Environmental Science and Policy 136 (2022) 476–485

Contents lists available at ScienceDirect

Environmental Science and Policy

journal homepage: www.elsevier.com/locate/envsci

A policy content analysis for evaluating urban adaptation justice in İstanbul

David Samuel Williams [a,*], Osman Balaban [b], Akgün Ilhan [c], Hande Paker [d], Ümit Şahin [a], Beyza Sarıkoç Yıldırım [e], Ethemcan Turhan [f], Baran Alp Uncu [g], Marta Olazabal [h]

[a] İstanbul Policy Center (IPC), Sabancı Üniversitesi, Bereketzade Mah., Bankalar Cd. No:2, 34421 Beyoğlu, İstanbul, Turkey
[b] Middle East Technical University (METU), Department of City and Regional Planning, Üniversiteler Mah., Dumlupınar Bulvarı No:1, 06800, Çankaya, Ankara, Turkey
[c] Boğaziçi Üniversitesi (BU), Department of Tourism Administration, Hisar Kampüs, Bebek, 34342 Beşiktaş, İstanbul, Turkey
[d] Bahçeşehir Üniversitesi (BAU), Department of Political Science & International Relations, Osmanpaşa Mektebi Çıkmazı Sokak No: 4 – 6, 34353 Beşiktaş, İstanbul, Turkey
[e] Marmara Üniversitesi (MU), Department of Local Governments, Anadoluhisarı Campus, 34820, Beykoz, İstanbul, Turkey
[f] University of Groningen (RUG), Department of Spatial Planning and Environment, Landleven 1, 9747 AD Groningen, the Netherlands
[g] Independent Researcher, İstanbul, Turkey
[h] Basque Centre for Climate Change (BC3), Scientific Campus of the University of the Basque Country, 48940 Leioa, Spain

ARTICLE INFO

Keywords:
Policy content analysis
Vulnerability
Urban climate justice
Adaptation
Urban inequality
İstanbul

ABSTRACT

Climate change is disproportionately affecting vulnerable communities, increasing existing risks and leading to further global inequalities. Drawing on the concept of urban adaptation justice, we evaluated the inclusion of vulnerable communities in the climate change adaptation planning process of İstanbul, a European coastal megacity with considerable vulnerability to climate change. For this, a policy content analysis structured around four criteria: (i) participation, (ii) capacity enhancement, (iii) governance, and (iv) justice integration into spatial planning, was carried out and supplemented by local expert consultations. Our findings indicate that while the objective of incorporating some aspects of justice in adaptation planning was recognized, there was a distinct lack of specific actions or evaluation tools. The expert consultations largely confirmed these findings, which were then connected to the socio-historical and political context of İstanbul and the wider Turkish region. Key conclusions include the failure of current adaptation policies to adequately consider vulnerabilities arising from a combination of urban marginalization interacting with neoliberal authoritarianism. We identify the need for understanding and integrating equitable climate change adaptation as a key dimension of urban decision-making for future policy-relevant research and practice.

1. Introduction

While the likelihood of remaining below the threshold of 1.5 °C global warming set out in the Paris Agreement diminishes, recent evidence suggests that climate change impacts are already experienced by vulnerable communities in the form of increasingly frequent and intense extreme events. Home to over half of the world's population, urban areas have been prioritised as key for climate change adaptation (Reckien et al., 2017; Bulkeley and Castán Broto, 2013; Bulkeley et al., 2014; Bai et al., 2018). Particularly urban areas in coastal regions will be highly susceptible to the impacts of climate change due in part to sea-level rise and changing coastal climate systems, as well as the impacts of urbanisation and establishment of human settlements in environmentally hazardous areas (IPCC, 2022; Olazabal et al., 2019; Abadie et al., 2016). It is for these reasons that urban populations without sufficient resources to adequately respond are considered the most vulnerable societal groups to climate change impacts (IPCC, 2022; Bai et al., 2018; Chu et al., 2017; Satterthwaite et al., 2020).

To redress social vulnerability in just ways, urban climate change adaptation efforts depend on (i) participation, (ii) capacity enhancement, (iii) governance, and (iv) justice integration into spatial planning (Shi et al., 2016). While there have been recent efforts to assess equity and justice in urban resilience and sustainability planning (Chu and Cannon, 2021; Fitzgibbons and Mitchell, 2019; Hess and McKane, 2021; Westman and Broto, 2021; Ziervogel et al., 2017), and more particularly in urban adaptation planning (Fiack et al., 2021), few studies developed structured and replicable evaluations of the degree in which justice is considered in urban adaptation planning processes.

* Correspondence to: İstanbul Policy Center (IPC), Sabancı Üniversitesi, Bereketzade, Bankalar Cd. No:2, 34421 Beyoğlu, İstanbul, Turkey.
E-mail address: david.williams@posteo.net (D.S. Williams).

https://doi.org/10.1016/j.envsci.2022.07.014
Received 17 August 2021; Received in revised form 6 May 2022; Accepted 10 July 2022
Available online 16 July 2022
1462-9011/© 2022 Elsevier Ltd. All rights reserved.

The objective of this research was to explore and assess urban justice in adaptation planning using the case study of İstanbul, a coastal megacity at the interface of intense urbanisation dynamics and significant exposure to climate change impacts. This was examined by conducting a policy content analysis of municipal and national policy documents relevant for climate change adaptation, which was then supplemented with data from expert consultations. Given the city's increased impetus in becoming an active part of transnational local climate networks, this research aims to make a timely contribution to the growing body of knowledge in urban adaptation justice from the perspective of a megacity in the Global South, particularly around facilitating the inclusion of vulnerable communities in adaptation planning (Wilson et al., 2020; Ziervogel et al., 2021).

2. Urban adaptation justice

Urban adaptation justice is closely related to the concept of climate justice, itself stemming from the idea that the cumulative historical responsibilities for the causes of climate change need to be accounted for (Schlosberg and Collins, 2014). The proliferation of extractivist economies since the colonial era has led to a destabilization of the earth's climate system, the impacts of which are enhancing the urgency of adaptation (IPCC, 2022), defined as "*the need for a socio-ecological systems response to actual and expected impacts of climate change*" (Moser and Ekstrom, 2010). If climate change responses fail to consider these already existing inequalities, they will most likely fall into the trap of further enhancing those inequalities and produce maladaptive outcomes (Eriksen et al., 2020). In order to offer a just alternative, adaptation options must adhere to the three components of climate justice, (a) distributional justice, referring to spatial and temporal distribution of burdens and benefits amongst individuals, communities and nations, (b) procedural justice, implying the need for a democratization of climate-related decision-making and policy planning processes, and (c) recognition, emphasizing basic respect and fair engagement and consideration of a multitude of cultures and viewpoints (IPCC, 2022). These components are inherently linked to the structural factors influencing vulnerability in cities.

Urban marginalization, understood as the unequal access to the formal economy and urban infrastructure (Cahyani and Widaningsih, 2019), not only determines and enhances vulnerability to climate change impacts (Shi et al., 2016), but is augmented and compounded by climate change dynamics (Hallegatte and Rozenberg, 2017; Schell et al., 2020). Hence, the contribution of unequal socioeconomic structures to the underlying drivers of climate injustice needs to be further understood (Chu and Cannon, 2021).

How urban climate action is framed and developed is also important when conceptualising equity and justice issues. Recent research points to the need of further assessing the effect of adaptation actions, as they may generate new vulnerabilities or redistribute existing ones (Eriksen et al., 2020). This suggests that further efforts in assessing the potential maladaptive outcomes of urban adaptation plans are necessary. For example, top-down climate urbanism approaches that overlook locally situated vulnerabilities may reproduce urban injustices when they focus on technological solutions rather than framing action according to local needs (Long and Rice, 2019; Robin and Broto, 2020).

If the ultimate goal is to challenge and redress underlying drivers of vulnerability, adaptation needs to be inherently transformative (Roberts and Pelling, 2020; Wilson et al., 2020). There is no uniform definition of adaptation success, and questions pertaining to who should be the recipients of adaptation or what must be adapted to, are inherently dependent on local context (Dilling et al., 2019). However, justice-oriented frameworks can help shed light on different components of just adaptation. Along this line, for the purposes of this study, key criteria for assessing the extent of urban adaptation justice and guiding decision-makers and policy planners as proposed by Shi et al. (2016) were operationalized.

