



# An Overview of Transdisciplinary and Bottom-up Approach for Urban Resilience: The Case of Turkey

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## Abstract

While top-down strategies have traditionally dominated urban planning in Turkey, recent shifts towards participatory practices and project-based policies have aimed to involve citizens in decision-making processes. Nevertheless, in the case of Turkey, these participatory models are inadequate for effectively addressing resilience. This article therefore discusses the role of participatory processes in creating resilient cities, as well as how to strengthen transdisciplinary (TR) and bottom-up approaches to urban participation in Turkish urban contexts. The article presents a theoretical framework that connects TR and bottom-up approaches based on existing literature, practices, and planning policy examples. It argues that TR approaches complement bottom-up approaches to urban governance by enhancing urban and social resilience, strengthening local communities, and reducing urban inequalities. Urban planning efforts that promote collaboration, incorporate multiple perspectives, and involve local communities in decision-making processes can address complex urban issues while also fostering long-term sustainability and resilience. This approach not only instills a sense of ownership and empowerment among urban residents but also leverages knowledge and skills to generate more effective and sustainable solutions. By creating a framework that promotes long-term education and citizenship awareness, urban governance can sustain urban resilience in a more viable manner over the long term in Turkey.

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## Keywords

*Urban Planning; Urban and Social Resilience; Bottom-up Approaches; Transdisciplinary Approaches*

## 1. Introduction

Today, urban centers are disproportionately affected by financial crises over other regions due to the increased concentration of capital and financial institutions (Amin, 2014). They are also extremely vulnerable to a range of disruptions. The need for urban and social resilience is increasing due to the privatization and commercialization of public spaces. Research by Vale & Campanella (2005) and Coaffee et. al. (2016) suggest that “resilience is in the very DNA of the urban” (Brantz & Sharma, 2020, p. 12). Resilience has been primarily utilized in climate change adaptation, sustainability science, disaster risk reduction, poverty reduction, and increasingly in economics and planning studies (Alexander, 2013; Meerow, Newell & Stults, 2016; Figueiredo et al., 2018). The three main approaches to resilience are the socio-ecological, sustainable livelihoods, and disaster risk reduction (DRR) approaches (Schipper & Langston, 2015) (see Figueiredo et al., 2018). Context-specific urban resilience plans,

integrated policies, and risk management must be implemented to link sectors such as transport, infrastructure, land-use planning, education, and employment to clear and strategic long-term planning. Policy indicators can be used to assess resilience levels and track the effectiveness of resilience policies. Some of the indicators used to measure urban resilience from four perspectives are: social (spatial segregation due to social inequality and homelessness), economic (education levels and a wider range and quality of livelihood opportunities), nature and built environment (housing deprivation, housing quality, and accessibility), and institutional aspects (land-use plans, risk-based, inclusive, and participatory urban planning are central to an effective approach) (Figueiredo et al., 2018).

To adequately address the various forms of resilience that are nevertheless interconnected, it is essential to consider the contributions of prominent theorists such as Jane Jacobs, Henri Lefebvre, and David Harvey. These theorists put forth the proposition that urban residents are active and conscious participants in the shaping of their environment. This process is considered to be fundamental to the realization of urban justice and rights. Jacobs advanced the concept of “organic, spontaneous, and untidy” cities, which exemplifies a bottom-up philosophy of urbanism. This approach emphasizes the pivotal role of citizens in influencing the development of their urban environment (Jacobs, 1961). Similarly, Lefebvre posited that urban space should be shaped and governed by its inhabitants rather than by market forces such as commercialization and capitalism (Lefebvre, 1996). This perspective has been embraced by a variety of social movements and urban activists across the globe, resulting in calls for greater social justice and democracy. The Right to the City has emerged as a vision for urban democracy, encompassing a range of demands aimed at addressing spatial inequalities in urban areas. These include government-supported housing, access to public space, participation in urban governance, and legislation that prohibits displacement and gentrification. Similarly, Harvey supported this approach, stating that it is a collective rather than individual right. He argued that the ability to shape our cities and ourselves is a fundamental yet often overlooked human right (Harvey, 2004; Harvey, 2008).

In numerous urban contexts across the globe, top-down policies continue to represent the dominant paradigm in urban planning. However, these policies cannot provide a comprehensive framework for urban planning and design and therefore fail to meet the diverse and changing needs of urban residents, resulting in discontent. Top-down strategies entail decision-making by representatives or authorities in positions of power. In contrast, bottom-up approaches prioritize active citizens’ participation in the urban development process, as exemplified by community-oriented approaches. These methods establish a structure that effectively fulfills societal requirements while promoting greater social involvement and inclusivity. Bottom-up approaches have been explored from various perspectives (Mitchell & Tang, 2017). Firstly, bottom-up approaches are rooted in tactical urbanism. Coined by Mike Lydon and Anthony Garcia (2011, p. 2), tactical urbanism is defined as “an approach to neighborhood building and activation using short-term, low-cost, and scalable interventions and policies.” Various stakeholders utilize this approach to test ideas or implement changes quickly, including government bodies, citizen groups, businesses, non-profit organizations, individuals, municipal units, government, developers, and non-profit organizations. This approach tackles urban development and planning through its open, iterative, rapid, and creative development, efficient use of resources, creative problem-solving, and social interaction (Lydon & Garcia, 2011) (Figure 1).



Figure 1: A process of relationality in tactical urbanism from The Street Plans Collaborative (Lydon & Garcia, 2011)

Secondly, tactical urbanism refers to a “decentralized, bottom-up, extraordinarily agile, networked, low-cost, and low-tech” strategy (İkiz, 2023). It is “a city, organizational, and/or citizen-led approach to neighborhood building using short-term, low-cost, and scalable interventions intended to catalyze long-term change” (İkiz, 2023). It encourages communities to take an active role in managing their habitats and places, enabling them to take ownership of urban areas and spaces and contribute to positive transformation (İkiz, 2023). Like tactical urbanism, bottom-up strategies are crucial in increasing urban and social resilience and sustainability. Urban development strategies aim to empower local communities and incorporate their needs and insights, thereby fulfilling citizens’ aspirations.

