usage rules, flexible governance structures, and the coordination of tangible and intangible resource exchanges between urban managers, residents and visitors are key to enhancing inclusion. Finally, a typology of inclusive governance forms is proposed, arranged along a continuum from centrally administered municipal governance to community-based governance, with an intermediate hybrid governance model between them.

1. Introduction

The dynamics of concentration and agglomeration in large urban areas have led to the emergence of zones characterised by high levels of multiple deprivation and increasing social polarisation (European Commission, 2019.; Hanakata & Gasco, 2018). In urban contexts worldwide, a globalising effect is clearly visible in the transformation of public spaces under the influence of productive, tourism, and mobility flows, which have become decisive drivers of urban dynamics. The redefinition of relationships among residents, visitors, and urban managers is unfolding within a development paradigm oriented towards maximising productivity (Sassen, 2018), while the mechanism of "disembedding" (Giddens, 1990) between those who plan and manage and those who use the city is intensifying. This tendency is reflected in institutional mechanisms that constrain active participation by non-specialist actors in decision-making concerning the social and material environments in which they live (Giddens, 1990), such as bureaucratic protocols, technical language, and technology platforms mediating expert–user interaction (Velasco et al., 2006).

In this scenario, growing citizen demands call for public spaces with non-productive purposes and free from bureaucratic transactions (Kronenberg, 2025): neighbourhood-based urban gardens, public parks or urban forests are spaces in which alternative social dynamics can take shape. Open green spaces can serve as a testing ground to develop policies and practices that improve social living conditions in growing urban environments (Roggero, 2015; Romero-Muñoz et al., 2024). From an inclusive governance perspective—understood as decision-making that ensures participation, accountability and equitable power-sharing among diverse actors (Annahar et al., 2023), green spaces in cities extend beyond their ecological function to become arenas for building social networks. In this sense, the environmental dimension of urban settings can act as a catalyst for collective action (Roggero, 2015). Following this perspective, the aim of this research is to characterise configurations of social and ecological factors that sustain inclusive forms of governance in urban green spaces over time. The analysis is guided by the following research questions. In general, which configurations of governance arrangements (norms, rules and social conventions) most effectively foster social inclusion in urban green spaces? Specifically, how do the ecological and spatial characteristics of urban green spaces interact with governance processes to shape social interaction and collective management? To address these questions, we employ analytical categories that uncover socio-ecological interaction

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dynamics, highlighting the need for integrative theoretical frameworks that account for both social and environmental factors in transforming urban spaces into inclusive ones, rather than merely spaces for climate adaptation.

Balancing the social, political, economic and ecological dimensions intersecting in urban green spaces remains both a pressing challenge and a valuable opportunity. Socially, green spaces improve mental and general health (Kolimenakis et al., 2022; Larkin and Hystad, 2019), for instance by enabling short-term recovery from stress or mental fatigue and by accelerating physical recuperation from illness (Konijnendijk, 2023; Solomou et al., 2019). They also influence the perception of a high quality of urban life (Astell-Burt & Feng, 2019) and can enhance office workers' performance and job satisfaction when they have views of nature (Lottrup et al., 2015). Moreover, green spaces are essential in mitigating the vulnerability of populations lacking access to quality private areas, acting as "vulnerability regulators" (Roman et al., 2018; Rugel et al., 2019) in cities marked by severe inequalities.

However, the social value of urban greening can be undermined when ecological improvements trigger exclusionary dynamics such as ecological gentrification or forms of bourgeois environmentalism (Baviskar, 2003), whereby green investments raise property values and displace original residents (Hädrich Silva et al., 2024). At the same time, an emerging niche of urban nature tourism is expanding (Kronenberg, 2025; Zoltan, 2024), as pro-environmental initiatives reshape the city's image and contribute to its international repositioning as a sustainable destination (Bilynets et al., 2023). This tendency is reflected in the growth of practices such as rooftop gardens, vertical greening systems and urban agriculture within the hotel and catering sectors (Briz Escribano et al., 2015; Zoltan, 2024). Green spaces thus become a strategic asset within urban climate adaptation agendas and a key target of policy initiatives and public–private funding aimed at carbon compensation (Monocle, 2018; Sijmons, 2020). When examining environmental urban agendas (European Commission, 2013, 2019, 2021a, 2021b, 2022), these dynamics are likely to intensify. From an ecological standpoint, urban green spaces play a key role in addressing climate change by sequestering carbon, regulating temperature, managing stormwater and improving air quality, among others (De la Paz et al., 2022; Konijnendijk, 2023). Large-scale rewilding projects, particularly visible in *global* cities, have become central to these agendas (Sassen, 2018). Recognising these dynamics is essential to understand how green initiatives, rather than simply attracting visitors, also reshape urban social fabrics and may or may not align with residents' everyday lifestyles and climate adaptation objectives.

Therefore, for the environmental dimension of urban settings to act as a genuine catalyst for inclusion (Roggero, 2015), the ultimate goal of this study is to generate applied and actionable insights for urban managers and policymakers pursuing socially inclusive regeneration and climate adaptation, while balancing trade-offs across the social, political, economic and ecological spheres of urban life. In this research, the term "inclusive" is used in its broad sense, referring to the capacity of governance arrangements to ensure equitable access, meaningful participation, and fair distribution of environmental and social benefits among diverse actors (Anttiroiko & Jong, 2020; Liang et al., 2022). By empirically analysing six mature cases of collaborative governance in forests, parks, and urban gardens, we seek not only to assess the effectiveness of top-down and bottom-up governance models for social inclusion within specific local contexts but also to demonstrate how certain combinations of factors can be scaled up and adapted to other urban environments. Comparing cases makes it possible to identify patterns of effective collaboration and derive transferable lessons that can guide the implementation of more adaptive and effective governance models targeting social inclusion in urban settings.

2. Literature review and analytical framework

To address the research questions set out above, three complementary fields of study are examined to form the theoretical basis of this investigation. First, the role of expert planning in urban greening is reviewed (Section 2.1), as the way in which green spaces are designed and managed largely determines who can access, enjoy and shape their use and care. Building on this, we explore their potential as "third places" (Section 2.2), that is, intermediary settings that foster dialogue between planners and users (residents and visitors), transcending the home–work divide and encouraging informal social interaction among diverse social groups. Finally, we turn to analytical approaches that enable the assessment of the potential of green spaces to promote social inclusion in cities by integrating the social dimension (particularly governance) and the ecological dimension of urban green space (Section 2.3). Drawing on Elinor Ostrom's Social–Ecological Systems (SES) framework, this section provides the conceptual link connecting design, interaction, and governance as mutually reinforcing components of inclusive urban management.

2.1. Expert planning of greening in cities: open to dialogue with non-experts?

Since the twentieth century, urban governance and the planning of nature in cities have largely been directed by expert agents, guided by technocratic management models that have determined the design and use of public space (Sennett, 2018). In recent decades, the growing introduction of nature in cities has been driven by new environmental and political challenges. Climate adaptation, reducing the impact of urbanism on ecosystems, and improving air quality have made green infrastructure a central axis of urban planning (Fors & Konijnendijk, 2015; Meerow & Newell, 2016), prompting a review of urban planning practices to incorporate principles more respectful of natural environments and better attuned to human-scale needs. Some voices propose an urbanism underpinned by empathy and the rehumanisation of cities (Sennett, 2018), aligned with initiatives such as the "15-min city" (Moreno, 2024), superblocks (Rueda, 2011), or the "3–30–300 Rule" (Konijnendijk, 2023). All of these proposals aim to enhance urban quality of life by improving the quality of nearby public spaces and fostering biodiversity and community health.

However, many of the greening projects being prioritised in cities, such as urban forests, continue to reproduce a model of planning led exclusively by experts, leaving citizens with only a marginal role in decision-making (Herdt & Muñoz Sanz, 2023; Romero-Muñoz, 2021). This mirrors the modern model of urban governance prevalent over the last century, characterised by strong technical specialisation, the standardisation of procedures, and the centralisation of decision-making in governmental institutions and large private operators. Technical language, bureaucratic procedures, and restricted-access platforms hinder meaningful citizen participation and magnify the feeling of "disembedding" (Giddens, 1990). Moreover, this challenge is exacerbated in contexts where citizen participation has been instrumentalised to counterbalance the bureaucratic and "blind" operation of institutions, yet without substantially changing the distribution of power in decision-making (Espinosa, 2009). Failed participatory experiments have revealed the rigidity of expert-led systems and the need for more flexible and adaptive approaches in public space governance (Muñoz Sanz et al., 2022; Romero-Muñoz et al., 2023, 2024).