2.1. Urban adaptation justice criteria

The first criterion of urban adaptation justice in Shi et al.'s (2016) framing is meaningful participation. Those affected by climate change risk are best placed to develop appropriate responses. The integration of local subaltern knowledge into decision-making has been identified as a key component to boost urban adaptation globally (Olazabal et al., 2021). However, there is no silver-bullet to effectively integrate local knowledge into adaptation planning and decision-making processes as adaptation requires the combination of multiple potentially conflicting knowledge systems (Olazabal et al., 2021). Participatory processes can help integrate local knowledge, further enabling dialogue and learning, legitimizing outcomes and facilitating implementation (Norström et al., 2020).

The second criterion is capacity enhancement and catalyzing action. Constraints in adaptive capacity are seen as a critical barrier for implementing climate change adaptation (IPCC, 2018). Adaptive capacity is understood as the availability and accessibility of resources and capabilities which determine effective climate change adaptation outcomes (Adger et al., 2005; Sen, 1997). Political leadership and vision, institutional capacity and financial resources can facilitate proactive adaptation at the municipal level (Shi et al., 2016). Technical expertise is particularly important to interpret data for climate-related decision-making and policy planning (Lemos et al., 2012; Brasseur and Gallardo, 2016).

The third criterion is multilevel and multiscalar governance. While climate change is largely governed at the national and international level, the manifestations of vulnerability play out at the sub-national and municipal level (Williams, 2020), contributing to the perception that regulating climate change adaptation is predominantly a local issue (Rosendo et al., 2018). However, this risks to neglect the intrinsic dependency of local action on multilevel cooperation (Nalau et al., 2014; Morgan et al., 2019), and regulatory authority and revenue assignment represent only two of a myriad of tensions embedded within local and national governments (Shi et al., 2016). Hence, any assessments of adaptation practice should be conducted through the sphere of multilevel governance, meaning both the local and the national level require consideration (Di Gregorio et al., 2019), as well as multiple external actors forming partnerships with nongovernmental organizations, research institutions, and community initiatives (Ostrom, 2010; Williams, 2020; Sovacool, 2013).

The fourth and final criterion is adaptation justice integration in spatial planning. The impacts of large-scale infrastructure projects on vulnerable communities are seldom a priority, if a criteria of interest at all (Anguelovski et al., 2016). For justice integration into spatial planning processes, adaptation researchers and civil society representatives of vulnerable communities need to be involved for embedding environmental or social justice criteria into adaptation projects (Shi et al., 2016). This could offer a response to rapid urbanisation and competing pressures for urban resources leading to the establishment of human settlements on land sensitive to climate impacts (Dupont et al., 2016). Otherwise there is a risk of maladaptive physical measures creating displacement or enhancing inequality and vulnerability to climate change impacts (Eriksen et al., 2020; Shi et al., 2016).

In the following sections, the four-fold roadmap suggested by Shi et al. (2016) is operationalized by applying it as an analytical framework to explore and understand the justice considerations in Istanbul's adaptation planning.

3. Climate change and urbanisation in İstanbul

İstanbul has been identified as the most vulnerable city to coastal climate change impacts in Europe (Abadie et al., 2016). Frequent heatwaves, reduced annual precipitation, changes in seasonal climate, and a transition from semi-humid to semi-dry and dry conditions have already been observed in the eastern Mediterranean over the past 40

years (Şahin, 2016). Local manifestations of climate impacts include urban heat islands, heat waves and flash floods (Yazar and York, 2021). Further observed and projected climate change impacts include pluvial, coastal, and riverine flooding, droughts, and forest fires. Looking to the future, a recent study found that "*climate change will have a strong impact on Istanbul from 2030 onwards and become more intense after 2040 […] which will challenge Istanbul's long term water security*" (Daloğlu Çetinkaya et al., 2022) (Fig. 1).

Located in the eastern Mediterranean region with significant geographical and strategic importance, the city experienced rapid urban growth from 1.1 million in 1945–4.75 million in 1980, and in the years from 1995 to 2002 was the fastest growing city in all OECD (Organisation for Economic Co-operation and Development) metropolitan areas (Keyder, 2018). Following the major economic crisis in 2001, the Justice and Development Party (AKP) rose to power in 2002 under the initial promise of democratization and decentralization. Embracing an economic agenda that involved the integration of the city into the global neoliberal economic regime, the urban agenda was characterised by regulations and policies to assist infrastructural services, construction, tourism and cultural investment (Balaban and Senol Balaban, 2015; Cabannes and Göral, 2020; Canitez et al., 2020).

The strong political will for a rapid transformation into a "*global city*" was supported by a dominant economic growth paradigm which significantly impacted urban development processes and resulted in strong social inequalities, primarily experienced through spatial segregation, as well as social and economic marginalization (Adaman et al., 2017). Even though this dominant economic growth paradigm does not represent a fundamental shift from earlier periods in terms of the primacy of economic growth, it took a distinctly neoliberal character under AKP rule and became the basis of its electoral success (Adaman et al., 2014).

The two key sectors that propelled the neoliberal growth under the AKP were construction and energy (Paker, 2017; Özkaynak et al., 2020; Erensü, 2018). Construction is of particular relevance for İstanbul since urban development undertaken through public and private investment in housing and infrastructural projects of vast proportions were realised most intensively and visibly in İstanbul. The most extravagant mega-projects, which were paraded by the government as the epitome of growth and grandeur despite considerable environmental costs and vigorous protests, were constructed in İstanbul, including the Third Bridge, the Third Airport and the highly contested and ecologically destructive Canal İstanbul project, for which construction is yet to begin (Erensü and Karaman, 2017; Paker, 2017; WWF, 2019).

This city, as is the case in many other emerging economies, has followed a dynamic of government-led rapid urbanisation, in combination with shortage of land and stringent eviction policies, leading to the establishment of communities in environmentally hazardous areas particularly vulnerable to climate change impacts (Cabannes and Göral, 2020; Satterthwaite et al., 2020). Moreover, the AKP has instrumentalised political support within a discourse of '*politics of serving*', packaging the mega projects as services to '*the people*', which promise to bring economic growth and grandeur to everyone (Paker, 2017).

As a city of migration, Istanbul received significant migration from both within Turkey and abroad. Particularly with the rise of domestic migration from the Anatolian periphery from 1960 s onwards, informal settlements (*gecekondu*) became modus operandi of housing, often posing significant risks. These informal and later-formalized settlements expanded significantly with the arrival of Kurdish communities, displacement of Romani people, and most recently the arrival of Syrian and Afghan refugees, amongst others. This is in addition to those economically marginalized residents who voluntarily and involuntarily moved to these areas for reasons of affordability. Today, some of the neighbourhoods in which marginalized urban populations reside, and which have been the focus of studies researching urban inequalities, environmental injustice and structural discrimination, include Sulukule (Uysal, 2012) and Tarlabası (Arıcan, 2020), as well as Yakacık, Hürriyet and Ayazma (Cabannes and Göral, 2020).

The neoliberal developmentalism of the AKP strengthens its hegemonic power, worsening these localized political inequalities. The growing emphasis of spatial segregation and inequality in İstanbul is



Fig. 1. Anticipated climate change impacts in different parts of İstanbul (Google Earth, 2020; Ministry of Environment and Urbanization, 2011; Onur and Tezer, 2015).

representative of many global coastal megacities where rapid urbanisation has led to an increased risk for vulnerable communities to climate change impacts (Cabannes and Göral, 2020; Chu et al., 2017).

The closing down of civic and political space for civil society in the past few years makes participation of marginalized groups extremely challenging. State-civil society relations in Turkey have always been strained due to an overbearing government that often uses exclusionary and co-optation based strategies aiming at control of civil society (Center for American Progress, 2017; Doyle, 2017; Keyman and İçduygu, 2003; Paker et al., 2013). Despite a political context defined by a historically centralist state deeply suspicious of local autonomy, there has been an extended period of growth in the numbers, influence, issue areas and rights-based activism in civil society roughly through 1990–2010. Civil society actors were able to navigate the contextual constraints and increase empowerment. However, spiralling de-democratization that has marked at least the past five years of AKP rule has not only made existing structural constraints ever more restrictive but has immobilised civil society and vulnerable groups.

Although there has been a rise in the interest on adaptation planning and justice considerations, it can be argued that Istanbul is a laggard compared to other megacities in terms of scholarly attention on these topics (for some exceptions, see Aygün Oğur and Baycan, 2022; Connelly and Bal, 2016; Onur and Tezer, 2015; Yazar and York, 2021). Henceforth, this study responds to and justifies growing calls for exploring equity and justice criteria around climate change adaptation at the national and sub-national levels in Turkey (Turhan, 2017).

