

Pathways to Urban Resilience: Tactical Urbanism vs. Transdisciplinary Approaches

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Abstract

This article explores how tactical urbanism and transdisciplinary approaches intersect in fostering urban resilience within Türkiye's evolving planning context. Tactical urbanism, characterised by small-scale, low-cost, and community-led interventions, promotes rapid adaptation and public engagement. In contrast, transdisciplinary approaches integrate diverse disciplines and stakeholder perspectives to address systemic urban challenges through long-term, collaborative strategies. Drawing on international frameworks and Turkish case studies—including Istanbul's parklet projects and İzmir's public space renewals—the study reveals that combining these two methods can bridge the gap between experimentation and institutional transformation. It argues that fostering synergy between grassroots initiatives and structured collaboration enables adaptive, inclusive, and context-sensitive urban resilience. Ultimately, integrating both approaches supports sustainable, participatory, inclusive and regenerative urban futures.

Keywords: Tactical urbanism, transdisciplinary approach, urban resilience, participatory planning, Türkiye

1. Introduction

The term resilience originates from the Latin word *resilientia*, referring to the capacity of a substance to return to its original shape after deformation. In the 19th century, Thomas Young and Thomas Tredgold defined resilience as a material's ability to absorb energy and withstand sudden forces, introducing concepts such as the “modulus of resilience” (Rogers, 2017, p. 14). In broader systems theory, resilience is understood as “a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist” (Holling, 1973, p. 17). It has also been defined as “the capacity of a system to absorb disturbance and reorganise while undergoing change” (Walker et al., 2004). Resilience can refer to engineering resilience, which is the time required for a system to return to equilibrium after a disturbance. It also encompasses dynamics far from equilibrium, describing the magnitude of disturbance a system can endure before shifting to a different stable regime with distinct governing variables and structures. In ecological contexts, the terms ecological resilience and ecosystem resilience are often used interchangeably (Brand and Jax, 2007).

Urban resilience refers to the capacity of cities to adapt to both predictable changes and novel conditions, such as population growth, resource scarcity, and climate change. Effective urban resilience planning is essential for cities to anticipate and respond to unexpected shifts (Yaman Galantini, 2020, p. 349). Two key considerations are central to this process. First, a city's ability to cope with change while maintaining stability must be strengthened. Second, resilience strategies need to be context-specific, tailored to the unique characteristics of each city, as the impacts of global challenges vary across local contexts. Given the dynamic nature of urban resilience, cities must periodically reassess their goals and capacities. An effective resilience plan should address three fundamental questions: 1) What are the immediate vulnerabilities? 2) What are the spatial scales for intervention? 3) What are the key components of the planning framework? These components include stakeholders, spatial scale, interdependencies, resilience indicators, planning tools, and policies—all of which together form the foundation for developing context-sensitive, adaptive, and sustainable urban resilience strategies (Yaman Galantini, 2020, pp. 348-349).

“The Urban Resilience Hub,” managed by UN-Habitat, is a global platform designed to enhance urban resilience and promote its practical implementation. The hub provides access to research, news, case studies, and best practices, fostering collaboration among local governments, practitioners, researchers, and international organisations. It offers toolkits, guidance documents, and other resources to help cities assess risks and implement resilience strategies, advocating for the integration of resilience thinking into urban planning and policy at local, national, and global levels. Additionally, the hub supports city alignment with global frameworks such as the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, and the Sustainable Development

Goals (Urban Resilience Hub, n.d.). Similarly, “Making Cities Resilient 2030” (MCR2030) is a global initiative led by the United Nations Office for Disaster Risk Reduction (UNDRR). It aims to help cities become safer, more inclusive, and resilient to disasters and climate-related risks, with a target of achieving enhanced urban resilience at the local level by 2030. The initiative contributes to Sustainable Development Goal 11 (SDG11) and other global frameworks, including the Sendai Framework, the Paris Agreement, and the New Urban Agenda, by promoting advocacy, knowledge sharing, learning networks, technical support, coordination among government levels, and the establishment of partnerships (Making Cities Resilient, MCR2030).

Another notable urban resilience initiative is the “New European Bauhaus”, launched by the European Commission in 2020, promotes sustainable, inclusive, and human-centered urban living. Bridging the European Green Deal with everyday life, it emphasizes sustainability, aesthetics, and participation, fostering community-driven urban transformation through both commission-led and grassroots projects that support climate goals and social inclusion (New European Bauhaus, n.d.).

A complementary strategy for enhancing urban resilience involves the adoption of tactical urbanism. Recent initiatives that integrate participatory models and tactical urbanism have highlighted both notable progress and persistent systemic challenges. While these approaches aim to democratise decision-making and strengthen resilience, their effectiveness is often limited by fragmented implementation and insufficient transdisciplinary integration.

In the context of Türkiye, the adaptive use of urban open spaces plays a crucial role in enhancing resilience and supporting adaptation to emerging climate conditions. Historically, top-down strategies have dominated urban planning, however, there has been a gradual shift toward participatory practices and project-based policies designed to engage citizens in decision-making processes. Despite these efforts, participatory models have often proven insufficient in effectively addressing urban resilience challenges. Key issues include the sustainability of urban governance, the early-stage implementation of participatory processes, and the tensions between top-down policies and grassroots initiatives.

Conversely, transdisciplinary collaboration and research offer significant potential to manage uncertainties, support adaptation, and drive development in response to emerging challenges, thereby enhancing urban resilience. To address issues of urban sustainability and resilience, architects, planners, and researchers require training and experience in knowledge transfer, with design research recognised as a legitimate method of knowledge generation (Després et al., 2011). In this context, planners can play a pivotal role by raising awareness among local governments and citizens, influencing the outcomes of resilience-building initiatives. Accordingly, this research focuses on strategies for implementing transdisciplinary approaches to strengthen urban resilience. It examines the role of participatory processes in fostering resilience and explores ways to enhance transdisciplinary urban participation within Turkish urban contexts through a theoretical framework.