In this environment, two institutional models appear to coexist: the rational-bureaucratic model, based on expert knowledge and administrative efficiency, and an emergent consensual model that seeks to include citizen deliberation and co-responsibility in decision-making (Cruces et al., 2003). Although still incipient in many urban settings, this consensual model introduces mechanisms of co-creation, co-design, and co-production, in which citizens and institutions collaborate to shape and manage urban spaces. We can draw a parallel between the rise of citizen-participation practices in urban areas and the quest to build dual institutional legitimacy. This means that, in the same urban space, actions responding to both rationales of governance (Shore, 2009; Shore

& Wright, 1997) occur: large-scale greening projects promoted by municipal or national governments, as well as public–social consultation processes and co-creation initiatives linked to green spaces of various sizes (Sama Acedo, 2016). The so-called "co-trends" are particularly visible in Europe, both in official discourse and in institutional participatory experiments, such as Climate Citizen Assemblies, Local Energy Communities and citizen councils. Such citizen engagement is expected to enhance the legitimacy, acceptance, and effectiveness of decisions and empower the public (Rugel et al., 2019; Schauppenlehner-Kloyber & Penker, 2016). It is therefore essential to examine critically and empirically whether expert-led planning approaches to greening in cities are capable of establishing a genuine dialogue with non-expert citizens, or if participatory strategies continue to operate as performative mechanisms that reproduce discourse rather than producing tangible outcomes (Geels, 2024; Smith, 2017). This juncture points to the possibility that open urban spaces featuring forests, parks, or gardens can function as intermediary or third places, well suited to fostering inclusion for a broad range of social groups.

2.2. The social potential in green spaces as "third places" for building inclusive and adaptive cities

Urban green spaces have been recognised as strategic places for social interaction and the construction of community ties (Parr, 2007; Van Herzele & Wiedemann, 2003). According to Oldenburg and Brissett (1982), these settings are defined by their openness to encounters, a non-discursive symbolism and their contribution to reinforcing a collective sense of belonging, thus generating benefits associated with diversity and emotional expression. In this sense, conceptualising them as "third places" (Oldenburg, 1989) highlights their role as spaces distinct from home (the first place) and work (the second), where diverse actors can engage in alternative forms of social relation and exchange between expert and lay knowledge within an intermediate setting. Empirical evidence shows how physical proximity and the availability of activities in these green spaces enable friendly and informal dialogue (Glover et al., 2005; Soltanian & Mohammadi, 2015; Yuen et al., 2005). Specifically, the creation of "international gardens" in German and US cities (Seeland & Nicolè, 2006) demonstrates the role of participation and mutual support in fostering the integration of foreign nationals. European policies clearly state that ecological integration reinforces resilience and social cohesion (European Commission, 2013, 2019, 2021a, 2021b, 2022). The variety of uses and activities in urban parks and public squares can be proposed as a response to the challenge of reconciling central and marginal roles in public space (Sassen, 2018).

From the standpoint of inclusive potential, at least three conditions are required for such environments to function effectively (Ostrom, 1990): (i) Equitable access that does not discriminate based on socio-economic status, gender, ethnicity, religion, age or land ownership; (ii) The possibility of citizen appropriation, understood as a collective and evolving process for establishing rules-in-use; and (iii) The absence of exclusive commercial use by one or more stakeholders. When these criteria are met, urban green spaces function as genuine common-pool resources, governed polycentrically by various entities, from municipal bodies to neighbourhood groups (Milbourne, 2021).

However, these "third places" are not inherently neutral and can reproduce power dynamics that exclude groups based on gender, ethnicity or socio-economic status (Fullagar et al., 2019). Exclusionary patterns have been observed among low-income residents in Mexico (Hernández Bonilla, 2010), within gated communities in South Africa (Landman, 2010) and in Saudi Arabia, where gender segregation shapes access to public space (Mandeli, 2010). Similar dynamics arise in European cities such as Amsterdam and Berlin, where migrant youth face marginalisation (Madanipour, 2021). Even these patterns can also appear more ephemerally during large-scale events, such as the Olympic Games, when public spaces are transformed for elite enjoyment (Kennelly & Watt, 2013). As mentioned earlier, the ongoing urban greening process also carries the risk of generating adverse dynamics through processes of ecological gentrification and green investments that raise property values, leading to the displacement of original residents (Hädrich Silva et al., 2024).

In contrast to these dynamics, there are also cases where citizen participation not only strengthens the social fabric but also supports the conservation of green environments (Brenner, 2009; Coisnon et al., 2024; Garcia-Lamarca et al., 2021). Recent research further highlights that the effects of urban greening on inclusion depend strongly on the type of green space—i.e., landscaped areas, forests, sports facilities and agricultural areas—and the social objectives pursued by local governments (Coisnon et al., 2024). In this regard, considering the perspective of inhabitants, as users, in the planning and management of urban green spaces becomes necessary, as it can help create more meaningful spaces of togetherness where relationships between nature and society transcend existing divisions (Milbourne, 2021). Therefore, it is vital to explore shared governance approaches in green spaces, in which responsibility does not lie solely with public agencies or business actors but is extended to citizens (Ostrom, 1990). The effectiveness of natural resource governance systems does not depend exclusively on the market or state authority, but on local stakeholders' capacity to establish sustainable, long-term agreements and on ecological characteristics (Ostrom, 1990, 2009). In this sense, urban green spaces hold potential for developing more inclusive and adaptive cities by combining environmental and social benefits under equitable conditions of access, participation and resource distribution.

2.3. Integrating governance and green space dimensions in cities: social-ecological systems analytical framework

Analysing the potential in green spaces to promote social inclusion in cities requires integrative analytical frameworks that can capture the complexity of interactions between governance and ecological systems (Binder et al., 2013; Ostrom, 2005, 2009). In the past two decades, various approaches have attempted to model these systems and establish a shared interdisciplinary vocabulary (Binder et al., 2013), notably the Drivers, Pressure, State, Impact, Response (DPSIR) framework, the Human Environment Systems Framework (HES), and the Ecosystem Services framework (cited in Binder et al., 2013). These approaches provide detailed analysis of material flows and resilience drivers without focusing in depth on the governance and collective-action dimension that is critical for promoting social inclusion in complex contexts such as urban areas.

Among all identified frameworks, the Social-Ecological Systems Framework (SES) by Nobel Laureate Elinor Ostrom (2005, 2009) emphasises governance and cooperation dynamics in maintaining common-pool or collectively beneficial green resources. The SES framework considers the governance system by examining operational, collective-choice, and constitutional rules that stakeholders establish to manage a common-pool green resource, as well as identifying the public and private organisations involved and the organisational and legal structures that govern the resource (see Fig. 1). In urban environments, where land ownership and access may be fragmented among multiple actors (municipalities, the state, private enterprises, residents, etc.), this aspect is key. Applying the SES framework makes it possible to evaluate which governance structures facilitate equitable access and participation, and which risk perpetuating exclusionary dynamics. Ostrom notes that collective governance systems that endure successfully balance the costs and benefits to users, highlighting that the long-term success of common-pool governance depends on the ability of the actors involved to foster trust and establish fair long-term arrangements for access and maintenance (Ostrom, 2009). This principle clarifies how the distribution of benefits and usage rights in urban green spaces affects their potential to foster inclusivity.

To extend the scope of the SES analysis, the urban planning typologies synthesised by Dirk Sijmons (2020) have been included, offering a

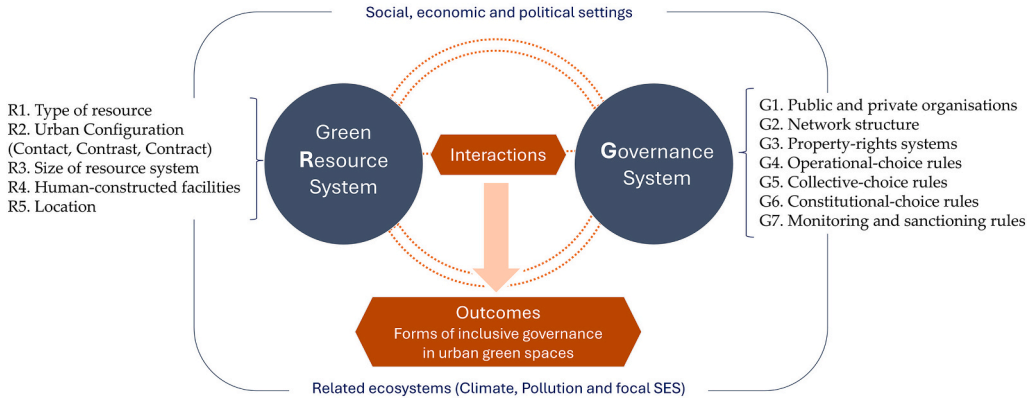

Fig. 1. Socio-ecological systems framework.
Source: Own elaboration adapted from Ostrom, 2009.

focused response to whether the ecological and spatial dimension of urban green spaces influences forms of social interaction. Each typology outlines a paradigm of interaction between the built city and nature, inspired by the historical evolution of urban planning models: "contrast," "contact," and "contract" (see R2 in Fig. 1). The "contrast" model is embodied by the Garden City, advocating relocation to nature and the creation of city satellites. The Garden Lobe, which integrates nature into the urban fabric, represents the "contact" model. Finally, the "contract" model is illustrated by the One-Acre City, where families are provided with one-acre plots for living and becoming self-sufficient in food production. These archetypes illustrate different approaches to structuring the relationship between built spaces and green environments that have shaped cities over the past century.