4. Methodological approach

The methodological approach applied in this study was twofold. In the first instance, a policy content analysis was conducted to assess whether current policy documents were aligned with urban adaptation justice assessment criteria of (i) participation, (ii) capacity enhancement, (iii) governance, and (iv) justice integration into spatial planning. This would give an indication to the degree of inclusion of justice and equity concepts in current adaptation planning. In the second instance, the identified text passages were crosschecked and categorised according to (i) goals, (ii) targets, (iii) instruments, and (iv) agents, aiming to determine the effectiveness of the adaptation policy in terms of urban justice. Expert consultations were then conducted with key stakeholders to supplement and substantiate the information derived from the policy content analysis.

4.1. Policy content analysis

Climate change adaptation policies can be understood as strategic devices for adjusting to expected climate change impacts, as well as promoting equitable outcomes enhancing urban resilience (Dolšak and Prakash, 2018). Carrying out policy content analyses has shown to be effective in elucidating priorities with which strategic actions are aligned. Whilst there are several approaches to policy content analyses with a national focus available, the application of Vogel and Henstra (2015) was deemed highly appropriate in identifying four fundamental elements upon which effective local climate adaptation policy is conditional. The four fundamental elements include (i) goals, (ii) targets, (iii) instruments and (iv) agents (Vogel and Henstra, 2015).

In the context of policy, (i) goals are understood as the broad normative aim or desired outcome; (ii) targets are specific aims conducive to the achievement of policy goals, commonly assigned a tangible numerical value within a measuring system; (iii) instruments are understood as the tools and mechanisms with which the policy objectives will be reached, and (iv) agents are the actors involved in developing and employing the instruments for reaching these targets (Vogel and Henstra, 2015). If adaptation policies are to improve urban adaptation justice effectively, then these four fundamental elements need to be present.

Policy documents relevant to adaptation can be understood as collective missions, visions, or plans promoting specific courses of action for responding to climate change (Vogel and Henstra, 2015). They can take various forms, such as vision statements, strategic plans, development guidelines, sustainability strategies, or management plans (Vogel and Henstra, 2015). Policy documents relevant to climate change adaptation were selected from both national and municipal government authorities, and confirmed as the most relevant through expert consultations and available literature on the Turkish context (Balaban and Senol Balaban, 2015; Savaşan, 2019).

As the national focal point under the UNFCCC, the Ministry for Environment and Urbanisation is the main institutional authority in Turkey for drafting and enacting climate change policies (Balaban and Senol Balaban, 2015; Yildirim and Onder, 2019). With the aim of enhancing Turkey's climate change adaptation capacity, the Ministry of Environment and Urbanisation collaborated with several UN Agencies (including UNEP, UNDP, FAO, and UNIDO) for drafting key policy documents (Turkish Ministry of Environment and Urbanisation, 2010). Central is the Climate Change Strategy (2010–2020) (Turkish Ministry of Environment and Urbanisation, 2011a), the implementation of which is to be supported by the National Climate Change Action Plan (2011–2023) (Turkish Ministry of Environment and Urbanisation, 2018), as well as the National Climate Change Adaptation Strategy and Action Plan (Turkish Ministry of Environment and Urbanisation, 2011b). In addition, a more recent policy document was made available in the form of Turkey's seventh communication under the UNFCCC (İstanbul Metropolitan Municipality, 2018).

There is an absence of national adaptation regulations to streamline strategies in municipalities at the sub-national level in Turkey. As of March 2021, only ten out of thirty metropolitan municipalities in Turkey had climate action plans. Peker and Ataöv (2021) identified five reasons as to why most local authorities in Turkey only focus on energy-related topics in their climate planning. According to the authors, a possible explanation may include "*the lack of actionable knowledge, legislative limitations, staff-related and institutional hardship, financial burdens and lack of a collective working mechanism*" (Peker and Ataöv, 2021). Responding to the 2015–2019 Strategic Plan in which the aim was to mainstream adaptation activities and environmental protection practices, İstanbul Metropolitan Municipality developed its own Climate Change Adaptation Plan (ICCAP) (İstanbul Metropolitan Municipality, 2018; Vizyon, Office, 2050, 2020). In part to support the implementation of the ICCAP, the İstanbul Planning Agency (IPA) was created as a strategic planning unit, engaging in inclusive planning efforts for achieving the strategies and vision of the city.

The five policy documents selected for the policy content analysis have been listed in Table 1. At time of carrying out this research and drafting the manuscript (September 2020 – August 2021), these constituted the most relevant policy documents and were hence included in the study. Official English versions of all policy documents were available. The aim was to determine whether priorities of strategic actions in terms of climate change adaptation were aligned with urban adaptation justice. This was carried out by closely reading the documents word for word in their entirety, interpreting and identifying relevant text passages related to one of either (i) participation, (ii) capacity enhancement, (iii) governance, or (iv) justice integration (Shi et al., 2016). In a second stage, to determine all relevant text passages had been identified, word searches were conducted (including adapt*; communit*; equa*; equi*; gender; informal; low-income; marginali*; participa*; poor; pov*; vulnerab*). Once the relevant text passages were identified, they were cross-checked and categorised under fundamental elements of effective adaptation policy either as (i) goals, (ii) targets, (iii) instruments, or (iv) agents (Vogel and Henstra, 2015).

The following is an example that illustrates the methodological approach for this study. The text passage "*Publications and events which raise the awareness of stakeholders will improve overall support and willingness and mobilise local knowledge and resources*" (ICCAP, 2018: p.38)

Table 1
Policy documents relevant for climate change adaptation planning.

Year	Title	Agency / Organization	Scale	Abbreviation	Pages total
2010	Climate Change Strategy (2010–2020)	Ministry of Environment and Urbanisation	National	CCS	46
2011	National Climate Change Action Plan (2011–2023)	Ministry of Environment and Urbanisation	National	NCCAP	178
2011	National Climate Change Adaptation Strategy and Action Plan	Ministry of Environment and Urbanisation	National	NCCASAP	123
2018	Seventh National Communication of Turkey under the UNFCCC	Ministry of Environment and Urbanisation	National	SNCTU	265
2018	İstanbul Climate Change Adaptation Plan	İstanbul Metropolitan Municipality	Municipal / Local	ICCAP	41

was identified as relevant due to it referring to the theme of "*participation*" in accordance with Shi et al. (2016), and subsequently was categorised as a "*policy instrument*" since it implies a tool or mechanism with which the policy objectives were to be reached in accordance with Vogel and Henstra (2015) (Appendix, Table 1). In another instance, the text passage "*to increase national preparedness and capacity in order to (…) adapt to impacts*" (CCS, 2010; p.9) was identified as relevant due to it referring to themes of "capacity enhancement" (Shi et al., 2016), and subsequently was categorised as a "policy goal" since it implies a broad normative aim or desired outcome (Vogel and Henstra, 2015) (Appendix, Table 2).

Using this analytical approach, a matrix was compiled with the most relevant text passages (see Appendix 1). These were first translated into binary format and then aggregated to synthesised figures presented in the results section (for higher granularity, see Appendix 2). This allowed for displaying the presence of text passages referring to an adaptation justice criteria in the form of either a (i) goal, (ii) target, (iii) instrument, or (iv) agents, as well as for displaying the presence of fundamental elements for effective local adaptation policy for achieving (i) participation, (ii) capacity enhancement, (iii) governance, or (iv) justice integration in all five policy documents, which is how the data is presented in Section 5. This analytical approach further allows for assessing the operationalization of adaptation policy as a unit of analysis, facilitating finer-grained descriptions and examinations in scope, intent, and means of local adaptation policy (Vogel and Henstra, 2015).

4.2. Expert consultations

In the second instance, key findings from the analysis were supplemented with data collected from semi-structured expert consultations. Integrating local expertise is key, as policy documents only to an extent reflect what is happening on the ground. Expert consultations are also useful in contextualising and nuancing data retrieved from desktop analyses.

Semi-structured interviews were conducted as a form of qualitative data collection in late 2020 and early 2021 with experts from the İstanbul Metropolitan Municipality, NGOs, and research institutions. All respondents have been in their position for 3 + years and considered as having senior roles within their respective organizations. An expert was defined as someone with privileged access to information regarding decision-making processes around issues on climate change adaptation, urban planning, or community participation (Otto-Banaszak et al., 2011) in İstanbul and the wider Turkish region, and identified through the thematic and contextual expertise of the authors. A total of 10 experts were consulted through individual online interviews during which the results of the policy content analysis were discussed. The duration of interviews was between 45 and 60 min on average. In pre-identifying the criteria of urban just adaptation which formed the central theme to the semi-structured interviews, the qualitative analysis was deductive. The data collected was mapped out and compared and contrasted with the data collected through policy content analysis. The identities of the experts have been kept anonymous.