In Turkey, there has been a discernible surge in the focus of urban governance bodies on bottom-up techniques and tactical urbanism. However, there are notable deficiencies in the manner in which these approaches have been addressed in Turkey. The transdisciplinary approach (TR) can be evaluated as a potential means of enhancing the efficacy of these approaches. Transdisciplinary (TR) approaches are characterized by their emphasis on real-world problems, integration of diverse disciplines and perspectives, and engagement with stakeholders beyond academia (Klein et al. 2001). By bringing together various actors, experts, and knowledge systems, these approaches can drive innovative solutions to complex urban challenges. These approaches are well-suited to addressing the complex societal problems that require a fundamental rethinking of the relationship between science and society (Jahn et al. 2012).

These approaches initially emerged in the social sciences and were first employed to address social-ecological issues in the 1950s. They were subsequently articulated at a conference in the 1970s and subsequently spread to the physical sciences, including mathematics and quantum physics, where they were regarded as a new mode of knowledge production (Mode II) (Jahn et al., 2012; Gibbons et al., 1994). Mode II knowledge production entails the dissemination of socially distributed knowledge among individuals and groups across society. This process-oriented framework facilitates communication beyond institutional boundaries, thereby establishing a global network of nodes (Gibbons et al., 1994). TR methodologies are distinguished by their capacity to integrate diverse perspectives and expertise, thereby facilitating the generation of innovative solutions. This collaborative approach can contribute to the establishment of trust between residents and local governments, which may in turn lead to the creation of more resilient and sustainable urban environments (Pamukcu-Albers et al., 2021). This approach is commonly used in the social sciences, education, environmental management, and urban planning. Transdisciplinary research (TDR) as a part of this process is a practical way to address contested, “high-stakes societal problems where knowledge is uncertain, the specific nature of the problem may be disputed and the potential impacts on stakeholders are significant” (OECD 2020, p. 8) (Figure 2).

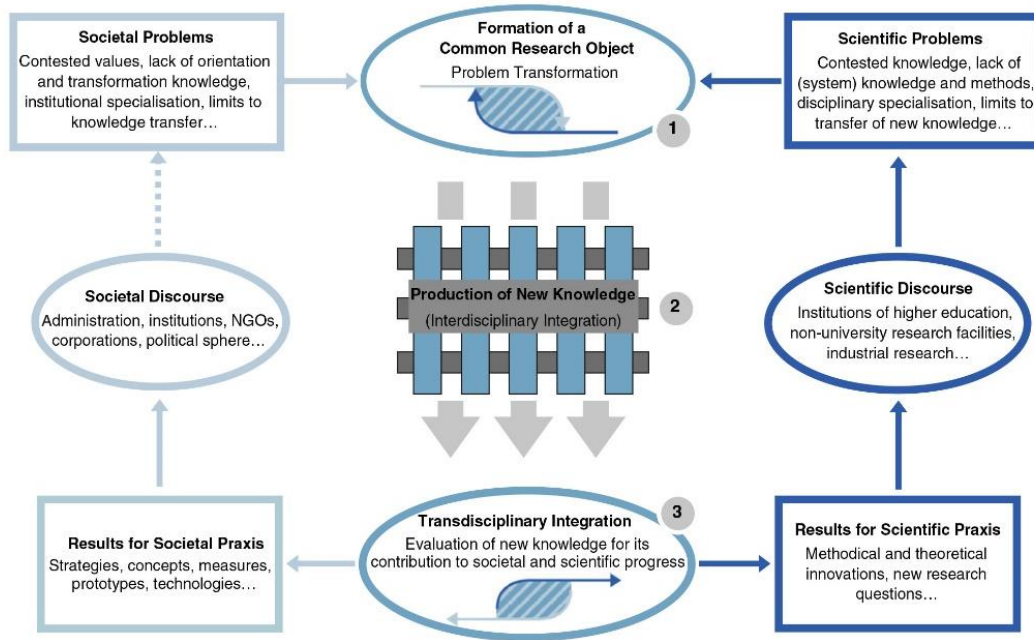


Figure 2: A conceptual model of transdisciplinarity (Jahn et al., 2012, p. 5)

In Figure 2, three stages of an ideal TDR process are distinguished. The initial stage entails the framing of the problem. The subsequent stage comprises the generation of new knowledge, which is achieved through the analysis of the problem. The final stage involves the integration and application of this newly acquired knowledge, enabling an investigation into its potential impact (Jahn et al., 2012; Brandt et al., 2013). TDR is key to sustainable development. It integrates diverse societal actors and their different skills, knowledge, and expertise (Pohl et al., 2021, p. 18).

Approaches based on TR can be employed as effective instruments for the reimagining and development of bottom-up strategies to enhance urban resilience and sustainability. Furthermore, they can facilitate the amalgamation of diverse multi-stakeholder engagements in urban design, transformation, and implementation. Therefore, this article examines the potential for these approaches to enhance the effectiveness and applicability of a range of resilience strategies at a common intersection in Turkey. This study considers the potential for diverse actors to collaborate effectively in addressing concerns about rent-driven urban transformation projects through transdisciplinary (TR) approaches. It further argues that this connection can assist urban governance in addressing the observed changes in urban life by reframing how communities are connected. A TR approach may be defined as a communication strategy that is developed through a combination of top-down and bottom-up processes.

