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Published

2020

Book Title

The Routledge Handbook of Planning Megacities in the Global South

Version

Submitted Manuscript (SM)

DOI

[10.4324/9781003038160-16](https://doi.org/10.4324/9781003038160-16)

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Two decades of planning for earthquake resilience in Istanbul

Ayşın Dedekorkut-Howes, Deniz Ay, Başak Demireş-Özkul

Introduction

As global systems are exposed to more and faster changes and disruptions the concept of resilience is increasingly being applied in various contexts including disaster risk reduction (Davidson et al. 2006; Torabi et al. 2018). With majority of the world's population now living in urban areas and future growth also predicted to take place in cities building the resilience of urban systems is becoming even more critical (Resilience Alliance 2007). However, defining and operationalizing urban resilience is no simple feat. Based on an analysis of previous definitions Meerow et al. (2016, 39) propose: "Urban resilience refers to the ability of an urban system – and all its constituent socio-ecological and socio-technical networks across temporal and spatial scales – to maintain or rapidly return to desired functions in the face of a disturbance, to adapt to change, and to quickly transform systems that limit current or future adaptive capacity."

Viewing cities as complex adaptive systems Resilience Alliance (2007, 10) identifies four interconnected themes that are important for the resilience of an urban system as a whole (see Figure 22.1). These themes include:

- metabolic flows in sustaining urban functions, human well-being, and quality of life including production, supply, and consumption chains;
- governance networks including institutional structures and organizations and the ability of society to learn, adapt, and reorganise to meet urban challenges;
- social dynamics of people as citizens, members of communities, users of services, consumers of products, etc. including demographics, human capital, and equity; and
- their relationship with the built environment which defines the physical patterns of urban form and their spatial relations and interconnections with ecosystem services.

This chapter overviews and evaluates resilience planning to earthquakes in Istanbul including the drivers of action/change, the role of national and international institutions, and the planning process using the themes of urban resilience as a framework. It chronicles the transformation of the reactive recovery efforts into proactive planning and tracks the shift from World Bank's Marmara Earthquake Emergency Reconstruction Project (MEER) to comprehensive 'Istanbul Model' risk management system, Earthquake Master Plan for Istanbul (EMPI), to the internationally financed mega public infrastructure project, Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP), examining the consequences of this shift.