5. Results

Fig. 2 presents the number of policy documents in which the respective criteria for urban adaptation justice were present (in grey) vs the number of those in which they were absent (in black). While several sections referring to both participation and capacity enhancement were present, this was less common for governance, while justice integration was referred to only twice in all five policy documents.

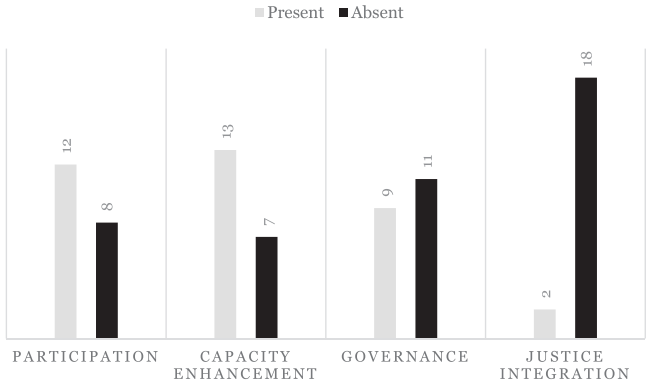


Fig. 2. Presence of text passages referring to adaptation justice criteria across all five policy documents.

i. Participation

The need for participation is recognised in every policy document, both at the national and at the municipal level (Appendix 1, Table 1). The importance of participation is illustrated by several of the national policy documents and the ICCAP having been co-developed with municipality officials and various other stakeholders (Green European Foundation, 2020), though criticism was voiced for the selective implementation of the participatory process resulting in the exclusion of several social justice advocacy groups and environmental NGOs (İstanbul Metropolitan Municipality 2019). Additionally, whilst offering several possible instruments for implementing this goal during the adaptation process, there are no specific targets to achieve the goals set out, such as number of participatory vulnerability assessments to be conducted, or number of individual stakeholders or communities to be included.

The lack of measures for implementation is reflected in statements from expert consultations, highlighting the lack of participatory mechanisms in adaptation planning. According to NGO representatives and researchers, the adaptation planning process was neither open nor inclusionary.

ii. Capacity enhancement

Similar to participation, the need for capacity enhancement for adapting to climate change is recognised in every policy document (Appendix 1, Table 2). Again, there are no targets listed for achieving the goals, but support packages for cities to enhance adaptation plan preparation, and trainings and outreach strategies are listed in the NCCASAP, SNCTU and ICCAP documents respectively as instruments for capacity enhancement. The policy documents further list numerous agents for implementing these strategies, primarily initiated through external organizations such as the FAO or UNEP, but also through the Ministry of

Environment and Urbanisation as well as from İstanbul Metropolitan Municipality.

Lack of capacity at the municipal level was highlighted in expert consultations as a primary bottleneck for implementing climate change actions in Turkey. This observation reflected the notion held at national level that municipalities only had a minor role to play in adaptation processes.

iii. Governance

With exception of the SNCTU, every policy document recognises the importance of a coordinated multilevel and polycentric approach to climate change adaptation, including the prioritization of integrating climate change into municipal and national development plans (Appendix 1, Table 3). The ICCAP highlights the importance of climate-change oriented dialogue and long-term cooperation. It is noticeable that while the importance of mainstreaming local climate change adaptation needs into national policy documents, this is not reciprocated from the national to the municipal level. It is also predominantly agents from the national level listed for achieving the policy goals.

Climate change adaptation is not treated as a cross-cutting issue requiring multi-sector and multi-stakeholder engagement with only a limited number of agencies and municipal departments involved in the decision-making and policy planning process. Efforts for effective multilevel and polycentric governance were further described in local expert consultations as insufficient. The few initiatives which were presented at national level were rarely being implemented at the municipal level. Those initiatives which were successful were commonly implemented by international agencies, increasing the dependency of adaptation on external funds.

The expert consultations also revealed the highly politicised and strained relationship between national and municipal government. The Turkish governmental system is highly centralised, preventing efficient multilevel governance. Legal and budgetary control remains centralised, significantly constraining municipal capacity to respond to climate change according to local requirements.

iv. Justice integration in spatial planning

The SNCTU and NCCASAP are the only policy documents which acknowledge the importance of justice criteria in spatial planning by pointing out that "*(.) improvements to be maintained in the regions with low income will provide important contributions in terms of environmental sustainability*" (SNCTU, 2018; p.177), as well as listing "*Gender Mainstreaming*" as a cross-cutting issue for climate change adaptation (NCCASAP, 2011; p.94) (see Appendix 1, Table 4). Apart from these statements, no references for justice criteria were found, such as the specific consideration of vulnerable communities in spatial planning processes.

This finding was confirmed in expert consultations, in which the prevalent perception of adaptation being viewed solely as a technical issue was offered as an explanation. There were concerns voiced over considerations around new spatial planning projects being carried out by environmental engineers without sufficient expertise from social or political scientists or adequate community consultation.

5.1. Fundamental elements of effective adaptation policies

Fig. 3 depicts the number of policy documents in which the respective fundamental elements for effective adaptation policy were present (in grey) vs the number of those in which they were absent (in black). Out of the four fundamental elements, the majority of references in the policy documents respond to goals. There were several normative statements, from acknowledging the importance of stakeholder participation in adaptation planning to supporting the enhancement of capacities at the municipal level.

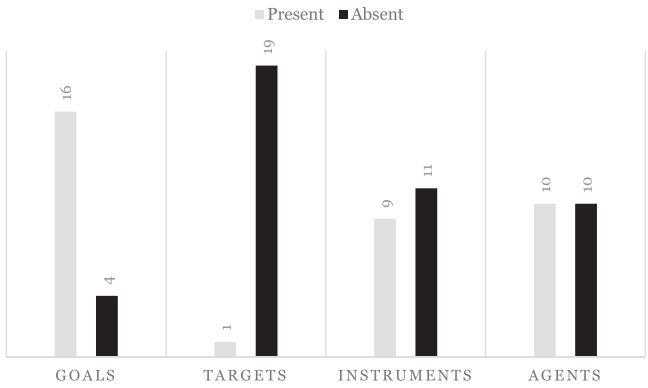


Fig. 3. Presence of text passages referring to fundamental elements for effective local adaptation policy across all five policy documents.

Agents were also mentioned on several occasions, though it is noteworthy that these were predominantly either from the Ministry of Environment and Urbanisation or international organizations. Some instruments were also suggested for implementing the stated goals, mainly relating to awareness raising and training activities such as workshops, publications and public information events. The distinct absence of specific and tangible targets is conspicuous. The sole target which was identified included "*establishing climate change research centres in vulnerable regions*" (NCCAP, 2011; p.155), though it is unclear whether this refers to the city of İstanbul.

6. State of urban adaptation justice in İstanbul

In İstanbul, the importance placed on community-led initiatives through public participation reflects a discursive shift from the previous municipal administration in recognizing the importance of a multi-stakeholder and multi-sector response to the cross-cutting challenge of climate change adaptation, as well as the need to engage community and social justice advocacy groups (İstanbul Metropolitan Municipality, 2019). The study developed here has enabled the assessment of these renewed efforts toward transformational adaptation, and the degree to which the underlying causes of vulnerability and enhancing equity and justice in ongoing development struggles are acknowledged and addressed. In the following, we turn to Shi et al.'s (2016) four-fold criteria to examine their reflection in the city's adaptation planning.

a. Participation

The participation of local communities in adaptation planning is recognised as a goal in all relevant policy documents. Setting ambitious goals is crucial, as this influences the content of other fundamental elements of climate change adaptation policy (Vogel and Henstra, 2015). However, there appears to be a significant gap between the legal provisions and reality on the ground, explained through the vagueness and implicitness of the implementation, lacking any notable targets. The proposed agents are predominantly from the Ministry of Environment and Urbanisation or external organizations, and not from the municipality. Instruments focus mainly on awareness-raising and enhancing public understanding to improve support and mobilise resources, as opposed to engaging the public in decision-making and policy planning processes. The absence of references specifically including vulnerable communities is particularly concerning, as uneven power relations risk to be reinforced through poorly designed participatory processes, increasing the likelihood of failing their stated objectives (Turnhout et al., 2020).