## 2. Methodology

The article presents a theoretical framework that examines the potential for integrating tactical urbanism and bottom-up approaches with TR in urban design. The article employs a critical lens and draws on existing literature, practices, and examples of planning policies in Turkey to explore the potential for integrating tactical urbanism and bottom-up approaches with TR approaches in urban design. First, it presents a literature study on the aforementioned method, contextualizes urban governance in Turkey, and identifies the adverse effects of top-down planning. Subsequently, it puts forth the proposition of the efficacious implementation of TR approaches. However, TR approaches are susceptible to uncertainty, ambiguity, and the emergence of new circumstances during the process. The most significant challenges associated with this approach are analogous to those encountered in TDR approaches. These include 1) the “lack of coherent framing,” which can impede effective communication and collaboration between diverse communities due to the use of different terminology and concepts (OECD, 2020), and 2) the “integration of methods,” given the absence of clear relations between the theoretical concepts (phases and types of knowledge). Furthermore, the methods themselves present a challenge (Brandt et al., 2013), 3) the “engagement of practitioners,” who may lack familiarity with this concept (Lange et al., 2012), and 4) “generating and measuring impact,” which requires the reproducibility of methods to track societal impacts (Lange et al., 2012). As a consequence of the

research, certain difficulties were encountered, which are addressed in the article. Furthermore, recommendations are proposed for addressing these issues.

TR methodologies encourage collaboration across disciplinary boundaries to address complex problems. To be effectively weighed in Turkey in the TR approach, it is essential to consider how the top-down and bottom-up approaches are integrated. In many projects, a linear approach is employed whereby first the policymakers and public authorities make decisions or draw the lines, the conditions for active participation are determined, and then participation is included in the next stage. While this gradual approach may gain importance in land planning and selection and land protection, it is necessary to discuss the lack of a sufficiently interactive framework. Given the divergence between urban governance practices in Turkey and those observed in Europe and numerous other countries, it is imperative to cultivate a more methodological and systematic environment conducive to contemplating diverse perspectives, fostering collective thinking, and devising innovative urban solutions.

### 3. Bottom-Up Urban Planning Practices

Research on bottom-up approaches includes the recognition and acceptance of the expected impacts of bottom-up efforts. This research includes studies on support for collaborative processes and enhanced public debate (Mens et al., 2023), the role of bottom-up urban initiatives in the city (Papachristou & Rosas-Casals, 2015; Rabbiosi, 2016; Pradel-Miquel, 2021; von Schönfeld & Tan, 2021), an in-depth study on the merits of bottom-up initiatives in urban development, and a comprehensive, global literature review examining the potential outcomes of the broader phenomenon of citizen initiatives (Igalla et al., 2019; Mens et al., 2023). Some of the outcomes of bottom-up urban planning include fostering a strong sense of ownership and identity within neighborhoods, enabling citizens to take charge of their environmental conditions, responding to urban inequalities, and perpetuating models that lead to fairer cities. Furthermore, some research translates decarbonization into an equitable process of urban transformation (as mentioned by the IPCC), accelerates decision-making, and identifies relevant solutions to people's needs (Campos & Adame, 2023). Bottom-up urban resilience projects, such as community-led environmental initiatives, urban labs, and sustainable solutions, foster resilience through multi-stakeholder collaboration between government, civil society, academia, and the private sector. Bottom-up strategies work best when combined with top-down planning to create flexible urban frameworks tailored to local contexts. For example, New York City's Plaza Program partners the government with community groups to reclaim streets for public use (Gattupalli, 2023; Campos & Adame, 2023). Urban labs are an increasingly popular bottom-up approach, providing experimental spaces for multi-stakeholder collaboration to co-create solutions to specific urban challenges (Campos & Adame, 2023). Decision-scaling is another method that uses a bottom-up adaptation approach to analyze which options are resilient to a range of socioeconomic and climate futures (Ilunga, 2021). Therefore, bottom-up approaches are crucial for enhancing urban resilience, as they ensure that development is equitable, climate-friendly, and responsive to local needs. Combining these grassroots efforts with top-down support allows cities to tackle complex challenges through a synergetic approach (Faster Capital, 2024; Gattupalli, 2023; Campos & Adame, 2023; Ilunga, 2021).

One illustrative example of a study that employs a combination of bottom-up and top-down approaches within the TR framework is the project conducted by the Municipality of Lecce in Italy in 2018 to address social issues and promote sustainable development. The project aimed to utilize the urban space within the Urban University Center, which was 12,000 square meters, to meet the diverse needs of various stakeholders. The top-down planning process involved stakeholders, university designers, and supervisory authority members, considering diverse roles in socio-ecological system transformation. The bottom-up approach involved citizens expressing their perspectives on decision-makers' views, aiming to address diverse social issues and promote sustainable development. The project involved a five-stage process to design a building for educational activities, a park area, and a recreational green area. The stages comprised formulating a method to gather insights on citizens' perceptions regarding social issues associated with urban space (Stage 1); collecting data and analyzing the findings (Stages 2 and 3); deliberating on the outcomes of citizen participation (Stage 4); and reviewing the questionnaire results with decision-makers (Stage 5) (Semeraro et al. 2020).

Some other notable projects currently employ a TR approach, integrating top-down and bottom-up methodologies within a unified framework. These initiatives seek to address complex societal issues by combining diverse

knowledge frameworks and engaging multiple stakeholders. The combination of top-down frameworks, which are characterized by institutional or governmental direction, with bottom-up initiatives, which are propelled by community involvement, exemplifies a transdisciplinary methodology for problem-solving. This approach has been demonstrated to be effective in addressing complex societal issues. The table below enumerates projects and initiatives that integrate these approaches. These initiatives concentrate on lifelong learning methodologies, both within the domain of higher education and among the general public and experts, to integrate TR science and society by focusing on information, cooperation, and transformation (Table 1).