In light of the theoretical foundations of resilience and its diverse interpretations, this study situates the concept within the specific context of urban resilience and its application to contemporary planning challenges. While global frameworks and initiatives offer valuable guidance, there remains a gap in understanding how tactical urbanism and transdisciplinary approaches can jointly enhance urban resilience, particularly within Türkiye's evolving planning landscape. Accordingly, this research examines how these two approaches—one grounded in grassroots experimentation and the other in integrative, long-term collaboration—can complement one another in addressing systemic urban vulnerabilities. The study argues that bridging the immediacy of tactical interventions with the structural depth of transdisciplinary processes can foster adaptive, inclusive, and context-sensitive models of urban resilience. It seeks to answer the following questions: 1) How can tactical urbanism contribute to strengthening urban resilience through participatory, short-term interventions? 2) In what ways can transdisciplinary collaboration expand these efforts into sustainable, long-term frameworks for urban transformation? By addressing these questions, the study aims to contribute to a more coherent and operational understanding of resilience in urban planning—linking theory, practice, and policy through both bottom-up and

cross-sectoral strategies.

2. Tactical urbanism: A catalyst for active participation

Historically, citizens have modified streets and public spaces—sometimes without formal approval—to address unmet needs, such as improving street safety or creating more open areas. These initiatives are community-led, emerging from the efforts of residents and activists who implement swift, incremental improvements in response to gaps or delays in official action, particularly in areas where municipal authorities are perceived as ineffective or unresponsive. The concept of tactical urbanism draws inspiration from earlier urban experiments, including Paris's pop-up book stalls (*les bouquinistes*) in the 16th century, *Ciclovía* in Bogotá, and pedestrian plazas in New York City (Lydon and Garcia, 2015, p. 51). Tactical urbanism arose as a response to the limitations of conventional urban planning methodologies. Its intellectual roots can be traced to the seminal work of Michel de Certeau, *The Practice of Everyday Life* (1984). De Certeau contrasted the tactical actions of ordinary individuals with the strategic actions of institutions, offering a perspective on social dynamics and the role of individuals in shaping urban environments. He introduced the concept of “making do,” a tactical approach employed by urban residents that he described as “invisible.” This strategy embodies what he termed an “art of the weak,” a means of temporarily subverting hegemonic authority that structures both tangible and intangible urban spaces. Tactics, as de Certeau demonstrated, are structurally shaped by social orders, yet they remain contingent and timeless, adaptable across different contexts (Copeland and Feldman, 2016).

Tactical urbanism has been defined as a “decentralised, bottom-up, extraordinarily agile, networked” and “citizen-led, quick, and affordable” approach to urban planning, characterised by low-cost and low-tech interventions (Mohankumar, 2020, p. 15; Lydon and Garcia, 2015, p. xii). It emphasises the use of short-term, low-cost, and scalable interventions to catalyse long-term change in neighbourhoods and public spaces (Mohankumar, 2020, p. 15). The concept emerged as a grassroots response to the slow, bureaucratic pace of conventional urban planning. Early initiatives included pop-up bike lanes, parklets, and temporary plazas, designed to demonstrate the potential for long-term improvements (Lydon, 2011; Tactical Urbanist's Guide, n.d.; Urban Design Lab, 2023). The approach gained widespread attention during the 2008 financial crisis, when budget constraints prompted cities to adopt cost-effective, community-driven strategies for urban revitalisation.

Tactical urbanism formally coalesced in 2010, at a meeting of the Next Generation of New Urbanist (CNU NextGen) group in New Orleans, convened by Mike Lydon with Anthony Garcia, Lydon authored the influential book *Tactical Urbanism: Short-term Action for Long-term Change* (2015), which catalyzed collaborative open-source projects and the broader adoption of the approach (Planetizen, n.d.). Their reports documented the experiences of urbanists and activists across the U.S., highlighting practices such as “guerrilla urbanism,” “DIY urbanism,” “planning-by-doing,” “urban acupuncture,” and “urban prototyping.” These case studies underscored the popularity and potential of tactical urbanism as a method for rapid, community-led change.

By the late 2010s, tactical urbanism gained traction among city governments and grassroots organisations, who implemented pop-up parks, pedestrian plazas, street murals, and other temporary interventions. This period also fostered experimentation with novel public space concepts, alternative street uses, and community-led initiatives such as street art and urban farming. The approach is characterised by its informal, hands-on, and experimental nature, allowing cities to test and evaluate ideas before committing to permanent urban modifications (Tactical Urbanist's Guide, n.d.; Anderson, 2023). The Street Plans Collaborative (2012) defines tactical urbanism as a phased, low-risk approach to urban change that emphasizes local, short-term, and community-driven interventions. It promotes incremental experimentation, context-specific solutions, and the building of social capital through collaboration among citizens, institutions, and organizations (Lydon et al. 2012, pp. 12).

2.1. The role of tactical urbanism in urban resilience

Lydon and Garcia (2015) draw a clear connection between tactical urbanism and broader urban planning movements, particularly emphasising citizen participation and the critical role of residents in shaping their communities. They also promote open-source urbanism, which enables the sharing of ideas and designs,

fostering collaborative problem-solving across communities. Tactical urbanism projects are distinguished by their experimental and adaptive nature, allowing for rapid testing and immediate community feedback. The global pandemic has further increased the appeal of this approach, as it offers flexible, low-cost interventions that can respond to urgent urban needs (Lowe et al., 2024). These initiatives are typically modest and cost-effective, yet they hold the potential to generate significant impacts in creative placemaking, empowering communities to test new concepts and develop a sense of ownership over their surroundings, often led by local residents (CoUrbanize, 2020). The application of tactical urbanism has been shown to enhance adaptability, social cohesion, and environmental sustainability through community-driven interventions such as pop-up parks and street murals (Mohankumar, 2020). As illustrated in Figure 1, tactical urbanism embodies a diverse set of characteristics and practices that collectively support responsive, community-centered urban transformation.

