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REVIEW ARTICLE

Justice and access in urban green spaces

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ABSTRACT

Urban green spaces have become central to discussions of sustainability and urban livability, yet significant disparities in access remain a pervasive challenge globally. This systematic literature review critically synthesizes scholarly works addressing the intersection of justice, equity, and urban green space planning. Drawing from foundational theories—Rawls' "Theory of Justice," Fainstein's "Just City," Harvey's "Right to the City," and the environmental ethics articulated by Leopold and Naess—the paper interrogates existing socioeconomic inequalities, green gentrification processes, ethical frameworks, and participatory governance practices in contemporary urban environments. The analysis reveals that despite widespread acknowledgment of urban greenery's ecological and social benefits, the distribution of these benefits is markedly uneven, frequently reinforcing existing socioeconomic divides. Additionally, green infrastructure projects, while improving urban environments, often inadvertently catalyze gentrification and displacement, undermining their intended equitable outcomes. Environmental justice perspectives further emphasize that equitable urban greening requires not only fair spatial distribution but also inclusive decision-making processes and cultural recognition. This review critically highlights conceptual and methodological limitations within current research, including inconsistent definitions of justice, geographical biases, and scale-dependent analyses. Addressing these gaps, it advocates for a holistic approach integrating distributive fairness, procedural inclusivity, and ethical considerations extending beyond anthropocentric values. Ultimately, the study contributes to the discourse by suggesting a paradigm shift toward ethically grounded and justice-oriented urban ecological planning, ensuring urban nature serves as a genuinely inclusive commons accessible equitably across diverse urban populations.

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INTRODUCTION

Urban green spaces have emerged as essential components of sustainable and livable urban environments, increasingly recognized for their ecological and aesthetic contributions. However, pressing issues of justice surrounding access to these spaces—who can access them, under which conditions, and with what implications—have garnered heightened attention within contemporary urban discourse. This study is rooted in a critical examination of urban environmental justice, informed by foundational philosophical perspectives and interrogated through the lens of the inequities inherent in neoliberal urbanism.

John Rawls' seminal work, "A Theory of Justice" [1], offers a pivotal normative framework advocating that equitable access to resources must prioritize the welfare of the least advantaged members of society. Susan Fainstein's "The Just City" [2] elaborates on these principles, applying Rawlsian ideals to urban planning by emphasizing equity, democracy, and diversity as foundational values. Furthermore, David Harvey's notion of "the right to the city" [3] introduces a radical perspective, asserting that urban space ought to be collectively shaped by its inhabitants. Complementing these ideas, environmental ethics, as articulated by Aldo Leopold's "Land Ethic" [4] and Arne Naess' concept of deep ecology [5], emphasize that nature's value extends beyond equitable distribution; it must be recognized for its intrinsic worth.

These theoretical frameworks reveal an increasingly evident tension: although urban greening initiatives are expanding globally, their realization often mirrors uneven spatial logics and capitalist motivations. In numerous urban areas, affluent neighborhoods boast well-maintained and lush parks, whereas marginalized communities frequently experience significant deficits in access to green spaces. Such disparities are systemic, deeply intertwined with broader socio-economic and political structures.

Contemporary literature highlights that urban green infrastructure projects, initially intended to enhance urban livability and resilience, may inadvertently yield adverse outcomes such as green gentrification and spatial

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displacement [6, 7]. Despite a growing body of empirical research focusing on green justice, much of it remains disjointed, lacking a coherent theoretical framework or comprehensive comparative analysis.

This review paper seeks to address this lacuna by synthesizing the expanding literature at the intersection of urban green space planning and environmental justice. It critically examines how socio-economic inequalities, green gentrification, ethical dimensions, and governance structures influence access to nature within urban contexts. Diverging from conventional literature reviews that typically enumerate findings, this paper engages with existing research through a justice-centered framework, incorporating both global and localized perspectives—including examples from Turkey—to evaluate the processes by which urban nature is conceptualized and planned for different communities.

By elucidating these complex dynamics, the paper contributes to ongoing discourse in urban studies, landscape architecture, and sustainability science. It advocates for a paradigm shift in the conceptualization and implementation of green infrastructure—a shift that prioritizes ethical, equitable, and participatory principles in urban ecological planning.

MATERIALS AND METHODS

This study employs a systematic literature review methodology, guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, to synthesize and critically evaluate scholarly research on justice and access to urban green spaces. A literature review approach is appropriate given the study's aim: to integrate theoretical perspectives with empirical findings across different geographies and disciplines, offering a justice-centered analysis of urban green infrastructure.

Literature Search Strategy

The review focused on peer-reviewed journal articles published between January 2000 and March 2024. This time frame captures both foundational and recent contributions to the topic, especially in light of increased global attention to urban sustainability and equity over the past two decades. Databases used included Web of Science, Scopus, ScienceDirect, and Google Scholar, providing a comprehensive interdisciplinary coverage.

The search strategy combined a range of keywords and Boolean operators, including:

- "urban green space" OR "green infrastructure"
- AND "environmental justice" OR "spatial equity" OR "social inequality"
- AND "access" OR "distribution" OR "planning"
- AND "green gentrification" OR "right to the city" OR "participation"

Additional terms such as "urban nature," "public green access," and "deep ecology" were also incorporated in follow-up searches. The search was performed in both English and Turkish to include international and local perspectives.

Inclusion and Exclusion Criteria

Articles were included if they:

- Focused explicitly on issues of justice, equity, or access in relation to urban green spaces,
- Provided either conceptual frameworks, empirical case studies, or policy critiques,
- Were published in peer-reviewed academic journals.

Articles were excluded if they:

- Focused solely on ecological or biophysical functions of green spaces without addressing access or justice,
- Were conference abstracts, reports, or opinion pieces without empirical or theoretical analysis,
- Were duplicates or failed to meet basic academic quality standards.

Screening and Selection Process

An initial pool of 243 articles was identified. After removing duplicates and screening abstracts, 78 articles were selected for full-text review. Following full-text assessment against the inclusion criteria, 70 articles were retained for thematic analysis. The process is illustrated following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, as standardized by Page et al. [8], in Table 1.

Thematic Analysis Approach

The final selection of articles was subjected to qualitative thematic coding, informed by Braun and Clarke's [9] method of reflexive thematic analysis. Four core themes were identified through iterative reading and comparison:

- Socioeconomic inequalities and access to urban green spaces,
- Green gentrification and urban spatial transformations,
- Environmental justice, ethics, and the right to urban nature,
- Participatory planning approaches and governance recommendations.

These themes guided the structure of the findings section and were used to cluster literature according to their primary conceptual or empirical contribution. Thematic organization allowed for the comparison of studies across different contexts, highlighting commonalities and divergences in how justice is conceptualized and operationalized in green space planning.

This method ensures transparency, replicability, and analytical rigor, supporting the review's goal of producing a coherent, justice-oriented synthesis of contemporary urban greening literature.

Table 1. PRISMA Flow Process for the research

Phase	Explanation	Articles
1. Identification	Total records initially scanned (Web of Science, Scopus, ScienceDirect, Google Scholar)	243
2. Screening	Remaining after duplicate records were removed	212
	Eliminated after title and abstract screening (off-topic, insufficient content)	134
3. Eligibility	Articles subjected to full-text reading	78
	Full texts not included (out of scope, methodological weakness, etc.)	8

RESULTS

Socioeconomic Inequalities and Access to Urban Green Spaces

Multiple studies across different contexts show that access to urban green spaces is not distributed equally – it correlates strongly with socioeconomic status. In general, affluent communities and high-income neighborhoods enjoy greater provision of parks, tree cover, and green amenities, while lower-income and marginalized areas tend to have fewer and smaller green spaces. In European cities, for example, evidence confirms that wealthier neighborhoods have a higher density and larger area of green spaces, whereas poorer districts and those with lower education or higher unemployment have significantly less green area per capita. This pattern has been documented in Germany, the Netherlands, and Portugal, among others [10, 11, 12, 13]. For instance, an environmental inequality analysis in a major German city found that low socioeconomic status neighborhoods had markedly lower public green space availability [11]. Similarly, a nationwide study in the Netherlands observed that neighborhoods with higher income and education levels enjoyed more nearby green space than less advantaged areas [12]. In Portugal, Hoffimann et al. [13] noted that districts with socioeconomically vulnerable populations had fewer parks and green amenities. These disparities begin even at childhood: children from lower-income and less-educated families in Germany have reduced access to urban green space compared to their wealthier counterparts [14]. Such uneven distribution of urban greenery has raised concerns that the benefits of nature – from recreation to health – are being inequitably enjoyed, reinforcing broader social inequalities [15, 16].