Combining Ostrom's SES framework with Sijmons' urban planning models forms a robust analytical tool for understanding not only social and ecological interaction, but also the potential urban configurations that can facilitate or hinder inclusive governance. Through this lens, the present research aims to provide empirical evidence that may inspire practitioners and open up new possibilities for urban managers and planners.

3. Methodological framework

This research adopted a qualitative approach combining ethnographic methods with a multiple-case study design (Eisenhardt, 1989; Yin, 2017) to analyse and compare governance practices in six urban green spaces located in two European countries: the Netherlands and Spain. The case study design facilitated a systematic exploration of action processes within clearly delineated boundaries in each case (Pinkerton, 1989). This multi-case approach provided an opportunity to contrast different governance models and derive findings with an appropriate level of generalisability (Hodge & Greve, 2007). The use of an ethnographic method was especially apt for investigating social conventions, collective-choice rules and norms governing the selected urban green spaces. It enabled an in-depth examination of statements (*what people say*), professed actions (*what they claim to do*), and observable behaviours (*what they actually did*) (Díaz de Rada, 2011). Detailed field descriptions were balanced with theoretical analysis. This process involved drafting fieldwork notes, contrasted with the selected theoretical framework, thereby integrating both descriptive and argumentative levels (Díaz de Rada, 2011). It sought to achieve a holistic understanding of how various actors—municipal managers, residents and visitors—interpret and shape governance in everyday practice.

Regarding the ethnographer's position, the researcher engaged in intersubjective practice (Díaz de Rada, 2011; Velasco & De Rada, 1997), acknowledging that, by being present, was inevitably part of the social dynamics under observation. This position required maintaining a reflexive awareness and cultivating a capacity for "estrangement", which encouraged critical distance from field agents and from one's own assumptions (Díaz de Rada, 2011). Such an attitude allowed taken-for-granted social conventions to be questioned from a theoretically and methodologically intentional position (Velasco and De Rada, 1997). From this standpoint, the researcher translated social practice into an object of inquiry through the production of empirical material, whether in Spain, the Netherlands or elsewhere. Moreover, the authors reflected from different roles or positionalities (Wittmayer et al., 2017), bringing together researchers who observed the phenomenon under study (the lead author), alongside two external observers who provided contrast from an interdisciplinary perspective, offered guidance in identifying research frameworks, and contributed to validating the results.

Data collection techniques included participant observation in each case study, 20 semi-structured interviews, and document analysis of case materials, encompassing both those published on official websites and internal documents (such as statutes or internal regulations) expressly requested for the study. Fieldwork was conducted intensively over two main periods: First, between September 2022 and June 2023 in Madrid, and subsequently between September 2023 and July 2024 in the Netherlands (four cities) and again in Madrid. This combination of qualitative techniques ensured data triangulation, as the information obtained from interviews was systematically compared with findings from participant observation and documentary sources for each case. The comparative process involved coding and labelling all material through analytical categories derived from the initial theoretical framework—the theoretical objects guiding the research—while progressively incorporating "native" categories that emerged from fieldwork and were used by actors within the studied settings (Díaz de Rada, 2011). The set of these categories made it possible to interpret reality through the researcher's methodological, conceptual, and classificatory rules (understandable to other social scientists), while also representing the meanings and internal structures expressed by field participants in their own terms (Díaz de Rada, 2011; Velasco & De Rada, 1997). In this sense, documents produced by field actors, such as municipal ordinances or neighbourhood association statutes, were considered "native" sources. A total of 110 analytical categories were produced in this research. The list of interviews, an extract of analytical categories and all the consulted documents are provided in the Appendix 1, 2 and 3.

The six case studies were selected based on theoretical criteria rather than statistical considerations, following an intentional and non-random sampling strategy (Glaser & Strauss, 1967), ensuring their accessibility for direct on-site observation. The first three selection criteria were drawn from Ostrom (1998) as essential for applying a Social-Ecological Systems (SES) analysis: (1) The object of study had to be a natural or semi-natural resource (e.g. forest or an irrigation system); (2) It had to be costly yet impossible to fully restrict access to the resource; (3) There

had to be a possibility of resource depletion or overexploitation. Three additional criteria were added: (4) Cases had to have been active for several years, namely mature cases that had overcome initial instabilities; (5) There had to be diversity in the legal land ownership across the cases; And (6) there had to be variation in scale and urban configuration, to allow comparison and draw conclusions about the impact—or lack thereof—of each variable.

The six criteria were applied to a group of potential case studies proposed by academic experts in landscape and urban design at Delft University of Technology and the Universidad Politécnica de Madrid. The inclusion of cases from two countries with different legal traditions—the Dutch system rooted in a more communal, Germanic legal culture, and the Spanish system grounded in a more individualistic, Roman law tradition (Díez-Picazo & Gullón, 2011)—provided a comparative lens to examine how institutional settings shape inclusive forms of urban green space management. Finally, case selection was guided by the accessibility of each site for direct on-site observation, a key requirement for ethnographic research, which in both Spain and the Netherlands was achieved through contacts with individuals directly involved in each case.

The final selection of cases comprised: Máxima Park (Utrecht), Dak Park (Rotterdam), EVA-Lanxmeer (Culemborg), Groene Mient (The Hague), Bosque Metropolitano (Madrid) and the Community Network of Urban Gardens (Madrid). These cities were chosen as exemplary cases of inclusive governance in greening city development, providing a basis for identifying common trends and exploring differences among cases, and ultimately allowing a replication logic to strengthen the validity of the findings. Conducting multi-sited fieldwork offered "a deep understanding of how people relate to their broader system beyond their neighbourhood and workplace, effectively linking the analysis of micro-processes with the complexity of macro-level influences" (Marcus, 1995).

4. Comparison of six case studies in the Netherlands and Spain

The chosen case studies are listed in Table 1 and are briefly outlined below, highlighting their origins and evolution. Further details will be introduced during the results discussion. The municipal parks and forests: Maxima Park in Utrecht, Dak Park in Rotterdam, and Madrid's Metropolitan Forest, are based on hierarchical and bureaucratic management structures that have existed for centuries in European societies. For instance, the first municipality in Utrecht was established in 1304,[1] Rotterdam's in the 1340s,[2] and Madrid's dates back to 1346 by order of King Alfonso XI.[3] These dates demonstrate the longevity of these municipal structures, which have evolved into their present complexity uninterruptedly over seven centuries. As Max Weber stated in his essay on bureaucracy: "Bureaucracy is the organisational manifestation of the rational spirit" (1992/1919). In all three cases, Utrecht, Rotterdam, and Madrid, the organisational structure directly involved in urban natural space management comprises the figure of the mayor (a political role) and a department or governmental area with competencies in Urban Development, Spatial Organisation, or Urban Planning, as well as Environment and Mobility. These functions are executed by municipal civil servants and contracted specialists with technical expertise.

Conversely, community initiatives such as the EVA-Lanxmeer eco-district in Culemborg, Groene Mient ecological housing in The Hague, and the Community Network of Urban Gardens in Madrid are based on associative structures and decision-making processes through assemblies. Their origins, embodied in associations and foundations, are much more recent than those of municipalities in Europe. For example, the EVA-Lanxmeer Homeowners' Association was established in 1994. The Community Network of Urban Gardens in Madrid marked its 10th anniversary in 2024 (although it has never been legally constituted as a specific entity), and the neighbourhood and district associations legally representing each garden either existed prior to the gardens or emerged simultaneously. In one Dutch case, Groene Mient ecological housing in The Hague, the legal framework for Collective-Private Ownership (CPO), which predates the current homeowners' association, was established in 2013 and has been part of Dutch legislation since 1984, though its use became popular only after the 2000s (Czischke et al., 2020). Thus, the historical data on the "legal birth" of these entities unavoidably distinguish their organisational forms, shaped by the modern rational techno-bureaucratic model. Among the community initiatives analysed, there is no historical legacy of the rational model, their assembly-based organisational structures revive ancestral forms of community organisation in late-modern formats.

5. Results

5.1. Governance forms that promote social inclusion: leveraging mechanisms along the rational–consensual continuum

A comparative analysis of case studies in the Netherlands and Spain reveals various levers that urban managers can activate to achieve inclusive governance in existing or future green spaces. It is worth mentioning that in this research, the term "inclusive" is referring to the capacity of governance arrangements to ensure equitable access, meaningful participation, and fair distribution of environmental and social benefits among diverse actors (Anttiroiko & Jong, 2020; Liang et al., 2022). The identified levers aim to maintain a delicate balance between cooperation and tension, where establishing rules can reinforce trust or, conversely, engender asymmetrical dynamics that undermine relationships (Ostrom, 2009). First, we identify agreed-upon rules for access and use of the green space between urban managers and users in three of the six cases studied. Ostrom (2005) distinguishes three classes of access rules, of which we have observed the first two types: (i) Residence or membership requirements, meaning that users must be residents (as in the EVA-Lanxmeer eco-district in Culemborg or Groene Mient ecological housing in The Hague) or members of an organisation (as with the neighbourhood associations of the Community Network of Urban Gardens in Madrid or the volunteer foundation at Rotterdam's Dak Park); (ii) Rules for resource use, such as rights of appropriation or exploitation obtained through mechanisms like auctions, lotteries, land purchase, or assignment. This occurs in the case of the Community Network of Urban Gardens in Madrid, where the City Council grants associations the right to use the land to plant gardens under a renewable four-year contract, though the Council remains the landowner; and (iii) Access based on inherited or acquired attributes, for instance age, ethnicity, clan, caste or level of education (Ostrom, 2005). The last category does not apply to any of the studied cases, although it is worth noting that all participants observed during the fieldwork periods were over 30 years of age; no adolescents were seen taking part. Regarding gender participation, an equitable balance was observed, and with respect to ethnicity, the Madrid cases displayed greater diversity than those in the Netherlands.