Furthermore, the policy documents reveal little in terms of differentiation between vulnerable and non-vulnerable groups. This is a point of concern, as participation per se without the consideration of

who is vulnerable and who is not, risks leading to further marginalization of those without power and influence (Schlosberg et al., 2017). Vulnerable communities require specific forms of additional support, such as livelihood protection, disaster relief efforts and evacuation assistance, or access to healthcare services (Shi et al., 2016), which remains outside the scope of policy documents assessed.

b. Capacity enhancement

For adaptation to respond to local needs, municipal governments require the necessary capacity to address the complexity of risk and vulnerability in implementing climate change adaptation. While the importance of capacity enhancement is acknowledged, the policy documents analysed remain vague in terms of implementation. The results of this study are indicative of a wider trend both internationally (Ziervogel et al., 2021) and in Turkey (Balaban, 2017; Yildirim and Onder, 2019), in which the lack of recognition around the importance of capacity to adapt at the municipal level, particularly that of vulnerable communities, is commonplace.

The lack of capacity is determined in part by a lack of external funding and budget availability for adaptation. From the expert consultations it became clear that socio-economic factors such as the lack of funds have a key role on municipal adaptation initiatives in Turkey, severely limiting the local response (ActAllianceEU, 2018; Tanik and Tekten, 2018; Yildirim and Onder, 2019). In recent years, municipalities have benefitted from external resource funds to finance their climate change adaptation activities. Turkey is the single largest recipient of EU climate finance, on average receiving 667 million Euro per year between 2013 and 2016 (CarbonBrief, 2017). In the same period, Turkey was also the fifth largest recipient of multilateral climate funds, and hence most of the current climate change action plans have been funded by external actors. Likewise, to support funding of climate change adaptation at the municipal level, the national government appears to be pinning its hopes on being listed as a non-Annex country (hence leaving Annex-I of UNFCCC) through which it would gain access to financial mechanisms such as the Green Climate Fund (CarbonBrief, 2018).

Further influences on municipal capacity include access of local planners and architects to trainings and workshops for enhancing knowledge and skill around the integration of climate change into everyday operations. Exchange and deliberation with local experts, as well as scenario development for building credibility and ownership has also shown to enhance municipal capacity (Shi et al., 2016). Unequal development resulting in pockets of low adaptive capacity is of particular concern in cities which have undergone rapid urbanisation processes, or are still growing in terms of population size (Shi et al., 2016).

c. Governance

Multilevel governance is embedded within a complex set of tensions between municipal and national government in terms of regulatory authority, revenue assignment and budget allocation (Shi et al., 2016). These tensions are particularly pronounced and fractious in the Turkish context (Kuyucu, 2018; Yılmaz and Turner, 2019), and it is not uncommon for municipalities to lack the mandate over central areas of urban adaptation, including energy provision, transport networks, water supply systems, and risk infrastructure (Shi et al., 2016). Municipal adaptation in Turkey is therefore highly dependent on national government, whose approach appears to be hampered by an incoherent and lethargic national prioritization of climate change adaptation (Uzelgun and Şahin, 2016). Combined with the uneven engagement of municipal departments this may further limit the potential for mainstreaming climate change adaptation into sub-national and municipal development and management policies (Shi et al., 2016).

In addition, political instrumentalization has shown to play a key role in urban contexts. Multilevel decision-making and policy planning at provincial and municipal level has not been carried out in a coherent and concerted manner resulting in fragmented and bureaucratic administrative systems. This has precipitated the creation of disjointed departments, reminiscent of the notion of fragmented governance arenas in areas particularly vulnerable to climate change (Canitez et al., 2020). While there is no clear strategy for climate change adaptation at the sub-national level, it is foreseen that municipal climate change action plans will be prepared for all metropolitan regions across Turkey by 2023 (Turkish Ministry of Environment and Urbanisation, 2018). In terms of polycentric governance, İstanbul has recently become well-connected to transnational networks and cities outside of Turkey. Illustrative of this is their participation in the C40 network, Resilient Cities, and various other climate change forums (Istanbul Metropolitan Municipality, 2019). Sub-national connectivity within Turkey is weak however, illustrated by a lack of municipality networks and exchange. Without support from national government, this priority may remain elusive.

The main responsibility in terms of preparing and implementing sub-national climate actions and strategies is under the jurisdiction of the environmental departments of the municipalities. However, this constitutes an organizational obstacle in terms of producing sound climate adaptation policies since climate change has been treated as yet another environmental issue without addressing its crosscutting impacts which bear heavily on other social and economic problems. Accordingly, mitigation and adaptation actions that require a multi-sectoral approach have not been put into effect since many municipality departments overlook climate change. In terms of variety of actors implementing measures for urban adaptation justice, it is observable that the listed organizations are either international organizations, or from the environmental wing of government. Not only does this signify an over-reliance on external funds and an avoidance of responsibility, but it also indicates a narrow focus on departments of environmental and land-use planning (Shi et al., 2016). Similarly, the lack of engagement around social justice advocacy groups points toward a lack of support for polycentric governance.

d. Justice integration in spatial planning

The prioritization of physical vs social adaptation in İstanbul is illustrated by the dominance of engineers in environmental and planning departments. This responds to research indicating that technocratic approaches to spatial planning and climate change adaptation have shown to disadvantage vulnerable communities (Nost, 2019). There is a technical orientation prevalent to climate change adaptation in municipalities hiding the inherent implications for equity and justice considerations (Eakin et al., 2021). This elite-led techno-managerial approach does not alter the capitalist urbanity as it fails to question underlying power relations which determine the response to climate change (Swyngedouw, 2015). Leading adaptation scholars and practitioners have recommended a shift from technocratic approaches to social and institutional change with direct input from disadvantaged communities to redress inherent social vulnerability (Goh, 2020; Shi et al., 2016).

When new infrastructure is being designed, or the reinforcing or retrofitting of infrastructure undertaken, there is a danger of an overemphasis on physical solutions as opposed to social, economic, or political reform (Eriksen et al., 2020). İstanbul is still a rapidly urbanizing city, and new infrastructure is a key component of the spatial planning process. Indeed, İstanbul's urban landscape is characterised by a focus on economic-growth centric urban development. The megaprojects have a history of being problematic for impacting and limiting social and economic benefits for marginalised communities (Paker, 2017; Shi et al., 2016).

A prime example of this Infrastructural developmentalist approach is the Canal İstanbul project (İstanbul Planning Agency 2020). The proposal of constructing a new artificial waterway in western İstanbul between the Marmara Sea and the Black Sea for maximising vessel capacity comes at the cost of the destruction of agricultural lands crucial to the

ecological resilience of the area (Yeşil Gazete, 2020). While propagated at the national level as a project of high economic importance, it has been met with harsh criticism by the municipality, being described as yet another megaproject which will lead to enhanced vulnerability to climate-induced extreme events for local communities (İstanbul Planning Agency, 2020). Ignoring attempts by the municipality to enhance consideration of affected communities further reveals a national agenda driven by economic interest, clientelism, and partisan divide.

7. Emerging issues in national and international context and concluding remarks

By conducting a policy content analysis of municipal and national policy documents relevant for climate change adaptation, and supplementing findings with data from expert consultations, we aimed to evaluate urban justice in adaptation planning in İstanbul. As stated by Shi et al. (2016), one of the key drivers behind the development of the urban adaptation justice concept was to allow researchers from diverse disciplines to examine how urban responses to climate change redress, create, or exacerbate socio-spatial inequality. The application of the concept illustrated in this paper allowed for a holistic and detailed assessment. However, as is the nature with real-world operationalization of conceptual frameworks, some of the criteria proposed in Shi et al. (2016) require further elaboration and contextualization. An element of bias cannot be excluded when judging whether specific policies could be categorized as e.g. capacity-enhancing measures or not. Nonetheless, we argue the methodological approach chosen for this research, in addition to the diverse backgrounds and local expertise of the researchers and participants involved, have resulted in outputs which are meaningful and highly relevant today.

Our study concludes that the origins of urban marginalization and their role in the underlying structures of vulnerability to climate change impacts are not being addressed. In line with other recent studies, we also argue that injustices based on socio-economic and gender inequalities are not adequately linked to climate change in Istanbul's context (Sarıkoç Yıldırım, 2020). These are linked to structural impediments such as decision-making processes, regulations, institutional setup and resource allocation (Peker and Ataöv, 2021). This observation echoes the distinct lack of tangible and measurable targets enhancing the impressions of vagueness around climate change adaptation policy, confirming previous findings describing Turkey's adaptation efforts as indistinct and poorly enforced (Savaşan, 2019; Balaban, 2017; Turhan, 2017).