Socioeconomic green space gaps are not unique to Europe. In the United States, a substantial body of research in environmental justice highlights similar patterns of "park inequity" along income and racial lines. Predominantly low-income communities of color often have fewer parks, and those parks are typically smaller and of lower quality, than parks in affluent or majority-white neighborhoods [17, 18]. Nationwide data reveal that U.S. neighborhoods where most residents are Black or Hispanic have around 44% less park space per capita than predominantly white neighborhoods. Historical policies like redlining and disinvestment in minority neighborhoods contributed to this legacy, leaving many inner-city areas "park-poor" and deficient in tree canopy [19, 20]. For example, a study of hundreds of U.S. cities found that formerly redlined (historically segregated) districts today have lower urban tree cover and park access, alongside higher summer temperatures, compared to non-redlined areas [21]. These findings underscore that socio-spatial inequalities in green infrastructure are a pervasive issue in both North America and Europe, rooted in long-standing patterns of segregation and unequal planning.

Not only the quantity but also the quality of green spaces tends to be inferior in economically disadvantaged neighborhoods. Research from multiple European cities shows that parks in low-SES (socioeconomic status) areas often have fewer amenities (e.g. playgrounds, sports facilities), less diverse landscaping, and poorer maintenance. A comparative study in Helsinki, Berlin, Lisbon, and Bucharest found that parks in poorer districts offered less variety of facilities and vegetation than those in wealthier districts [22]. In Porto, lower-income communities' green areas not only were scarcer but also exhibited more physical damage and safety issues (broken equipment, insufficient lighting), which can discourage use [23]. Likewise, in the Netherlands, greenspaces in deprived neighborhoods were rated as less aesthetically pleasing [12]. These quality deficits mean that even when a park exists in a low-income area, residents may not fully benefit if the space feels unsafe or lacks appealing features. In effect, underserved communities suffer a double burden: fewer parks overall, and the parks that do exist are often poorly equipped to meet local needs [24]. Consequently, residents in marginalized urban areas tend to use parks less frequently and derive fewer health benefits, exacerbating disparities in outcomes like obesity, stress, and mental health [25, 26].

Socio-demographic factors intersect with these inequalities. Immigrant communities and ethnic minorities in Europe often have limited access to high-quality green and blue spaces (waterfronts), compounding social exclusion. For example, studies indicate that immigrant populations in cities like Oslo and Berlin live in higher-density quarters with less green space per capita [27, 28]. In Helsinki, immigrant neighborhoods are on average farther from recreational lakes or seashores than non-immigrant areas [29]. Such patterns reflect broader processes of urban segregation, where marginalized groups end up concentrated in environments with fewer natural amenities [30]. Age and ability also matter: the elderly and people with disabilities face additional barriers to green space access if parks lack benches, ramps, or toilets [31, 32]. If a public space is not designed with these users in mind, it effectively excludes some of the people who might need it most – a condition some scholars term "ordinary environmental injustice" in daily urban life [33].

Importantly, inequitable green space provision is not inevitable – it can be mitigated by inclusive urban planning and policy. Differences in green space access are highly location-specific and often reflect planning decisions and governance priorities. Some cities have deliberately pursued more even distribution. For instance, Oslo has managed to provide relatively uniform green space access across socioeconomic groups, with one study finding no major disparities between rich and poor neighborhoods [34]. This outcome is attributed to Norway's strong public planning tradition and large, accessible natural areas integrated throughout the city. Another example is Berlin, where urban environmental justice principles have been adopted into

planning regulations. Berlin's city government actively monitors environmental indicators (air quality, noise, greenspace, etc.) by neighborhood and uses an "Environmental Justice Map" to guide interventions so that no area accumulates multiple disadvantages [35]. The city even set quantitative standards: every resident should have at least 6 m^2 of small green space and 7 m^2 of large green space, and a park of 0.5 hectares should be within 500 meters of home. Similarly, Vienna incorporates generous green courtyards and parks into its extensive social housing projects, ensuring lower-income residents have greenery at their doorstep [36].

Inequities in green space access are also pronounced in cities of the Global South, though they often take different forms. For instance, in Lagos, Nigeria, urban parks are not only scarce but frequently privatized or poorly maintained, disproportionately affecting low-income residents living in informal settlements [37]. In Dhaka, Bangladesh, studies have shown that wealthier neighborhoods are adjacent to elite private parks or clubs, while densely populated poorer areas lack accessible public green spaces, leading to extreme urban heat vulnerability among marginalized populations [38].

These cases illustrate that government commitment and equitable planning policies can counteract the typical market-driven pattern of "green for the wealthy." Still, many fast-growing cities (especially in the Global South) have yet to prioritize equitable green space, and even in Europe, austerity and privatization trends can threaten past gains [39]. The evidence overall indicates a clear need: addressing socioeconomic inequalities in urban green space access is critical for urban sustainability and public health. Without deliberate corrective measures, the gap between "green-rich" and "green-poor" communities is likely to persist or widen, prompting calls for justice in urban greening as discussed in subsequent sections.

Green Gentrification and Urban Spatial Transformations

While urban greening is intended to improve quality of life, paradoxically it can also trigger processes of displacement and exclusion – a phenomenon widely termed green gentrification. Green gentrification refers to the situation where the creation or improvement of urban green spaces (parks, greenways, waterfronts, tree-lined streets, etc.) increases an area's attractiveness and property values, ultimately leading to the influx of higher-income residents and the ousting of long-term lower-income communities [6, 40]. In other words, what begins as an environmental enhancement ends up as a catalyst for classic gentrification, reshaping the social geography of neighborhoods. Scholars have described this as the "green space paradox": a well-intentioned initiative to make cities more sustainable inadvertently contributes to housing unaffordability and social inequity [7, 41]. Over the past decade, numerous empirical studies across North America and Europe have documented cases where new parks and greening projects were followed by significant rises in rents, land prices, upscale development, and displacement of vulnerable residents [42, 43, 44]. These findings highlight a growing tension between urban environmental goals and social justice outcomes.

High-profile examples have brought green gentrification to public attention. One seminal case is New York City's High Line – a linear park built on an old, elevated railway. Opened in stages starting in 2009, the High Line quickly became a tourist magnet and a symbol of innovative urban design. However, studies show it also contributed to a sharp spike in adjacent real estate values – housing prices within a few blocks soared by 35% or more, among the fastest increases in NYC. Lower-income tenants and small businesses in the area (Chelsea and the Meatpacking District) struggled with escalating rents or were bought out by developers, accelerating a demographic shift toward affluent professionals [44, 45]. Thus, the park that was celebrated as a "public space for all" also became, unintentionally, a motor of exclusivity and urban rebranding for the elite. Similar dynamics have been observed with other flagship green projects. In Atlanta, the creation of the BeltLine, a 22-mile greenway and streetcar loop, was envisioned to connect communities and provide parks and trails citywide. In practice, the BeltLine has driven significant appreciation of land and homes along its corridor, leading to what one observer called "a heavily racialized version of gentrification" that pushed out many Black working-class residents from intown neighborhoods [46]. Over 15 years, areas near the BeltLine that were formerly affordable saw an influx of luxury apartments and a decline in minority and low-income population share, as documented by urban researchers and even the project's own equity reports [46, 47]. The Atlanta case is now often cited as a cautionary tale of green infrastructure fueling spatial inequity – with revitalized, amenity-rich districts becoming enclaves of wealth, and displaced communities being relegated to peripheral suburbs with fewer services.

