Geoforum 155 (2024) 104099

Contents lists available at ScienceDirect

Geoforum

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

Recognising the right to urban climate justice in Kuwait

Deen Sharp [a,*], Batul Sadliwala [b], Abrar Al-Shammari [c]

[a] Department of Geography & Environment, London School of Economics and Political Science, United Kingdom
[b] LSE Middle East Centre, United Kingdom
[c] Department of Near Eastern Studies, Princeton University, United States

ARTICLE INFO

Keywords:
Kuwait
Climate just city
Urban climate justice
Bidoon
Migrant workers
Citizenship
Gender

ABSTRACT

In 2016, the Kuwait Mitribah weather station recorded a scorching 53.9 degrees Celsius, among the highest temperatures ever recorded on earth. Today, temperatures in Kuwait frequently exceed 50 degrees Celsius during the summer, accompanied by a host of extreme weather events such as severe droughts, dust storms, and floods. These climate challenges threaten and transform Kuwait's social and ecological landscape. To address these pressing issues, this paper adopts an urban climate justice framework, emphasizing the right to the city, recognition justice, and advocating for a climate-just city. Through this lens, we examine how climate change disproportionately affects Kuwait's structurally vulnerable populations, particularly the majority non-citizen groups: the Bidoon (stateless) and low-wage migrant workers. This paper highlights the necessity of including marginalized groups in climate change discussions along with climate adaptation and mitigation policies. By examining the everyday urban lives of Kuwait's non-citizen residents – including their struggles with access to civil and political rights; poor housing and labor conditions; and inequitable access to basic urban services, such as water, electricity and transport – this paper demonstrates how these factors significantly increase their vulnerability to the detrimental impacts of climate change. In highlighting the vulnerabilities of low-income non-citizens and advocating a shift to a climate-just city approach, this analysis aims to guide decision-makers in Kuwait and beyond. The impact of climate change, we contend, offers an opportunity to re-open debate about the fundamental rights and concepts of citizenship, belonging, community and justice.

1. Introduction

In Kuwait the dawn of the fossil fuel era in the late 1930s transformed state-society relations, leading to rapid urbanization and a significant influx of migrant workers. Today, the country faces the dual challenges of climate change and the necessity to adapt and mitigate its effects, once again altering its socio-spatial and ecological systems. Kuwait has recorded some of the highest temperatures on the planet and is increasingly experiencing extreme weather events, such as dust storms and flooding. This paper examines the disproportionate impact of climate change in Kuwait on those with the least responsibility for causing it, who are already among the most vulnerable in the country, namely the low-income non-citizen population. Extreme temperatures, for example, are associated with the doubling or tripling of mortality risk amongst migrant workers, and the risk associated with dust exposure is higher for non-citizens compared to citizens (Alahmad et al., 2020, 2022, 2023; Alahmad, 2022).

This paper focuses on the non-citizen *Bidoon* and low-income migrant workers communities, shedding light through an intersectional lens (McArdle, 2021) on the nuanced differences that climate change is having within these demographics. While the scholarship has concluded that women, especially in rural areas, are the most vulnerable to climate-related dangers (for an overview of this literature, see Pearse, 2017), the context of Kuwait presents a different scenario. Here, most low-income migrant workers are men, performing outdoor labour mainly in construction and peri-urban agriculture, making them particularly susceptible to the adverse effects of climate change. Transitioning from the workplaces of non-citizens to their homes, we show how urban segregation, insecurity of tenure, poor-quality construction and maintenance, are all combining with the impacts of climate change to further urban injustices. Critically, our analysis underscores how current mitigation and adaptation strategies reinforce these existing structural inequalities.

Contemporary mitigation and adaptation strategies and initiatives by the Kuwaiti government, and other stakeholders, often ignore the most vulnerable and the majority non-citizen population. These

* Corresponding author.
E-mail addresses: d.s.sharp@lse.ac.uk (D. Sharp), alshammari@princeton.edu (A. Al-Shammari).

https://doi.org/10.1016/j.geoforum.2024.104099
Received 19 November 2023; Received in revised form 24 July 2024; Accepted 5 August 2024
Available online 12 August 2024

strategies prioritize top-down, large-scale projects, such as renewable energy installations or newly constructed "sustainable" housing developments, which are frequently financialized. In this paper, we aim to highlight not only who the most vulnerable are to the impacts of climate change and how they are exposed, but also to identify who is included and excluded in adaptation and mitigation strategies, along with the consequences of these exclusions. We seek to demonstrate how a more "climate-just city" (Granberg and Glover, 2021; Steele et al., 2018) can be achieved in Kuwait and beyond, in which climate adaptation and mitigation strategies recognize, address and protect the most vulnerable.

This paper contributes to the growing scholarship on urban climate justice (see for instance, Shi et al., 2016; Bulkeley et al., 2014; Cohen, 2018; Goh, 2020; McArdle, 2021; Rice et al., 2023; Wagle and Philip, 2022) and specifically to the "third wave of climate urbanism" that connects climate change to broader issues of sustainable development and social justice (Bulkeley, 2021). It builds upon this urban climate justice scholarship by drawing explicitly on Henri Lefebvre's (1996) concept of the "right to the city" and Nancy Fraser's (2000) notion of "recognition justice". In this context, we focus on questions of citizenship and social status in relation to the consequences of climate change. In Kuwait, the issue of who is granted citizenship has long been deeply contested, touching upon matters of belonging, community and justice (Boodrookas, 2020). We argue that climate change presents an opportunity to open a debate on the right to citizenship and its associated benefits, asserting that climate adaptation and mitigation strategies must also be attentive to issues of equity and protection.