Table 1: The implementation of transdisciplinary (TR) approaches, which integrate top-down and bottom-up strategies, is a core component of several ongoing projects and initiatives

<b>Projects and Initiatives Implementing Transdisciplinary (TR) Approaches Integrating Top-down and Bottom-up Approaches</b>			
<b>Project</b>	<b>Enhance, Transdisciplinary Project Catalyst, EU, 2023</b>	<b>Participatory City, UK, 2018-2023</b>	<b>EUTOPIA 2050, Global Connections Project, 2022-2026</b>
<b>Initiative</b>	Enhance, a European Universities of Technology Alliance was established in 2019 as part of the Erasmus+ funding program for European universities. The initiative’s objective is to foster the formation of knowledge-creating teams comprising academics, students, and societal stakeholders in the domain of sustainable TR research and education. This encompasses a range of interdisciplinary areas, including digitalization and AI, smart and sustainable cities and communities, and climate action. To this end, the initiative organizes a series of public workshops, training sessions, Massive Open Online Courses (MOOCs), and joint public policy reports on TR science.	The Participatory City Foundation, founded in the 2010s, seeks to establish a citizen-led participation ecosystem in Barking and Dagenham, London. The foundation employs a research-based approach and the Every One Every Day initiative to integrate insights from multiple disciplines, thereby fostering collaboration among citizens, researchers, and local authorities. Between 2018 and 2022, 42 programs were conducted, and the foundation published reports on city leadership, urban policy, community development, skills and employment, and the built environment.	EUTOPIA is an alliance of networks that is student-centered and inclusive. It offers a range of activities that address global issues such as migration and environmental challenges through a transdisciplinary lens. Students from a variety of academic institutions work together in cross-disciplinary teams to develop innovative solutions, integrating their disciplinary expertise with personal experiences (Eutopia (a) (n.d)).
<b>Content</b>	The project promotes community innovation through peer exchange and aims to enhance student involvement in TR research while addressing Sustainable Development Goals (SDGs) 11 and 13. Activities include joint workshops that integrate regional transdisciplinary projects into educational programs, fostering collaboration between students and researchers (Transdisciplinary Project Catalyst (n.d.)).	The Participatory City project has the objective of establishing collective projects at both the top-down and bottom-up levels in Barking and Dagenham, East London. The project places an emphasis on initiatives that engage citizens in the development of new systems for practical participation and societal co-production. It develops a large-scale initiative through the Every One Everyday program, which will engage over 400 residents over five years. The report describes the design, implementation, and evaluation of these models (Participatory City (n.d.)).	EUTOPIA 2050 is a project within the European Universities Initiative that has been designed to advance digital functionality within universities, address the issue of climate change, and foster a spirit of solidarity. It is aligned with new policy initiatives for higher education, research, and innovation that have been spearheaded by the European Union and the European Commission. The project’s objective is to facilitate connections across campuses, disciplines, and borders, emphasizing the significance of a bottom-up approach and leveraging the distributed expertise of various communities (Eutopia (b) (n.d.)).

### 3.1. Bottom-up Approaches: Fostering Urban Resilience and Sustainability in Turkey

While certain professionals, such as architects, planners, and economists, can serve as technical or organizational actors in flexible and complex forms of governance, non-professional sectors, and less powerful social groups are largely excluded from decision-making. According to Swyngedouw et al. (2002), this exclusion has turned many cities into elite playing fields with significant democratic deficits. In the case of Turkey, numerous challenges in population growth as well as sustainability in urban planning and design are some of the issues affecting urban policies. Urban areas in Turkey are particularly vulnerable to environmental problems due to increased building density, climate change, and environmental deterioration (Özdemir, 2019). Since the 2000s, urban land has become

highly commoditized, making it increasingly important for governments to regulate the land market and create a legal basis for new investments (Yılmaz Bakır, 2020). Urban planning is generally determined by top-level policies, with decisions made by authorities and planners, often with little participation from local communities. Top-down strategies in urban planning are typically driven by government policies, regulations, master plans, zoning laws, and relevant rules that guide urban development (Rabe et al., 2023; Yılmaz Bakır et al., 2018). As stated by Yaman Galantini (2020), integrating urban resilience planning into the existing planning hierarchy will help move towards dynamic processes and will increase resiliency in cities from a local to a national scale. However, frequent plan amendments and revisions to address economic and political pressures can undermine the continuity and integrity of long-term planning approaches (Yılmaz Bakır et al., 2018) (Figures 3 & 4).



Figure 3: Rapid and uncontrolled urban growth in Istanbul: Urban housing (Özdamar, 2009)



Figure 4: Dense urban environment (Özdamar, 2009)

Some of the negative urban transformations and social reactions emerge as the phenomenon of gentrification in historical areas (Behar and Islam, 2006), as well as grassroots mobilizations in Başbüyük and Tarla başı neighborhoods (Kuyucu and Ünsal, 2010), the displacement of the urban poor by state-led urban renewal projects, and the prevalence of political sentiments against authority and capitalism in city centers (Kahraman, 2014). Such top-down urban interventions, which serve to undermine inclusiveness, are particularly evident in Istanbul. The solidarity demonstrated by urban dwellers over the past 15 years in support of the right to the city illustrates the relational nature of the durability of socio-ecological and sustainable living conditions. The Sulukule Platform (SP) represents a significant case study in this regard, exemplifying the resistance to state-led urban renewal projects that have resulted in the gentrification of the Roma community and the transformation of land disputes into urban resistance (Uysal, 2012). Another example is the Gezi Occupation Movement (2013), which was a revolt against the perpetual authority of the state in shaping the public sphere. The movement aimed to create new political structures and communication methods in response to discrimination. It sought to establish a future with real democracy and active citizenship through participatory structures and open communication channels (Kaya, 2017).