Second, the different land tenure systems for green space in the studied cases do not, in themselves, constitute a lever that impacts social inclusion in the forest, park, or garden. This means that whether the green space is fully publicly owned (as in the municipal parks studied) or entirely collectively privately owned (as in the ecological housing projects examined), inclusive and collaborative processes can still be established—although the specific rules for achieving them vary across cases. Of particular interest is a hybrid (public–private–collective) land system at the EVA-Lanxmeer eco-district, resulting in a more complex

[1] Utrecht was chartered in 1122 and had a city council as early as 1304. Source: https://www.britannica.com/place/Utrecht-Netherlands.

[2] Source: http://www.engelfriet.net/Alie/Hans/rottadam.htm.

[3] The first City Council of Madrid was established in 1346 by order of King Alfonso XI. Source: https://cosasdelosmadriles.blogspot.com/2015/10/el-primer-ayuntamiento-de-madrid.html.

Table 1
Selected case studies according to the criteria.

Name, location and district population (in thousands)	Surface size (ha)	Year of start	Urban configu ration	Organisations involved (legal forms)	Property rights (% of public, private and common land)
Maxima Park. Utrecht, Leidsche Rijn district (49,307 inhabitants)	330 ha FOREST park	2007. Before there was agriculture land	Contact	Municipality and Foundation of neighbours volunteering	Public land 100%
Dak Park. Rotterdam, Delfshaven district (76,605 inhabitants)	7 ha park with vegetable gardens	2014. Before there was railways	Contact	Municipality and Foundation of neighbours volunteering	Public land 100%
EVA-Lanxmeer. Culemborg, eco-district (800 inhabitants)	56 ha eco-district of 330 houses	1994. Before there was agriculture land	Contract	Owners' Association and a network of foundations, associations, cooperatives and corporates	Private lands 68%, public lands 9%, and common lands 23% (owned by the Owners' Association under the legal form of "mandeligheid")**
Groene Mient. The Hague, Segbroek district (60,054 inhabitants)	0.76 ha. ecological housing of 33 houses	2016. Before there was a school	Contract	Owners' Association, a secondary association and a cooperative	Private land 44% and common lands 56% (under the Collective Private Ownership or CPO legal form)***
Metropolitan Forest. Madrid, (3.5 million inhabitants). Ongoing project	437 ha peri-urban forest	2019. Before there was unused or degraded public land	Contact	Municipality and contracted maintenance companies	Public land 32% and the rest (68%) is private land in the process of negotiation****
Community Network of Urban Gardens. Madrid, 66 gardens in 20 districts (3.3 million inhabitants)	60 ha* 66 vegetable gardens	2010. Before there was unused interstitial public land	Contact	Municipality and neighbourhood association (or agro-ecological association) in each garden	Public land 100% given under contract to the neighbourhood association for renewable periods of 4 years

* The total surface area has been estimated based on the average surface area.
** EVA-Lanxmeer. Breakdown of Property Rights: Private land 68%: each house with a private garden 24 ha, the farm and gardens 7.6 ha, agricultural land 3.5 ha, and plots owned by the water company 3.3 ha Public land 9%: tree-lined public streets owned by the Municipality of Culemborg 5 ha. Common land 23%: owned by the homeowners' community under the legal form of "mandeligheid" 12.6 ha.
*** Groene Mient. Breakdown of Property Rights: Private land 44%: houses with private gardens totalling 4.8 ha. Common land 56%: shared garden and roofs totalling 4.3 ha under the legal form of Collective Private Ownership (CPO).
**** Metropolitan Forest of Madrid. Breakdown of Property Rights: Public land: 32% of the indicated hectares, of which 16.35% are state-owned public land. The remaining 68% is private land under negotiation (individual or corporate ownership).
Source: Own elaboration.

collaborative arrangement. The district contains public land (the neighbourhood's streets and the trees lining them), privately owned individual plots (homes and private gardens), and collectively owned green areas (the eco-district's wetlands and community gardens). In this scenario, the City Council funds three staff positions within a foundation created by residents (Terra Bella Foundation), which is responsible for maintaining the district's public green spaces. In an internal document of the eco-district (see Appendix 3), this arrangement is defined as follows:

> "Each court (neighbourhood cluster) has its own organisational structure to manage and maintain its community garden. There are no guidelines on how they should proceed. Residents are free to participate or not in garden activities. In some cases, they must pay a fee to contribute to the budget." (Document "Organisational aspects of eco-neighbourhood Lanxmeer")

On top of this, they apply an ancient Dutch legal principle known as "mandeligheid", still in effect in current Dutch civil law, to enable collective (and indivisible) ownership of communal green spaces within the eco-district.

Third and finally, an influential lever in nearly every case study is the set of operational rules that define how tangible and intangible assets are exchanged between managers and users. By "asset" we refer, for instance, to the regeneration of vacant or derelict lots into attractive urban green areas, seedlings and saplings that municipalities provide to users, and free tours offered by neighbourhood associations and volunteers for tourists or researchers interested in learning about the green space and its governance arrangements. Notably, Dak Park in Rotterdam, EVA-Lanxmeer in Culemborg and Groene Mient in The Hague all receive and host guided visits for those who register on their websites and social media. As one volunteer expressed: "We feel proud of the park; it's our work, and we want others to respect it" (Interview 05). The Community Network of Urban Gardens does not organise any specific tours, but everybody may access each garden freely at any time, except for gardens that are fenced and require a gate key; in that case, access is available whenever at least one key-holding neighbour is present. Beyond gardening, several of the Network's 66 gardens host open events such as neighbourhood gatherings or musical performances that celebrate nature as a meeting point. In particular, the Noches del Huerto (Garden Nights) are musical events organised by participants at the Manoteras Garden (in northern Madrid) on summer evenings in June and July, held annually for the past eight years. These activities help "create a neighbourhood" (Interview 17) and foster dialogical and collaborative attitudes towards others, as evidenced by a shared sense of community and attachment to the environment. Fig. 2 illustrates the organisational factors mentioned and photographs are shown in Fig. 3.

The three main levers mentioned above may be combined in different ways within the arrangement between urban managers and citizens, giving rise to distinct governance practices that are distributed along the rational–consensual continuum (see Fig. 4). From the perspective of the rational–consensual continuum that characterises the contemporary process of building institutional legitimacy, we may identify a rational–bureaucratic model of governance in larger-scale parks and metropolitan forest projects (such as those in Utrecht and Madrid), as they incorporate only occasional citizen participation and feature limited user interaction. In contrast, the collaborative cases in Dak Park (Rotterdam), the Urban Gardens Network (Madrid), and the ecological housing in The Hague exemplify the late-modern consensual model, which seeks to rekindle the relationship with users through strategies of re-personalisation (Cruces et al., 2003). Therefore, a set of influential levers can generate a diverse gradient of inclusive governance practices. It is important to recognise that the intensity and the degree of symmetrical reciprocity in what is agreed between managers and users ultimately define the resulting governance form.

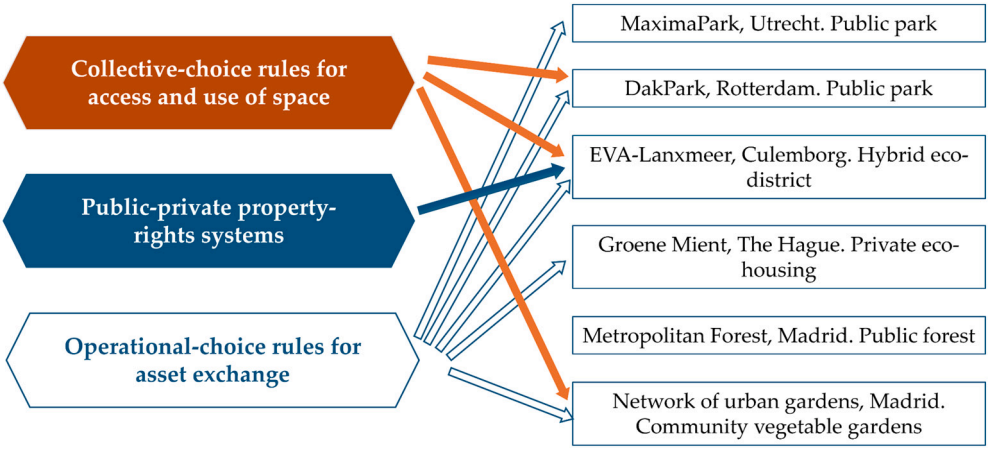

Fig. 2. Socio-organisational factors identified as critical in each case study.
Source: Own elaboration.