Furthermore, this paper intentionally applies an urban climate justice lens within the context of the Arab world, a region often overlooked in climate justice discussions. Rather than focusing on the regional level, we engage specifically with the city-state of Kuwait. In the Arab world, the growing social science scholarship on climate change is mainly framed through a regional or inter-national scale (see for instance, Al-Maamary et al., 2017; Al-Sarihi and Mason, 2020; Azar and Raouf, 2017; Luomi, 2014, 2021; Mason, 2019; Waha et al., 2017; Simpson, 2019; Zumbraegel, 2022). However, there is limited research, particularly on the Arabian Peninsula, that considers questions of everyday climate vulnerability and climate justice at the intrastate and/or urban scale.[1]

As Simpson (2019) has argued, the scholarly discourse on sustainability and the environment in the Gulf Cooperation Council often lacks a realistic inner landscape of society in these countries and fails to articulate the social inequalities related to it (91). Climate change is global in scale but is mediated through multiple local problems (Fisher, 2015; Lehman and Kinchy, 2021; Porter et al., 2020). Scholars have called for greater attention to be placed on the processes of climate change in relation to urban dynamics and everyday life, in the Arab world (Deboulet and Mansour, 2022; Jabareen, 2015; Rignall, 2019; Sowers, 2019) and beyond. This paper responds to that call. Climate change, and responses to it, are now significant forces shaping the urban form and life. For those seeking urban justice, greater attention must be placed on issues surrounding climate change. Similarly, those concerned with climate justice must be attentive to urban processes.

2. Climate Change, Citizenship, and Inequality in Kuwait

The Intergovernmental Panel on Climate Change (IPCC) (2021) has projected with high confidence that, due to continued increases in Greenhous Gas (GHG) emissions, heat extremes and marine heatwaves will continue for the Arabian Peninsula. Kuwait has always been hot, but the intensity and extent of this heat is being aggravated with climate change. In 2016, the Kuwaiti Mitribah weather station's reading of 53.9 degrees Celsius was the uppermost temperature ever recorded in Asia and among the highest recorded on Earth (Merlone et al., 2019). Previously, temperatures rarely exceeded 50 degrees, but now it is an annual occurrence; extreme heatwaves are becoming normalized (Zittis et al., 2021, 2022). Sea temperatures are also breaking historic records (Alosairi et al., 2020, 6). In addition, Kuwait, due in part to climate change, has experienced an increased severity of droughts and dust storms, as well as more frequent and severe flash floods and rains (see for instance, Ajjur and Al-Ghamdi 2021; Zittis et al., 2021).

Kuwait urgently needs global and local action on climate change to effectively reduce fossil fuel combustion to decelerate the socioeconomic and ecological risks facing the country. But any drastic cut in fossil fuel demand would have a transformative and disruptive impact on its current political and economic system (Krane, 2020, 118). Globalisation and the discovery of oil in 1938 changed the scale of the small port town of Kuwait into a capital-rich and carbon-intensive urbanized city-state that today is home to over four million inhabitants. The country holds six percent of the world's proven oil reserves and is the tenth largest petroleum producer in the world. At the same time, we should be cautious in labelling Kuwait an "oil-city-state", since all industrialized cities, from New York to Beijing, are built, operated, and navigated thanks to oil (Mitchell, 2011).

The immense oil revenues accumulated over the past century significantly transformed the distribution of political power and the nature of state-society and labor relations (Al-Nakib, 2016; Crystal, 1990; Hanieh, 2011). However, these changes, were not revolutionary as they inserted themselves into pre-existing political structures (Menoret, 2014). Nonetheless, Kuwait's social and urban composition was transformed in its shift from a port-based economy to an oil-based one (Al-Nakib, 2013, 8). The state greatly expanded, and the provision of citizenship was central to the state-building project that began in earnest in the 1950s (Al-Nakib, 2014). The state granted designated citizens generous welfare provisions. Distinct from its Arabian Peninsula neighbours, Kuwait is the sole Gulf monarchy with a popularly elected National Assembly that serves as an actual law-making (rather than just advisory) body (Al-Nakib, 2022, 73). While Kuwaitis are proud of their democratic traditions since the advent of oil, Al-Nakib (2016) argues that the idea of citizenship is defined primarily by access to state welfare benefits rather than by social democracy or equality (200).

Kuwait was the first Arab Gulf city to use its oil revenues to undergo intensive urbanization that has since defined the Arabian Gulf region (Al-Nakib, 2016). Today, nearly all the residents of Kuwait live in what can be defined as an urban context; the historical pastoral population no longer exists. Despite this, the distinction between *hadar* (townspeople) and *badu* (nomadic) continues to be in use and remains a social divide in the country (Al-Nakib, 2014). Various tiers of citizenship were created depending on the time that one's family became "settled" in Kuwait rather than nomadic (Freer, 2024, 208). There exists uneven access to the state with *hadar,* Sunnis, and men receiving preferential rights and benefits over *badu*, Shi'a, non-Muslims and women (Al-Nakib, 2016, 200). The continued existence of the divide between the *hadar* and *badu* communities in Kuwait illustrates both the tenuous basis in who is defined as a citizen and the continued tension around this category.

The question of citizenship and "who is a Kuwaiti" has long been a topic of national debate. Boodrookas (2020), in his historical genealogy of the citizenship debate in Kuwait, argues that being a Kuwaiti national became significant when ordinary people faced yes-or-no questions in moments of material struggle (143). We are now potentially at the beginning of the end of the fossil fuel era that will again have a transformative ecological and urban impact for Kuwait and involve once again material struggle. Notably, Boodrookas (2020) asserts that Kuwaitis did not restrict access to nationality solely to increase their share of oil wealth. Instead, they based these restrictions on who 'deserved' to benefit from the nation's oil wealth, raising larger issues of belonging, community, and justice (145). We contend that the impact of climate change on Kuwait presents an opportunity to reopen the debate about the right to citizenship and its benefits. The expected rise in

[1] Except for the notable literature focused on largely top-down financialized urban mega-projects, like Masdar (for an overview of this literature see, Sharp 2022).

financial investment and accompanying proliferation of adaptation and mitigation schemes provide an opportunity to make demands about who should be protected from the impacts of climate change and how.