European cities have likewise grappled with green gentrification. In Barcelona, for instance, a wave of urban greening in the 2010s – from new parks on former industrial lands to trendy "superblock" street redesigns – has correlated with notable housing market shifts. Anguelovski et al. [39] found that neighborhoods in Barcelona which received major new green spaces (e.g. the revitalized Glòries area, or parks in Poble Nou) experienced faster increases in property prices and an influx of higher socio-economic status residents, compared to neighborhoods that did not get such investments. A comparative study by Cole et al. [48] across 28 cities in Europe and North America confirmed that in many cases new urban green spaces are statistically associated with nearby gentrification indicators (rising income levels, educational attainment, etc.), especially when those green projects are large in scale or accompanied by real estate development. Interestingly, that study also noted that smaller or more peripheral green projects sometimes did not produce gentrification, suggesting that context and scale matter [48]. In Central and Eastern Europe, researchers have observed a related trend: as market economies re-emerge, green and pleasant urban districts tend to become expensive and exclusive. In Poland, for example, Kraków's well-parked neighborhoods have higher housing prices, and new parks have been linked to "ecological" prestige developments targeting the wealthy [49, 50]. A study in Debrecen, Hungary likewise found that newly built high-end residential areas on the urban fringe included significantly more green space (gardens, yards, tree-lined streets) than older socialist-era housing estates, effectively concentrating urban greenery in wealthier enclaves [51]. These patterns reflect a broader urban spatial transformation: green amenities are increasingly capitalized into land value, reinforcing socio-spatial stratification between a "green, gentrified" city and the disinvested areas left behind [52].

The mechanisms behind green gentrification are multifaceted. At one level, it is a market response: urban greenery is a desirable commodity, often touted in real estate listings and factored into property appraisals [53]. Parks and tree-lined streets improve aesthetics and environmental

quality (shade, cleaner air), which can command price premiums – extensive research shows that homes near attractive parks often sell for 8–20% more than similar homes farther away [54, 55]. For developers and local governments, this creates an incentive to "green up" neighborhoods as a strategy for economic growth and tax revenue, sometimes overshadowing concerns about affordability for current residents [56]. Moreover, in the discourse of city branding, signature green projects (like waterfront parks, botanical gardens, or eco-parks) are used to rebrand formerly blighted districts as vibrant, sustainable, and trendy, thereby drawing in higher-income professionals and investors – what some scholars call the "eco-city" marketing effect [42, 57]. The High Line, for example, was instrumental in rebranding Manhattan's West Side, and similar projects have been emulated in Seoul, Paris, and Mexico City as catalysts for urban renewal [58]. There is also a cultural dimension: newer affluent residents often have different demands (dog parks, urban farming spaces, boutique playgrounds), and as they arrive, city services may be reoriented to those preferences, sometimes at the expense of previous users [59]. This can lead to a subtle form of exclusion where long-time residents feel the park is "no longer for them" – a process documented in studies of neighborhood change around greenways in Chicago and Philadelphia [60, 61]. The result of these processes is a reshaping of urban space: greener, yes, but also more unequal. The influx of wealthier residents drives up rents and taxes, pushing vulnerable groups either out of the neighborhood or into housing precarity. In many cases, lower-income families are effectively displaced to farther suburbs or to other parts of the city lacking equivalent amenities, a relocation that reproduces spatial inequities on a metropolitan scale [41, 59].

It is important to note that not every greening project must lead to gentrification – outcomes vary depending on policy measures and community context. Some cities have taken steps to counteract the gentrifying tendencies of urban greening. For instance, Philadelphia paired its ambitious parks initiative with an affordable housing strategy in certain neighborhoods, and studies suggest this helped temper displacement in those areas [62]. In Copenhagen, where many parks and waterfronts were developed in the last two decades, strong social housing programs and rent regulations have been credited with maintaining mixed-income communities despite environmental upgrades [63]. These examples underscore that green gentrification is not an unstoppable force but one contingent on governance choices. Nonetheless, the prevalent experience in many cities has been that well-intentioned sustainability projects can "backfire" by reinforcing urban inequality. This realization has spurred a growing advocacy for "just green enough" approaches – deliberately modest or community-focused greening that improves environmental quality without dramatically altering property markets [7, 44]. The challenge of green gentrification thus sets the stage for a broader discussion of environmental justice and rights in the city: how can cities pursue ecological and climate resilience goals without displacing the very communities such improvements are meant to benefit? The next section will delve into the ethical and justice dimensions of this question.

Environmental Justice, Ethics, and the Right to Urban Nature

The disparities in green space access and the phenomenon of green gentrification highlighted above raise fundamental questions about environmental justice in cities. Environmental justice, at its core, is concerned with the fair distribution of environmental benefits and burdens, as well as inclusive decision-making processes about the environment [64, 65]. Traditionally, the environmental justice movement focused on unequal exposure to hazards like pollution and waste facilities in low-income or minority communities. Today, this lens has expanded to include the unequal distribution of environmental benefits – such as clean air, safe parks, and green amenities – under the recognition that access to nature and a healthy environment is a crucial component of well-being [15, 66]. Scholars argue that urban green space is not a luxury or mere aesthetic, but a public good that all citizens have a right to enjoy [67, 68]. When some groups (often wealthier, whiter populations) enjoy leafy parks and tree-lined streets, while others are confined to concrete "gray" neighborhoods, this constitutes an environmental injustice that can reinforce health and social inequalities [69, 70]. For example, limited access to parks has been linked to higher rates of obesity and stress in lower-income urban communities, contributing to health disparities along socioeconomic and racial lines [25]. Thus, equitable access to urban nature is increasingly seen as a matter of justice and ethical obligation for cities.

Underpinning this perspective is the concept of the "right to the city," first articulated by Henri Lefebvre and later expanded by David Harvey and others. The right to the city is a call for all urban inhabitants – not just the privileged – to have a say in shaping urban space and to enjoy its collective benefits. In contemporary terms, many theorists include the "right to urban nature" as a key aspect of the right to the city [33, 71]. The "everyday right to urban nature" means that all people, regardless of income or status, should be able to regularly experience green environments like parks, trees, community gardens, and clean rivers in their city [33]. This idea has gained traction not only in academia but also in policy and activism. For instance, some city charters and constitutions now recognize residents' rights to a healthy environment or green space. One notable example is the city of Montreal, which in 2021 added a "right to a healthy environment" (including access to nature) to its municipal charter [72]. Internationally, the United Nations has also moved in this direction: in 2022 the UN General Assembly declared access to a clean, healthy, and sustainable environment to be a universal human right [73]. Although broad, this declaration underscores a global ethical consensus that includes urban nature as part of the common environmental heritage that people are entitled to. Likewise, the European Commission's 2030 Biodiversity Strategy explicitly emphasizes the importance of bringing nature back into cities in an equitable way, and global Sustainable Development Goals (notably SDG 11.7) commit to providing universal access to safe, inclusive and accessible green and public spaces, particularly for vulnerable populations [74, 75]. These developments reflect a normative shift: access to urban green space is increasingly viewed not just as a policy option, but as a right and justice issue.

The ethical arguments for equitable urban nature extend beyond health metrics to questions of recognition and process. Environmental justice scholars like Schlosberg [76] highlight that justice has multiple dimensions: distributional (fair outcomes), procedural (fair processes), and

recognitional (respect for different values and needs). In the context of urban green spaces, distributional justice demands an even spread of parks and trees; procedural justice requires that marginalized communities have a meaningful voice in decisions about park planning and land use; and recognitional justice means acknowledging the different ways communities relate to nature (for example, cultural or spiritual connections to certain places, or differing preferences for manicured parks versus naturalized spaces) [60, 76]. Violations of these principles can be seen in cases where low-income or minority neighborhoods are excluded from park planning processes or where their specific needs (like spaces for large family gatherings, or culturally appropriate design) are ignored, leading to parks that feel alienating or underutilized by those communities [77, 78]. The ethical imperative, then, is for city governments and planners to proactively redress these imbalances – not only by redistributing green resources but by ensuring inclusive governance (more on that in the next section). The "Just City" framework put forth by Susan Fainstein [2] and others argues that urban policy should explicitly aim for equity, democracy, and diversity; applying this to urban nature means policies like equitable park funding, anti-displacement measures in greening projects, and protecting the rights of existing residents to stay and enjoy improvements in their neighborhoods [2, 52].