Although it is developing slowly, in the context of Turkish urban governance, there is an increasing emphasis on participatory practices that address how to compete on a global scale. Enhancing public participation practices is emphasized as critical to improving Turkish cities' global and urban competitiveness to effectively address the challenges of new urban policies and to strengthen people-centered policies and regulations to support the Right to the City. According to Ahsan (2022), some of the practices that have enabled Turkish cities to increase their global competitiveness while effectively protecting the Right to the City include implementing rehabilitation, human-centered policies and regulations, and promoting participatory practices. Bottom-up strategies prioritize community involvement and grassroots participation in urban regeneration projects (Rabe et al., 2023; Yılmaz Bakır, 2020). The participatory approach facilitates the dissemination of information and the formation of consensus regarding the identification of local needs, thus contributing to the process of raising awareness with regard to sustainability (Özdemir, 2019). These approaches contribute to urban renewal by considering residents' needs and perspectives. For example, the "Urban Renewal Project" in Turkey is one of the urban renewal and transformation projects that combine bottom-up urban strategies with participatory methods. While it has become a victim of rent in terms of meeting the real needs of users, it should be discussed in terms of some points. In this project, bottom-up approaches supported urban transformation efforts such as urban rehabilitation and redevelopment against illegal construction, disaster risk, and uncontrolled urban expansion (Yılmaz Bakır, 2020).

Regional development policy has evolved in recent years, leading to a new approach to regional planning that incorporates all stakeholders and encompasses all regions. This new approach, known as new regional planning, is a social, collaborative, strategic, and innovative process that combines top-down and bottom-up planning techniques. Current regional plans are implemented with flexibility and a long-term, strategic vision (Özdemir, 2019). Since the 2010s, there has been a shift in political discourse among policymakers and practitioners towards involving local people in the development of area-based regeneration initiatives (Yılmaz Bakır, 2020). This shift has been particularly evident in project-based urban policies and urban regeneration projects in cities like Istanbul and Izmir. These projects aim to tackle issues such as illegal housing, disaster risk, and uncontrolled urban sprawl. The focus on urban transformation projects has been significant, with specific emphasis on spatial restructuring processes and addressing major urban problems. Urban planning strategies in Turkey also blend top-down and bottom-up approaches to tackle various urban development challenges (Çelik, 2011). While the bottom-up and community-centered approach is generally favored in urban regeneration efforts, certain factors can hinder these processes, such as constraints in the time and resources for local governments and partners when involving the local community. In area-based policies, a common approach is a mix of different top-down interventions (physical, economic, and social). Another approach that has gained traction since the 2000s is to increase the role of residents in the planning process (Yılmaz Bakır, 2020).

According to the *Local Agenda 21* action program (Yerel Gündem 21 (YG-21), *Local Agenda 21 in Turkey: Moving from local to national reports* (2001), and the recent *Climate Change Mitigation Strategy and Action Plan 2024-2030* (İklim Değişikliği Azaltım Stratejisi ve Eylem Planı 2024-2030) prepared by The Ministry of Environment, Urbanization, and Climate Change (by The Directorate of Climate Change), there is a great emphasis on public participation (UNDP, 2001; Climate Change Mitigation Strategy and Action Plan 2024-2030).

*The Climate Change Mitigation Strategy and Action Plan* (İDASEP) was developed by the Turkish government during the inaugural meeting of the Climate Council, resulting in 217 recommendations aimed at achieving the net zero target by 2053. Of these, 76 were identified as priorities and subsequently disseminated to the public. The plan, which was in effect from November 2022 to December 2024, is structured around seven principal reduction sectors and two horizontally cutting theme areas. The final two areas of focus were Just Transition and Carbon Pricing Mechanisms. The preparation of the action plan was conducted in conjunction with the National Development Goals (NDC) to ensure consistency between the NDC and the action plans covering the period up to 2030. The needs analysis and policy mapping study involved the participation of over 2,000 individuals from 175 institutions and organizations. The Climate Change Mitigation Strategy and Action Plan 2024-2030 was submitted to the Climate Change and Adaptation Coordination Board for approval. In addition to the input provided by stakeholders during bilateral meetings and via email, the views expressed in two official letters were also taken into consideration and reflected in the action plan. Subsequently, the Climate Change Mitigation Strategy and Action Plan 2024-2030 was

submitted to the Climate Change and Adaptation Coordination Board for approval, following the completion of the aforementioned studies. A multitude of institutions were involved in this process, including the Ministry of Environment, Urbanization and Climate Change, the Presidency of Strategy and Budget, the Ministry of Energy and Natural Resources, the Ministry of Foreign Affairs, the Ministry of Industry and Technology, the Ministry of Agriculture and Forestry, and the Ministry of National Education (Climate Change Mitigation Strategy and Action Plan 2024-2030).

However, involving city councils in line with the *Agenda 21 Document* (which defines the rights and responsibilities of urban residents and local administrators to ensure public participation in urban decisions), the implementation and monitoring actions from a local perspective must be sustained in the long term (Tuğaç, 2022). In a regional context, for example, the *2014-2023 Istanbul Regional Plan* (2014-2023 İstanbul Bölge Planı), developed by the Ministry of Development, signifies a shift towards a more inclusive, bottom-up, tailor-made regional development approach, focusing upon endogenous assets and the local knowledge of regions. The plan was implemented in collaboration with local municipalities, NGOs, and academic institutions. It aimed to develop a comprehensive strategy for promoting urban resilience and sustainability in the city. The project took an interdisciplinary approach, involving extensive stakeholder engagement, integrating multiple disciplinary perspectives, and co-creating knowledge and solutions. The resulting strategy included several interventions to increase the resilience and sustainability of urban systems in Istanbul, such as improved public transportation, reducing waste and water consumption, and promoting green infrastructure (2014-2023 Istanbul Regional Plan, 2016).