The most significant divide in Kuwait is not within the community of citizens but between citizens and non-citizens. The expanded and intensified urbanization required the influx of a foreign worker population to build and maintain the city-state. According to government figures, foreign nationals, largely from India, Egypt, and the Philippines, constitute just over two-thirds of Kuwait's four million plus inhabitants. In turn, two-thirds of this population are male. These foreign nationals enter the country through the Kalafa system. Kafala abdicates state responsibility in migration governance through a system based on citizens' sponsorship of foreign labor. Under this system, the *kafeel* (sponsor) takes financial and legal responsibility for the worker. The *kafeel* is generally an individual Kuwaiti citizen or a private business (which must have majority Kuwaiti citizen ownership). Originating from British colonial policy in the early 20th century, the Kafala system was implemented to regulate labor migration to the Arab Gulf, including Kuwait, following the discovery of oil. *Kafala* marked a break from a more cosmopolitan pre-oil urban social fabric (Al-Nakib, 2016) and institutionalized the political exclusion of new migrants as a feature of the state politics and the economy (Dito, 2015).

Many migrant workers use agents to arrive in the country. Some of these migrant workers may end up paying for their visa, air-ticket and accommodation in advance, even though Kuwaiti labor law stipulates that employers must bear the cost of recruitment and provide adequate housing. One community organizer told us this could be around US $2000 that is then often deducted from the worker's monthly salary in Kuwait (often between US$320-400 per month). Formally this population resides in the country on short-term one-to-three-year work permits (the de jure length of their work permits) but in practice many live and work in Kuwait for decades, raising families, and, in spite of an absence of formal citizenship or permanent residence, settling down.

In addition to the migrant worker population, the *Bidoon* (literally "without" in Arabic and means "without citizenship") constitute another important non-citizen group in the country. The *Bidoon* population, estimated to number between 100,000 and 200,000 people, was rendered stateless following the passing of the 1959 Nationality Law. This law defined "original Kuwaitis" as those who could trace their ancestry in the country through their paternal line since 1920 (Beaugrand, 2018; Longva, 1997). To this day, the Kuwaiti government classifies this undocumented population as "illegal immigrants", denying this population access to formal employment and state services, such as healthcare and education. Officially, the Kuwait Government does not consider the Bidoon to be stateless, but citizens of another country who are hiding their genuine passports. Al-Nakib (2016) argues that the nationality law was part of a broader set of state backed measures that ensured access to Kuwaiti nationality and the rights and privileges that came with it, including the right to own land and significant business privileges, was rendered extremely exclusive (179). As several members of the *Bidoon* community explained in our focus group and interviews, the denial of citizenship results in restrictions in the type of employment opportunities they can access, areas they can live in and houses they can rent. They, like all non-citizens, are legally forbidden from buying property and they must rent on the private market.

The denial of citizenship, along with civic and political rights, to Kuwait's majority non-citizen population is a central component to their social subordination and exacerbates their vulnerability to climate change. Simpson (2019) contends that across the Gulf Cooperation Council, this unequal relationship between privileged citizens and excluded non-citizens stifles environmental reform efforts in the region (80). This paper highlights the importance of including the voices and experiences of marginalized groups, such as low-income non-citizen workers in Kuwait, in climate change discussions. The provision of citizenship, or at least the abolition of institutionalized legal regimes like Kafala, should be considered as integral to climate adaptation and mitigation efforts.

3. Urban Climate Justice: The Right to the Climate-Just City and Recognition Justice

In this research, we aim to build on the urban climate justice scholarship that stresses the need to incorporate climate change related issues into discussions of urban justice in Kuwait and the region. This entails being attentive to the everyday lives of low-income non-citizens and understanding how climate change makes certain groups particularly vulnerable in their workplaces, homes, and during their daily commutes. Through this analysis, we aim to provide clear entry points for efforts directed toward improving non-citizens' rights while, or even through, adapting to and mitigating climate change. We assert that restoring a right to the climate-just city can achieve not only an improved urbanity but also more just climate adaptation and mitigation policies.

At the core of urban climate justice literature lies Henri Lefebvre's writings and his concept of the right to the city (Lefebvre, 1996). Arising as a critique of modernist urban planning with its segmented and specialized urban zones, Lefebvre's notion emphasizes the need for urban inhabitants to actively participate in shaping their urban surroundings through everyday practices. Later he explicitly added the right to difference to his understanding of the right to the city. This right signifies the ability to create a city marked by varied lifestyles and ways of living – a demand for urban diversity and for a plurality of actors, across social categories, to be able to produce urban space according to their own needs and desires (Lefebvre, 1996). Essential to urban justice frameworks are inquiries into who shapes the city, and who is the city built, maintained, and developed, for? These questions are intertwined with urban-based climate change processes. Urban climate justice aims to expand the right to the city, to the right to the *climate-just* city; where cities also address the climate crisis and protect all residents from climate harm (Rice et al., 2023).

Along with the right to the city framework, recognition justice (Fraser, 2000) has become a major component of urban climate justice. Recognition justice asks, who is recognised as a stakeholder with a right to participate in decision making? A major concern with the critical scholarship on climate adaptation and mitigation policies is the lack of consideration toward equity, inclusion, and justice, as well as the neglect of the lived realities of how people are affected and adapt to the effects of climate change (Chu and Michael, 2019, 141). Recognition justice serves as a lens through which to examine the complexities of urban climate justice, elucidating the need for equitable treatment, inclusive decision-making processes, and sensitivity to diverse perspectives in addressing urban-based climate challenges.