Fig. 3. Photographs of organised visits and recreational activities in several of the case studies: (a) Esta es una Plaza Garden. Source: Website of the Esta es una Plaza Association (2014, December 29); (b) "Las noches del huerto" at the Manoteras Garden. Source: Hortaleza Local Journal. (2021, June 25); (c) and (d) EVA-Lanxmeer eco-district. Visit by a group of master's students studying this project. Source: Authors.

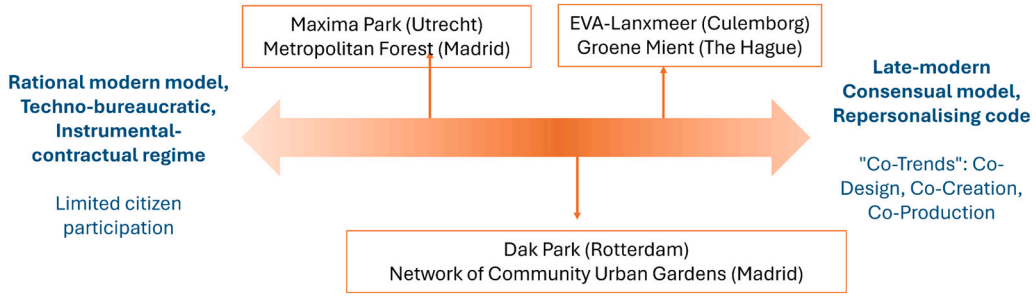

Fig. 4. Case studies conceptually located between the rational modern and late-modern consensual models
Source: Own elaboration.

5.2. Influence of ecological and spatial conditions on forms of social interaction in the analysed cases

A comparative analysis of the ecological and spatial factors in the six case studies highlights various governance and organisational dynamics that affect both the effectiveness and sustainability of social inclusion via collaborative governance processes (see Table 2). First, a relationship of mutual dependence emerges between the size of the resource and the organisational capacity for collective governance. When large green spaces are exclusively owned and managed by municipal authorities, citizen participation is constrained. This is evident in Metropolitan Forest in Madrid (400 ha) and Máxima Park in Utrecht (330 ha), where no stable collaborative governance processes or formal community representation have been observed. One of the municipal managers expressed this clearly: "People expect everything in city parks to be 100%. It's hard to meet those expectations, especially when we rely on volunteers for maintenance" (Interview 01). The magnitude of the resource and wholly municipal management complicate more autonomous or self-directed user involvement, aligning with Ostrom's (1990) argument that users need a clear understanding of the resource boundaries. However, physical size alone does not prevent experimentation, as polycentric organisational structures can be built that integrate local demand and experience with institutional regulations (Ostrom, 2005). As demonstrated by the EVA-Lanxmeer eco-district (56 ha, 800 residents), inhabitants have developed a governance model involving distributed responsibilities and cooperative networks with other organisations, coupled with assembly-based decision-making and periodic communication with the municipal government, which has been maintained and adjusted for more than thirty years. This arrangement extends benefits beyond residents themselves—for example, by welcoming visiting groups, establishing a renewable-energy cooperative created by several residents, or producing organic goods through a farm owned by the homeowners' association. This approach fosters collective action and adapts ecological conditions to the diverse needs of multiple social groups (Ostrom, 2005).

Second, the "contact" and "contract" models (Sijmons, 2020), explained in Section 2.3, facilitate social and ecological inclusion. Urban green-space configurations adhering to the "contract" model—such as the two Dutch eco-housing projects: EVA-Lanxmeer and Groene Mient—integrate nature into residential areas, facilitating management by inhabitants. This is more feasible in lower-density areas, where green spaces intersect seamlessly with domestic life, including leisure, work, or travel routes. Conversely, in densely populated locales—such as Rotterdam or Madrid—the "contact" model dominates, making nature easily accessible, yet not directly interwoven with the residential zone. Participation in the green area therefore requires an institutional framework featuring clear rules for use and/or exploitation of the green space, enabling responsibilities to be shared among managers and users. Where green spaces are scattered throughout the city (the dispersed "contact" model), as is the case with urban gardens in Madrid, collaborative governance can more readily be organised through a network of small interconnected groups, thereby reinforcing a polycentric system that can accommodate both local community-building needs and emerging alternative tourism in a distributed manner. The fencing around some of these gardens seeks to prevent frequent vandalism but also inadvertently restricts open access at all times. During the fieldwork, these models were easily distinguishable simply by walking through the projects—one could literally "feel" the contact with nature embedded in these different approaches to city–nature planning.

Ultimately, the long-term formation of social bonds in multifunctional urban spaces, such as green spaces, is more dependent on the quality and flexibility of governance structures than on the green resource's scale or spatial configuration. In Groene Mient, for instance, the relatively small number of participants (66 people) and a clear organisational framework have promoted social cohesion from the 33 ecological dwellings to the entire neighbourhood, reactivating existing local associations and acquiring expert knowledge on energy efficiency and urban resilience. One of the residents noted:

> "Now I know everything about energy systems, and I knew nothing about this before. In 2013, there was talk about having gas in the

Table 2
Case studies urban configuration and surface (ha).

Case	Maxima Park. Utrecht	Dak Park. Rotterdam	EVA-Lanxmeer. Culemborg	Groene Mient. The Hague	Metropolitan Forest. Madrid	Network of Urban Gardens. Madrid
Surface	330 Ha. Forest park	7 Ha. Park with vegetable gardens	56 Ha. Eco-district of 330 houses	0,76 Ha. 33 Ecological houses	437 Ha. Peri-urban forest	60 Ha*. 66 vegetable gardens
Map						
Configu-ration	Contact	Contact	Contract	Contract	Contact	Contact

*The total surface area has been estimated based on the average surface area.
Source: Own elaboration on OpenStreeMap.org.

houses. I remember someone saying to me: but do you want to depend on foreign gas producers? I had never thought about it. And now I think... yes. The truth is, you don't want to depend on them." (Interview 09)

Nevertheless, in larger-scale initiatives, the more centralised and top-down the governance framework is, the more challenging it becomes to achieve similar outcomes. Comparable results could be attained if functional responsibilities are distributed, along with shared sanctions for those who violate usage rules, as evidenced by Ostrom (1990, 2009).

5.3. Emergence of three governance models in green spaces for inclusive cities

An inclusive governance typology is proposed based on patterns identified in the interactions of specific socio-ecological levers that have proven relevant in the cases analysed. This classification distinguishes three governance stages, arranged along a continuum from centralised to community-based management, with an intermediate hybrid governance model (see Fig. 5).

- Type 1. Municipal-led governance with limited social participation. The green space is owned by the public administration, which is responsible for its management and funding. Decision-making is regulated by formal rules, and citizen participation is restricted to specific instances, such as consultations or one-off initiatives. It is a model oriented towards public control.
- Type 2. Hybrid governance. Ownership of the land and other assets can be public, private, or mixed, but decision-making is carried out jointly between the administration and organised citizenry (associations, foundations). This model encourages cooperation in planning and managing the space, granting the community a significant degree of autonomy while operating within formal agreements established with local authorities.
- Type 3. Community-led governance with targeted public intervention. Here, the community predominantly manages the green space, while local government involvement is limited to specific functions, for example urban planning or sporadic financial support. Although the public administration retains regulatory authority, day-to-day management and use of the space is the responsibility of the community.

Each type can be applied as a "stage" defined by a particular combination of governance and ecological factors that urban managers can influence and which generally fall within their decision-making remit. The term "stage" emphasises the dynamic character of this classification, which does not represent rigid or mutually exclusive types. Accordingly, a greening project can evolve across stages over time or integrate elements from different stages depending on its context. Classifications and tools such as this proposal can "help identify the elements for understanding how constraints are organised, make predictions about governability" (Ostrom, 2005) and systematically implement management models adapted to each setting.

6. Discussion: Applicability of the typology for planners and urban managers

The purpose of this typology is to support the selection and implementation of inclusive governance designs that can be adapted to the characteristics of each green resource, as well as to the specific social and institutional dynamics of different contexts. In Type-Stage 2 (Hybrid governance), the highest levels of collaboration and manager–user inclusion are found. Decision-making is shared, and the agreements reached between municipalities and users can determine the long-term viability and resilience of the green space. By contrast, in Type-Stage 1 (Municipal-led governance with limited social participation) and Type-Stage 3 (Community-led governance with targeted public intervention), the power to decide is held primarily by a single agent. In the first, the local government retains most authority; in the second, the local community takes on the main management role, while the municipality intervenes more narrowly.

Specifically, if a local government intends to promote hybrid governance (Type-Stage 2) for a large urban park exceeding 50 ha, the critical steps to activate would be: (i) Designing an organisational structure appropriate to the number of users and the size of the green area (G1, G2, R2, R3 in Fig. 1); (ii) Mutually agreeing upon access and use/exploitation rules for the green space (G4, G5); (iii) Negotiating an asset exchange system that strengthens reciprocity and promotes in-person interaction (G4, G5).