While some agents were mentioned for employing instruments to implement policy objectives, these were predominantly embedded within the Ministry of Environment and Urbanisation. The executive aggrandisement and authoritarian consolidation that Turkey has experienced, in particular since the coup attempt in 2016 (Savaşkan, 2021; Tansel, 2019), and the heavy emphasis on one-man rule by side-lining parliament and other regulative and administrative bodies including local authorities, without involving any specific departments or offices, or encouraging collaboration between state departments, reinforces this centrality of power (Kuyucu, 2018). There is also no mention of regulatory agencies or partnerships with NGOs or the private sector with close ties to affected communities which could enhance the employment of instruments for achieving policy objectives.

Pre-existing conditions in municipalities resulting from a combination of neoliberal authoritarianism interacting with urban marginalization give rise to vulnerabilities which remain unconsidered in current adaptation policies. Indicative of this is the lack of consideration around vulnerable communities and participation of civil society in decision-making and policy planning processes, as well as the centralization of power. This is compounded by high levels of polarization and politicization. Particularly at the municipal level, neoliberal and developmentalist agendas have resulted in a reluctance of imposing progressive policies on urban adaptation.

The question which invariably arises is whether authoritarian governments are generally poorly equipped to reflect the context-sensitivity of climate change adaptation. Illustrative of this question is the distinct lack of strategies for municipalities in highly centralised states to overcome national inertia, ideological resistance and political instrumentalization for implementing climate change adaptation actions at the municipal level. There is a certain naivety and ambiguity in calling for enhanced urban adaptation justice through participation of vulnerable communities in authoritarian governance contexts. The call for increased inclusion of civil society in climate politics through the Paris Agreement is most often met with a refusal to recognise civil society as a legitimate actor (Dolšak and Prakash, 2018). In light of climate change projections it is also clear however that İstanbul will be severely impacted (Abadie et al., 2016), and the risk for local communities can only be minimised if participatory and inclusive approaches are adopted (Shi et al., 2016).

In sum, we identify urban adaptation justice in authoritarian governance contexts as a critical research gap from this case study of İstanbul, a megacity depicting some of the key contradictions experienced across the Global South. Approaches need to be identified for redressing structural risks and vulnerabilities experienced by marginalised communities which reflect the highly political nature of adaptation (Eriksen et al., 2015). Whether this could include the support of social movements and activist initiatives through enabling international climate finance for adaptation remains an open question. However, addressing this research gap is particularly pressing as early evidence shows how climate change impacts are being manipulated by authoritarian leaders to seize power and solidify their stronghold over society and nature alike (The New Republic, 2018).

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

This research was conducted under the 2020/2021 Mercator IPC Fellowship Program. The authors would like to extend their gratitude to all those willing to participate as experts in this research. A special thanks also to Nesrin Nazlieva for providing assistance with the review of recent climate-related extreme events in İstanbul. Marta Olazabal's research is supported by AXA Research Fund (Grant Agreement No. 4771), the Maria de Maeztu program (MDM-2017-0714, Spanish State Research Agency) and the BERC 2018-2021 program (Basque Government).

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.envsci.2022.07.014.

References

Abadie, Luis M., Murieta, Elisa Sainz de, Galarraga, Ibon, 2016. "Climate risk assessment under uncertainty: an application to main European coastal cities.". Front. Mar. Sci. 3 (DEC), 1–13. https://doi.org/10.3389/fmars.2016.00265.

ActAllianceEU, 2018, "An Analysis of the Climate Finance Reporting of the European Union." https://actalliance.eu/wp-content/uploads/2018/04/Analysis-of-the-climate-finance-reporting-of-the-EU.pdf.

Adaman, Fikret, Akbulut, Bengi, Madra, Yahya, Pamuk, Şevket, 2014. "Hitting the wall: Erdoğan's construction-based, finance-led growth regime.". Middle East Lond. 10 (3), 7–8.

Adaman, Fikret, Murat Arsel, Akbulut, Bengi, 2017. "Introduction: neoliberal developmentalism in Turkey: continuity, rapture, consolidation.". Neoliberal Turkey and Its Discontents: Economic Policy and the Environment under Erdoğan. IB Tauris, 1–17.,, London.

Adger, W., Neil, Nigel W., Arnell, Emma, L.Tompkins, 2005. “Successful adaptation to climate change across scales.”. Glob. Environ. Change 15 (2), 77–86. https://doi.org/10.1016/j.gloenvcha.2004.12.005.

Anguelovski, Isabelle, Linda Shi, Eric Chu, Daniel Gallagher, Kian Goh, Zachary Lamb, Kara Reeve, Teicher, Hannah, 2016. “Equity impacts of urban land use planning for climate adaptation: critical perspectives from the Global North and South.”. J. Plan. Educ. Res. 36 (3), 333–348. https://doi.org/10.1177/0739456X16645166.

Arıcan, Alize (2020) Care in Tarlabaşı amidst heightened inequalities, urban transformation and Coronavirus. https://radicalhousingjournal.org/2020/care-in-tarlabasi-amidst-heightened-inequalities-urban-transformation-and-coronavirus/.

Aygün Oğur, A., Baycan, T., 2022. Identifying priority planning areas of Istanbul for climate change preparedness. Asia-Pac. J. Reg. Sci. 1–24.

Xuemei, Bai, Dawson, R.J., Ürge-Vorsatz, D., Delgado, G.C., Barau, A.S., Dhakal, S., Dodman, D., et al., 2018. Six research priorities for cities and climate change. Nature 555, 23–25.

Balaban, O., Senol Balaban, M., 2015. “Adaptation to climate change: barriers in the Turkish local context.”. Tema-J. Land Use Mobil. Environ., no. SI 7–22. https://doi.org/10.6092/1970-9870/3650.

Balaban, Osman, 2017. “A matter of capacity: climate change and the urban challenges for Turkey.”. N. Perspect. Turk. 56 (159–62) https://doi.org/DOI: 10.1017/npt.2017.22.

Brasseur, Guy P., Gallardo, Laura, 2016. “Climate services: lessons learned and future prospects.”. Earth’s Future 4 (3), 79–89. https://doi.org/10.1002/2015EF000338.

Bulkeley, Harriet, Castán Broto, Vanesa, 2013. “Government by experiment? Global cities and the governing of climate change.”. Trans. Inst. Br. Geogr. 38 (3), 361–375. https://doi.org/10.1111/j.1475-5661.2012.00535.x.

Bulkeley, Harriet, Edwards, Gareth A.S., Fuller, Sara, 2014. “Contesting climate justice in the city: examining politics and practice in urban climate change experiments.”. Glob. Environ. Change 25 (1), 31–40. https://doi.org/10.1016/j.gloenvcha.2014.01.009.

Cabannes, Yves, Göral, Özgür Sevgi, 2020. “Land disputes on the outskirts of istanbul: a unique case of legalization amidst demolitions and forced evictions.”. Environ. Urban. 32 (1), 69–88. https://doi.org/10.1177/0956247819893187.

Cahyani, D., Widaningsih, L., 2019. Identification of the marginalized urban communities characteristics and preferences. KnE Soc. Sci. 2019, 178–192. https://doi.org/10.18502/kss.v3i21.4967.

Canitez, Fatih, Alpkokin, Pelin, Kiremitci, Sabahat Topuz, 2020. “Sustainable Urban Mobility in Istanbul: Challenges and Prospects.”. Case Stud. Transp. Policy 8 (4), 1148–1157. https://doi.org/10.1016/j.cstp.2020.07.005.

CarbonBrief, 2018, “The Carbon Brief Profile: Turkey.” https://www.carbonbrief.org/carbon-brief-profile-turkey.

Center for American Progress, 2017, “Trends in Turkish Civil Society.” https://www.americanprogress.org/issues/security/reports/2017/07/10/435475/trends-turkish-civil-society/.

Chu, Eric, Anguelovski, Isabelle, Roberts, Debra, 2017. “Climate adaptation as strategic urbanism: assessing opportunities and uncertainties for equity and inclusive development in cities.”. Cities 60, 378–387. https://doi.org/10.1016/j.cities.2016.10.016.

Chu, Eric K., Cannon, Clare E.B., 2021. “Equity, inclusion, and justice as criteria for decision-making on climate adaptation in cities.”. Curr. Opin. Environ. Sustain. 51, 85–94. https://doi.org/10.1016/j.cosust.2021.02.009.

Climate Brief, 2017, “Mapped: Where Multilateral Climate Funds Spend Their Money.” https://www.carbonbrief.org/mapped-where-multilateral-climate-funds-spend-their-money.

Connelly, Rana I., Bal, Pınar G., 2016. Local networks of resilience and climate adaptation: the case of Istanbul. In Climate change adaptation, resilience and hazards. Springer, Cham.