The question of citizenship lies at the heart of the intersection of the right to the city and recognition justice. Citizenship in Kuwait brings notable social, economic, and political rights and benefits. The absence of status equality and reciprocal recognition, for certain non-citizens in Kuwait results in their misrecognition and status subordination, where they are deemed: inferior, excluded or simply invisible (Fraser, 2000, 113). But these benefits for citizens and burdens for non-citizens are not fixed; rather, they are at the centre of political contestation. The rights and privileges accorded to citizens and noncitizens are constantly debated and in flux and in this paper, we insert climate change into the considerations and debates in relation to them. Recognition justice and the right to the city, along with the associated concerns of citizenship, are central to our definition of urban climate justice in this study.

The Kuwaiti government is, and increasingly often with the support of the agencies of the United Nations, publishing mitigation and adaptation schemes, renewable energy investment plans, waste management and recycling strategies, green infrastructure, and low carbon urban plans. These policies and initiatives that do exist around climate change are focused on mitigation initiatives that are top-down, financialized, and isolated projects, such as the Shagaya Renewable Energy Park (a 3.2

GWe solar panel, photovoltaic and wind energy complex). The Government's *National Adaptation Plan 2019–2030* documents, unwittingly, how few adaptation activities are underway in Kuwait and the minimal attention that the state has placed on this area (EPA, 2019). Kuwait's Nationally Determined Contribution (NDC) in its "Vulnerability and Adaptation" section does make passing mention to the increased risk to public health that climate change will bring and even specific mention to those who work outdoors (2019, 58). But there is no mention of who the population is that is mostly exposed to outdoor work, the particular risks they are exposed to and what adaptations are required to ensure that they are protected from the risk of death or harm. The Kuwaiti government's national communications on climate change provide little insights into "climate inequality or the political and economic factors that structure them" (Sowers, 2019, 622).

We understand the current mitigation plans in Kuwait and the effective non-existence of adaptation plans as political statements as to who and what matters in the country in relation to climate change. It is not those who are most impacted by it. The invisibility of non-citizens in existing government mitigation and adaptation policies and practices is leaving some of them exposed to extreme forms of climate injustice and is a clear articulation of this groups (albeit differentiated) social subordination. This misrecognition of non-citizens, as we detail below, is codified in law, institutionalized through government policies, rooted in societal structures and cultural practices, and materialized and mediated by the spatial organization of political powers. Non-citizens are disconnected from formal urban governance processes and excluded from information, knowledge, and decision-making processes. The struggle for recognition in relation to the impact of climate change and subsequent climate action is a decidedly urban struggle. To rectify this urban misrecognition, as this study seeks to do, is to undertake a politics aimed at overcoming subordination by establishing the misrecognized party as a full member of society, capable of participating on par with the rest of society.

This paper deploys an intersectional lens to engage non-citizens, exploring how they are impacted by climate change hazards and illuminating their adaptation actions and needs. The category of non-citizen constitutes a vast range of experiences, circumstances, and exposure to climate change. There are non-citizens in Kuwait who occupy professional jobs, earn good salaries, and are no more or less exposed to the hazards of climate change than citizens. While professional non-citizens are also disenfranchised, they do not suffer from socio-economic subordination in the manner that other lower income non-citizen groups do. In this paper, we recognize low-income non-citizens in Kuwait as important subjects who should be included in mitigation and adaptation policies. The goal is to create the contours for a shift in what is considered climate action in the country, in line with a climate justice approach to reduce "marginalization, exploitation and enhance equity and justice" (Sultana, 2022, 118).

Urban climate justice as an analytical framework has been only minimally utilized in the context of the Arab world, if at all. This is in stark contrast to the robust scholarship and activism around urban justice and the right to the city in the region. Across the Arab world, in both oil and non-oil producing states, there has been a rapid rural to urban transformation marked by high levels of inequality and segregation. Lefebvre's ideas, and notably his "cry and demand" for a "right to the city", have emerged as crucial analytical tools and rallying points for scholars and activists in the region, advocating for increased democratic control over urban space (for a full overview of the influence of Lefebvre in the region, see Sharp, 2022b).

In Kuwait, the work of Lefebvre has been a widely deployed by scholars to examine the spatial history of Kuwait (Albaqshi, 2010; Al-Nakib, 2016), the use of public space (Al-Nakib, 2014; Chay, 2015) and housing policies and practices (Al-Ragam, 2017). The right to the city has served in Kuwait as a crucial tool to interrogate issues such as the agency to shape and assert claims over the built environment, the changing conceptions of rights and citizenship, as well as demands for recognition, inclusion, and entitlement (see for instance, Al-Nakib, 2014, 2016; Shahrokni and Sofos, 2023).

It is perhaps not a surprise that Lefebvre's work has been influential in Kuwait, given that since the start of the 1950s a British town-planning firm created a master plan that transformed Kuwait into a "modern" city. This plan demolished the old town and created an urban space that emphasized the separation of activities and relocated its inhabitants en masse to new suburbs (Al-Nakib, 2014, 103). The divide between citizens and non-citizens in Kuwait is spatialized. Most male low-income migrant workers like in temporary housing near work sites or in high density residential areas, with citizens mainly living in villas in suburban areas. Al-Nakib (2016) argues that claiming a right to the city in Kuwait is part of a bigger goal to achieve the "democratic city". She focuses on the issue of access to citizenship citing the growing divide between citizens and non-citizens in Kuwait: "Restoring a right to the city… opens up new opportunities for social becoming and belonging that defy the precepts of orderly planning and transcend the barriers of formal citizenship, and (in so doing) can potentially salvage Kuwait's primordial quality of urbanity" (221).

4. Methodology

Our data collection for this study took place between October 2020 to June 2022. As this was during the COVID pandemic many of the interviews for this study were conducted via Zoom or WhatsApp. A central part of the data we draw on comes from over forty semi-structured interviews conducted largely by Kuwait based members of the research team in English, Arabic and Hindi with residents of Kuwait (both citizens and non-citizens). All the interviews conducted in Arabic and Hindi were translated and transcribed into English. The interviews included those from the *Bidoon* (n = 11) community and the migrant workers (n = 19) – from Indian, Ethiopia, Nepal, the Philippines, and Egypt – communities. We were a team of five interviewers, three of whom were based in Kuwait and two in the United Kingdom. Two of the Kuwait-based interviewers had extensive networks within the *Bidoon* community and the third within the migrant community, which we deployed to obtain interviewees. We also interviewed local and regional migrant rights activists and community case workers. Unless the interviewee was a public figure, we have used pseudonyms to protect their identity.