Conversely, if the decision is to introduce a community-based governance model with limited public involvement (Type-Stage 3) in a small-scale residential area—an example might be a one-hectare plot to create an urban garden—at least the following would be crucial: (i) Formalising clear legal agreements regarding ownership between municipal managers and the core group of users, so that if the land is publicly owned, it may be transferred to a neighbourhood association through a recognised legal vehicle such as the land-transfer contract used by the Madrid City Council, or the CPO co-ownership principle employed in Groene Mient (G1, G3, G6); (ii) Negotiating access and usage rules consistent with the size and urban configuration of the green space, as a single garden in a specific location is quite different from 60 gardens spread out across a city's districts (G2, G4, G5, R2, R3).

Although the proposed typology may not guarantee success in all

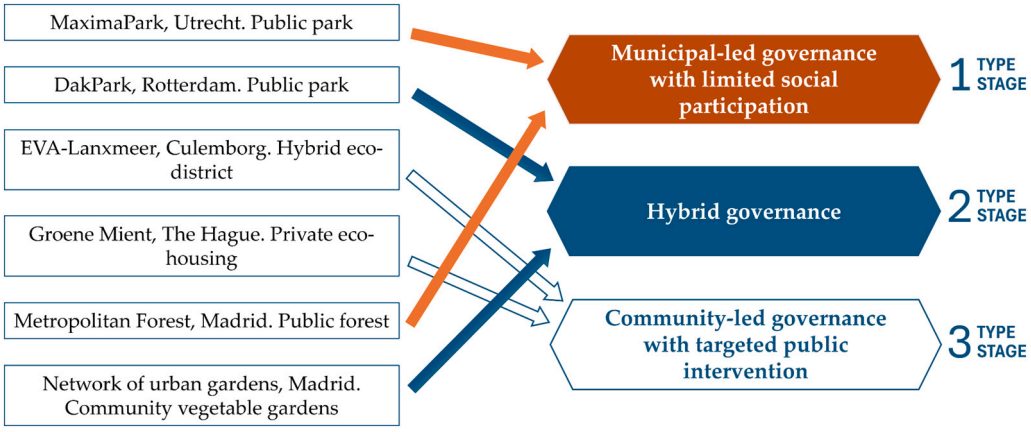

Fig. 5. Proposed typology.
Source: Own elaboration.

scenarios, it provides key guidelines for supporting decision-making and anticipating potential challenges. Drawing on empirical data, its applicability is shaped by local cultural, political, and economic conditions, such as whether the democratic system is more favourable to negotiations among diverse stakeholders. Ultimately, as Ostrom (2005) observes, the viability of any governance model that aims for social inclusion depends on stakeholders perceiving a reasonable balance between costs and benefits, as well as the flexibility to adapt collective-choice rules over time. Therefore, this typology can be viewed as a flexible tool that aids in transitioning towards polycentric governance systems, which are more resilient and better prepared to cope with contemporary socio-ecological pressures.

7. Conclusions

The comparative analysis of the case studies presented in this research highlights the inherent complexity of inclusion and collaboration processes in urban green spaces. Governance approaches aimed at social inclusion entail a reconfiguration of the "rules of the game" and a redistribution of shared responsibilities, which reveals both the opportunities and the limitations of this perspective.

Like any piece of research, this study has certain limitations. The choice of cases is based on theoretical criteria and on the feasibility of fieldwork, a prerequisite for ethnographic research, which makes it difficult to draw statistical generalisations to other contexts. Moreover, although the Social-Ecological Systems (SES) framework is useful for exploring interactions between social actors and ecosystems, it has been criticised for emphasising local solutions and human well-being without fully encompassing large-scale challenges or ecological dynamics independent of human action. At the same time, however, this framework proves to be a robust and practical analytical tool for informing decisions that enhance inclusive governance practices in urban intermediate spaces, as green areas have shown to be.

One of the most significant lessons emerging from the analysed cases is that the sustainability of inclusive, collaborative processes depends largely on the ability of involved actors to negotiate and legitimise operational rules in response to social and ecological changes. As Ostrom's theory suggests, there is no single optimal set of rules applicable to every context. Instead, common resource management systems must be treated as ongoing experiments requiring continuous adjustments (Ostrom, 2005). Flexibility and adaptability are therefore crucial for the long-term success of these initiatives. Nevertheless, the analysed cases demonstrate that deliberate actions can be planned and negotiated to establish basic conditions for collaboration. As observed, resource exchanges—whether through payments, material provisions, or local visibility—play a key role in driving cooperation, together with rules concerning the allocation of tasks and benefits. In this context, processes of face-to-face dialogue and negotiation must always conclude with clear rules to ensure compliance and mutual monitoring of the agreed terms.

Rather than treating social and ecological factors as separate spheres, the findings indicate that it is precisely the integration of these two dimensions that offers deeper insights into the dynamics of inclusion and exclusion in these green spaces. In general, large-scale areas, such as extensive urban forests or metropolitan parks, pose greater challenges due to the higher levels of coordination and technical support required, particularly when municipal authorities own the land and serve as the primary managing entity. In these cases, citizen engagement can be diluted by bureaucratic complexities and the difficulty of intervening in a centralised, standardised maintenance system. However, the cases studied show that this challenge can be addressed effectively through a polycentric structure and a set of mutually agreed rules, allowing for a distributed yet coordinated form of management.

Similarly, smaller-scale spaces, such as community gardens or small parks—where the proximity of people might initially suggest that self-organisation is easier—also require legal mechanisms that legitimise collaboration, as well as collectively agreed rules to guarantee the long-term viability of inclusive governance. Lastly, whether the green resource is geographically concentrated (a park in the city centre) or dispersed across various locations (an ensemble of urban gardens) requires either a more centralised or a more networked organisational structure that allows for citizen participation. Along these lines, some authors note that green spaces—including the least formal ones—can also act as catalysts for economic as well as eco-social regeneration (Kronenberg, 2025). It is vital to recognise the value of informal green spaces, even if their economic viability is not immediately obvious or they lack the political visibility commonly associated with large urban parks. Such smaller or more dispersed spaces enhance social cohesion and enable a rethinking of relationships among residents and visitors from more decentralised, territory-sensitive perspectives (Kronenberg, 2025).

Reflecting back on the research aim and questions, the findings confirm that inclusion in urban green spaces cannot be achieved through top-down design or policy, but through governance arrangements co-created with the people who use these spaces, taking into account both the group's capacity for negotiation and organisation and the ecological characteristics of each green environment. Having unpacked the social–ecological interaction dynamics in the six case studies, we conclude that the coexistence of rational–bureaucratic and consensual management models in public institutions can give rise to agreements that require sustained dialogue and commitment, paving the way for more diverse and inclusive forms of governance. Consequently, to provide urban managers and policymakers with actionable outcomes, the study proposes a set of practical insights that may prove useful. The proposed typology embodies a range of tested levers that municipal governments can activate to foster social inclusion through green spaces—spaces that, at least in Europe, will continue to serve as a key focus of urban regeneration and climate adaptation strategies.

CRediT authorship contribution statement

Sara Romero-Muñoz: Writing – review & editing, Writing – original draft, Visualization, Resources, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Víctor Muñoz Sanz:** Writing – review & editing, Validation, Supervision, Conceptualization. **Teresa Sánchez-Chaparro:** Writing – review & editing, Validation, Supervision, Conceptualization.

Declaration of competing interest

The authors declare no conflict of interest.

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Appendix 1. Interviews. List of in-depth interviews conducted (average duration: 1 h 15 min)

Case study	Internal code	Interviewee	Date
Maxima Park. Utrecht	Interview 01	Municipal manager of Maxima Park, Department of Spatial Development, Utrecht City Council	21 December 2023
	Interview 02	Group discussion with the park's municipal manager and professors from Delft University of Technology	6 February 2024
	Interview 03	Master Plan Designer for the neighbourhood renewal project at Maxima Park	14 December 2023
Dak Park. Róterdam	Interview 04 Marjan. Green Group	Volunteer and neighbour of the maintenance volunteer group	25 November 2023
	Interview 05 Green Group	Group discussion with the group of maintenance volunteers during a pruning day	2 December 2023 (5 h)
	Interview 06	Municipal official, Department of Urban Planning, Landscape, and Development, Rotterdam City Council	28 December 2023
EVA-Lanxmeer. Culemborg	Interview 07 Félix van de Laar	Communication Focal Point at EVA-Lanxmeer	28 October 2023
	Interview 08	Resident living in the area for 3 years	9 December 2023
Groene Mient. The Hague	Interview 09 Aicha Lubbinge	Resident living in the area for 9 years	28 October 2023
	Interview 10 Mieke van Gool	Resident living in the area for 10 years	9 December 2023
Metropolitan Forest. Madrid	Interview 11	Project coordinator at the Strategic Planning Directorate of Madrid City Council	9 September 2022
	Interview 12 Luis Tejero	Project coordinator	28 February 2024
	Interview 13	Architect involved in the project	28 February 2024
	Interview 14 Marisol Mena	Member of the project design selection jury	20 October 2021
Network of Community Urban Gardens. Madrid	Interview 15	Participant from Garden 1	27 December 2023
	Interview 16 Alberto Peralta	Founder of the Network of Community Urban Gardens	29 February 2024
	Interview 17	Participant from Garden 2	4 January 2024
	Interview 18	Municipal manager linked to urban renaturing programs	1 March 2024
	Event 19	10th Anniversary Celebration of the Network of Community Urban Gardens	20 January 2024

Full names are included where interviewees have provided explicit consent for their names to appear in this research.