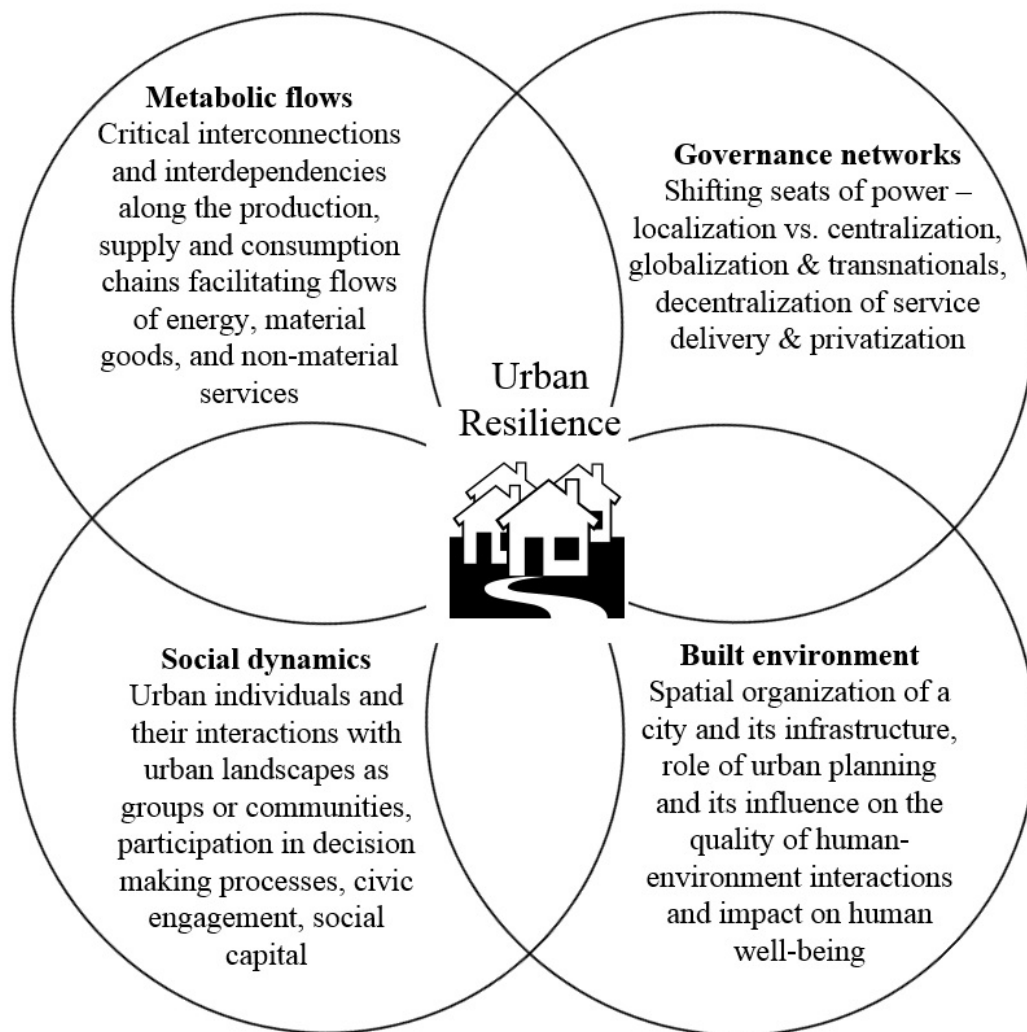


Figure 22.1 Urban Resilience Themes (based on Resilience Alliance 2007)

The next section of the chapter introduces the case study of Istanbul. The third section sketches the contours of risk mitigation planning in Istanbul in the last two decades since the Marmara Earthquakes of 1999 to identify the key developments in earthquake risk mitigation planning followed by a review of relevant national legislative reforms. The following two sections evaluate the earthquake risk mitigation efforts in Istanbul at the opportune time of the 20-year anniversary of the Marmara Earthquakes based on urban resilience themes. Concluding section provides a critical evaluation of the risks and vulnerabilities discourse and its transformative power on urban planning.

Risk and vulnerability in Istanbul

Istanbul is a megacity that grew from 800,000 residents in 1930 to ten million by the turn of the millennium, passing the 15 million mark in 2017¹ (TUIK 2019). It is “not only the financial, cultural and industrial center of the country, but is also a nexus of inter-continental importance” (World Bank 2005, 17) stemming from the city’s ongoing transformation from a

regional economic center into a business platform for transnational capital flows. However, it is facing various planning challenges arising from this rapid pace of growth coupled with its unique geography, geology, and historical development patterns.

The Marmara Earthquakes that hit the region including Istanbul in 1999 marked a turning point for significant changes in institutional arrangements in Turkey, but the pressing need for mitigation efforts in Istanbul have received particular attention in the aftermath of this catastrophic experience due to:

1. Level of earthquake risk and its implications on the nation,
2. Increased interest of the central government in Istanbul after the ascent of its mayor to first prime minister, then president of Turkey,
3. National and municipal governments' aspirations to increase Istanbul's competitiveness in the global city rankings, and
4. Increasing foreign investment, development, and opportunities for profit.

The fast pace of growth of Istanbul has been accompanied by unplanned development at times on vulnerable land particularly since the 1960s. Istanbul has a remarkably high environmental risk profile mainly due to its proximity to the most active strike-slip fault in Europe and Asia Minor, the North Anatolian Fault Zone, which runs 20 km south of Istanbul threatening this mega city with a major disaster (Figure 22.2). However, seismic hazard risk associated with the metropolitan region of Istanbul is not often addressed in economic feasibility analyses favoring Istanbul as an attractive location for investment. A potential earthquake in the region represents severe socioeconomic losses and consequences. Expert assessments predict the probability of a major earthquake affecting Istanbul in the next 30 years is 62% +/- 12%, while the likelihood of such a major event occurring is 32% +/- 12% in the next decade with great potential for death, injury, damage, and economic disruption (World Bank 2005).