We also conducted a series of focus groups: one high-level expert focus group, which included government advisors and consultants, as well as United Nations officials; two with youth aged between 13–17 years; and one with six members of the *Bidoon* community. All focus groups were held under Chatham House rules and summaries were written up and posted on the project page website housed at the London School of Economics.[2] The interviews and focus groups were transcribed and analysed using the coding and categorizing tools available in the data analysis software NVivo.

5. The Great Outdoors: Gender and Non-Citizen Vulnerability

In Kuwait the group most at risk from the negative implications of climate change are predominantly low-income non-citizen men. This is not only because this group makes up most of the population but due to the type of outdoor-based work they are engaged in. Gender, citizenship status and class intersect with where work is undertaken and subsequent exposure to climate hazards. Low-income male migrant workers, as we detail below, mainly work outdoors and are especially vulnerable to the impacts of climate change, on construction sites, as delivery drivers (notably on motorbikes rather than cars), and to a lesser extent in urbanized agricultural areas (as shepherds or farmers). Low-income

[2] The summaries of the focus groups can be accessed here: https://www.lse.ac.uk/middle-east-centre/research/kuwait-programme/research-grants/2020-21/Sustaining-Kuwait-in-Unsustainable-Times.

Bidoon men are vulnerable as many of them work outdoors as street vendors.

Low-income female migrant workers are mostly employed in domestic work, which generally takes place indoors. As a result, they are somewhat protected from the worst excesses of heat and exposure to dust. However, our interviews revealed that indoor work does not provide complete protection from climate hazards. Joy, a domestic and community case worker, explained that while there is some shelter from the heat in the house where she works because of air-conditioning, the laundry room where she spends a significant amount of time, ironing and washing, lacks an air-conditioner. Migrant rights activists we interviewed also noted that domestic workers are sometimes required to work outside, for instance, to cultivate land. Additionally, they are often exposed to extreme heat when employers order them to clean roofs or windows.

The Kuwaiti government has moved to implement some climate adaptation measures to protect those exposed to the extreme weather. Notably construction workers have been at the centre of several national and international migrant rights campaigns, and the focus of state protections. The Ministerial Decree No. 535 (2015) prohibits working outdoors between 11am and 4 pm from 1 June until 31 August. While it applies to all private sector and government workers, it does not apply to domestic or agricultural workers employed by Kuwaiti households who are on domestic worker visas.

However, our interviewees noted that the increase in temperatures and extended duration of the summer is weakening the protection that this decree provides and rendering it ineffective. A recent study notes that the midday time window is somewhat arbitrary and may not coincide with peak heat risk – that can occur in the morning – nor does it address environmental factors (relative humidity, wind speed), workplace factors (i.e. clothing) or personal factors (i.e. acclimatisation or pre-existing conditions) (Alahmad, 2023, 351). Many interviewees also questioned the extent to which this law was followed, in particular by the private sector. Construction workers engaged for this research, however, did report that in their experience if it gets too hot, then work is halted and that in the summer months work did switch to the night. They also reported that companies provided oral rehydration salts when workers feel sick or to help them keep working.

Another group of male migrant workers notably exposed to extreme weather conditions are delivery drivers, particularly those who deliver by bike or motorcycle. Like construction workers, there have been campaigns in Kuwait to restrict bike and motorcycles to deliver at night and cars to deliver in the day. In our interviews with delivery drivers, they noted how difficult it was to work in extreme heat on a bike. In June 2024, Decree No.535 was extended to include motorcycle delivery workers. One driver, Deepak, mentioned that rain poses the greatest danger for bike riders due to slippery roads. He stated that as a delivery driver, it is better to choose a car, saying, "There's AC and even traffic is not a problem. You can sit. The risk is only for the bike rider."

Several of our key expert interviewees, directly involved in migrant rights advocacy, noted that the relatively visible and recognized status of workers in construction and delivery has provided them with a degree of legal and material protection. However, different workplaces exhibit varying levels of social subordination and vulnerability. According to these experts, the most vulnerable are the less visible and inaccessible workers in outdoor environments, specifically agricultural workers in Kuwait's expanding peri-urban agricultural areas. The agricultural sector, with approximately 38,000 workers in 2019 according to the Central Statistics Bureau, is much smaller than construction. Many of these workers often labor in extreme temperatures, in isolation and with little access to basic services. A 2021 community-run project interviewed shepherds in farming areas like Abdaly, finding individuals living in canvas tents or semi-permanent steel structures, with precarious access to water, electricity and cooling (Sadliwala, 2022).

In addition, agricultural workers employed on a domestic worker's visa are not covered by the protections of the country's Labor Law, including amendments prohibiting outdoor work in the summer.[3] If the farm is private property and not registered as a business, then the Public Authority for Manpower has no jurisdiction to conduct inspections. Our interviewees also added that commercial farms, often located far from the city centre, rarely undergo workplace safety inspections. The increasing numbers of agricultural workers exposed to these hazards is concerning, as climate change has pushed the Government of Kuwait to boost domestic food production. Kuwait imports over 90 percent of its food, and food price variability, exacerbated by climate change, has long been a major concern for policymakers (Gelan and Atkinson, 2022, 8). The specific vulnerability of low-paid migrant workers in Kuwait's growing urbanized agricultural areas requires further research.