Appendix 2. Analytical categories. Extract from the list of analytical categories including both researcher-generated categories (theoretical objects) and "native" categories that emerged during fieldwork

Researcher categories	Native categories
Modes of connection between expert systems and social actors	"Citizen engagement"
Municipal political organisation. Evolution	"Climate-neutral city"
Rules of communication among agents	"Ecosystem services"
Rhetorics surrounding the observance of conventions, rules, and norms	"Special urban development plan"
Institutional construction of the status of "citizen"	Definitions of trust
Ways to manage property. Evolution	Definitions of nature in cities. Evolution

Appendix 3. Supplementary materials

The following data sources have been analysed as fieldwork materials produced by the field actors in each case study and are fundamental pieces in this research as expressions of conventions and collective-choice rules that shape the rules-in-use: https://drive.upm.es/s/Ws4hM307LKw0J3f.

Data availability

The data presented in this study are openly available in the Appendix 1, 2 and 3.

References

Annahar, N., Widianingsih, I., Paskarina, C., & Muhtar, E. A. (2023). A bibliometric review of inclusive governance concept. *Cogent Social Science, 9*(1), Article 2168839. https://doi.org/10.1080/23311886.2023.2168839

Anttiroiko, A.-V., & Jong, M. (2020). *The inclusive city: The theory and practice of creating shared urban prosperity*. https://doi.org/10.1007/978-3-030-61365-5

Astell-Burt, T., & Feng, X. (2019). Association of urban green space with mental health and general health among adults in Australia. *JAMA Network Open, 2*, Article e198209.

Baviskar, A. (2003). Between violence and desire: Space, power, and identity in the making of metropolitan Delhi. *International Social Science Journal, 55*(1), 1009. https://doi.org/10.1111/1468-2451.5501009

Bilynets, I., Knezevic Cvelbar, L., & Dolnicar, S. (2023). Can publicly visible pro-environmental initiatives improve the organic environmental image of destinations? *Journal of Sustainable Tourism, 31*(1), 32–46.

Binder, C. R., Hinkel, J., Bots, P. W., & Pahl-Wostl, C. (2013). Comparison of frameworks for analyzing social-ecological systems. *Ecology and Society, 18*(4). https://doi.org/10.5751/ES-05551-180426

Brenner, N. (2009). Urban governance and the production of new state spaces in Western Europe, 1960–2000. In B. Arts, a. Lagendijk, & H. Houtum (Eds.), *Environment & Policy: 49. The disoriented state: Shifts in governmentality, territoriality and governance* (pp. 41–77). Dordrecht: Springer. https://doi.org/10.1007/978-1-4020-9480-4_3.

Briz Escribano, J., Kohler, M., & De Felipe Boente, I. (2015). *Green cities in the world (2nd ed.): Progression innovation organization*. Agrícola Española. ISBN 978-84-92928-39-2.

Coisnon, T., Musson, A., Pene, S. D., & Rousselière, D. (2024). Disentangling public urban green space satisfaction: Exploring individual and contextual factors across European cities. *Cities, 152*, Article 105154. https://doi.org/10.1016/j.cities.2024.105154

Cruces, F., Díaz de Rada, Á., Velasco, H., Jiménez de Madariaga, C., & Sánchez Molina, R. (2003). ¿Confianza, cosmética o sospecha? Una etnografía multisituada de las relaciones entre instituciones y usuarios en seis sistemas expertos en España. *Alteridades, 13*(25), 77–90.

Czischke, D., Carriou, C., & Lang, R. (2020). Collaborative housing in Europe: Conceptualizing the field. *Housing, Theory and Society, 37*(1), 1–9.

De la Paz, D., de Andrés, J. M., Narros, A., Silibello, C., Finardi, S., Fares, S., … Mircea, M. (2022). Assessment of air quality and meteorological changes induced by future vegetation in Madrid. *Forests, 13*, 690.

Díaz de Rada, A. (2011). *El taller del Etnógrafo: Materiales y herramientas de investigación etnográfica*. Madrid, España: UNED.

Díez-Picazo, L., & Gullón, A. (2011). *Sistema de Derecho Civil. Volumen III, Tomo I: Derechos Reales en General. Posesión. Propiedad. El Registro de la Propiedad* (9th ed.). Madrid España: Tecnos.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review, 14*(4), 532–550.

Espinosa, M. (2009). La participación ciudadana como una relación socio-estatal acotada por la concepción de democracia y ciudadanía. *Andamios, 5*(10), 71–109.

Esta es una Plaza Association. (2014). Termina la cesión del solar. Retrieved from https://estaesunaplaza.blogspot.com/2018/06/enero-2015-termina-la-cesion-del-solar.html.

European Commission. (2013). *EU green infrastructure strategy*. European Union. Disponible en https://eur-lex.europa.eu/resource.html?uri=cellar:d41348f2-01d5-4abe-b817-4c73e6f1b2df.0008.03/DOC_1&format=PDF (consultado el 4 de marzo de 2025).

European Commission. (2019). *The European Green Deal (COM/2019/640 Final)*. European Union. Disponible en https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF (consultado el 4 de marzo de 2025).

European Commission. (2021a). *EU biodiversity strategy for 2030: Bringing nature Back into our lives*. European Union. Disponible en https://eur-lex.europa.eu/resource.html?uri=cellar:a3c806a6-9ab3-11ea-9d2d-01aa75ed71a1.0001.02/DOC_1&format=PDF (consultado el 4 de marzo de 2025).

European Commission. (2021b). *A new EU forest strategy for 2030: For forests and the forest-based sector*. European Union. Disponible en https://eur-lex.europa.eu/resource.html?uri=cellar:21b27c38-21fb-11e3-8d1c-01aa75ed71a1.0022.01/DOC_1&format=PDF (consultado el 4 de marzo de 2025).

European Commission. (2022). *Who benefits from nature in cities? Social inequalities in access to urban green and blue spaces across Europe*. European Environment Agency. https://www.eea.europa.eu/publications/who-benefits-from-nature-in.

Fors, H., & Konijnendijk, C. C. (2015). User participation in urban green spaces: For the people or the parks? *Urban Forestry & Urban Greening, 14*(3), 722–734.

Fullagar, S., O'Brien, W., & Lloyd, K. (2019). Feminist perspectives on third places. In *Rethinking third places* (pp. 20–37). Edward Elgar Publishing. https://doi.org/10.4337/9781786433916.00010.

Garcia-Lamarca, M., Anguelovski, I., Cole, H., Connolly, J. J. T., Argüelles, L., Baró, F., … Shokry, G. (2021). Urban green boosterism and city affordability: For whom is the 'branded' green city? *Urban Studies, 58*, 90–112. https://doi.org/10.1177/0042098019885330

Geels, F. (2024). *Advanced introduction to sustainability transitions*. Edward Elgar Publishing.

Giddens, A. (1990). *The consequences of modernity*. Stanford, CA: Stanford University Press.

Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*.

Glover, T. D., Parry, D. C., & Shinew, K. J. (2005). Building relationships, accessing resources: Mobilizing social capital in community garden contexts. *Journal of Leisure Research, 37*(4), 450–474.

Hädrich Silva, R., Zwarteveen, M., Stead, D., & Kuzniecow Bacchin, T. (2024). Bringing ecological urbanism and urban political ecology to transformative visions of water sensitivity in cities. *Cities, 155*, Article 104685. https://doi.org/10.1016/j.cities.2023.104685

Hanakata, N. C., & Gasco, A. (2018). The *Grand Projet* politics of an urban age: Urban megaprojects in Asia and Europe. *Palgrave Communication, 4*, 86. https://doi.org/10.1057/s41599-018-0141-5

Herdt, T., & Muñoz Sanz, V. (2023). Experts as game changers? A critical discourse analysis of climate measures in the metropolitan region of Amsterdam. *Urban Planning, 8*, 307–321. https://doi.org/10.17645/up.v8i2.6413

Hernández Bonilla, M. (2010). Public space in Mexico: Between state control and social appropriation. In A. Madanipour (Ed.), *Whose public space? International case studies in Urban Design and development* (pp. 85–103). London: Routledge.

Hodge, G. A., & Greve, C. (2007). Public-private partnerships: An international performance review. *Public Administration Review, 67*, 545–558. https://doi.org/10.1111/j.1540-6210.2007.00736.x

Hortaleza Local Journal. (2021). Las noches del huerto: Percusión japonesa & rock. Retrieved from https://www.periodicohortaleza.org/evento/las-noches-del-huerto-percusion-japonesa-rock/.

Kennelly, J., & Watt, P. (2013). Restricting the public in public space: The London 2012 Olympic Games, hyper-securitization and marginalized youth. *Sociological Research Online, 18*(2), 131–136.