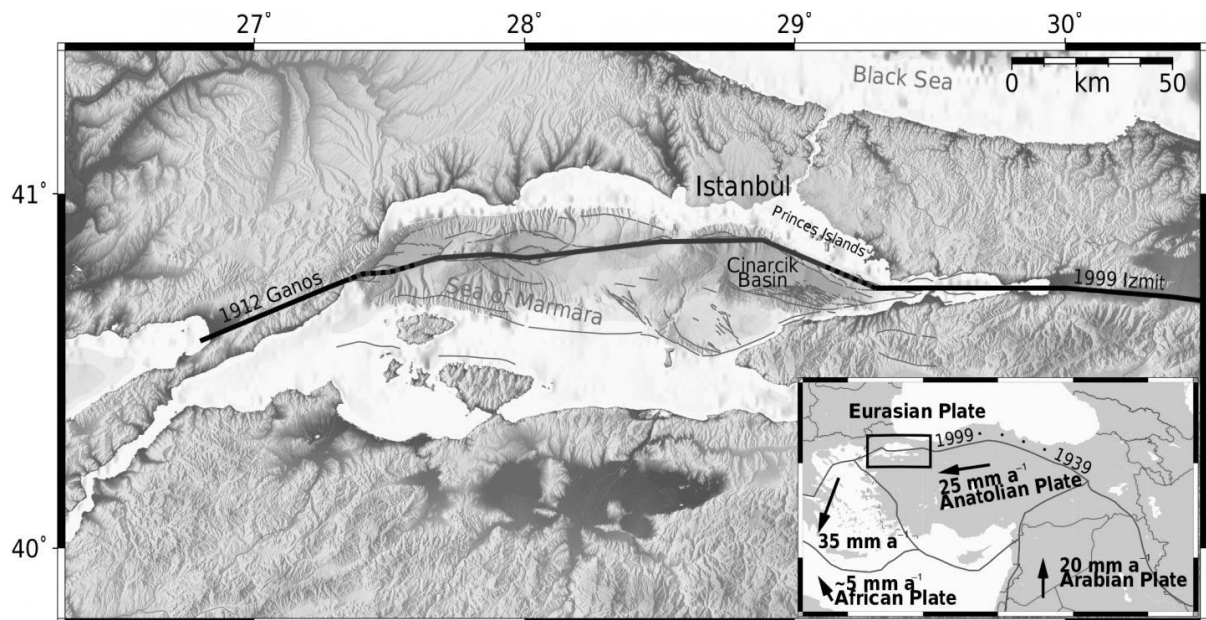


Figure 22.2 North Anatolian Fault Zone

The Marmara Earthquakes partially confirmed these scientific predictions. The death toll reached over 17,000 people and approximately 200,000 people were left homeless. The region affected by the earthquakes was home to 23% of the country's population and

accounted for 34.7% of the GNP (Pelling et al. 2002). The State Planning Organization estimated, Turkey's direct economic losses to be between \$9 to \$13 billion in total, including losses in industrial facilities, buildings, and infrastructure. This figure excludes the indirect losses generated through reduction in production, which took months to recover back to their pre-disaster levels (Pelling et al. 2002; Özerdem and Barakat 2000). Although the epicenter of these major earthquakes was about 60 km away from Istanbul, they exemplified the scale of the potential devastation for Istanbul if the 'big earthquake' predicted by the models hits the city. The unprecedented social and economic destruction of the Marmara Earthquakes became a defining moment for risk mitigation planning in Turkey, and particularly in Istanbul.

Istanbul's devastating experience with the Marmara Earthquakes is followed by comprehensive policy efforts to market Istanbul as a 'global city', which drastically accelerated when the currently ruling Justice and Development Party (AKP) led by a former mayor of Istanbul took over the central government for the first time in 2002 (Aksoy 2012). The national and municipal governments' congruent economic and development agendas to position Istanbul on the global stage have not slowed down since. Political and geographical factors positioned Istanbul to become an attractive location for regional headquarters of globally operating businesses. Consolidated global economic interests behind Istanbul's transformation into a global city also triggered the development of numerous megaprojects that take years to develop and implement with the involvement of multiple public, private, and multinational stakeholders (Flyvbjerg 2014). These multibillion dollar worth of infrastructure investments – particularly in urban renewal, luxury real estate development, and transportation in the case of Istanbul – are developed, delivered, and funded transnationally (see Flyvbjerg 2005). These megaprojects drastically changed not only the urban landscape, economic models used for urban development, and city planning tradition in Istanbul but also its positioning as an emerging global city (see Turkish Association of Architects in Private Practice 2015 for information on megaprojects in Istanbul).

Istanbul's ambition to position itself as a global city combined with its high-risk profile provides an informative case to study the planning implications of the interplay between high disaster risk and unplanned growth. This chapter sheds light on the transformative role of the risk discourse in rearranging the local governance structure and decision-making processes by focusing on the last two decades of resilience planning in the megacity of Istanbul.

Planning for risk mitigation in Istanbul

Planning efforts for mitigating the earthquake risk in Istanbul predate the devastating Marmara Earthquakes of 1999. Kandilli Observatory and Earthquake Research Institute of Bogaziçi University in Istanbul were commissioned with the first earthquake master plan attempt for Istanbul in the early 1990s together with relevant government, academic and private partners. The scope of this earliest earthquake study included assessment of the hazard and vulnerability, disaster scenarios, and mitigation measures (Erdik 1994). However, the outcome of this planning process is undocumented. Thus, when the Marmara Earthquakes hit the megacity, Istanbul still did not have an integrated seismic disaster prevention or mitigation plan (Pektaş 2004).

The devastation caused by the Marmara Earthquakes triggered a paradigm shift for disaster risk response and planning in Turkey (Ganapati 2008). The national economy was already going through an economic downturn before the earthquake with slower growth due to the

combined effects of the international economic crisis and Turkish economy's structural weaknesses. In the aftermath of these major earthquakes, international development finance was an unavoidable option for the national government to induce an immediate recovery from the catastrophe. World Bank's MEER project was developed in this context (see Table 1). It was initiated in November, only a few months after the first earthquake and its main objectives included helping to "restore living conditions in the earthquake-hit region, support economic recovery and growth, and develop an institutional framework for disaster risk mitigation" (World Bank 2007, iii). MEER was also co-financed by the European Investment Bank in construction of permanent housing, business rehabilitation and rebuilding and repair of the infrastructure.