Real-world urban struggles often bring these abstract principles to life. A vivid example is the 2013 Gezi Park protests in Istanbul. Gezi Park – a small green oasis in the heart of Istanbul – became the flashpoint for a large social uprising when plans were unveiled to replace it with a shopping mall. What began as an environmentalist sit-in to protect trees quickly grew into a broader movement for democracy and the right to the city. Protesters emphasized that public green space was part of their collective heritage and that decisions about it should not be made without public consent [79]. Gezi Park's defense was thus not only about saving a park but about claiming the right to urban nature and participatory governance in the face of urban inequality and authoritarian planning [79, 80]. Similarly, in cities like New York and Los Angeles, community groups have mobilized under banners such as "Parks for People, Not Profit," demanding that underserved neighborhoods get their fair share of green infrastructure and that community gardens be preserved from development [81]. These movements frame access to nature as a social justice issue on par with housing or employment rights. They often invoke ethical language – for example, describing parks as the "lungs of the city" that every child deserves access to, or pointing out that depriving certain communities of greenery is a form of systemic neglect or racism [67, 68].

In ethical discussions, the intrinsic value of urban nature is also considered. Philosophers note that beyond utilitarian health benefits, simply having the opportunity to experience nature is part of human dignity and fulfillment [82]. There is an argument that biophilia – the human affinity for nature – means that access to green space is a basic psychological need [83]. If so, denying that access to certain urban populations is morally problematic. The concept of environmental ethics thus enters urban planning: it presses city leaders to consider not just economic outcomes but the well-being of all living beings (human and non-human) and intergenerational justice [84]. For instance, ensuring that children in inner-city neighborhoods can play under trees and see birds or butterflies is framed as an ethical responsibility to provide a healthy upbringing and a connection to nature [85, 86]. The right to urban nature intersects with the rights of future generations as well – cities are recognizing that planning decisions now (where to create parks, how to mitigate climate change impacts with green infrastructure) will affect the lives of residents for decades to come. A just and ethical approach means those future benefits shouldn't be accessible only to the wealthy or the lucky few.

In summary, the literature on environmental justice and urban ethics calls for reframing urban green spaces as essential urban rights rather than optional amenities. Equitable access to parks and a healthy urban environment is increasingly seen as a cornerstone of the "just city" and as a public good on par with education or transportation [87]. This perspective insists that urban sustainability must explicitly integrate social justice – a theme that now permeates many policy recommendations and planning approaches. City governments, from the EU to Turkey and beyond, are gradually acknowledging these principles. The challenge moving forward is how to operationalize the right to urban nature through concrete policies and governance innovations. The final theme below explores emerging approaches – particularly participatory planning and inclusive governance – aimed at realizing these justice and rights-based ideals in practice.

Participatory Planning Approaches and Governance Recommendations

Addressing the intertwined issues of green space inequity and green gentrification requires intentional changes in how cities plan and govern urban nature. A strong consensus in recent literature is that participatory planning and inclusive governance are key to making urban greening more just and effective [88, 89]. In practice, this means involving local communities – especially those from historically underserved or vulnerable groups – in the design, implementation, and management of green spaces. By doing so, cities can ensure that green infrastructure actually meets the needs of residents, build public support, and preempt the conflicts or exclusions that often accompany top-down projects [90, 91]. This section outlines several recommended approaches and governance strategies that emerge from the literature, ranging from grassroots participation to policy reforms. These recommendations aim to foster urban environments that are both green and equitable.

Community engagement in planning and design

Involving community members in planning urban green spaces from the earliest stages is widely advocated. Effective participatory planning can take many forms – public workshops, design charrettes, "planning-by-doing" through temporary installations, or community-led advisory committees for park projects. The idea is that residents, as experts in their own needs and local context, can guide planners to make parks more accessible, culturally appropriate, and inclusive [92, 93]. Evidence shows that when vulnerable or marginalized groups are actively engaged in the design of green spaces, the resulting parks are more likely to be used and cherished by those communities. For example, a project in Dublin called Mapping Green Dublin used community workshops and local surveys to develop a neighborhood greening strategy, directly reflecting residents' concerns [94]. Similarly, in Tokyo, Japan, citizen participation in park design (through workshops and even involving schoolchildren in playground planning) led to parks that residents felt greater ownership of, resulting in higher usage rates and volunteer maintenance [95]. Inclusive design

considerations also emerge – such as adding lighting and visibility in parks to address women's safety concerns or incorporating ramps and smooth paths so that seniors and wheelchair users can navigate [32, 96]. By institutionalizing participatory processes, cities can correct power imbalances in planning. Some municipalities now require an equity assessment or community consultation before any major park development. For instance, Seattle's Parks Department instituted an Equity Toolkit that mandates outreach to underrepresented groups when planning new parks, which has led to features like bilingual signage and designs honoring local cultural heritage in certain neighborhoods [97]. The literature strongly supports that co-creation of green spaces with residents not only yields socially inclusive designs but also builds trust and empowerment in communities [98, 99]. In the long term, people who have a voice in shaping a park are more likely to use it and help take care of it, fostering a virtuous cycle of engagement.

Community stewardship and co-management

Governance doesn't end with planning a park – how parks are managed and by whom also influences equity and inclusion. One widely recommended approach is to involve local communities in stewardship and co-management of green spaces. This can range from volunteer programs (e.g., park friend groups, community garden committees) to formal co-management agreements where residents or nonprofits share responsibility with city agencies for maintaining a site. Community stewardship has a dual benefit: it can supplement maintenance resources for parks in under-resourced areas, and it empowers residents by giving them an active role in shaping the space over time [100]. For example, Berlin supports over 100 intercultural gardens and neighborhood pocket parks that are managed by local associations, often comprising migrants or low-income residents, with modest city support; these spaces provide recreation and also social integration opportunities [101]. In Detroit, community groups have transformed numerous vacant lots into local parks and gardens, effectively "greening from below" in areas the city government had difficulty servicing – an effort that has improved local environmental conditions and community cohesion [88]. The literature suggests that cities should formally recognize and partner with such grassroots initiatives. This might involve providing small grants, tools, or training to community groups for park projects, or establishing frameworks for shared governance. Notably, co-management can help ensure that maintenance standards do not diverge widely between affluent and low-income areas; residents in any neighborhood can advocate and care for their space given the opportunity and support. However, researchers also caution that community stewardship should complement rather than replace public investment – governments must avoid offloading all responsibility onto communities already burdened by social inequities. The optimal model is a collaborative governance where municipal agencies, residents, and civil society (NGOs, schools, etc.) work as partners. This inclusive governance can make urban green spaces more resilient (both ecologically and socially) and ensure that a diversity of user voices (youth, elders, minorities) is heard in ongoing management decisions [102].

"Just Green Enough" and anti-displacement strategies

To combat green gentrification, planners and scholars propose coupling greening projects with anti-displacement measures and adopting a "just green enough" approach. The "Just Green Enough" strategy, introduced by Curran and Hamilton [44], suggests consciously limiting the scale or luxury aesthetics of green projects so they improve environmental conditions without dramatically raising property values. For example, rather than an expansive designer park that might attract upscale development, a community might opt for small, distributed green interventions – like community gardens, pocket parks on vacant lots, improved street tree canopy, or cleaning up existing parks – that are targeted to local residents' needs [7, 44]. This approach was used in New York City's Greenpoint neighborhood: activists pushed for a series of modest greening efforts (e.g. tree plantings, a neighborhood park renovation) funded by an environmental settlement, deliberately avoiding any "flagship" project that could spark real estate speculation [44]. In addition to scaling projects appropriately, cities are urged to implement housing and land-use policies in tandem with greening. These can include: dedicating a portion of new development around parks to affordable housing (through inclusionary zoning or community land trusts), offering property tax abatements or rent stabilization for long-term residents in greening neighborhoods, and acquiring land for parks in advance of speculators [6, 36]. For instance, Barcelona's Green Infrastructure Plan explicitly pairs new urban green corridors with commitments to invest in social housing and anti-eviction programs in the same areas [36, 103]. Meanwhile, Atlanta belatedly created an Anti-Displacement Tax Fund to help low-income homeowners pay increased taxes near the BeltLine, after community pressure [46]. These measures aim to ensure that "green benefits" don't translate into "green removal" of vulnerable residents. Policy reports like Oscilowicz et al. [36] stress that urban greening plans must integrate equity goals – for example, setting up monitoring to detect early signs of gentrification (rising rents, demographic shifts) and trigger interventions if needed. In short, the recommendation is that urban greening should be accompanied by equitable development frameworks so that climate resilience and sustainability improvements truly serve all citizens, not just the affluent [52, 104].