Kolimenakis, A., Solomou, A. D., Proutsos, N., Avramidou, E. V., Korakaki, E., Karetsos, G., , … Maroulis, G., et al. (2022). Public perceptions of the socioeconomic importance of urban green areas in the era of COVID-19: A case study of a Nationwide survey in Greece. *Land, 11*, Article 2290.

Konijnendijk, C. C. (2023). Evidence-based guidelines for greener, healthier, more resilient neighbourhoods: Introducing the 3–30–300 rule. *Journal of Forestry Research, 34*(3), 821–830.

Kronenberg, J. (2025). From neoliberal urban green space production and consumption to urban greening as part of a degrowth agenda. *Cities, 159*, Article 105739. https://doi.org/10.1016/j.cities.2025.105739

Landman, K. (2010). The transformation of public space in South Africa. In A. Madanipour (Ed.), *Whose public space? International case studies in urban design and development* (pp. 181–199). London: Routledge.

Larkin, A., & Hystad, P. (2019). Evaluating street view exposure measures of visible green space for health research. *Journal of Exposure Science & Environmental Epidemiology, 29*, 447–456.

Liang, D., Jong, M. D., Schraven, D., & Wang, L. (2022). Mapping key features and dimensions of the inclusive city: A systematic bibliometric analysis and literature study. *International Journal of Sustainable Development and World Ecology*. https://doi.org/10.1080/13504509.2021.1911873

Lottrup, L., Stigsdotter, U. K., Meilby, H., & Claudi, A. G. (2015). The workplace window view: A determinant of office workers' work ability and job satisfaction. *Landscape Research, 40*, 57–75.

Madanipour, A. (2021). *Whose public space? International case studies in urban design and development*. Routledge.

Mandeli, K. N. (2010). Public space and the challenge of urban transformation in Saudi Arabia. In A. Madanipour (Ed.), *Whose public space? International case studies in urban design and development* (pp. 203–224). London: Routledge.

Marcus, G. E. (1995). Ethnography in/of the world system: The emergence of multi-sited ethnography. *Annual Review of Anthropology, 24*, 95–117.

Meerow, S., & Newell, J. P. (2016). Spatial planning for multifunctional green infrastructure: Growing resilience in Detroit. *Landscape and Urban Planning, 159*, 62–75. https://doi.org/10.1016/j.landurbplan.2016.10.005

Milbourne, P. (2021). Growing public spaces in the city: Community gardening and the making of new urban environments of publicness. *Urban Studies, 58*(14), 2901–2919. https://doi.org/10.1177/0042098020972

Monocle. (2018). *Top 25 liveable cities, the liveable city index (2010, 17 June) and top 25 most liveable Cities (2009, 17 June)*.

Moreno, C. (2024). La "Ciudad de 15 Minutos": rediseñar la vida urbana con la proximidad de servicios. *Barcelona Societat. Journal on Social Knowledge and Analysis, 30*. https://hal.science/hal-04648669v1.

Muñoz Sanz, V., Romero-Muñoz, S., Sánchez Chaparro, T., Bello Gomez, L., & Herdt, T. (2022). Making green work: Implementation strategies in a new generation of urban forests. *Urban Planning, 7*, 202–213.

Oldenburg, R. (1989). *The great good place: Cafés, coffee shops, community centers, beauty parlors, general stores, bars, hangouts, and how they get you through the day*. Paragon House.

Oldenburg, R., & Brissett, D. (1982). The third place. *Qualitative Sociology, 5*(4), 265–284.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge: Cambridge University Press.

Ostrom, E. (1998). A behavioral approach to the rational choice theory of collective action. *American Political Science Review, 92*(1), 1–22. https://doi.org/10.2307/2585925

Ostrom, E. (2005). *Understanding institutional diversity*. Princeton University Press.

Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. *Science, 325*(5939), 419–422. https://doi.org/10.1126/science.1172133

Parr, H. (2007). Mental health, nature work, and social inclusion. *Environment and Planning D: Society and Space, 25*(3), 537–561.

Pinkerton, E. (1989). *Co-operative management of local fisheries: New directions for improved management and community development*. Vancouver: University of British Columbia Press.

Roggero, M. (2015). Adapting institutions: Exploring climate adaptation through institutional economics and set relations. *Ecological Economics, 118*, 114–122.

Roman, A., Pearsall, H., Eisenman, T. S., Conway, T. M., Fahey, R. T., Landry, M. S., … Locke, D. H. (2018). Human and biophysical legacies shape contemporary urban forests: A literature synthesis. *Urban Forestry & Urban Greening, 31*, 157–168.

Romero-Muñoz, S. (2021). *Producir políticas para una ciudad "descarbonizada": Formas de producción de políticas públicas vinculadas al cambio climático en el espacio público de Madrid*. Madrid, España: Trabajo Final de Grado, Facultad de Filosofía, Universidad Nacional de Educación a Distancia, UNED. https://hdl.handle.net/20.500.14468/13456.

Romero-Muñoz, S., Alméstar, M., Sánchez-Chaparro, T., & Muñoz Sanz, V. (2023). The impact of institutional innovation on a public tender: The case of Madrid metropolitan forest. *Land, 12*, 1179. https://doi.org/10.3390/land12061179

Romero-Muñoz, S., Sánchez-Chaparro, T., Muñoz Sanz, V., & Tillie, N. (2024). Urban greening management arrangements between municipalities and citizens for effective climate adaptation pathways: Four case studies from the Netherlands. *Land, 13*(9), 1414. https://doi.org/10.3390/land13091414

Rueda, S. (2011). Las supermanzanas: reinventando el espacio público, reinventando la ciudad. In *Ciudades (im) propias: la tensión entre lo global y lo local* (pp. 123–134). Centro de Investigación Arte y Entorno.

Rugel, E. J., Carpiano, R. M., Henderson, S. B., & Brauer, M. (2019). Exposure to natural space, sense of community belonging, and adverse mental health outcomes across an urban region. *Environmental Research, 171*, 365–377.

Sama Acedo, S. (2016). De la Smart City a los huertos comunitarios. In E. F. Cruces (Ed.), *Cosmópolis: Nuevas maneras de ser urbanos* (pp. 167–200). Gedisa.

Sassen, S. (2018). *Cities in a world economy*. Sage Publications.

Schauppenlehner-Kloyber, E., & Penker, M. (2016). Between participation and collective action—From occasional liaisons towards long-term co-management for urban resilience. *Sustainability, 8*(7), 664.

Seeland, K., & Nicolè, S. (2006). Public green space and disabled users. *Urban Forestry & Urban Greening, 5*(1), 29–34.

Sennett, R. (2018). *Building and dwelling: Ethics for the city*. Farrar, Straus and Giroux.

Shore, C. (2009). La antropología y el estudio de la política pública: reflexiones sobre la "formulación" de las políticas: La antropología y el análisis interpretativo de la política pública. *Revista Antípoda, 9*, 21–50.

Shore, C., & Wright, S. (1997). *Anthropology of policy: Critical perspectives on governance and power*. Routledge.
Sijmons, D. (2020). Contrast, contact, contract: Pathways to pacify urbanization and natural processes. In R. Roggema (Ed.), *Nature driven urbanism* (pp. 9–42). Springer International Publishing.
Smith, A. (2017). Social innovation, democracy and makerspaces. In *Revista Española del Tercer Sector, (36), II Cuatrimestre* (pp. 49–74). Fundación Acción contra el Hambre.
Solomou, A. D., Topalidou, E. T., Germani, R., Argiri, A., & Karetsos, G. (2019). Importance, utilization and health of urban forests: A review. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca, 47*, 10–16.
Soltanian, F., & Mohammadi, A. (2015). Study of characteristics of urban public open spaces based on social interaction (case study: Salavatabad's 3-kilometer route). *European Online Journal of Natural and Social Sciences, 4*(3), 553.
Van Herzele, A., & Wiedemann, T. (2003). A monitoring tool for the provision of accessible and attractive urban green spaces. *Landscape and Urban Planning, 63*(2), 109–126. https://doi.org/10.1016/S0169-2046(02)00192-5
Velasco, H., & De Rada, Á. D. (1997). *La lógica de la investigación etnográfica*. Madrid: Trotta.
Velasco, H., Díaz de Rada, Á., Villalobos, F. C., Fernández Suárez, R., Jimenez de Madariaga, C., & Sánchez Molina, R. (2006). La Sonrisa de la Institución. In *Confianza y Riesgo en Sistemas Expertos*. Madrid, Spain: Editorial Universitaria Ramón Areces.
Wittmayer, J. M., Avelino, F., van Steenbergen, F., & Loorbach, D. (2017). Actor roles in transition: Insights from sociological perspectives. *Environmental Innovation and Societal Transitions, 24*, 45–56.
Yin, R. K. (2017). *Case study research and applications: Design and methods*. Thousand Oaks, CA, USA: Sage Publications.
Yuen, F. C., Pedlar, A., & Mannell, R. C. (2005). Building community and social capital through children's leisure in the context of an international camp. *Journal of Leisure Research, 37*, 494–518.
Zoltan, J. (2024). Tourism in net-zero cities. *Cities, 152*, Article 105178. https://doi.org/10.1016/j.cities.2024.105178

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