What set MEER apart from earlier similar projects was its embodiment of a major policy shift from 'reactive planning' to 'proactive planning' as a response to natural hazards and disasters. In addition to its emergency recovery component, the MEER project aimed at assisting the Turkish government by strengthening the central level emergency response functions and instituting a national disaster insurance scheme as a risk transfer mechanism (World Bank 2003a). Hence, it consisted of both emergency preparedness and risk mitigation efforts, which was a novel approach in Turkey's disaster response measures. MEER project was not designed as an end in itself but also as a means towards reforming Turkey's planning approach to disasters. World Bank (2007, 12) defined the MEER project as "merely a start which provides the foundation for improved ex-ante disaster risk reduction". Accordingly, the project's final evaluation report identified the enforcement of building codes and land use plans as the core of the disaster vulnerability in Turkey that constitutes a "deeply rooted problem which cannot be resolved only through the new technical standards and regulation" (World Bank 2007, 12).

World Bank involvement in assisting the Government of Turkey in disaster risk mitigation continued after MEER. Based on the MEER experience, the World Bank developed ISMEP even before the closing date of the MEER project. ISMEP fundamentally differed from the MEER project in terms of its scale and focus. While MEER aimed at reforming the risk management scheme at the national level, ISMEP's aim was to reform risk mitigation particularly in Istanbul at the municipal level. In fact, ISMEP is viewed as "an Istanbul-specific extension" of the MEER project (Kocabaş 2005, 39).

While the World Bank's ISMEP was still at concept stage, the Government of Turkey commissioned a key study from the Japanese Government to enhance knowledge on the city's disaster risk profile. In response, the Japan International Cooperation Agency (JICA) conducted a comprehensive study to assess disaster vulnerability in Istanbul in 2002. The study compiled the seismic microzonation maps and supported these technical analyses by recommendations for earthquake-resistant urban development (JICA & IMM 2002). The recommendation to prepare a master plan for earthquake disaster prevention prompted EMPI (Pektaş 2004).

EMPI is the first official master plan developed for earthquake risk mitigation in Turkey. The plan development team consisted of academics from four major national universities (MMI 2003). EMPI was prepared in eight months and submitted by the end of July 2003 (Balamir 2004a) and contains a detailed account of topics ranging from comparison of the JICA study's microzonation findings with national studies to detailed evaluation of the existing administrative, legal, and planning structures. It also includes a strategic plan titled the *Earthquake Mitigation Plan for Istanbul*. This strategic plan identifies thirteen risk sectors for

the whole city and aims to bring public administration, business, industry, nongovernment organizations, and local community together in order to mitigate and manage the urban risks (Balamir 2004b). EMPI provides both a strategic and comprehensive plan to improve Istanbul's resilience physically, socially, and institutionally in case of an earthquake and considers the city and its urban environment comprehensively with life-lines, land use and emergency facilities. The plan also identified national and international financial resources necessary for all pre- and post-earthquake mitigation and risk management work as well as a financial model for a properly coordinated allocation of resources (Pektaş 2004).

Although JICA's study and EMPI demonstrate the solid and comprehensive steps taken by the Istanbul Metropolitan Municipality to adapt proactive measures to disaster risk planning in Istanbul in the post-1999 period, neither of their recommendations were pursued in practice. ISMEP that was started parallel to JICA's study and EMPI incorporated main elements of both and constitutes the core of Istanbul's risk mitigation measures since it was initiated in May 2005. ISMEP's overall objective is to assist the central government in mitigating seismic risk in Istanbul. Although ISMEP started as a World Bank project in partnership with the national government, it induced change in Istanbul's local governance structure and eventually integrated with the local government offices. In order to oversee the project, Istanbul Project Coordination Unit (IPCU) was established under the Governorship of Istanbul². The basic components of ISMEP include strengthening institutional and technical capacity for emergency response, retrofitting critical public facilities (schools, hospitals, and administrative buildings), and improving building codes and enforcement of land use plans in Istanbul (World Bank 2005).

ISMEP's progression illustrates an interesting development in the scale and the scope of Istanbul's risk mitigation. ISMEP started as a medium-size project with a US\$ 400 million budget and was financed through a loan agreement between the World Bank and the Government of Turkey. The initial project closing date of 2010 was extended three times, with a total extension of five years. The extensions in the project timeline were accompanied by the expansion of the project budget which reached four-times its initial amount (US\$1.6 billion) by World Bank's closing date in 2005. This remarkable increase was made possible as ISMEP leveraged additional financing from other international development organizations. ISMEP's financiers now include the European Investment Bank, Council of Europe Development Bank, Islamic Development Bank, and Germany's state-owned development bank KfW (Credit Institute for Reconstruction). Despite the departure of the World Bank as the initial project developer, ISMEP continues under the Governorship of Istanbul's IPCU whose initial closing date of December 2019 has been pushed to 2021. With the addition of new financiers, ISMEP's current budget has reached €2 billion (IPCU 2016, 2) and the project is institutionalized under the Governorship of Istanbul as a central government operation in Istanbul.