Equitable funding and resource allocation

Another governance strategy is to reform how resources for parks and green infrastructure are allocated across the city. Studies have found that parks in wealthier areas often receive more maintenance funding and private donations (e.g., via "Friends of Parks" groups), while parks in poorer areas languish with budget shortfalls [105]. To counteract this, some cities are adopting equity-driven budgeting for green space. For example, Los Angeles developed a citywide Park Equity Index to identify neighborhoods most in need of parks based on metrics like park acres per capita, income, and health indicators. This index now guides park funding – areas with the highest need are prioritized for new park investments and renovations [106]. Similarly, New York City launched the Community Parks Initiative in 2014, explicitly directing $130 million to reconstruct parks in the 33 historically under-served communities, which had higher poverty and lower park conditions [107]. By using objective criteria to distribute funds, these programs work to close the gap between park-rich and park-poor neighborhoods. Another recommendation is to leverage innovative financing for equitable greening: for instance, participatory budgeting processes allow residents in low-income areas to propose and vote on small-scale green improvements (like adding playground equipment or planting street trees), giving communities direct control over a slice of municipal funds

[108]. On a national or regional level, government grants can be structured to reward cities that demonstrate equity outcomes – the EU's Urban Greening Plans (part of the EU Biodiversity Strategy) encourage cities to map green access and set improvement targets for disadvantaged communities [75]. By tying funding to justice metrics, governance can shift from a reactive stance to a proactive redistribution of environmental amenities.

Integrated Planning and Policy Frameworks

A broader recommendation is that cities adopt integrated policies that embed social justice into all aspects of urban greening. This involves cross-sector collaboration – aligning parks departments, housing authorities, public health agencies, and transportation planning to pursue shared equity goals. For instance, when a city develops a climate adaptation plan using nature-based solutions (like restoring wetlands for flood protection or planting trees for cooling), it should simultaneously consider which communities are most vulnerable and target those areas first [109]. Some pioneering frameworks exist: London's Environment Strategy for 2018 includes an initiative "Green Infrastructure for All" which sets targets for reducing the gap in access to open space between rich and poor boroughs, and ties this into the city's public health and transport programs [110]. Berlin's use of an environmental justice criterion in land-use planning (noted earlier) is another example of institutionalizing equity. Meanwhile, Turkish cities like Istanbul are beginning to incorporate green space equity in their strategic plans – the Istanbul Metropolitan Municipality's 2020-2024 Strategic Plan acknowledges the low per-capita green space in many districts and calls for creating new parks in the dense, underserved neighborhoods [111]. To ensure accountability, governance recommendations often include establishing metrics and monitoring systems for green equity (e.g., publishing annual reports on park access by district, or using GIS mapping to identify priority zones) [112]. Finally, international networks and charters – such as the EU's Green City Accord and the C40 Cities' Urban Nature Declaration – encourage city leaders to share best practices on inclusive green planning and commit publicly to closing accessibility gaps. These governance tools build political will and knowledge around the idea that social justice is an integral part of sustainability.

In conclusion, the literature strongly advocates that urban greening initiatives be planned and governed with an explicit focus on justice, inclusion, and community empowerment. Whether through participatory design, anti-displacement policies, equitable funding, co-management, or integrated planning, the goal is to ensure that the benefits of urban nature are shared broadly and fairly. Such approaches also help rebuild trust in public institutions, as historically marginalized communities see their voices influencing tangible outcomes in their environment [84]. The four themes discussed – socioeconomic inequalities, green gentrification, environmental justice rights, and participatory governance – collectively suggest that achieving "just access" to urban green spaces is both a social and an ecological imperative. By synthesizing these insights, city policymakers and stakeholders can move toward urban futures where green spaces truly function as inclusive commons rather than exclusive privileges, and where the right to urban nature becomes a lived reality for all urban residents.

DISCUSSION

The results of this systematic review underline the complex justice issues surrounding access to urban green spaces. Within various contexts, four interrelated themes have emerged: socioeconomic disparities in the provision of green spaces, the occurrence of green gentrification, broader environmental justice and ethical considerations, and the importance of participatory governance. In this section, I synthesize and critically interpret these themes through the framework of foundational justice theories—ranging from Rawls' principles of fairness and Fainstein's ideals of a Just City to Harvey's Right to the City and environmental ethics inspired by Leopold's Land Ethic and Naess' Deep Ecology. This theoretical reflection not only highlights what the literature reveals but also addresses its conceptual and methodological limitations, including inconsistent definitions of "justice," varying analytical scales, and uneven geographic focus.

Socioeconomic Inequalities in Urban Green Space Access

A clear consensus in the literature is that access to urban green spaces is unevenly distributed along socioeconomic lines. Numerous studies across different countries document that low-income and other disadvantaged communities tend to have poorer access to green spaces – whether measured by distance, size, or quality – compared to wealthier communities. For example, a study in Porto, Portugal found that neighborhoods with higher deprivation were significantly farther from parks, and their available green spaces were of markedly lower quality (with more safety issues and fewer amenities) than those in affluent areas. Similarly, a global mapping of 49 cities noted that most large cities, especially in low- and middle-income countries, exhibit green space inequities favoring higher socioeconomic groups, with few cases where the urban poor enjoy better access. These inequities are not only about quantity of parks but also their condition – deprived districts often face a double burden of having both less green space and parks that are less safe or well-maintained. Consistent findings from North America, Europe, and beyond corroborate that income and racial/ethnic disparities shape who enjoys the benefits of urban greenery. In short, the current urban landscape in many cities' privileges privileged groups with greener, healthier environments, while marginalized communities are left "nature-poor." This pattern directly implicates questions of justice and fairness in urban planning.

From a theoretical standpoint, such socioeconomic green space gaps reflect failures of distributive justice. Rawls' Theory of Justice posits that social inequalities are only justifiable if they benefit the least advantaged members of society. Applying Rawls' difference principle to urban green space would mean that any disparity in park access should be arranged to improve the well-being of lower-income groups – a standard that current patterns clearly do not meet. In reality, parks are often scarcest in the very neighborhoods whose residents have the greatest need for free, health-promoting recreation space. The literature thus affirms an injustice: those already disadvantaged by poverty also suffer environmental disadvantages, compounding inequality. A Rawlsian analysis underscores that these inequities violate the expectation of fairness toward societies' least advantaged. Likewise, Susan Fainstein's concept of the Just City – which centers equity, diversity, and democracy in urban development – would demand proactive planning measures to redistribute green amenities toward neglected

communities. Fainstein argues that justice requires cities to prioritize equitable outcomes over market-driven growth. Many of the reviewed studies implicitly echo this, calling for planners to focus on providing quality green space for underserved groups rather than merely increasing aggregate green cover. In sum, the evidence of socioeconomic disparities in urban nature access aligns with fundamental justice theory: a just city would not tolerate a situation in which one's income or social status predicts their exposure to greenery and its health benefits. Addressing these inequities is central to advancing urban justice.