Daloğlu Çetinkaya, I., Yazar, M., Kılınç, S., Güven, B., 2022. Urban climate resilience and water insecurity: future scenarios of water supply and demand in Istanbul. Urban Water J. 1–12.

Dilling, Lisa, Prakash, Anjal, Zommers, Zinta, Ahmad, Farid, Singh, Nuvodita, Wit, Sara de, Nalau, Johanna, Daly, Meaghan, Bowman, Kerry, 2019. “Is Adaptation Success a Flawed Concept. Nat. Clim. Change 9, 572–574. https://doi.org/10.1038/s41558-019-0539-0.

Dolšak, Nives, Prakash, Aseem, 2018. “The politics of climate change adaptation.”. Annu. Rev. Environ. Resour. 43, 317–341. https://doi.org/10.1146/annurev-environ-102017-025739.

Doyle, Jessica Leigh, 2017. “State control of civil society organizations: the case of Turkey.”. Democratization 24 (2), 244–264.

Dupont, Veronique, Jordhus-Lier, David, Sutherland, Catherine, Braathen, Einar, 2016. The politics of slums in the Global South. New York. Routledge,.

Eakin, Hallie, Jagadish Parajuli, Yamini Yogya, Manheim, Marisa, Bertha, Herna, 2021. “Entry points for addressing justice and politics in urban flood adaptation decision making,”. Curr. Opin. Environ. Sustain. 51, 1–6. https://doi.org/10.1016/j.cosust.2021.01.001.

Erensü, Sinan, 2018. Powering neoliberalization: energy and politics in the making of a new Turkey. Energy Res. Soc. Sci. 41 (148–57) https://doi.org/10.1016/j.erss.2018.04.037.

Erensü, Sinan, Karaman, Ozan, 2017. “The Work of a Few Trees: Gezi, Politics and Space.”. Int. J. Urban Reg. Res. 41 (1), 19–36. https://doi.org/10.1111/1468-2427.12387.

Eriksen, Siri H., Andrea, J.Nightingale, Eakin, Hallie, 2015. “Reframing adaptation: the political nature of climate change adaptation.”. Glob. Environ. Change 35, 523–533. https://doi.org/10.1016/j.gloenvcha.2015.09.014.

Eriksen, Siri, Lisa, E., Schipper, F., Scoville-Simonds, Morgan, Katharine, Vincent, Hans Nicolai, Adam, Brooks, Nick, Harding, Brian, 2020. “Adaptation Interventions and Their Effect on Vulnerability in Developing Countries: Help, Hindrance or Irrelevance? World Dev. Rev. 141, 105383 https://doi.org/10.1016/j.worlddev.2020.105383.

Fiack, Duran, Jeremy Cumberbatch, Michael Sutherland, Zerphey, Nadine, 2021. “Sustainable adaptation: social equity and local climate adaptation planning in U.S. Cities ” Cities 115, 103235. https://doi.org/10.1016/j.cities.2021.103235.

Fitzgibbons, Joanne, Mitchell, Carrie L., 2019. “Just Urban Futures? Exploring Equity in ‘100 Resilient Cities.’. World Dev. 122, 648–659. https://doi.org/10.1016/j.worlddev.2019.06.021.

Goh, Kian, 2020. “Urbanising climate justice: constructing scales and politicising difference.”. Camb. J. Reg., Econ. Soc. 13 (3), 559–574. https://doi.org/10.1093/cjres/rsaa010.

Green European Foundation, 2020, “Making the City Green with Civil Society: Roundtable Meeting Report of IMM-Civil Society Relations within the Framework of Green City.” https://gef.eu/wp-content/uploads/2021/02/Roundtable_Meeting_Report_of_IMM.pdf.

Hallegatte, Stephane, Rozenberg, Julie, 2017. “Climate change through a poverty lens.”. Nat. Clim. Change 7 (4), 250–256. https://doi.org/10.1038/nclimate3253.

Hess, David J., McKane, Rachel G., 2021. “Making sustainability plans more equitable: an analysis of 50 U.S. Cities.”. Local Environ., March 1–16. https://doi.org/10.1080/13549839.2021.1892047.

IPCC, 2018, “Strengthening and Implementing the Global Response.” https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter4_Low_Res.pdf.

IPCC. 2022. "Working Group II: Impacts, Adaptation and Vulnerability." https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/.

İstanbul Metropolitan Municipality, 2018, “Istanbul Climate Change Action Plan.” https://www.iklim.istanbul/wp-content/uploads/ÖzetRaporİngilizce.pdf.

Keyder, Ça.ğlar, 2018. Imperial, National, and Global Istanbul: Three Istanbul ‘Moments’ from the Nineteenth to Twenty-First Centuries. In *Istanbul*. Rutgers University Press,, pp. 25–37.

Keyman, E.Fuat, İçduygu, Ahmet, 2003. “Globalization, civil society and citizenship in turkey: actors, boundaries and discourses.”. Citizsh. Stud. 7 (2), 219–234.

Kuyucu, Tuna, 2018. “Politics of urban regeneration in turkey: possibilities and limits of municipal regeneration initiatives in a highly centralized country.”. Urban Geogr. 39 (8), 1152–1176. https://doi.org/10.1080/02723638.2018.1440125.

Lemos, Maria, Carmen, C.J., Kirchhoff, V.Ramprasad, 2012. “Narrowing the climate information usability gap.”. Nat. Clim. Change 2, 789–794.

Long, Joshua, Rice, Jennifer L., 2019. “From sustainable urbanism to climate urbanism.”. Urban Stud. 56 (5), 992–1008. https://doi.org/10.1177/0042098018770846.

Morgan, Edward A., Nalau, Johanna, Brendan, Mackey, 2019. “Assessing the alignment of national-level adaptation plans to the paris agreement.”. Environ. Sci. Policy 93 (November), 208–220. https://doi.org/10.1016/j.envsci.2018.10.012.

Moser, S.C., Ekstrom, J.A., 2010, A framework to diagnose barriers to climate change adaptation. Proc. Natl. Acad. Sci. 107, 22026–22031. https://doi.org/10.1073/pnas.1007887107.

Nalau, Johanna, Benjamin, L.Preston, Megan, C.Maloney, 2014. “Is adaptation a local responsibility. Environ. Sci. Policy 48, 89–98. https://doi.org/10.1016/j.envsci.2014.12.011.

Norström, Albert V., Cvitanovic, Christopher, Löf, Marie F., West, Simon, Wyborn, Carina, Balvanera, Patricia, Bednarek, Angela T., et al., 2020. “Principles for knowledge co-production in sustainability research.”. Nat. Sustain. 9. https://doi.org/10.1038/s41893-019-0448-2.

Nost, Eric, 2019. “Climate services for whom? The political economics of contextualizing climate data in Louisiana’s Coastal Master Plan.”. Clim. Change 157 (1), 27–42. https://doi.org/10.1007/s10584-019-02383-z.

Olazabal, Marta, Eric Chu, Vanesa Castán Broto, James, J.Patterson, 2021. “Subaltern forms of knowledge are required to boost local adaptation.”. One Earth.

Olazabal, Marta, de Gopegui, Maria Ruiz, Tompkins, Emma L., Venner, Kayin, Smith, Rachel, 2019. “A cross-scale worldwide analysis of coastal adaptation planning.”. Environ. Res. Lett. 14 (12), 124056 https://doi.org/10.1088/1748-9326/ab5532.

Onur, A.C., Tezer, A., 2015. Ecosystem services based spatial planning decision making for adaptation to climate changes. Habitat Int 47, 267–278. https://doi.org/10.1016/j.habitatint.2015.01.008.

Ostrom, Elinor, 2010. “Beyond markets and states: polycentric governance of complex economic systems.”. Am. Econ. Rev. 100, 641–672. https://doi.org/10.1257/aer.100.3.641.

Otto-Banaszak, Ilona, Piotr Matczak, Justus Wesseler, Wechsung, Frank, 2011. “Different perceptions of adaptation to climate change: a mental model approach applied to the evidence from expert interviews.”. Reg. Environ. Change 11 (2), 217–228. https://doi.org/10.1007/s10113-010-0144-2.

Özkaynak, Begüm, Ethemcan Turhan, and Cem İskender Aydın, 2020, “The Politics of Energy in Turkey.” In The Oxford Handbook of Turkish Politics.

Paker, Hande, 2017. “The ‘Politics of Serving’ and Neoliberal Developmentalism: The Megaprojects of the AKP as Tools of Hegemony Building.”. Neoliberal Turk. Its Disco.: Econ. Policy Environ. Erdogan, Ed. Adaman, Akbulut, Arsel. Tauris.