Beyond the project timeline and budget, ISMEP has undergone significant changes in its stated objectives and scope. First, the project's initial goal was to reform the disaster risk planning in Istanbul. This ambitious target corresponded to transforming the institutional and structural weaknesses in governance that were identified as the underlying cause of the physical and social vulnerability in the city (World Bank 2011, 2). However, the project's goals gradually narrowed down in scope despite the expansion in its scale as reflected in its fourfold increase in budget. This significant expansion in the project's scale is justified by the increase in the number of public buildings to be retrofitted and/or rebuild based on the risk assessments. Although strengthening the public buildings is a crucial step in risk mitigation,

it hardly represents a structural change in addressing the institutional causes of Istanbul's disaster risk vulnerability. Second major change in ISMEP's scope is based on its administrative structure. IPCU is a new unit specifically created to deliver and coordinate ISMEP and it eventually became the administrative unit in charge of delivering risk mitigation in Istanbul. IPCU is accountable to the Governorship of Istanbul, which is appointed by and officially accountable to the central government.

Table 22.1 Comparison of Earthquake Resilience Projects

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	Marmara Earthquake Emergency Reconstruction Project (MEER) ^a	Earthquake Master Plan for Istanbul (EMPI) ^b	Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP) ^c
Objectives	<ul style="list-style-type: none"> ▪ help restore the living conditions in the region of Turkey that was affected by the August 17, 1999 Marmara earthquake ▪ support economic recovery and resumption of growth ▪ develop an institutional framework for disaster risk management and mitigation 	<ul style="list-style-type: none"> ▪ risk management, earthquake disaster mitigation 	<ul style="list-style-type: none"> ▪ enhance the effectiveness and capacity of the provincial and municipal public safety organizations in Istanbul to prepare for, respond to and recover from significant emergencies, especially those arising from earthquakes ▪ reduce the risk of future earthquake damage to critical facilities and lifelines in order to save lives and ensure their continued functioning in the event of an earthquake ▪ support innovative approaches to better enforcement of building codes and compliance with land use plans ▪ support the Istanbul Special Provincial Administration to implement the project in efficient and transparent manner, and build the institutional capacity to sustain the implementation of Seismic Risk Mitigation and Preparedness program beyond the life of the project

	Marmara Earthquake Emergency Reconstruction Project (MEER) ^a	Earthquake Master Plan for Istanbul (EMPI) ^b	Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP) ^c
Scope	<ul style="list-style-type: none"> ▪ upgrade the disaster response systems ▪ rehabilitate the damaged business sector and reduce the social effects of the earthquake ▪ reconstruct and repair affected housing and municipal infrastructure 	<ul style="list-style-type: none"> ▪ the assessment of existing building stock, infrastructure, urban and public facilities in the light of available geological and geotechnical data ▪ the determination of short, medium and long term measures and strategies for earthquake preparedness of Istanbul ▪ the identification of legal, technical, financial and social responsibilities, including implementation plans at selected pilot project areas 	<ul style="list-style-type: none"> ▪ Component A: Enhancing Emergency Preparedness <ul style="list-style-type: none"> – Improvement of emergency communications systems – Establishment of an emergency management information system – Strengthening of institutional capacity of AYM – Istanbul Governorship Disaster Management Center – Upgrading of emergency response capacity in Istanbul – Public awareness and training ▪ Component B: Seismic Risk Mitigation for Priority Public Buildings <ul style="list-style-type: none"> – Retrofitting/reconstruction of priority public facilities such as hospitals, clinics, schools, administrative buildings and infrastructure, etc. – Risk assessment of lifelines and vital infrastructure – Risk assessment of cultural heritage buildings ▪ Component C: Building Code Enforcement <ul style="list-style-type: none"> – Public awareness campaigns – Further development of regulatory framework for enforcement of building codes enforcement land use plans – Volunteer accreditation/ training of engineers – Streamlining of building permits issuance procedures and promoting transparency and accountability in selected district municipalities ▪ Component D: Project Management <ul style="list-style-type: none"> – Project management support, including support to monitoring and evaluation <p>Narrowed down to reconstruction and strengthening of important public buildings such as the schools and hospitals</p>
Scale	<ul style="list-style-type: none"> ▪ Regional (earthquake affected regions) 	<ul style="list-style-type: none"> ▪ Local (Istanbul Metropolitan Municipality Area) 	<ul style="list-style-type: none"> ▪ Local (Istanbul Metropolitan Municipality Area)
Timeframe	November 1999-December 2006	November 2002-July 2003	May 2005-2010, extended to 2011, 2014 and finally 2015 by World Bank and closed in December, continued under IPCU until December 2019, extended to 2021
Budget	\$505 million committed, \$294 million disbursed	N/A	World Bank period: US\$ 400 million expanded to US\$1.6 billion IPCU period: €2.028 billion