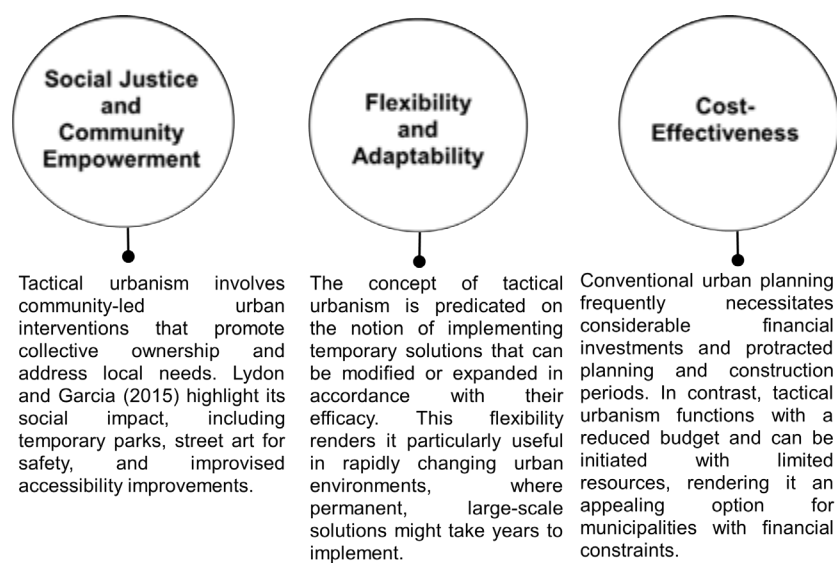


Figure 1. Benefits of tactical urbanism (Derived from Lydon and Garcia (2015))

Table 1 showcases global examples of tactical urbanism, illustrating how temporary, community-led interventions—such as street closures, pop-up parks, and pedestrian zones—can improve public spaces, mobility, and social engagement across diverse urban contexts.

Table 1. Notable Examples of Tactical Urbanism

Project	Year	Location	Description	Impact	Reference
Times Square Pedestrian Plaza	2009	New York City, USA	Pedestrianisation of Times Square using temporary materials; later made permanent.	Improved safety, increased foot traffic, and economic benefits.	Snøhetta (n.d.)
Paris Plages	2002- ...	Paris, France	Seasonal transformation of Seine banks into urban beaches since 2002.	Enhanced public access to riverfronts and recreation.	Paris (2022)
Superblocks	2016- ...	Barcelona, Spain	Car-free superblocks promoting pedestrian and cyclist priority since 2016.	Reduced traffic, pollution; increased green spaces.	(Iturralde, 2021)

Ciclovía	1970- ...	Bogotá, Colombia	Weekly car-free events encouraging cycling and pedestrian use since the 1970s.	Boosted public health and global influence on similar events.	(Lydon et al, 2012)
Park(ing) Day	2005- ..	Global (orig. San Francisco (USA))	Temporary conversion of parking spaces into public spaces; annual event since 2005.	Raised awareness on public space use; inspired parklets.	(Bela, 2023)
Better Block Project	2010- ...	Dallas, USA	Temporary revitalisation of blighted blocks for urban improvement potential.	Catalysed global community-led urban projects.	Better Block (n.d.)
Play Streets	2019- ...	London, UK	Temporary street closures for children's play and community interaction.	Encouraged child-friendly design and community cohesion.	(Sustrans, 2019; Playing Out, 2020)

Despite its successes, tactical urbanism faces several challenges and criticisms, including governance limitations, concerns about inclusivity, and the constraints of temporary interventions in addressing systemic urban vulnerabilities (Mohankumar, 2020). In contrast, participatory approaches to urban planning have demonstrated considerable benefits by fostering collaboration, integrating diverse perspectives, and supporting long-term sustainability and resilience. Such initiatives have been shown to enhance community resilience, strengthen local ownership, and leverage local knowledge to develop context-specific and effective solutions (Özdamar and Önay, 2024). However, challenges persist in contemporary urban transformation practices, particularly in Istanbul. Large-scale projects, such as the planned redevelopment of 600,000 earthquake-prone housing units, often emphasise physical reconstruction over community participation. This prioritisation can lead to community discord and limit opportunities for meaningful engagement in shaping urban outcomes (Gün, Pak, and Demir, 2020).

2.2. Tactical urbanism in Türkiye

The concept of tactical urbanism has gained global recognition, including in Türkiye, where cities have employed temporary, low-cost interventions to address diverse urban challenges and respond to immediate needs. Measures such as street closures, parklets, and pop-up green spaces offer valuable opportunities to enhance public spaces, promote sustainability, and actively engage citizens in urban transformation. Research on tactical urbanism in Türkiye emphasises original processes, participatory engagement, and exemplary case studies (Türkoğlu and Terzi, 2021; Vardı Topal, 2023). These projects primarily focus on improving public spaces, enhancing mobility, and fostering community participation. Notable examples include the Roman Orchard Project in Istanbul and the Transformation of Zümrütevler Square (2019), both of which implemented low-cost, temporary interventions to redesign urban areas. The Zümrütevler Square initiative, led by Maltepe Municipality with support from the Bernard van Leer Foundation, NACTO, and Superpool, aimed to improve pedestrian safety for children and families in the neighbourhood. Interventions included road painting, traffic calming measures, and seating areas, resulting in a 72% increase in square usage (Günç, 2021; Superpool, 2021). Despite these successes, such projects often face limitations in scalability and integration within broader urban planning frameworks, which can constrain their long-term impact on urban resilience. These challenges highlight the importance of linking tactical urbanism initiatives to strategic planning and stakeholder collaboration to ensure lasting benefits for cities.