Green Gentrification and Urban Change

Ironically, efforts to remedy green inequities can themselves generate new injustices – a dynamic captured by the theme of green gentrification. "Green gentrification" refers to the process by which adding or improving urban green spaces (parks, greenways, etc.) in underserved areas unintentionally spurs rising property values, the in-migration of higher-income residents, and the displacement of existing lower-income communities. The literature documents multiple cases in which well-intended greening initiatives led to socio-spatial displacement of vulnerable residents. For instance, studies note that when new parks or revitalized greenways are introduced in historically disinvested neighborhoods, nearby housing prices often increase, making the area less affordable to its original residents. What starts as an environmental improvement can thus evolve into a driver of involuntary relocation, ultimately undermining the social justice goals of urban greening. Empirical examples span cities in North America and Europe, and recent research indicates this pattern is emerging elsewhere as well. In Turkey, for example, the government's ambitious "Nation's Gardens" (Millet Bahçeleri) project – large public parks intended to enhance urban livability – has in many cases been accompanied by socio-spatial changes indicative of gentrification. A study of 12 Nation's Gardens in Istanbul (2017–2021) found evidence of green gentrification in eight of those sites, with demographic shifts and rising incomes suggesting that the new parks were followed by an influx of more affluent residents. Notably, parks on the urban periphery in that case tended to stimulate even more pronounced gentrification than those in inner-city locations. Such findings highlight that green amenities, without safeguards, can become magnets for real-estate speculation and exclusionary development. The "Just Green Enough" approach has been proposed in response – the idea of scaling environmental improvements in a way that is sufficient to benefit local residents' health and well-being, yet deliberately modest so as to avoid triggering large market shocks. This notion, emerging from community advocacy, emphasizes community-defined greening and anti-displacement measures to balance environmental and social objectives. Across the literature, the message is that urban greening must be pursued with care: if new parks simply pave the way for upscale redevelopment and force out the very communities they were meant to help, green space expansion can paradoxically deepen urban injustices.

Interpreting green gentrification through classical theories reveals a fundamental tension between the "right to the city" and market forces. David Harvey's concept of the Right to the City is illuminating here: Harvey argues that all urban inhabitants – especially the marginalized – should have a collective right not just to access the city's resources, but to shape the urban space and ethos according to their needs. He writes that this right is "far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city," and crucially, it is a common, collective right rather than an individual one. Green gentrification represents a breach of this right – improvements in the urban environment are captured by more privileged groups, and long-term residents are denied the ability to remain and enjoy the greener city they helped shape. In effect, the city's transformation serves private market interests over existing communities, which is precisely what Harvey cautions against. The commodification of green space (as a value-adding amenity) pits the exchange value of urban land against its use value for local residents, leading to exclusion. Susan Fainstein's Just City framework would similarly critique green gentrification as an outcome of a development paradigm overly focused on growth and spectacle at the expense of equity. She would urge that new urban parks be planned with inclusive intent, ensuring that benefits (like aesthetic improvement, cooler microclimate, recreational space) accrue to all and do not price out the poor. In Rawlsian terms, one might ask: do the gains from a shiny new park truly trickle down to the least-advantaged city dwellers, as the difference principle would require? If the answer is no – if instead the park primarily enriches landowners and attracts higher-income newcomers – then a Rawlsian perspective deems that outcome unjust. Thus, theoretical lenses reinforce an essential point: urban greening without social safeguards can subvert justice. The literature's critical examinations of cases around the world serve as a cautionary tale that environmental enhancements must be accompanied by policies (e.g. affordable housing, community land trusts, anti-displacement measures – though these belong in policy recommendations later) to uphold the right to the city for vulnerable residents.

Environmental Justice and Ethical Perspectives

Numerous studies reviewed explicitly frame the unequal access to green spaces as a significant issue of environmental justice. Traditionally, the scholarship surrounding environmental justice has scrutinized the distribution of environmental benefits and burdens across various social groups. The context of urban green space has emerged as a compelling extension of this inquiry. Parks, trees, and green amenities are perceived as essential environmental benefits that should be equitably accessible, akin to clean air and the absence of pollution. The literature corroborates the broader environmental justice findings, revealing that low-income and minority communities frequently encounter a disproportionate scarcity of environmental goods, such as parks, concurrently bearing a heavier burden of environmental disadvantages. This distributive injustice is closely linked to adverse health outcomes and disparities in quality of life.

Beyond the dimensions of distribution, theories of justice encompass multiple facets that are pertinent to urban greening. Scholars differentiate between distributive justice (the equitable allocation of resources), procedural justice (the fairness inherent in decision-making processes), and recognition justice (the acknowledgment of diverse values and needs). Within this review, discourse predominantly centers on distributive concerns—specifically, the question of who receives what proportion of green space. In contrast, procedural and recognition aspects receive comparatively less attention, revealing a notable conceptual gap. Although some studies touch upon procedural justice implicitly—highlighting that marginalized communities often lack agency in decision-making regarding green investments—few apply

a formal procedural justice analysis to green space planning. This could include evaluating the inclusivity of public consultations or assessing whose voices are represented in park design processes. Moreover, recognition justice, which pertains to acknowledging and valuing the unique ways various cultural or social groups interact with and utilize green space, is infrequently examined. It raises questions about whether planning efforts respect the cultural needs and identities of diverse urban residents. For instance, do planners consider that certain groups—such as immigrant communities, Indigenous residents, or the elderly—may have distinct preferences for green space design or unique barriers to access? This review suggests that these nuanced considerations of justice are often overshadowed by a narrower focus on distributional metrics. This oversight constitutes a limitation; without recognition, even a "fair" distribution of green spaces may fail to achieve true justice if the provided green areas prove culturally alienating or misaligned with community needs.

Engagement with foundational theories significantly enhances our understanding of the diverse dimensions of justice within urban contexts. The concept of recognition finds its grounding in critical social theory as articulated by scholars such as Nancy Fraser and Axel Honneth, resonating with Susan Fainstein's advocacy for embracing diversity within the framework of the Just City. According to Fainstein, a just city is characterized not only by equitable resource distribution but also by its ability to celebrate diversity, thereby enabling all urban communities to thrive. This perspective suggests that the planning of green spaces must be sensitive to the varied ways in which different communities conceive of and value nature.

Several articles within this review acknowledge that a "one-size-fits-all" approach to urban greening—exemplified by uniform park designs—risks marginalizing specific groups, underscoring the importance of recognition and procedural inclusion. Moreover, the ethical landscape of justice within urban greening can be broadened through engagement with environmental ethics. A majority of the literature tends to adopt an anthropocentric lens, concentrating on justice for urban inhabitants in their access to nature. However, thinkers such as Aldo Leopold and Arne Naess compel us to consider whether justice should also encompass non-human and ecological communities. Leopold's Land Ethic advocates for a paradigm shift wherein humans transition from viewing themselves as conquerors of the land-community to recognizing their role as members and citizens within it; this necessitates respect for all constituents of the ecological community.

When applied to urban environments, this perspective promotes the treatment of green spaces as more than mere resources for human recreation or health but as vital urban ecologies deserving of ethical consideration. Similarly, Naess's philosophy of Deep Ecology posits that all living beings possess inherent worth independent of their utility to humans, advocating for societal restructuring that honors this intrinsic value. From this standpoint, there emerges a potential radical expansion of the concept of "justice," which could redefine the right to the city to include a right to nature itself or even the rights of urban nature.

It is evident that the predominant focus within urban studies is predominantly human-centric; however, it is pertinent to note that issues relating to biodiversity within parks, habitat preservation, and the well-being of urban trees and wildlife frequently remain underexplored.

Participatory Governance and the Right to Green Space

The fourth major theme articulates the critical role of participatory governance in advancing justice in the provision of urban green spaces. A pervasive element in both academic literature and empirical case studies is the assertion that the inclusivity of decision-making processes regarding urban green spaces significantly affects the resultant equity of outcomes. Numerous inequities in the distribution and quality of green spaces can be attributed, at least in part, to the systematic exclusion of certain communities from planning and governance frameworks. Historically, urban green space planning in numerous cities, including those in Turkey, has predominantly followed a top-down approach, primarily orchestrated by governmental bodies or private developers, with scant consideration of input from low-income or minority populations. This paradigm often leads to the neglect of the needs and preferences of marginalized groups; for instance, parks are frequently prioritized in affluent neighborhoods, or their designs overlook the diverse ways in which different demographics utilize public spaces.

Several studies within this review underscore the significance of enhancing procedural justice through strategies that promote inclusive planning, community engagement, and collaborative management as essential measures to address distributional inequities. When residents, particularly those from underrepresented communities, are afforded a substantive role in decisions regarding the location, design, and maintenance of new parks, the resultant green spaces are more likely to effectively serve those communities. Community participation has the potential to ensure that parks are equipped with desired amenities, such as playgrounds, sports facilities, and culturally relevant features, as well as to address safety concerns raised by residents, thereby fostering equitable usage.