*The 2014-2023 Istanbul Development Plan* was designed to ensure local ownership, sustainability, and effectiveness. To this end, it sought to involve citizens, public institutions, civil society organizations, and the private sector in decision-making processes. The plan commenced with a situation analysis and a participatory process, designated as *#istanbulbenim (my istanbul)*, which was conducted via a social media campaign. On 29 April 2013, the My Istanbul Vision Meeting was held, during which the vision scenarios were discussed with local stakeholders. In May 2013, 12 thematic workshops and two roundtable meetings were conducted to determine the strategic goals and objectives necessary to achieve the vision outlined in the regional plan. The finalized plan, which was compiled, evaluated, and harmonized by ISTKA, aims to create a Unique Istanbul: a City of Innovation and Culture with Creative and Free Citizens with 23 priorities and 57 strategies. The plan addresses several socio-economic issues, including poverty, unemployment, regional imbalances, and income inequality. The city of Istanbul is confronted with significant challenges as a result of intense migration and urbanization. However, it aspires to establish a peaceful, prosperous, fair, and inclusive society by the year 2023. The plan identifies seven priority areas and 17 strategies to mitigate potential risks and ensure the establishment of a peaceful, prosperous, fair, and inclusive society. Priority areas include the utilization of demographic opportunities, the strengthening of institutional capacity, and the adoption of effective governance. By 2023, Istanbul aims to become an inclusive society with equal opportunities, peace, confidence, and harmonious economic and social development (2014-2023 Istanbul Regional Plan, 2016).

The Istanbul Regional Plan delineates three developmental axes for Istanbul's economic, social, and spatial development. The primary objective of the first axis is to establish a globally competitive, high-value-added, innovative, and creative economy by 2023. This will be achieved by focusing on the training and attraction of creative personnel, the promotion of research and development, and the management of the city's image. The second axis is concerned with the establishment of a fair, inclusive, and learning society to enhance Istanbul's social structure and accelerate human development. The priorities encompass the preservation of Istanbul's vibrant demographic composition, the facilitation of resident engagement in economic, political, social, and cultural spheres, the provision of essential services such as education, healthcare, and security, and the improvement of service quality. The third axis is concerned with the creation of urban spaces that are joyful, authentic, and sustainable, with the promotion of inclusivity, the preservation of historic and cultural heritage, the fair allocation of urban function areas, and the promotion of authenticity, diversity, and high-quality design. The key themes are human capital, quality of life, sustainability, cooperation, coordination, institutional capacity, and creativity and innovation (2014-2023 Istanbul Regional Plan, 2016).

Notably, the TR approach is not addressed in these projects. In Turkey, multidisciplinary or interdisciplinary frameworks are typically employed. Additionally, bottom-up approaches or tactical urbanism emerge in response to public demands. Bottom-up strategies that bring communities and stakeholders together are essential in promoting sustainability. These strategies consider the social, economic, and environmental aspects of urban development simultaneously to address the complex and interconnected problems that cities face. This approach is of particular importance in Turkey, where rapid urbanization and population growth have resulted in significant challenges in the areas of infrastructure, housing, transportation, and environmental quality. To effectively tackle these issues and promote sustainability and resilience in both urban and rural areas, a stronger framework and tactic—such as transdisciplinarity—are necessary. In the Turkish urban context, TR approaches play a pivotal role in fostering democratic participation by facilitating interactions between diverse stakeholders, enabling them to gain insight into each other's perspectives, needs, and potential support. This approach can be viewed as a crucial step in raising awareness about the significance of active participation.

### **3.2. Integrating Transdisciplinary Approaches in Urban Planning for Enhanced Resilience**

TR projects aimed at developing new sustainability pathways for cities showcase the importance of collaboration in achieving urban resilience and sustainability. These processes can bring together expertise from different sectors to tackle complex urban challenges, promote knowledge sharing, and foster a culture of collaboration, leading to more resilient and sustainable communities. Adopting a TR approach results in a redistribution of architectural autonomy, transferring authority from the architect or designer to other stakeholders. This increased visibility allows for the inclusion of the user-subject and other experts in the design process. Through open and engaging dialogues, all parties involved gain a deeper understanding and appreciation for the participatory aspects of the TR approach and its crucial role in architectural and planning practice. Furthermore, this interactive process helps to promote design democracy (Özdamar, 2024).

To gain a more profound understanding of participants' needs and priorities in the context of urban resilience and sustainability, decision-making processes must involve collaboration with stakeholders and local communities. Such processes include participatory planning, community-based monitoring and evaluation, and the co-creation of knowledge and solutions. Another key element of TR methodologies is the integration of different disciplinary perspectives. These experts can gain a better understanding of complex urban systems and develop innovative approaches that take into account social, economic, and environmental factors. TR requires active and seamless collaboration among local governments, NGOs, experts, and stakeholders to establish common goals and methods for urban resilience and sustainability. However, when used as a tool to facilitate representative engagement among stakeholders, there is a significant risk of planning an environment that is merely symbolic. To counter these symbolic approaches, it is necessary to adopt approaches that recognize active, participatory, tactical urbanism, and community-based approaches as three crucial elements of urban governance. This approach allows for a real integration of different stakeholders, including experts, citizens, initiatives, and the academic community in TR approaches (Figure 5).