The "Parklet" Projects in Istanbul (2020), initiated by WRI Türkiye Sustainable Cities as part of the WRI Ross Center for Sustainable Cities' Urban Mobility initiatives, in collaboration with the Istanbul Metropolitan Municipality Transportation Department, transform on-street parking spaces into small, temporary public parks known as parklets. The initiative was supported by the Fund of the "Partnership for Healthy Cities" (PHC), and implemented

in partnership with the World Health Organization. These parklets, deployed across multiple neighbourhoods—particularly in Beyoğlu—feature amenities such as benches, greenery, and public art. The objectives of parklets are threefold: to create pedestrian-friendly spaces, promote social interaction, and enhance public areas. By converting automotive space into pedestrian zones, parklets aim to reduce traffic congestion and increase foot traffic for local businesses. Additionally, these temporary interventions allow communities to assess the potential impacts of long-term urban design changes (Yaman and Yaraç, 2023; IBB, n.d.).

Similarly, the Sokak Bizim Derneği (Street Belongs to Us, 2010), an Istanbul-based NGO, seeks to improve pedestrian infrastructure by temporarily closing streets to cars and reopening them for pedestrians and cyclists (Sokak Bizim Derneği, n.d.) (Table 2). This initiative promotes walking, cycling, and social interaction, raising awareness of sustainable urban mobility and aligning with David Harvey's concept of "the right to the city." While such interventions have the potential to foster more equitable and inclusive urban politics and encourage authentic participatory urbanism, they also carry the risk of failing to generate sustained or comprehensive urban opposition, limiting their long-term transformative impact (Öcal and Erkut, 2019, p. 116).

Table 2. Examples of Tactical Urbanism in Istanbul

Name	Year	Location	Initiated by	Strategy and Description
Squat house	2013 - 2015	Kadıköy, Istanbul	Don Quixote Squat Collective (2013-2015, currently Squatters İstanbul (SQI))	Social sustainability and governance
Roma Orchard	2013	Beyoğlu, Istanbul	Roma Orchard Volunteers (2013)	Sustainability of natural resources
Kuzguncuk Orchard	2014	Üsküdar, Istanbul	Kuzguncuk Association	
Historical Yedikule Orchards	2017	Fatih, Istanbul	Historical Yedikule Orchards Protection Initiative (2013)	
The Transformation of Zümrütevler Square	2019	Maltepe, Istanbul	Bernard van Leer Foundation, NACTO and Superpool	Social sustainability and governance (Türkoğlu and Terzi, 2021)
Mahalle ni Onar (Fix Your Neighbourhood)	2019	Kadıköy, Istanbul	Onaranlar Kulübü, Kadıköy Municipality	Local identity and urban aesthetics
Boğada Project	2017	Kadıköy, Istanbul	Herkes için Mimarlık, Onaranlar Kulübü, TAK Kadıköy (Municipality)	Local identity and urban aesthetics
Istanbul's "Parklet" Projects	2020 - 2022	Beyoğlu, Istanbul	WRI Türkiye Sustainable cities, part of urban mobility within WRI Ross Center for Sustainable Cities.	Local identity and urban aesthetics, urban mobility
Ayda Bir Gün Sokak Bizim	2010 - 2019	Şişli, Kadıköy, Beyoğlu, Beşiktaş, Sarıyer	Sokak Bizim Derneği (Street Belongs to Us, 2010)	Urban mobility

Several projects in Türkiye illustrate how tactical urbanism can successfully transform public spaces through rapid, low-cost, and participatory interventions. The Tersane Neighbourhood Public Space Renewal Project in İzmir, implemented in collaboration with the United Nations Development Program (UNDP) and Karşıyaka Municipality, aimed to enhance two public spaces through innovative tactical urbanism measures. Engaging neighbourhood residents, the project included improvements such as shelter and health solutions for stray cats and the revitalisation of green areas (UNDP Türkiye, 2022).

In Kadıköy, tactical urbanism initiatives have focused on temporarily converting streets into car-free zones for pedestrians and cyclists, fostering human-centered environments that encourage social interaction and public activity. These interventions also promote alternative transportation modes, such as walking and cycling, reducing reliance on private vehicles. The Boğada Project, a collaborative effort with Herkes için Mimarlık (Architecture for All), Onaranlar Kulübü (Fixer's Club), TAK Kadıköy, and other partners, transformed the area around the Bull statue in Kadıköy. Over ten days, participants conducted field research, generated design ideas, and installed urban furniture, demonstrating the participatory and experimental nature of tactical urbanism (Boğada n.d.; Trak n.d.).

Despite these successes, tactical urbanism faces several challenges. The temporary nature of interventions may limit long-term impact, particularly when projects lack institutional support for permanence. Without a robust planning framework, tactical urbanism initiatives can become fragmented or disconnected, potentially resulting in ineffective outcomes. The approach's emphasis on simplicity and short-term solutions can conflict with broader urban development plans that demand larger-scale investment and long-term vision. Additionally, implementing tactical urbanism in densely populated areas often introduces greater logistical and organisational complexity (Ramos, 2022). These limitations underscore the need to integrate tactical urbanism with strategic planning and stakeholder collaboration to ensure that experimental interventions contribute meaningfully to long-term urban resilience and development.

3. Transdisciplinary methods in urban resilience planning and action

Transdisciplinary approaches originated in the social sciences during the 1970s and were subsequently extended to the physical sciences, including mathematics and quantum physics. They are conceptualised as Mode II knowledge production, referring to knowledge that is socially distributed and accessible to individuals and groups across society. This process-oriented framework facilitates communication beyond traditional institutional boundaries, creating a global network of interconnected nodes (Gibbons et al., 1994). Transdisciplinarity is characterised by its focus on real-world problems, the integration of diverse disciplinary perspectives, and active engagement with stakeholders outside the academic sphere. Through interdisciplinary collaboration and multi-sectoral participation, transdisciplinary approaches are particularly well-suited to addressing the complex, interconnected challenges of urban resilience.