Bidoon men are particularly vulnerable to the impact of climate change as many of them work outdoors as street vendors. Several members of the *Bidoon* community we interviewed shared their experiences of heat stroke associated with this work. They detailed how their status within Kuwait, which prevents them from accessing formal employment, forces them to endure extreme temperatures to make a living as street vendors. Many of our *Bidoon* interviewees noted that the period of extreme heat in Kuwait has been extended. Additionally, the increasing severity of dust storms and extreme temperatures in recent years have made it more difficult for street vendors to operate. Their produce often goes bad in the heat or ends up ruined by the dust. One *Bidoon* interviewee described it as a "race against time," with a constant fear of losing their produce. Some older *Bidoon* women also work as street vendors, selling food and women's apparel, and they too are impacted by the rising heat. These women are particularly present outside schools, selling candy and sandwiches. However, another *Bidoon* interviewee noted that police harassment and social stigma around women working outdoors have driven most of them away.

It is not only at work that residents of Kuwait are exposed to the outdoors. Respondents noted how they are adapting to extreme temperatures by changing their daily routines. Reem explained that for the past two years now, "All of my errands, no matter what I have, I won't go out in the morning. It's very rare for me to be forced to go out in the morning… I restrict myself to a specific time frame just so that I don't have to face the sun." Several interviewees reported that the increased temperatures in recent years have led them to limit their time outdoors. They also noted the impact of these temperatures on their health, reporting instances of heat strokes, dehydration, eczema, asthma and lethargy.

6. Non-Citizen Housing and the Struggle for the Right to the Climate Just City

Kuwait's urban landscape is marked by high levels of inequality and segregation between citizens and non-citizens (Al-Nakib, 2016; Alsahli and Al-Harbi, 2023). In writing on the "loss of the right to the city" in Kuwait, Al-Nakib (2016) highlights how the oil-revenue driven suburbanization process dissolved common bonds between Kuwaitis and placed residents in socially homogenous enclaves that resulted in a "highly insular, divided and increasingly intolerant society" (197). Certain select citizens in Kuwait were provided with large housing plots located in the inner suburbs between the First and Fourth Ring Roads in which a suburban urban fabric was constructed to cater for them (Al-Nakib, 2016, 192). The non-citizens we interviewed all came from a small cluster of densely populated neighborhoods, such as Jleeb Al Shuyoukh, Hawalli, Salmiya, Mahboula, as well as areas within the Jahra governorate, that are known for their poor-quality housing and infrastructure. Mohammed, an Indian resident, remarked on the poor construction and maintenance in these areas: "I believe [this is] most common in places like Jleeb, Khaitan and Farwaniya, areas that are

[3] Although they would be covered by the Domestic Workers Law, which has unfortunately fewer protections.

densely packed with [non-citizens]… the buildings are not maintained."

Despite the urgent need to update the building codes and improve the insulation and construction of the existing housing stock, current mitigation schemes in Kuwait focus overwhelmingly on renewable energy technologies and new housing developments.[4] Several large urban construction projects are underway in Kuwait, but few of them link up to an urban-based decarbonization strategy or efforts to improve the quality of construction and/or insulation. An international urban consultant who advises the government noted that "95 percent of [current] urban projects are detrimental to climate change mitigation." He cited the construction of hundreds of kilometres of roads that link to new urban developments that are "completely unsustainable". The minimal number of projects that are being implemented are focused on elite technological fixes.

Building standards, in general, are poor, with construction often being undertaken with inappropriate or poor-quality materials. Kuwait's building code lacks specific construction guidelines for designing structural elements, and design specifications are often not tailored to the local context, relying instead on British and American standards (Almansour and Krarti, 2022, 2). Energy consumption in Kuwait, amongst the highest per capita in the world, is in part related to the poor selection of construction materials, design considerations and deficient construction practices (Almansour and Krarti, 2022, 2). An international urban consultant noted in a focus group that issues of flooding, dust and poor insulation are a common problem for the housing sector across different classes in Kuwait. Housing standards in low-income areas of Kuwait are particularly bad. Several non-profit and migrant community organizers noted that the municipality rarely goes to these areas and that there is a "complete neglect of the environmental changes that are happening". For those in the poorest areas of Kuwait, climate change is making the poor-quality construction and maintenance of their housing apparent. In our interviews respondents noted how poor construction and insulation was putting their health at risk and straining their already tight finances through the cost of repairs. As Haya, a *Bidoon* woman, said, "We live in homes that aren't appropriate for this climate".

Historically, vernacular architecture across the GCC placed great emphasis on using suitable materials, including stone, mud brick, and palm tree reeds, to achieve thermal comfort. The advent of air-conditioning (AC) introduced a whole "new regime of material culture" (Winter, 2016). This shift, especially in a context like Kuwait with low energy costs, reduced the need for careful selection of both external and internal building materials. As Winter (2016) notes, AC enables the use of steel reinforced concrete and glazed facades, and an interior design more familiar to the temperate climates of Europe and North America, including furniture that cushions and insulates through feathers and foam, and wall-to-wall carpeting. Air conditioning is energy hungry and imposes a great strain on the electricity grid in Kuwait, accounting for over 60 percent of peak electricity consumption (Municipality of Kuwait, 2021). Despite its inordinate energy demands, throughout the Arabian Gulf, air conditioning has been singled out as the ultimate technical fix in confronting the climate – other solutions such as better insulation or more appropriate building materials have been less persuasive (Günel, 2018, 573). In Kuwait, to participate in the city life and claim a right to the city, the ability to access air conditioning is critical.

The ability to obtain thermal comfort through air-conditioning is uneven. While most housing now is likely to have air-conditioners units, as one migrant worker advocate noted, "The AC does not help when it's crowded." Worker accommodations are well known for being overcrowded with as many as 18 people being housed in three-bedroom units. Other essentials in protecting against the heat, such as maximum room capacity and proper insulation are rarely thought about or acted upon. The need and desire in Kuwait for AC also exerts extra pressure on household finances. ACs require regular maintenance, the cleaning and replacement of filters, and the refilling of refrigerants. The more frequent dust storms are also resulting in the need for more regular AC repair, as they get clogged up with dust. Ayah, a *Bidoon* woman, detailed how, "every summer and winter there are people saying their AC unit has broken down and they need a new one." And Layla added that her father allocates a budget at the start of every summer, "he knows at least one of the AC units that we have in our home will break down."