	Marmara Earthquake Emergency Reconstruction Project (MEER) ^a	Earthquake Master Plan for Istanbul (EMPI) ^b	Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP) ^c
Stakeholders/Funders	<ul style="list-style-type: none"> ▪ Government of Turkey ▪ World Bank ▪ European Investment Bank 	<ul style="list-style-type: none"> ▪ Istanbul Metropolitan Municipality ▪ Boğaziçi University ▪ Istanbul Technical University ▪ Middle East Technical University ▪ Yıldız Technical University 	<ul style="list-style-type: none"> ▪ Istanbul Project Coordination Unit (IPCU) of the Governorship of Istanbul ▪ World Bank ▪ European Investment Bank ▪ Council of Europe Development Bank ▪ Islamic Development Bank ▪ KfW Development Bank

^a World Bank 1999 ^b MMI 2003 ^c World Bank 2003b; 2005

National legislative reforms

Concurrent to the plans and projects in Istanbul the national government was working on changes to various institutional frameworks in response to the earthquakes for strengthening building codes and enabling the development of master plans to redevelop risky areas. The key instruments of these actions were *Metropolitan Municipality Law No. 5216* (2004) and Article 73 of *Municipal Law No. 5393* (2005). The former extended the boundaries of the Istanbul Metropolitan Municipality and authorized it to develop master plans and strategic plans concerning disasters (Erdik and Durukal 2008) whereas the latter gave municipalities powers to take measures against earthquake risk along with designation and implementation of urban transformation projects (Gökşin et al. 2016). A more controversial and comprehensive urban transformation law that was also debated at this time was substantially narrowed down into the *Law No. 5366 on Conservation by Renewal and Utilization by Revitalization of Deteriorating Historic and Cultural Immovable Assets* in July 2005 (Türkün 2011) and covered only designated conservation areas. The controversial and long debated *Law No. 6306 on the Transformation of Areas under Disaster Risk* (commonly referred to as the Disaster Law or Urban Transformation Law) passed only in 2012 and gave the Ministry of Environment and Urbanization the authority to designate urban transformation and relocation areas centralizing planning authority (Gibson and Gökşin 2016; Özkan Eren and Özçevik 2015). While on the one hand all these legislations are justified on the basis of disaster risk reduction a more recent legislation, *Law No. 7143* of 2018, commonly referred to as the ‘Zoning Peace Law’, is undermining all these efforts by providing amnesty to squatter housing.

Resilience in the built and natural environment

The urban resilience theme of metabolic flows is wholly ignored in the risk mitigation efforts at both national and local levels in Turkey. The emphasis of the various initiatives is on the resilience of the physical infrastructure but these are also insufficient and not particularly effective. Despite the fact that the main cause of human casualties is the existing building stock, none of the risk mitigation projects focus on retrofitting these (Erdik and Durukal 2008). MEER project focused on post-disaster recovery, thus its scope was limited to new buildings. Its only contribution to resilience is through building quality and lower density housing stock. ISMEP focuses on rehabilitation of public buildings. Resilience of the existing housing stock is thus left to the various national laws governing urban transformation.

Urban transformation has been extremely contested and controversial in Turkey for various reasons including lack of public participation, exclusion of local governments from decision-making and most importantly due to issues of distributive justice. The projects cause displacement and gentrification, at the same time making substantial profits for investors and developers. Added to all these problems is the debate over whether they increase the resilience of the city at all.

The earlier laws (2004-5) that shape the first phase of urban transformation efforts in Turkey are criticized for using earthquake risk to legitimize profitable development projects. Yalçın (2012 translated by Adanalı 2013) suggests that urban transformation projects are “geared towards rent-seeking and real estate confiscation, indifferent to disaster prevention bar on paper, and negligent of poverty, and social and economic relations”. Similarly, Türkün (2011, 66–70) claims that most of the designated areas are
either historic areas where construction has been restricted, or squatter housing districts that occupy highly valuable urban land ... The legal changes have in effect eliminated former obstacles to big urban projects, which can be developed more easily as they need pay little attention to their integration into wider development plans ... neo-liberal urban policy in Istanbul has aimed to transform areas with high rent³ potential by evicting the inhabitants.

It is unavoidable then, for this kind of thinking not to shape the subsequent Urban Transformation Law, which the development industry unabashedly views as an investment opportunity (Adanalı 2013). The law is heavily criticized by academics, professional organizations, and activist and community groups for being an ‘excuse’ to legitimize and speed up urban transformation projects which cause forced evacuations, gentrification, and violation of property rights (Adanalı 2013) while failing to minimize disaster risk (Gibson and Gökşin 2016; Gökşin et al. 2016).