The primary goal of transdisciplinary approaches is to achieve a “unity of knowledge” that transcends disciplinary silos, fostering improvements in the issue under study, the generation of new knowledge, and mutual transformative learning between researchers and participants. This methodology has proven especially effective in tackling sustainability-related challenges, including climate change, poverty, and resource security. The concept of “unity of knowledge” can be traced to early formulations by Jean Piaget (Klein, 2008) and has been further elaborated by scholars such as Hirsch Hadorn (2008), who emphasises the integration of scientific, ethical, and pragmatic knowledge from diverse scientific disciplines and non-academic stakeholders to address complex societal problems. Its primary aim is to co-produce knowledge that enhances understanding (system knowledge), informs decision-making (target knowledge), and guides practical action (transformation knowledge) toward sustainable solutions (Hirsch Hadorn, 2008; OECD, 2020). Similarly, Julie Thompson Klein (2008) highlights the necessity of cross-sectoral cooperation to resolve complex issues and embrace integrative practices that reflect the multidimensional nature of reality. These principles have been institutionalised in frameworks such as those developed by CIRET (Nicolescu, 2002), all of which underscore the importance of combining diverse forms of knowledge to confront complex societal challenges effectively.

Research on transdisciplinary planning demonstrates a paradigm shift in knowledge production and application, moving away from isolated disciplinary approaches toward collaborative, problem-oriented, and socially embedded research practices (OECD, 2020). A growing body of literature highlights the critical role of transdisciplinary approaches in urban planning and urban resilience, showing their effectiveness in addressing multifaceted challenges, including public health, climate change, social vulnerability, and sustainable development. The transdisciplinary approach is a problem-solving methodology specifically designed to address the complex and interconnected societal challenges of the contemporary world. It involves engaging with complexity, acknowledging multiple scientific and societal perspectives, generating actionable knowledge, and bridging the gap between academic understanding and practical application to produce outcomes that are both scholarly and socially relevant (Hirsh Hadorn, 2008). This approach relies on the collaboration of community organisations, private enterprises, and policymakers to co-create knowledge and solutions that are contextually meaningful and implementable. By transcending traditional disciplinary boundaries, transdisciplinarity produces insights that are simultaneously scientifically rigorous and socially applicable.

The transdisciplinary process is iterative and non-linear, requiring the formation of diverse teams that combine disciplinary expertise with practical experience. Engaging relevant stakeholders throughout every stage of research—from the formulation of questions to the integration and evaluation of results—is essential. The process often necessitates negotiation and dialogue among participants with different knowledge bases, assumptions, and interests (OECD, 2020).

Research on transdisciplinary planning has explored a wide range of applications, including urban planning, sustainability, healthier urban environments, and the interaction between Global North and Global South contexts (Després et al., 2011; Pärli, Fischer, and Lieberherr, 2022; Lawrence, 2022). As summarised in Table 3, these studies illustrate key aspects of transdisciplinary planning research, highlighting its capacity to integrate diverse academic disciplines with non-academic stakeholders to collaboratively address complex societal challenges (Table 3).

Table 3. Transdisciplinary Planning Research Focus Areas

- Integrative knowledge production combining academic and non-academic insights
- Collaborative stakeholder engagement as co-producers of knowledge
- Iterative, flexible research processes tailored to complex societal problems
- Development of actionable knowledge that informs policy and practice
- Emphasis on sustainability and societal relevance in research outcomes
- Addressing challenges in research system structures and cultural contexts

3.1. Transdisciplinary approaches in urban resilience

Urban resilience research underscores the critical role of participatory and transdisciplinary approaches in enhancing cities' capacity to respond to social and environmental shocks, such as floods, climate change, and other urban stresses. Central to this is the integration of diverse perspectives and knowledge domains, the promotion of social innovation, and the strengthening of multi-stakeholder collaboration—core components of co-creation and participatory urban planning. These processes enhance both the adaptive capacity and the legitimacy of urban governance. International frameworks, including the United Nations 2030 Sustainable Development Goals, stress the importance of fostering trust, transparent communication, and meaningful participation, particularly among marginalised communities (United Nations Framework Convention on Climate Change, 2015; United Nations, 2015).

However, implementing transdisciplinary research faces several challenges. Disciplinary silos, institutional constraints, and the complexity of integrating heterogeneous knowledge systems can impede progress. Moreover,

methodologies developed in Western contexts are often not directly transferable to developing countries, highlighting the need for context-sensitive approaches (OECD, 2020). Despite these obstacles, transdisciplinary planning is widely regarded as a transformative strategy, capable of overcoming the limitations of fragmented disciplinary work and top-down planning. By integrating diverse stakeholders and knowledge systems, it provides a framework for addressing the complexity and uncertainty inherent in urban environments, including climate-related risks and social inequalities, thereby facilitating more sustainable and equitable urban futures (Karaman, 2022).

Research on transdisciplinary planning in the context of urban planning and resilience highlights its effectiveness in generating inclusive, proactive, and integrated solutions to complex urban challenges. By engaging multiple stakeholders and knowledge domains in collaborative processes, transdisciplinary approaches enhance cities' capacity to promote health, sustainability, and resilience amidst growing urban complexities (Lawrence, 2022; Karaman, 2022). These methods have also been applied in spatial planning education (Van der Knaap, 2022) and in managing collaborations between universities and municipalities (Brink et al., 2018).

The concept of urban resilience requires attention to interrelated dimensions such as social equity, environmental sustainability, and economic stability. Transdisciplinary approaches allow cities to address these dimensions holistically—considering environmental, social, cultural, and economic factors within a unified framework. Incorporating diverse perspectives has been shown to produce more robust and durable solutions. Unlike tactical urbanism, which often focuses on short-term, immediate interventions, transdisciplinary strategies aim for long-term structural change, addressing systemic issues through coordinated planning and sustained action. This enables the creation of comprehensive resilience strategies capable of withstanding future shocks. A key feature of transdisciplinary methods is the emphasis on inclusive stakeholder engagement, ensuring that marginalised communities and non-expert voices are actively involved in decision-making. Such inclusivity is essential for developing equitable solutions that garner broad support, which is critical for the success and legitimacy of urban resilience initiatives (Figure 2).