The cost of air-conditioning for non-citizen residents could also increase in the future through mitigation and adaptation initiatives. There are plans by the municipality, for instance, to install district cooling systems (Municipality of Kuwait, 2021, 61). This could be part of both mitigation and adaptation plans because they are far more energy efficient and effective than individual AC units in generating thermal energy for cooling buildings. However, without a state-driven approach to achieve a climate-just city, it is probable that low-paid non-citizens will be excluded from these cooling districts. Such exclusion could foster new forms of environmental privilege, urban inequality and undermine the right to the city.

It is not only the increasing extremes of heat that is resulting in climate hazards in relation to low-income non-citizen housing. Badly constructed and poorly insulated homes have made it almost impossible for many of our interviewees to keep the dust out of their homes, leading to them cite instances of poor health and discomfort. Mariam, a *Bidoon* woman, noted how the dust can last for a week and how harmful this was to her family's health, "In the summer we worry about the dust a lot, homes are turned into cemeteries, we are literally buried." Respondents described how the rain and dust entering their homes often meant large-scale repairs were constantly required to roofs and interiors straining already tight budgets. Hadeel, for instance, recalled how in the heavy rains of 2020 after they moved into their new home in Sulaibiya, the ceiling in their living room collapsed. "Imagine, the ceiling of the living room collapsing after you had just arranged your new home". She detailed the annual expenses that the family must pay to ensure before every winter that the ceiling is secure, "This is a big source of pressure for us."

The poor building standards and housing stock also intersects with restrictions on non-citizens to buy property, insecurity of tenure and the general difficulty of renting property. Layla detailed the trouble her family had in finding a Kuwaiti citizen to rent from and how many landlords refused to rent their property if they found out they were *Bidoon*. She said that areas where *Bidoon* could rent often contained mostly poor-quality housing. Several *Bidoon* also described how difficult it is to repair the rented homes they occupy. Elsewhere, many low-income migrant workers live in dormitories with little possibility of making structural changes to their homes. Non-citizens are often prevented from making necessary adaptations to their rented homes to protect themselves from exposure to extreme heat, dust, or flooding. Notably the inability of non-citizens to claim a right to the city has also hampered mitigation measures in Kuwait even for the wealthy. Landlords, for example, have been reported to be unwilling to rent to non-citizens with Electric Vehicles (EV) who want to install an EV amplifier charging box (Ottesen et al., 2023, 14).

7. Transport Mitigation and Adaptation: Recognising Public Transport

The transport sector is of critical importance for those working to achieve greater urban climate justice and implement mitigation and adaptation strategies. Transportation is a substantial contributor to Kuwait's carbon emissions, constituting 18 percent of the country's total annual GHG emissions (State of Kuwait, 2021, 8). There is awareness in

[4] The Public Authority for Housing Welfare (PAHW) enlisted, for instance, the National Technology Enterprises Company (NTEC) to build a prototype house using renewable energy technologies, "House 2035".

Kuwait amongst scholars and policy makers of the potential for public transport to reduce GHG emissions (Alkheder, 2021). But Kuwait's urban form is designed for cars and has poor pedestrian infrastructure (Rode et al., 2020). As in places like the United States, full inclusion in the economy is contingent on personal car ownership. But while in the US there have emerged in recent years national campaigns for transit justice, this has yet to occur in Kuwait, although there has been a significant expansion of public transport across the Arabinan Peninsula in recent years (Sharp, 2022).

The level of private car ownership in Kuwait has far outstripped the projections of previous Master Plans. A technical study for the 4th Master Plan notes that the ten-year modal share (the percentage of travellers using a particular type of transportation) of all transport in Kuwait is 80 percent for cars and just 0.2 percent for public buses (Municipality of Kuwait, 2021). Buses are the only mode of public transport and ridership levels have dropped since the 1990s, despite the substantial increase in the population. There has been a three-fold reduction in bus usage in the last decade (Municipality of Kuwait, 2021, 42). The low priority of buses places a heavy burden on those who are already among the most marginalized in the country perpetuating income inequality and limiting economic opportunity. Owning a car is costly and the extreme temperatures have meant that if the air-conditioning is incapacitated, so is the car. "Three days ago my car AC broke down so I haven't turned on my car," one interviewee explained, "It's impossible to drive my car without AC".

The social subordination of low-income migrant workers has greatly contributed to the low-levels of public transport use. Our interviewees noted that there continues to be a strong social stigma against using public transport in Kuwait and that it is viewed as something for "non-Kuwaitis" or "workers", specifically male migrant workers. Indeed, those from the *Bidoon* community we interviewed noted that using public transportation could further expose them to what one interviewee referred to as "demeaning perceptions". Several interviewees noted that when Kuwaitis travel abroad, to places like London, they often take the bus. However, these same Kuwaitis would never take a bus in Kuwait, partly due to the stigma associated with using public transport. As the electoral candidate Shaikhah Al Jassim, who has been a proponent of public transport in Kuwait told us, "In Kuwait we don't take public transport because public transport is for non-Kuwaitis, while when we travel, we do take it. I wanted to break that stigma, as a Kuwaiti and as a woman." This social stigma not only applied to use of buses. Asrar, a *Bidoon* woman, said that it was "'aib" (shameful) or embarrassing for her daughter to go by taxi and it was essential for the family to have several cars. Al-Nakib (2016) notes that in the 1940s, it was not uncommon for Kuwaitis to take taxis. However, by the 1950s, citizens began to view the use of public transport as socially demeaning. While foreigners could take taxis because they were not staying permanently (despite the fact many stayed for decades), for citizens, owning a car became a symbol of their rootedness to place (Al-Nakib, 2016, 181-182).