Peker, E., Ataöv, A., 2021. Barriers to Implementing Local Climate Action Plans in Turkey: Searching for a Potential Way Out. In Governance of Climate Responsive Cities. Springer, Cham, pp. 21–42.

Paker, Hande, Adaman, Fikret, Kadirbeyoğlu, Zeynep, Özkaynak, Begüm, 2013. “Environmental organisations in turkey: engaging the state and capital.”. Environ. Polit. 22 (5), 760–778.

Reckien, Diana, Felix Creutzig, Blanca Fernandez, Shuaib Lwasa, Marcela Tovar-Restrepo, Darryn Mcevoy, David Satterthwaite, 2017. “Climate change, equity and

the sustainable development goals: an urban perspective.". Environ. Urban. 29 (1), 159–182. https://doi.org/10.1177/0956247816677778.
Roberts, Erin, Pelling, Mark, 2020. "Loss and damage: an opportunity for transformation. Clim. Policy 20 (6), 758–771. https://doi.org/10.1080/14693062.2019.1680336.
Robin, Enora, Broto, Vanesa Castán, 2020. "Towards a postcolonial perspective on climate urbanism.". Int. J. Urban Reg. Res. https://doi.org/10.1111/1468-2427.12981.
Rosendo, S., Celliers, L., Mechisso, M., 2018. "Doing more with the same: a reality-check on the ability of local government to implement integrated coastal management for climate change adaptation.". Mar. Policy 87, 29–39. https://doi.org/10.1016/j.marpol.2017.10.001.
Şahin, Ümit, 2016. "Warming a frozen policy: challenges to Turkey's climate politics after Paris.". Turk. Policy Q. 15 (2), 117–119.
Sarıkoç Yıldırım, Beyza, 2020. "Climate justice at the local level: the case of Turkey.". Polit.: IAPSS J. Political Sci. 45 (June), 7–30. https://doi.org/10.22151/politikon.45.1.
Satterthwaite, David, Diane Archer, Sarah Colenbrander, David Dodman, Jorgelina Hardoy, Mitlin, Diana, 2020. "Building resilience to climate change in informal settlements.". One Earth 2 (2), 143–156. https://doi.org/10.1016/j.oneear.2020.02.002.
Savaşan, Zerrin, 2019. "Climate governance in turkey: a forward-looking perspective.". Turk. Stud. 20 (4), 541–571. https://doi.org/10.1080/14683849.2019.1613895.
Savaşkan, Osman, 2021. "Political dynamics of local government reform in a development context: the case of Turkey.". Environ. Plan. C: Polit. Space 39 (1), 204–225. https://doi.org/10.1177/2399654420943903.
Schell, Christopher J., Dyson, Karen, Fuentes, Tracy L., Des Roches, Simone, Harris, Nyeema C., Sterud Miller, Danica, Woelfle-Erskine, Cleo A., Max R, Lambert, 2020. "The ecological and evolutionary consequences of systemic racism in urban environments.". Science 369 (6510), 1–19. https://doi.org/10.1126/science.aay4497.
Schlosberg, D., Collins, L.B., 2014. From environmental to climate justice: Climate change and the discourse of environmental justice. *Wiley Interdiscip. Rev. Clim.* Chang. 5, 359–374. https://doi.org/10.1002/wcc.27.
Schlosberg, David, Lisette, B.Collins, Niemeyer, Simon, 2017. "Adaptation policy and community discourse: risk, vulnerability, and just transformation.". Environ. Polit. 26 (3), 413–437. https://doi.org/10.1080/09644016.2017.1287628.
Sen, Amartya, 1997. "Editorial: human capital and human capability.". World Dev. 25 (12), 1959–1961. https://doi.org/10.1016/S0305-750X(97)10014-6.
Shi, Linda, Eric Chu, Isabelle Anguelovski, Alexander Aylett, Jessica Debats, Kian Goh, Todd Schenk, et al., 2016. "Roadmap towards justice in urban climate adaptation research.". Nat. Clim. Change 6 (2), 131–137. https://doi.org/10.1038/nclimate2841.
Sovacool, Benjamin K., 2013. Adaptation: the complexity of climate justice. Nat. Clim. Change 3 (11), 959–960. https://doi.org/10.1038/nclimate2037.
Swyngedouw, Erik, 2015. "Politicizing urban political ecologies.". Routledge Handb. Political Ecol. 609.
Tanik, Aysegul, Tekten, Deniz, 2018. "Planning climate change adaptation activities for Turkey.". Int. J. Environ. Sci. Dev. 9 (9), 258–265. https://doi.org/10.18178/ijesd.2018.9.9.1110.
Tansel, Cemal Burak, 2019. "Reproducing authoritarian neoliberalism in turkey: urban governance and state restructuring in the shadow of executive centralization.". Globalizations 16 (3), 320–335. https://doi.org/10.1080/14747731.2018.1502494.
The New Republic, 2018, "Climate Kings: How a New Generation of Authoritarian Leaders Are Using Climate Change to Seize Power." https://newrepublic.com/article/148861/climate-change-authoritarian-leaders.
Turhan, Ethemcan, 2017. "Right here, right now: a call for engaged scholarship on climate justice in Turkey.". N. Perspect. Turk. 56 (May 2017), 152–158. https://doi.org/10.1017/npt.2017.21.
Turkish Ministry of Environment and Urbanisation, 2010, "Climate Change Strategy 2010- 2023." https://www.csb.gov.tr/db/iklim/editordosya/iklim_degisikligi_stratejisi_EN.pdf.
Turkish Ministry of Environment and Urbanisation, 2011a, "National Climate Change Action Plan 2011–2023." http://www.dsi.gov.tr/docs/iklim-degisikligi/ıdepeng.pdf?sfvrsn=2.
Turkish Ministry of Environment and Urbanisation, 2011b, "Turkey's National Climate Change Adaptation Strategy and Action Plan." http://www.csb.gov.tr/db/iklim/editordosya/Adaptation_Strategy.pdf.
Turkish Ministry of Environment and Urbanisation, 2018, "Seventh National Communication of Turkey under the UNFCCC." https://unfccc.int/sites/default/files/resource/496715_Turkey-NC7–1-7th National Communication of Turkey.pdf.
Uzelgun, Mehmet Ali, Şahin, Ümit, 2016. "Climate change communication in Turkey. Oxf. Res. Encycl. Clim. Sci. (June), 1–21. https://doi.org/10.1093/acrefore/9780190228620.013.466.
Vizyon 2050 Office, 2020, "Istanbul Planning Agency Launch." https://www.vizyon2050.istanbul/eventdetail-2–11-istanbul_planning_agency_launch.
Vogel, Brennan, Henstra, Daniel, 2015. "Studying local climate adaptation: a heuristic research framework for comparative policy analysis.". Glob. Environ. Change 31, 110–120. https://doi.org/10.1016/j.gloenvcha.2015.01.001.
Westman, Linda, Broto, Vanesa Castán, 2021. "Transcending existing paradigms: the quest for justice in urban climate change planning.". Local Environ. 26 (5), 536–541. https://doi.org/10.1080/13549839.2021.1916903.
Williams, David Samuel, 2020. "Enhancing autonomy for climate change adaptation using participatory modeling.". Weather, Clim., Soc. 12 (4), 667–678. https://doi.org/10.1175/WCAS-D-20-0024.1.
Wilson, Robyn S., Herziger, Atar, Hamilton, Matthew, S. Brooks, Jeremy, 2020. "From incremental to transformative adaptation in individual responses to climate-exacerbated hazards.". Nat. Clim. Change 10 (3), 200–208. https://doi.org/10.1038/s41558-020-0691-6.
Yeşil Gazete, 2020, "İklim Politikaları Açısından Kanal İstanbul: Yangına Körükle Gitmek." https://yesilgazete.org/iklim-politikalari-acisindan-kanal-istanbul-yangina-korukle-gitmek/.
Yıldırım, Korkmaz, Onder, Murat, 2019. "Collaborative role of metropolitan municipalities in local climate protection governance strategies: the case of Turkish Metropolitan Cities.". J. Environ. Assess. Policy Manag. 21 (2), 1–23. https://doi.org/10.1142/S1464333219500066.
Yılmaz, Zafer, Turner, Bryan S., 2019. "Turkey ' s deepening authoritarianism and the fall of electoral democracy.". Br. J. Middle East. Stud. 46 (5), 691–698. https://doi.org/10.1080/13530194.2019.1642662.