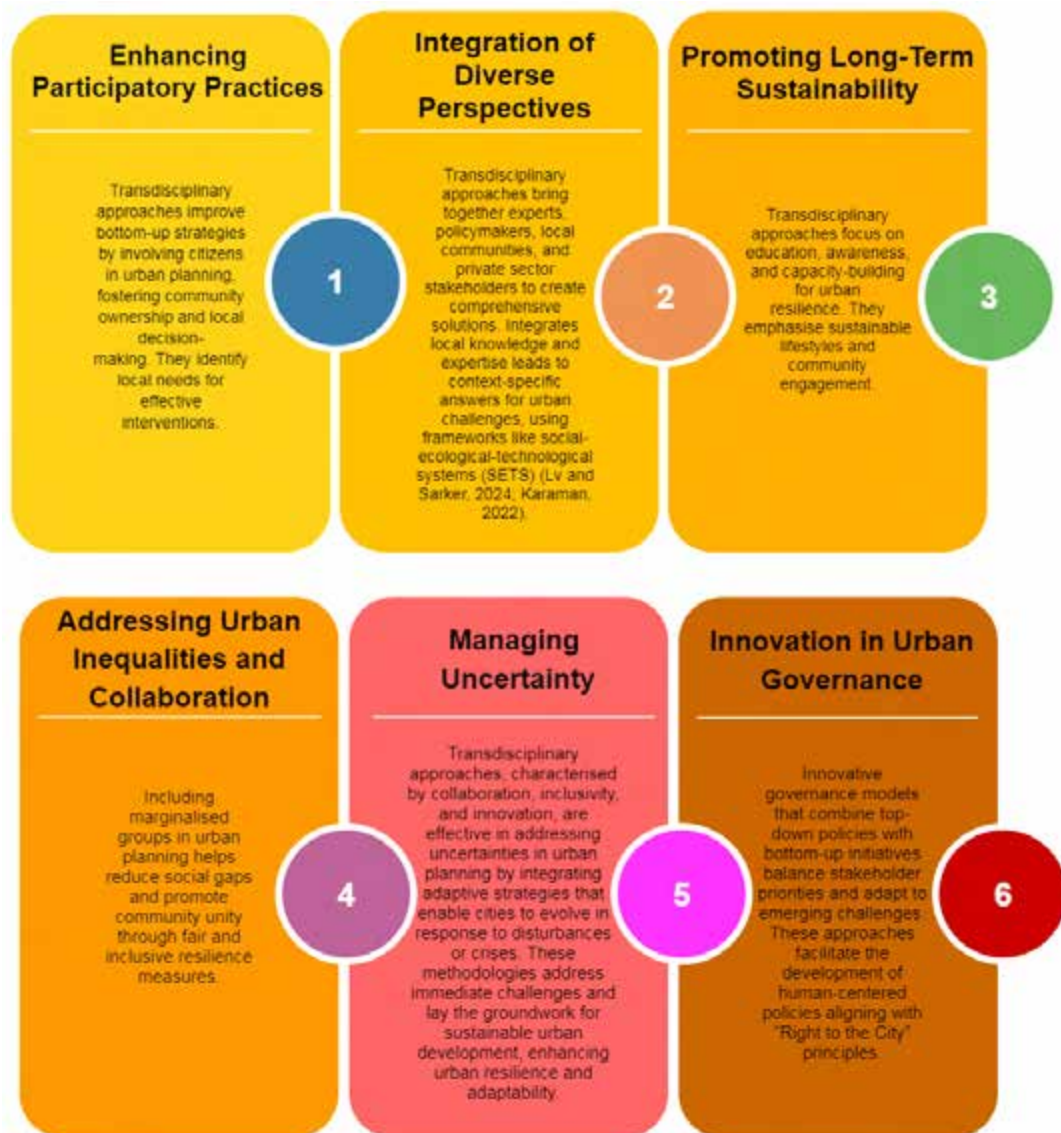


Figure 2. Transdisciplinary approaches promote different dimensions of urban resilience

This figure illustrates how transdisciplinary approaches enhance multiple, interconnected dimensions of urban resilience, including ecological, social, economic, and institutional aspects. By fostering collaboration among diverse stakeholders and integrating knowledge across disciplines, transdisciplinary practices enable cities to:

- Strengthen ecological resilience through sustainable resource management and environmental regeneration;
- Enhance social resilience by empowering communities and encouraging inclusive participation;
- Support economic resilience via innovation, adaptability, and equitable growth; and,
- Bolster institutional resilience through adaptive governance and cross-sectoral cooperation.

Transdisciplinary approaches also encounter several significant challenges. Integrating knowledge across diverse disciplines often proves complex, requiring not only methodological flexibility but also a shared conceptual framework among collaborators. Coordinating multiple stakeholders—each with distinct priorities, institutional constraints, and professional languages—can further complicate the process. Additionally, the substantial time, financial investment, and institutional commitment required for transdisciplinary initiatives may pose considerable barriers, particularly for cities operating with limited budgets or insufficient political support.

3.2. Transdisciplinary practices in Türkiye

Turkish cities have increasingly implemented human-centered policies, participatory practices, and urban rehabilitation initiatives aimed at strengthening both social inclusion and urban competitiveness. These efforts have enabled cities to enhance their global standing while safeguarding citizens' rights and promoting sustainable development. According to the 2014-2023 Istanbul Regional Plan (2016), improving urban resilience requires the integration of interdisciplinary collaboration with bottom-up participation. This plan marked a shift toward a more tailored, inclusive, and locally driven model of regional development. It was developed through the joint efforts of the Ministry of Development, academic institutions, local governments, and non-governmental organisations (NGOs). The plan adopted an interdisciplinary framework, emphasising stakeholder engagement and the co-production of knowledge to generate innovative solutions for sustainability and resilience in Istanbul.