The official aim of the law is to improve, clear and transform areas and buildings vulnerable to disasters (mainly earthquakes); however, very few of the designated areas in Istanbul are in the high earthquake risk areas identified by the JICA study. Critics interpret this as government creating opportunities for profitable housing development for the construction sector in poor neighbourhoods where the rates of return are the highest. Özkan Eren and Özçevik (2015, 228) maintain that “Law No: 6306 potentially creates a great arena for real estate sector, by speeding up the legal and bureaucratic procedures, bypassing democratic planning processes, resolving ownership and planning problems and increasing development rights.” Yapıcı (2019, 67) argues that earthquake risk was used to legitimize the implementation of megaprojects for the sake of solving the national deficit, highlighting the importance of the construction sector in the national economy: “Today, 80% of the economy rests on the construction industry; the finance sector is completely dependent on it”

The ambiguity of important concepts such as ‘risky areas’, ‘risky buildings’ and ‘reserve areas’ in the law “gives considerable power to central government to make redevelopment plans and to open new development areas in every possible land without any significant restriction” (Özkan Eren and Özçevik 2015, 229), resulting in designated ‘risky areas’ which have no direct relationship with the earthquake risky districts identified in EMPI. Ünsal (2015, 1305-6) claims that the central government used the Marmara earthquakes as an opportunity to reformulate the institutional and legal system and expand market relations and tackle local opposition. ... the new Law 6306 ... has

strengthened the power of the state even more by terminating all existing planning laws, such as the natural or historical preservation codes; restricting the rights of citizens and civil organisations to oppose plans, such as terminating the courts' authority to stop natural disaster area projects; forcing people to demolish their houses within a certain legally defined period, under the threat of cutting off basic services, such as electricity and gas, and expanding the expropriation rights of the state in those areas.

Özkan Eren and Özçevik (2015, 236) argue that rather than avoiding earthquake risk the new law “reproduces a new geography of environmental and social risks ... [it] is a flexible tool for the state to control redevelopment business by enabling selective implementation of deregulation in return for monetary, ideological and political interests.” Furthermore, the displacement of the original residents of the transformation areas in effect reduce their social resilience.

Disengaging the public and other stakeholders from risk mitigation planning

It has long been acknowledged that a successful hazard mitigation planning process that creates resilient cities and communities should ensure genuine involvement of all affected stakeholders (Burby et al. 2000). Petak (2002) argues earthquake resilience efforts should develop collaborative mechanisms to engage stakeholder participation in the policy adoption and implementation process. In their research on climate disasters Aldunce et al. (2016) specifically identify local government and community participation as critical for building resilience. The literature points to the importance of local knowledge that will be brought to the process through participation of local actors in the process (Prashar et al. 2013). Despite the clear significance of social dynamics and governance networks for resilience building (Resilience Alliance 2007) the common weaknesses of the national legislation and Istanbul-specific projects center on the exclusion of key stakeholder groups from the decision-making processes and centralization of decision-making authority.

Most of the urban transformation projects completely excluded residents living in the designated areas from the process (Ünsal and Kuyucu 2010; Türkün 2011; Gibson and Gökşin 2016) as decisions were based on the top-down impositions of the national government's urban transformation agenda. Furthermore, Urban Transformation Law centralizes all authority over urban transformation areas in the hands of the Ministry of Environment and Urbanization excluding district and metropolitan municipalities from the process.

The efficacy of the plans and projects in mitigating Istanbul's earthquake risk is also questionable as they share similar shortcomings with the national legislation. The post-1999 earthquake housing reconstruction projects including MEER were similarly top-down with limited public participation (Ganapati 2016). World Bank's participation initiatives were conducted too late in the process and were limited to project beneficiaries. Most of the feedback was not incorporated into the plans of the new housing. Key stakeholders such as local governments and community-based organizations in affected provinces were completely excluded from the processes (Ganapati 2016). Within six days of the first Marmara earthquake the Ministry of Public Works and Settlement invoked Article 8 of the *Urban Development Law No. 3194* taking over the power of preparation and revision of local plans from local governments. This centralization of decision-making excluded local governments with the knowledge of the local context from the planning process (Ganapati and Ganapati 2009).

EMPI's implementation also substantially relied on top-down institutional arrangements despite its stressed recommendations on the involvement and participation of civil society (Erdik and Durukal 2008). The plan was criticized for prioritizing the areas of the city with greatest historical significance over the most economically or socially marginalized areas where the residents from lowest income groups tend to live in unpermitted buildings that cannot be earthquake proofed (Dias and Crawford 2013). Furthermore, during implementation the central and municipal governments focused on urban transformation projects without regard to upper scale plans and long-term development projects (Gencer 2013).

ISMEP started with an institutional focus with the stated objective of generating a decentralized approach to risk mitigation planning in Istanbul. However, the focus and goals of the project were narrowed down to reconstruction and strengthening of important public buildings such as schools and hospitals. All the additional loans specify reconstruction and retrofitting of public buildings as the purpose of lending. This change in ISMEP's scope and objectives basically transforms it into a megaproject that aims to upgrade the construction quality of the major public buildings. Although retrofitting and reconstruction is vital for reducing the casualties and physical damage of an earthquake, it is far from addressing the institutional and systemic causes underlying Istanbul's vulnerability vis-à-vis an imminent major earthquake.