Participatory governance approaches—including community-led park committees, co-design workshops, and "friends of the park" stewardship groups—demonstrate promise in cultivating a sense of ownership and inclusion among local inhabitants. In certain instances, urban residents have mobilized to assert their "right to green space" through protest and grassroots initiatives, effectively demanding participatory governance when formal avenues were lacking. A salient example is the 2013 Gezi Park movement in Istanbul, wherein citizens united to protect a public park from redevelopment. This protest transcended mere opposition to development; it was fundamentally about asserting the democratic right to influence the management of communal open spaces.

The collective resistance observed in the Gezi Park events underscores the notion that urban green space is not merely an amenity but a civic right and a vital platform for democratic expression. Globally, analogous conflicts—such as protests against the privatization of public parklands and community-driven campaigns for the establishment of new parks in areas deficient in green space—resonate with the principle that urban green justice encompasses both fair distribution and equitable representation. Indeed, numerous scholars note that cities characterized by robust participatory planning mechanisms typically yield outcomes that more accurately reflect social equity in the allocation of green spaces. When planning processes are transparent and incorporate diverse perspectives, the resultant decisions are more likely to integrate the needs of a variety of stakeholders rather than solely serving the interests of dominant actors.

Consequently, participatory governance is affirmed not only as a strategy for achieving equitable access to green spaces but also as an intrinsic element of justice, wherein individuals possess agency in shaping their environments.

The theoretical foundations underlying the significance of community participation in urban planning are robust and well-articulated. David Harvey's concept of the Right to the City fundamentally encompasses the entitlement of inhabitants to engage in and appropriate urban space, advocating for democratic control over the production of urban environments. Within this framework, green spaces can be understood as components of the "urban commons," suggesting that the exclusion of communities from decision-making processes regarding these spaces constitutes a violation of their rights. Harvey's vision posits that achieving green justice necessitates the empowerment of communities to collectively influence the creation and management of parks, rather than relegating these decisions to technocrats or market forces alone.

Similarly, Susan Fainstein's Just City paradigm underscores the essential role of democracy in urban planning, emphasizing that a just city must afford individuals—particularly those from disadvantaged backgrounds—meaningful opportunities to contribute to the policies that affect their lives. In practical terms, this perspective dictates that public participation should not be treated merely as a procedural formality; rather, it must be accorded substantive weight in shaping policy outcomes. This notion resonates with theories of communicative action in planning, inspired by the works of Jürgen Habermas and others, which justify public participation on the grounds that inclusive deliberation engenders more legitimate and equitable outcomes.

A review of relevant literature indicates that participatory planning tends to yield more just outcomes in the provision of green spaces by ensuring that a diverse array of needs is acknowledged and by addressing power imbalances inherent in urban development processes. When marginalized communities are not only invited to the planning discourse but also empowered to exert influence, there is a greater likelihood that new green spaces will be allocated to areas of highest need and designed with cultural sensitivity in mind. Conversely, the absence of participatory mechanisms may exacerbate existing injustices; for instance, if affluent residents disproportionately dominate park advocacy and planning forums, resources may continue to be directed toward neighborhoods that are already enriched with greenery.

The case of Gezi Park serves as an illustrative example, demonstrating that when formal governance structures fail to incorporate public opinion, individuals may resort to informal means, such as protest, to assert their rights. This situation underscores a critical observation: inclusive governance is integral to the pursuit of justice in urban contexts. It is insufficient to merely create green spaces for communities; just processes demand that these spaces be developed in collaboration with the communities themselves. Recent studies have even explored innovative avenues for enhancing participatory principles, such as engaging citizens in the participatory design of green spaces or facilitating community-led data collection to ascertain needs.

In summary, this review highlights that achieving equitable access to urban greenery constitutes not merely a technical challenge of planning, but a profound governance issue. Justice in urban contexts requires a concerted effort to address power dynamics and to amplify the voices of those historically marginalized within environmental decision-making processes.

Conceptual and Methodological Reflections: Strengths and Limitations

Reflecting on the body of literature reviewed, several conceptual and methodological strengths and limitations become evident. While the scholarship on justice and urban green space has grown richer and more diverse, it also faces challenges regarding how justice is defined, the scales and contexts studied, and the methods employed. Key considerations include:

Divergent definitions of "Justice"

One notable issue is the lack of a consistent definition of justice across studies. Some researchers focus narrowly on distributive justice (typically measuring equality or equity in the spatial distribution of parks or tree canopy), whereas others adopt a broader environmental justice framing that includes procedural fairness and sometimes recognition of diverse groups. This divergence means that what counts as a "just" outcome varies: one study might label a city just if everyone has the same park area per capita, while another might require that marginalized communities have priority access to new green projects (a needs-based or Rawlsian approach), and yet another might emphasize whether marginalized voices were included in planning (procedural criteria). These differing justice lenses are intellectually enriching, drawing from various theories, but they can lead to incommensurable findings. For instance, a city could score well on distributive measures (parks evenly spread) yet score poorly on procedural justice (if decisions were top-down), raising the question of overall justice. The strength here is that the literature is increasingly recognizing justice's multidimensionality, moving beyond pure distribution. However, a limitation is that few studies integrate all three dimensions (distribution, procedure, recognition) in their analysis, which would be necessary for a holistic understanding. The field would benefit from clearer conceptual frameworks so that studies are comparable and build on each other, rather than talking past one another with different implicit definitions of equity and justice.

Scale of analysis – Local vs. citywide vs. global

The reviewed literature spans a range of spatial scales, and this presents both strengths and weaknesses. On one hand, many fine-grained neighborhood or intra-city studies (often using GIS mapping) vividly demonstrate block-by-block inequities and are able to tie green space distribution to local socio-demographics. These local-scale analyses are excellent for pinpointing environmental injustices within a city. On the other hand, citywide or multi-city studies offer comparative perspectives – for example, identifying broader patterns (such as the tendency for larger cities in various countries to have higher green inequity) or anomalies (cities where low-income areas surprisingly have more green space than high-income areas). A strength is that the literature now includes some global comparisons and multi-city systematic reviews, which help generalize findings and highlight structural factors (like urban form or policy regimes) influencing green equity. However, a limitation is that scale profoundly influences the observed outcomes. Patterns of justice can "hide" or "appear" depending on the scale of analysis. For instance, a city may meet a per-capita green space standard overall, yet contain stark inequalities between

neighborhoods – a nuance lost at a coarse scale. Conversely, a micro-scale study in one park or district might not capture regional inequities or the citywide resource distribution. Some studies explicitly noted that results change with spatial resolution (e.g. measures of park accessibility can seem equitable at a large census tract scale but show inequity at a smaller block scale). Very few studies systematically tested multiple scales (one noted exception being research examining how spatial scale alters equity assessments). Thus, there is a methodological challenge in choosing the appropriate scale for justice analysis. The current literature would benefit from multi-scalar approaches – linking neighborhood-level injustice to city-level policy contexts, and even considering regional or metropolitan scales when, for example, suburban parks serve urban populations. The choice of scale can also bias conclusions about what needs to be done: a citywide view might prioritize adding parks in the worst-off city, whereas a neighborhood view might push for targeting specific underserved communities within an otherwise green city. Both lenses are important and bridging them is a task for future research.

Geographic representation and context

Research into the concept of green space justice reveals a significant geographic imbalance in scholarly attention. A substantial concentration of studies is evident in North America and Western Europe, with a notable increase in recent contributions from East Asia, particularly China. In contrast, there remains a relative scarcity of research focused on cities within Africa, South Asia, and the Middle East, although interest in these regions is gradually expanding. The representation of Turkish urban experiences within the existing literature is also limited, despite some recent works addressing topics such as Istanbul's green spaces and civic movements.

This predominance of Anglophone and European contexts presents a methodological limitation, as it risks over-representation of certain urban forms and socio-political dynamics. For instance, the patterns of racial segregation influencing park access, as documented in urban centers in the United States, may not be applicable to other contexts. Similarly, the welfare-state framework characteristic of some European cities, which supports robust public park systems, contrasts starkly with the conditions in rapidly privatizing urban areas or those characterized by informal settlements.