Similarly, the Urban Renewal Project sought to merge bottom-up urban concepts with participatory mechanisms for urban rehabilitation and development. Although the project fell short in meeting the essential needs of local communities, it nonetheless incorporated participatory and community-based strategies into urban transformation processes—addressing challenges such as illegal construction, disaster risk, and uncontrolled urban expansion (Yılmaz Bakır, 2020). However, while interdisciplinary and multidisciplinary frameworks have been widely utilised in Türkiye's planning and development initiatives, transdisciplinary approaches—which move beyond disciplinary boundaries to foster genuine co-creation between experts and communities—have yet to be systematically integrated into these processes (Özdamar and Önay, 2024).

According to Arslan and Kaya Erol (2023), the Turkish planning system lacks a legal framework for participation because it is necessary to create flexible and legal frameworks that incorporate participation arrangements in planning and design to build a knowledge and experience base for participatory-oriented design. The development of comprehensive solutions for complicated problems like disaster preparedness and fair resource allocation is made possible by transdisciplinary approaches, which encourage cooperation between technical specialists, local communities, and legislators. However, the development of cooperative platforms that bring together sociologists, architects, and inhabitants in co-design processes is essential to the success of this approach (Özdamar and Önay, 2024). It has been shown that implementing a transdisciplinary approach is a successful tactic for breaking down silos. A key component of the process is the integration of knowledge. In order to build a resilient neighbourhood, for example, engineering, sociology, ecology, and economics must be integrated (Breaking Down Silos: Collaboration Across Disciplines).

While not specific to a particular city, these examples demonstrate efforts to incorporate transdisciplinary and bottom-up approaches in urban planning and development. The overarching objective of these initiatives is to enhance urban resilience, strengthen local communities, and reduce urban inequalities by promoting collaboration, incorporating multiple perspectives, and involving local communities in decision-making processes (Özdamar and Önay 2024).

While the participatory experiments conducted in Türkiye represent a departure from rigid top-down models, the efficacy of these experiments in building resilience is contingent upon the systemic integration of transdisciplinary collaboration and ICT-enabled inclusivity. It is argued that, by anchoring design-thinking processes in empathy and shared expertise, Istanbul's urban transformation could evolve into a model of adaptive, citizen-centred planning that is globally replicable. Transdisciplinary approaches have the potential to significantly enhance urban resilience in Türkiye by addressing complex urban challenges through integrative, participatory, and innovative strategies.

4. Tactical Urbanism vs. Transdisciplinary Approach

While both tactical urbanism and transdisciplinary approaches play vital roles in advancing urban resilience, they differ markedly in their focus, scale, and methodology. Tactical urbanism is characterised by its immediacy, flexibility, and low-cost implementation—emphasising short-term, community-driven actions that can quickly address local needs and test new ideas. In contrast, transdisciplinary approaches operate at a broader and

more complex level, integrating multiple fields of knowledge and stakeholder perspectives to develop long-term, systemic strategies for sustainable urban transformation (Table 4).

Table 4. Differences Between Tactical Urbanism and Transdisciplinary Urban Approaches

		Tactical urbanism	Transdisciplinary Approaches
1	Temporary vs. Long-Term Solutions	Short-term interventions (Karaman, 2022)	Systemic, long-term resilience (Karaman, 2022)
2	Scalability and Impact	Hard to scale up Tactical urbanism, like parklets, can be scalable but must be mindful of their limitations in addressing systemic issues in urban areas.	Bigger impact Transdisciplinary initiatives are conceived with the objective of achieving a more substantial impact.
3	Community Engagement Models Ownership	Grassroots-driven (Karaman, 2022; Mohankumar, 2020) Value community input. Starts with the community Tactical urbanism, a cost-effective strategy, emphasises community engagement as a fundamental element in its implementation.	Institutional collaboration (Karaman, 2022; Mohankumar, 2020) Value community input. Need to involve community members Although transdisciplinary projects require significant resources, their long-term benefits and transformative potential make such investments highly worthwhile.
4	Cost-Effectiveness and Resource Allocation	Cost-effective	Require more resources
5	Scale and Scope	Focuses on small, localised Interventions that are swift and cost-effective, often focusing on specific issues in specific neighbourhoods.	Operates on a larger scale, addressing systemic urban challenges and requiring coordination across various sectors and levels of government.
6	Flexibility vs. Structure	Thrives on flexibility, experimentation, and immediate action, allowing for rapid adaptation based on real-time feedback, a critical aspect of urban planning and management in dynamic environments.	Prioritises structured collaboration and long-term planning, often requiring more time and resources to develop comprehensive solutions.
7	Community vs. Expert-Centric	Primarily driven by community involvement, often with little reliance on experts or formal planning processes.	Integrates expert knowledge across multiple fields, while still emphasising the importance of community participation and inclusivity.
8	Who Can Use?	Urban planners can use tactical urbanism to test ideas.	Policymakers can support transdisciplinary projects.
9	Adaptability to Climate Challenges	They both address climate change-induced risks like rising water levels and extreme weather events (Lv and Sarker, 2024) (Karaman, 2022).	

Despite the apparent distinction between tactical urbanism and transdisciplinary approaches, these frameworks are not mutually exclusive. When applied together, they can reinforce one another, strengthening urban systems and enhancing their resilience. Both approaches demonstrate their effectiveness through the empowerment of communities: tactical urbanism serves as an experimental platform for testing localised ideas, while transdisciplinary approaches integrate these experiments into broader, long-term strategies for urban sustainability and resilience. Likewise, insights gained from transdisciplinary collaboration can inform and scale tactical interventions, ensuring their coherence with wider resilience objectives.