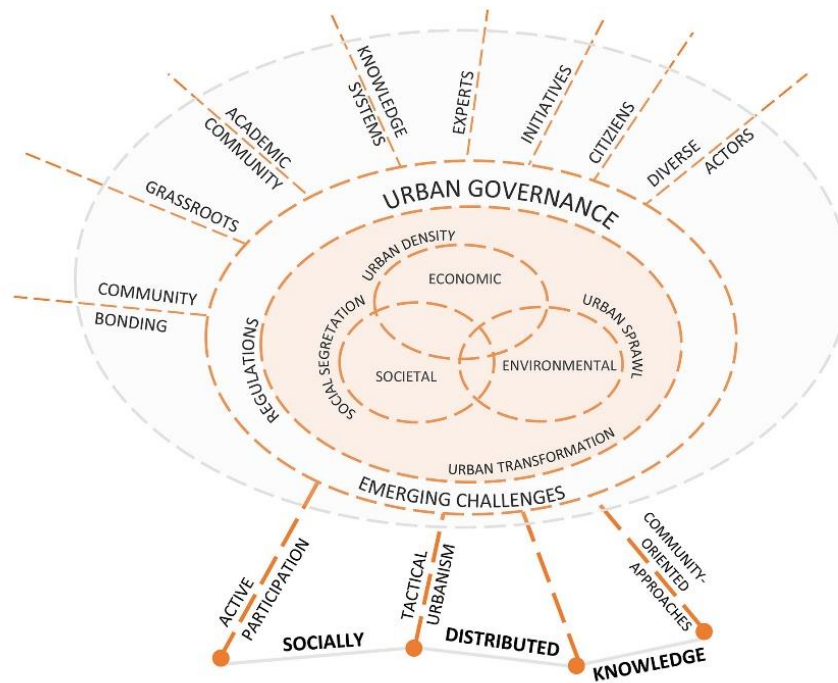


Figure 5: A conceptual model for implementing the TR approach for urban resilience in Turkey

While bottom-up approaches and TR approaches are each uniquely useful, they can conflict when applied simultaneously in urban development. This may result in bottom-up strategies that ignore problems (such as environmental and economic sustainability) that could negatively affect other stakeholders. For example, residents may request to assume responsibility for issues of economic and environmental sustainability that align with their interests and generate profit, but these actions could have adverse long-term effects on the environment. This may also be attributed to the emergence of reactionary movements, which are driven by a lack of confidence in the efficacy of local governments. When disparate groups have conflicting priorities and interests, for example, bottom-up approaches and transdisciplinary methodologies can become contentious. For example, a community may advocate for the creation of a new park in its neighborhood, while a developer may propose a park for different uses due to competing interests, such as a new commercial development or investment scheme in the same location.

#### 4. Discussion

The difficulties that have arisen in the Turkish case regarding TR, bottom-up, and participatory approaches are primarily due to a lack of awareness and experience with participatory processes. According to OECD resilience reports mentioned in previous sections, this can be developed primarily through education and transformed into active grassroots movements. Achieving this in primary, secondary, and high school education in Turkey is a long-term issue, as the education system exhibits inadequacy in terms of demonstrating the importance of the interactive framework between the individual and the community practically due to its oppressive and broadly centralized, top-down nature. On the other hand, as Arslan and Kaya Erol (2023) state, the absence of a legal participation framework in the Turkish planning system stems from the fact that to establish a knowledge and experience base for participatory-oriented design, legal and flexible frameworks must be established to include participation arrangements in planning and design.

By disseminating information about sustainable lifestyles, community education programs significantly contribute to the development of a grassroots culture of sustainability and resilience in society (Olazabal, 2012). People can make better decisions that benefit the environment and themselves by implementing community education programs to raise awareness of environmental issues and resource conservation. These programs may include multifaceted and varied activities such as workshops, training sessions, awareness campaigns, and educational initiatives in different schools and community centers. The benefits of promoting sustainable lifestyles through community education programs include reduced resource consumption and waste generation; increased community resilience to environmental challenges; and enhanced well-being and quality of life for residents. Developing comprehensive

strategies for addressing complex urban challenges requires a TR approach that goes beyond traditional knowledge silos. By considering the interconnectedness of social, economic, environmental, and spatial dimensions of urban systems, planners can create integrated solutions that promote resilience and sustainability across multiple fronts (Zeng et al., 2022). Another aspect of participation is the emergence of technological advancements such as ICT-enabled participatory design, which allows stakeholders to engage through web-based platforms and various mobile applications. These options are increasingly popular in urban transformation and can also be effective in bringing urban communities in Turkey together (Gün et al., 2021). Local governments should play an active role in establishing planning instruments that will provide urban spaces with character and establish the conditions necessary for participation in these processes (Yılmaz Bakır et al., 2018). By actively involving residents, planners can access valuable information to co-create solutions that are contextually appropriate and culturally sensitive. This participatory approach is essential for ensuring that urban planning initiatives align with the community, fostering a sense of ownership and commitment to the resilience-building process (Pamukcu-Albers, et al., 2021).

The utilization of TR approaches and TDR has the potential to facilitate a more collaborative approach to decision-making by bringing together a diverse range of stakeholder groups. Involving experts from diverse fields such as economics, sociology, architecture, urban planning, and environmental science, can facilitate the creation of a comprehensive framework for addressing complex urban issues. Another effective strategy is to promote bottom-up processes that involve community members in urban development while considering larger concerns like economic and environmental sustainability. Urban planning that integrates TR methods can encourage cooperation and foster collaboration among different disciplines, thereby contributing to the creation of more resilient and sustainable cities. This collaborative effort allows for a thorough examination of multiple perspectives and the generation of creative solutions to tackle the intricate challenges faced by urban areas (Maiello et al., 2011). By leveraging the synergy of various disciplines, urban planners can develop and devise strategies that not only enhance urban resilience but also promote long-term sustainability (Zeng et al., 2022). The incorporation of local knowledge and expertise is a critical component of building urban resilience and sustainability through TR approaches (Sant, 2022).