The lack of extensive studies within the Global South—aside from a handful focused on Latin America and an emerging body of research in China and Brazil—compromises our understanding of how issues pertaining to green justice manifest in low-income, informally urbanized, and culturally diverse settings. This gap in the literature raises concerns about our ability to adequately address challenges such as access to green shade in tropical developing cities or the role of customary land in facilitating community green space, which are currently underrepresented in academic discourse.

Nonetheless, the international examples that are available provide valuable insights, illustrating that while the core concern of inequitable access to green spaces is nearly universal, its specific manifestations can differ considerably. For instance, affluent neighborhoods in certain Latin American cities may feature opulent private gardens and gated green spaces, while lower-income districts experience a deficiency of public parks. In contrast, some urban centers in Asia present older, densely populated cores with minimal green areas juxtaposed against newer peripheries that offer more greenery, thereby complicating simplistic rich–poor dichotomies.

An international perspective not only expands the theoretical framework surrounding green space justice but also fosters a deeper understanding of diverse urban realities. This includes the exploration of environmental justice in post-socialist contexts and the examination of various governance regimes. To enhance the discipline and ensure that the discourse on urban greening justice is informed by a truly global perspective, a concerted effort to broaden geographic representation—especially incorporating more studies from Turkey, Africa, South Asia, and beyond—is essential.

Methodological approaches and data limitations

The body of literature employs a mix of quantitative and qualitative methods, each with advantages and drawbacks. A predominant approach, especially in public health and planning studies, has been quantitative spatial analysis – using GIS to map green space distribution against socio-economic indicators, often yielding equity indices or statistically testing for disparities. This has been powerful for revealing hidden patterns and providing objective evidence of inequality. The strength of such methods is their ability to cover entire cities or multiple cities, offering generality and visualizing "green privilege" vs "green deficits" clearly. However, a limitation is that what gets measured can be limited: many studies quantify green space in terms of area, distance, or counts of parks, which may not fully capture accessibility (e.g. physical barriers, safety perception) or quality (beyond basic amenities) as experienced on the ground. Some quantitative studies attempt to include quality (using audits or indices of park features), but these are harder to standardize. Moreover, heavy reliance on available data (like land cover or census data) can miss informal or community-managed green spaces that don't appear in official records, potentially underestimating resources in some low-income areas. On the qualitative side, fewer studies provide in-depth community perspectives – though those that do (e.g. ethnographies of park use, interviews about cultural meanings of urban nature) offer critical insight into recognition justice and the lived experience of green space. The literature would benefit from more mixed-methods research that combines spatial analysis with community engagement to understand not just where greenspace lies, but how it is perceived, used, and valued by different groups. Another methodological limitation is the relative scarcity of longitudinal studies. Many analyses are cross-sectional "snapshots" of a single time. Thus, processes like gentrification or the impacts of new park interventions are not always captured. Exceptions exist – some studies have compared past and present data or used time-series to show how green distribution and demographics co-evolve – but these are in the minority. Longitudinal approaches (e.g. before-and-after studies of a greening project) are needed to confidently identify causal relationships and to distinguish temporary versus enduring changes in access. Finally, an encouraging methodological trend is the integration of justice considerations into planning tools and policy evaluation. Some papers examine how equity is or isn't embedded in urban green space standards, or how participatory budgeting can channel resources to underserved areas. These connect research to practice but also reveal a limitation: often justice is treated as an add-on consideration rather than a core criterion in planning models. Methodological innovation is called for to embed justice metrics (distributional outcomes,

community satisfaction, etc.) into urban green space planning processes in a rigorous way.

In summary, the literature on justice and urban green space has made notable progress in documenting access disparities to urban nature and the implications of these differences. Its strength lies in its interdisciplinary approach, encompassing urban planning, geography, public health, and environmental ethics, along with a growing recognition of various dimensions of justice. To advance the field further, however, it must address definitional clarity, ensure broader inclusivity across scales and locations, and employ methodologies that capture the full complexity of justice—including both quantitative patterns and qualitative meanings. The preceding discussion, rooted in empirical findings and theoretical reflections, offers a critical perspective on the current state of the field. The conclusion will explore how these insights might inform actionable principles and strategies (while deliberately avoiding specific policy prescriptions, as translating these ideas into practice remains the ultimate test of justice). For now, it is evident that achieving justice in access to urban green spaces presents a significant challenge that necessitates a blend of fair distribution, inclusive processes, and ethical mindfulness toward both people and nature. The interplay between empirical evidence and foundational theories of justice enhances our understanding, uncovering not only patterns of inequality and conflict but also the aspirational vision of truly just, green cities that honor both social and ecological well-being for current and future generations.

CONCLUSION

This systematic literature review critically synthesizes diverse strands of research concerning justice and access to urban green spaces, illuminating a nuanced yet cohesive understanding of urban environmental justice. Drawing insights from foundational theories—including Rawls' Theory of Justice, Fainstein's concept of the Just City, Harvey's notion of the Right to the City, and the ethical perspectives of Leopold and Naess—it underscores the profound tensions that exist between urban sustainability goals and social equity outcomes.

The extensive body of literature reviewed confirms a pervasive pattern: urban green spaces are distributed in ways that disproportionately benefit affluent communities while marginalizing socioeconomically disadvantaged populations. This distributional injustice contravenes fundamental principles of equity articulated by Rawls and the equity-focused planning espoused by Fainstein. While contemporary urban policies frequently emphasize ecological resilience and economic revitalization, the literature provides consistent evidence that, without proactive measures, these initiatives often exacerbate existing socio-spatial inequalities through processes such as green gentrification.

Indeed, the paradoxical phenomenon of green gentrification illustrates the complexity inherent in integrating social equity into urban environmental agendas. The reviewed cases demonstrate that well-intentioned greening projects may unintentionally trigger displacement of vulnerable residents and further socio-spatial polarization. This finding strongly aligns with Harvey's critique, underscoring that neoliberal-driven urban transformations frequently privilege market interests over the rights and needs of existing, particularly marginalized, residents.

Moreover, the theoretical lenses of environmental ethics, as articulated by Leopold and Naess, prompt an expansion of the justice discourse beyond purely anthropocentric considerations, suggesting the potential for an inclusive approach that integrates intrinsic ecological values. While still underrepresented in empirical urban studies, these ethical considerations underscore the necessity of redefining urban justice in ways that recognize not only human communities but also the intrinsic worth and rights of non-human entities and ecosystems.

The review also highlights the critical role of participatory governance, revealing it as an essential dimension of procedural justice. Literature consistently indicates that meaningful public participation in urban greening decisions is integral not only to democratic urban governance but also to achieving equitable outcomes. The Gezi Park protests, and similar movements globally affirm this principle, revealing the transformative potential of collective civic action in safeguarding urban commons against privatization and exclusion.

Despite the robust insights provided by existing research, this review identifies several critical gaps. Future research should deepen the understanding of recognition and procedural justice in green space planning, particularly by systematically assessing how cultural diversity, community values, and inclusive decision-making processes shape equitable urban environments. Moreover, there remains a need for more geographically inclusive studies, especially from rapidly urbanizing cities of the Global South, including Turkey, to ensure that urban environmental justice discourse reflects a truly global and contextually sensitive perspective.

Methodologically, the integration of mixed methods approaches, combining spatial quantitative analyses with qualitative community narratives, would significantly enhance our understanding of justice in urban green space provision. Additionally, longitudinal studies assessing long-term impacts of urban greening projects on community displacement, social cohesion, and ecological resilience are necessary to fully grasp the implications of green investments.

In conclusion, this review emphasizes that achieving justice in access to urban green spaces necessitates comprehensive and transformative urban policies grounded in robust ethical principles, equitable distribution mechanisms, and inclusive governance practices. By synthesizing theoretical reflections and empirical findings, the review reinforces the notion that urban sustainability must inherently and explicitly integrate social justice. Ultimately, just cities are not only ecologically vibrant but also socially equitable and democratically inclusive, ensuring that urban nature truly becomes a shared commons accessible to all citizens, both present and future.

DATA AVAILABILITY STATEMENT

No data was used for the research described in the article.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest with any individual, institution, or organization in the preparation, evaluation, or publication of this study.

USE OF AI FOR WRITING ASSISTANCE

Not declared.

ETHICS

There are no ethical issues with the publication of this manuscript.

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