4.1. Challenges in Türkiye

Despite the increasing emphasis on bottom-up strategies and tactical urbanism in Türkiye, notable shortcomings persist in how these approaches are conceptualised and implemented. A transdisciplinary framework is proposed as a means to enhance their effectiveness by fostering deeper collaboration across sectors and knowledge domains. One of the primary obstacles to active participation in Türkiye is the highly centralised administrative system, which necessitates the development of alternative models to facilitate genuine and continuous collaboration (İzci and Geylani, 2021). Within this context, the participatory democracy model envisions citizens as proactive agents in governance processes (Tekeli, 2012). Although numerous reforms have introduced new mechanisms aimed at promoting openness, transparency, citizen participation, and decentralisation, these efforts often remain procedural rather than transformative. To advance participatory governance, policymakers and public authorities should prioritise establishing platforms that enable sustained, interactive engagement—supported by regulatory frameworks and strategic policy proposals. However, given the limited success of such initiatives to date, it is essential to strengthen citizens' involvement in parliamentary committees and to encourage voluntary collaboration with city councils and civil society organisations. Ultimately, this approach seeks to cultivate sustainable and resilient communities by nurturing open systems of governance grounded in shared responsibility, inclusivity, and collective learning.

4.2. Implementation strategies for synergy between tactical urbanism and transdisciplinary approaches

By adopting these strategies and emphasising participatory processes, Türkiye can cultivate more resilient cities capable of confronting complex urban challenges while advancing long-term sustainability. Empowering local communities, fostering collaboration, and engaging diverse perspectives have proven effective in addressing multifaceted problems and generating more inclusive, context-sensitive solutions. This vision is achieved through strengthening stakeholder cooperation, integrating local knowledge and expertise, and promoting sustainable living practices via community education initiatives. As illustrated in Table 5, the following dimensions are crucial for establishing a productive synergy between tactical urbanism and transdisciplinary approaches.

Table 5. Building synergy between tactical urbanism and transdisciplinary approaches

B a l a n c i n g Priorities	When implementing both bottom-up and transdisciplinary approaches, it is critical to strike a balance between competing priorities and interests among stakeholders. This requires; • <u>Empowering local communities</u> • <u>Encouraging collaboration</u> • <u>Engaging diverse perspectives</u>
Stakeholder Collaboration	Fostering stakeholder collaboration is essential for addressing complex urban challenges and promoting long-term urban resilience and sustainability. This can be achieved through; • <u>Engaging local knowledge and expertise</u> • <u>Promoting sustainable lifestyles through community education initiatives</u> • <u>Creating awareness among local governments and citizens</u>
Training and Knowledge Transfer	Architects, planners, and researchers need to receive training and experience in knowledge transfer. Design research should be recognised as a legitimate method of knowledge generation to address emerging issues of urban sustainability and resilience (Eker, 2022).

Implementing both bottom-up and transdisciplinary approaches simultaneously requires careful negotiation among diverse stakeholders to balance competing priorities and interests. Empowering local communities, fostering collaboration, and integrating multiple perspectives have consistently proven effective in tackling complex urban challenges and generating inclusive, sustainable solutions. Achieving this necessitates cultivating cross-sectoral cooperation, mobilising local knowledge and expertise, and promoting sustainable lifestyles through community education initiatives. Such an integrated approach enables the formulation of adaptive strategies that respond to immediate needs while fostering long-term urban resilience and sustainability.

A promising pathway for combining these methodologies lies in participatory planning, which actively engages communities, experts, and institutions in shaping urban interventions. Tactical urbanism can act as a catalyst for community engagement—creating opportunities for experimentation and collective learning—while transdisciplinary approaches provide the overarching framework that aligns these small-scale actions within a coherent, strategic vision for the city's future.

The synergy between tactical urbanism and transdisciplinary approaches merits further study. For instance, in a flood-prone city, temporary rain gardens could serve as tactical interventions demonstrating quick adaptation, while transdisciplinary collaboration among experts and residents could develop long-term water management strategies. Insights from these short-term actions would refine broader plans, illustrating how iterative, integrated practices can foster resilient, adaptive, and community-driven urban environments.

6. Conclusion

In the context of Türkiye, it is essential to draw on the insights gained from both tactical urbanism practices and inter/transdisciplinary approaches to counterbalance the impacts and limitations of top-down planning initiatives. Urban planners can play a transformative role in this process by raising awareness among local authorities and citizens, thereby shaping the trajectory and outcomes of urban interventions. Building urban resilience requires diverse, multifaceted pathways that embrace innovation and collaboration. Tactical urbanism represents a flexible, grassroots-driven strategy that facilitates rapid and localised responses to urban challenges, while transdisciplinary approaches provide a more systematic, long-term framework for addressing the complex and interrelated problems cities face. By recognising the respective strengths and constraints of these two approaches, cities can integrate them to cultivate urban environments that are both resilient to

present challenges and adaptable to future uncertainties.

Democratic participation extends beyond the simple involvement of citizens or local authorities; it requires the establishment of an integrated and coherent system capable of realizing a city's collective aspirations. The "right to the city" is grounded in egalitarian principles, rejecting hierarchical structures that privilege certain groups over others. Instead, it evolves through a dynamic redistribution of power and shared responsibility. Crucially, both transdisciplinary approaches and tactical urbanism must orient themselves toward the creation of regenerative cities—urban systems that merge long-term ecological renewal with short-term resilience. Such cities cultivate ecosystems that sustain themselves, foster circularity, and support the well-being of all forms of life, not only humans. Achieving this vision requires equitable and inclusive planning and design processes grounded in community-centered prosperity. However, a critical debate arises regarding the extent to which tactical urbanism and transdisciplinary approaches can effectively operate in tandem. In some contexts, these strategies may be appropriated by local governments as symbolic gestures that only partially fulfil the "right to the city." In this regard, the transdisciplinary approach may hold deeper transformative potential—emerging as an inherently grounded and long-term pathway toward realizing a genuine and enduring "right to the city."

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