Engaging local communities in decision-making processes is a crucial bottom-up approach to enhancing urban resilience and sustainability (Zeng et al., 2022). Key benefits of engaging local communities in decision-making processes include increased social cohesion and community bonding, greater transparency and accountability in governance, and enhanced responsiveness to local challenges and opportunities. By incorporating the input of residents at the planning and decision-making stages of urban development projects, cities can ensure that initiatives are aligned with the specific needs and priorities of the community and integrate them into long-term planning strategies. This approach not only fosters a sense of ownership and empowerment among residents but also leverages local knowledge and expertise to create more effective and sustainable solutions.

In this context, workshops and charrettes can be held to raise awareness of TR approaches among local governments and the public, as well as to enhance the experience of their implementation. These activities can be instrumental in conveying the notion that TR approaches operate within a distinct framework than that of top-down, mechanical, linear, inorganic, and centralized systems (Özdamar, 2024). It is crucial to prioritize the development of internal models over the exclusive reliance on democratic participation forms that are constrained to local governments, educational institutions, institutes, and civil society organizations (NGOs). The internal urban struggle may facilitate the formation of new perspectives, which could be addressed by gradually integrating large mass movements into the city. This would be a preferable approach to explosive movements against capitalist developments driven by rent and governments. The right to the city is a crucial element of social resilience, community consciousness, and the existence of urban residents. These transformations, which are particularly evident in Turkey, move in the opposite direction and can lead to more stable long-term transformation tactics, resulting in rhizomatic, organic, self-determining, imageless, and immanent transformations (Özdamar, 2022).

## 5. Conclusion

The article highlights how bottom-up strategies integrate community involvement and grassroots participation in urban regeneration, promoting urban resilience and sustainability. The evolving interplay between top-down and bottom-up approaches, TR methodologies, and participatory practices in the urban planning landscape in Turkey has

been thoroughly examined. Concepts such as resilience, sustainability, and participatory decision-making have been contextualized within several urban challenges, including the commodification of urban land, rapid urbanization, sustainability, and environmental degradation. However, the discussion also identifies potential conflicts that may emerge from the concurrent implementation of bottom-up strategies and TR methodologies in urban development. Moreover, the importance of community-based solutions, the involvement of a diverse range of stakeholders, and the necessity for comprehensive urban planning strategies are crucial insights that must be considered. The value of collaboration, community education programs, and ICT-enabled participatory design must be intertwined to achieve urban resilience and sustainability.

The multi-faceted discussions on the transformation of participatory processes and the critical importance of sustained awareness and experience in participatory initiatives have established a foundation for future developments in urban planning and design practices. In conclusion, this research serves to advocate for the continued advancement and implementation of inclusive and sustainable urban planning practices, underscoring the significance of community participation and collaboration. It is emphasized that a combination of bottom-up strategies, TR methodologies, and participatory approaches is fundamental to the creation of resilient and sustainable urban environments, thus facilitating the development of a more equitable and vibrant urban future. Consequently, it is necessary to re-examine Alexander's (2013) concept of resilience, moving beyond a purely ecological perspective to encompass socio-ecology and human (cultural) ecology. This expanded ecological framework can be effectively addressed in the present era through TR approaches.

Local governments, public authorities, and policymakers must acknowledge and advocate for transdisciplinary research (TR) as an essential complement to conventional research methodologies in addressing intricate societal challenges (OECD, 2020). The United Nations Sustainable Development Goals (SDGs) (2015) have progressively emphasized the necessity for comprehensive, integrated strategies and inclusive involvement to address interrelated developmental challenges (United Nations Sustainable Development Goals, 2015).

Therefore, TR collaboration and TDR can facilitate the management of uncertainties, the adjustment to diverse resilience forms, and the thriving amidst emerging challenges, thereby augmenting urban resilience. To address the emerging issues of urban sustainability and resilience, it is essential that architects, planners, and researchers receive training in knowledge transfer and that design research is recognized as a legitimate method of generating knowledge (Després et al., 2011). In Turkey, it is essential to utilize the insights derived from this knowledge base to reduce the impact and extent of top-down planning initiatives executed by local government. Instead, there is a need to transform these activities into a dynamic and participatory process. Planners can play a pivotal role in this transformation by raising awareness among local authorities and citizens, thereby influencing the outcome of these activities. In a politically charged country like Turkey, individuals and governments aware of this reality can work strategically to dismantle and eradicate this centralization over time. It is of the utmost importance to strike a balance between competing priorities and interests among stakeholders when implementing both bottom-up and TR approaches concurrently. The empowerment of local communities, the encouragement of collaboration, and the engagement of diverse perspectives can address complex problems and foster more inclusive and effective solutions. This is accomplished by cultivating stakeholder collaboration, incorporating local knowledge and expertise, and advocating for sustainable lifestyles through community education initiatives. This perspective enables the development of comprehensive strategies that address complex urban challenges and promote long-term urban resilience and sustainability.

The most significant challenge to active participation in Turkey is the centralized administrative structure, which necessitates the development of diverse models to ensure seamless collaboration (İzci & Geylani, 2021). The participatory democracy model posits the existence of active citizens (Tekeli, 2012). The implementation of numerous reforms has resulted in the establishment of a multitude of novel mechanisms in comparison to those that existed previously. These mechanisms are designed to ensure the principles of openness, transparency, citizen participation, and decentralization in governance. In this context, one of the initial steps for policymakers and public authorities should be to establish platforms for implementing an interactive participatory environment through the implementation of regulations containing policy proposals or strategies. However, given the lack of success of this

planning, it is crucial to emphasize the importance of citizens' participation in parliamentary committees and their roles in voluntary work and cooperation with city councils and civil society organizations. This approach will ensure the formation of sustainable and resilient communities, cities, and open systems.

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