In contrast to the stated objectives of 'decentralization' of earthquake response, the analysis of ISMEP's progression indicates a process of centralization in risk mitigation planning in Istanbul. Centralization of power and authority for risk mitigation planning has occurred in decision-making, administration and financial resources. International development organizations' loans to finance ISMEP have been issued to the central government. This is mainly due to local governments' lack of financial autonomy in Turkey. The central government is the only authority that can underwrite the public debt. Thus, the financial resources allocated for risk mitigation planning is controlled by the central government and the municipal government has no administrative or decision-making power over risk mitigation planning. The project is run by IPCU, which is accountable only to the Governorship of Istanbul. Governorship office consists of bureaucrats appointed by the central government and represents the national government within the provincial boundaries. This aspect of ISMEP significantly undermines the basic democratic values in planning. Istanbul residents' electoral choices are not represented in the risk mitigation planning due to the complete omission of the municipality in decision-making and administration of ISMEP. In other words, the project is missing even the most basic form of public participation in the planning process. IPCU's consolidated authority over risk mitigation planning in Istanbul epitomizes a broader trend of centralization of urban planning in Turkey (see Ay 2019).

Despite these shortcomings private consultants involved in the development of ISMEP are already presenting it as a 'best practice' (Ayhan et al. 2017; World Bank 2019). World Bank granted ISMEP the 'highly satisfactory' rating in its recent final project evaluation, making it its first project in Turkey receiving the perfect score (IPCU 2016). The World Bank presents the project as a new 'model' to be implemented elsewhere.

Conclusion

This chapter indicates that in the case of Istanbul and more generally Turkey, the very real risk of earthquakes have been used to centralize planning powers, bypass local and public opposition, and overall reduce obstacles to development in profitable areas. The earthquake risk mitigation projects developed in the aftermath of the Marmara Earthquakes in 1999 mostly focused on the built environment, while neglecting and even undermining the natural, social, and institutional systems. Regarding social dynamics and governance networks there are two interrelated findings: centralization of decision-making authority and subsequent exclusion of local government and the public from the planning processes.

Findings of this study raise new questions about the repercussions of globalization of risk mitigation planning for cities, particularly in terms of maintaining and advancing the basic democratic measures in planning including accountability and citizen participation. Use of megaprojects as a service delivery method for risk mitigation transforms the local and national institutions which have traditionally been responsible for risk management.

This transformation in risk mitigation planning has ramifications on the future of democratic planning. The increasing involvement of international actors in risk mitigation planning transforms the local government organization and its practices. As the risk mitigation efforts scale up to the transnational level, the practice of risk mitigation moves further away from those who will be immediately affected by the hazard when it happens. Non-transparent planning for risk mitigation also reduces the public's chances of keeping the officials and experts accountable. In the case of Istanbul, ISMEP is disengaging the public from decisions on earthquake risk mitigation. This chapter argues that this process generates new risks for the institutions and governance. The top-down character of physical risk mitigation efforts reduces the chances of progress in democratic planning culture. In a sense, the policy measures to put Istanbul higher in the global city rankings risks the local democracy. These new forms of risks stem from the minimized public engagement in the planning process for the most dramatic challenges the city and its residents face.

A 5.8 magnitude earthquake hit Istanbul on September 26, 2019 reminding everyone the city's vulnerability and brought new vigor to risk mitigation activity in the city. Current initiatives such as the Istanbul Urban Transformation Master Plan that seeks to be sensitive to disasters, holistic, inclusive, and taking into consideration social integration and aims to address the problems arising from the incremental urban transformation projects provide additional opportunities (İBB 2017). This is the time to learn from the mistakes of the past and make genuine efforts to address the very real risk this megacity is facing.

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¹ It is difficult to get accurate population statistics on Istanbul for several reasons. Due to the substantial informal sector and illegal settlements official statistics tend to underestimate the population. On the other hand, since the alignment of provincial and municipal boundaries in 2004, the reported population statistics for the municipality is the provincial population including the villages and towns in the nonurban parts of the province which tends to overestimate the population of the urbanized metropolitan area.

² Initially, IPCU was established under the Istanbul Special Provincial Administration (SPA), which was a part of the local government. SPAs had financial and decision-making autonomy within the provincial areas that are outside municipal administrative boundaries. SPA’s decision-making body consisted of elected officials. However, the administration was led by the Governor, who is an appointed representative of the central government at the provincial level. SPAs were abolished in 2014 and since then IPCU has been affiliated directly with the Governorship of Istanbul.

³ “In Turkish, the term ‘rant’, or rent, connotes unearned income – as in the economic concept of rent-seeking – rather than the leasing of property for hire.” (Angell 2014, 677).