Those who we interviewed that use public transportation were overwhelmingly migrant workers. They noted that there has been a recognizable improvement in recent years in the buses that now all have ACs, are clean, some even have Wi-Fi and sell affordable tickets. Kuwait now has two private bus companies (City Bus and Kuwait Gulf Link) and the state-owned Kuwait Public Transport Company (KPTC). A notable issue with taking the bus, and the impact of climate change, raised by non-citizens who use public transport was the lack of suitable bus stops. Most bus stops are located on the main roads, difficult to reach on foot, and are often without shelter leaving them exposed to the sun with no seating. Many interviewees who used the bus detailed how it was uncomfortable in the extreme heat to wait for the bus and how this in turn made it increasingly difficult for them to use public transport.

Some limited efforts in Kuwait have been made to encourage Kuwaiti citizens to use public transport, such as the grassroots group Kuwait Commute. The founder of Kuwait Commute, Jassim Al Awadhi, detailed the challenges that he has had in trying to encourage public transport in Kuwait noting the financial and emotional attachment of people to their cars: "Even if the bus stops in front of your house, you wouldn't use it because you're a prisoner of private transport." But he also noted some more important material reasons why public transport is not being taken up by the population, such as the lack of bus stops in Kuwaiti residential areas. Al Alwadhi noted that only 10 percent of bus routes are profitable, and the absence of government subsidy means new routes and services are not incentivised. The social subordination of non-citizens, and in particular low-paid male migrant workers, is again reinforcing the hazards of climate change for the most vulnerable as public transport is not viewed as a mitigation or adaptation priority.

8. Conclusion

Restrictions on basic civic and political rights, through kafala in the case of migrant workers and the withholding of citizenship from the Bidoon, have heightened the vulnerability of populations already more exposed to the negative effects of climate change. This study identified several areas where low-income non-citizens are particularly affected, including outdoor work, overcrowded residences, poor access to quality housing, and inadequate public transport.

By addressing the needs and concerns of the most vulnerable to climate change, we aim to highlight new issues that climate adaptation and mitigation strategies should consider. If the Kuwaiti state begins to intergrade the perspectives, circumstances and needs of low-income non-citizens, it would be a significant step toward achieving a climate-just city. Our argument illustrates that for Kuwait to develop climate adaptation and mitigation strategies, political and moral considerations must inform scientific, techno-managerial, and financial interventions. The accelerating impacts of climate change are making Kuwait increasingly unlivable for some of its most marginalized yet crucial segments of society and the economy. This research outlines climate actions aimed at ensuring a liveable environment for all.

CRediT authorship contribution statement

Deen Sharp: Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Batul Sadliwala:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Abrar Al-Shammari:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization.

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.

Data availability

The publicly avaliable data used for this study can be accessed at the project page housed on the LSE Middle East Centre website, https://www.lse.ac.uk/middle-east-centre/research/kuwait-programme/research-grants/2020-21/Sustaining-Kuwait-in-Unsustainable-Times.

Acknowledgements

This work was supported by the LSE Kuwait Programme Research Grant.

References

Ajjur, S.B., Al-Ghamdi, S.G., 2021. Seventy-year disruption of seasons characteristics in the Arabian Peninsula. Int. J. Climatol. 41 (13), 5920–5937. https://doi.org/10.1002/joc.7160.

Alahmad, B., Shakarchi, A.F., Khraishah, H., Alseaidan, M., Gasana, J., Al-Hemoud, A., Koutrakis, P., Fox, M.A., 2020. Extreme temperatures and mortality in Kuwait: who is vulnerable? Sci. Total Environ. 732, 139–289. https://doi.org/10.1016/j.scitotenv.2020.139289.

Alahmad, B., Vicedo-Cabrera, A.M., Chen, K., Garshick, E., Bernstein, A.S., Schwartz, J., Koutrakis, P., 2022. Climate change and health in Kuwait: temperature and mortality projections under different climatic scenarios. Environ. Res. Lett. 17 (7), 074001 https://doi.org/10.1088/1748-9326/ac7601.

Alahmad, B., Al Hemoud, A., Al-Bouwarthan, M., et al., 2023. Extreme heat and work injuries in Kuwait's hot summers. Occup. Environ. Med. 80 (6), 347–352. https://doi.org/10.1136/oemed-2022-108697.

Alahmad, B., 2022. 'Climate, The Environment and Health of Migrant Workers: Lessons from Kuwait'. In: Sowers, J., Lynch, M. (Eds.), Environmental Politics in the Middle East and North Africa, Project on Middle East Political Science, 46, 26-34. https://pomeps.org/climate-the-environment-and-health-of-migrant-workers-lessons-from-kuwait.

Albaqshi, M., 2010. The Social Production of Space: Kuwait's Spatial History. PhD Thesis. Illinois Institute of Technology, Chicago.

AlKheder, S., 2021. Promoting public transport as a strategy to reduce GHG emissions from private vehicles in Kuwait. Environmental Challenges 3, 100075. https://doi.org/10.1016/j.envc.2021.100075.

Al-Maamary, H.M.S., Kazem, H.A., Chaichan, M.T., 2017. Climate Change: The Game Changer in the Gulf Cooperation Council Region. Renew. Sustain. Energy Rev. 76, 555–576. https://doi.org/10.1016/j.rser.2017.03.048.

Almansour, M., Krarti, M., 2022. Value engineering optimal design approach of high-performance residential buildings: Case study of Kuwait. Energ. Buildings 258. https://doi.org/10.1016/j.enbuild.2022.111833.

Al-Nakib, F., 2013. Kuwait's Modern Spectacle: Oil Wealth and the Making of a New Capital City, 1950–90. Comp. Stud. South Asia Afr. Middle East 33 (1), 7–25. https://doi.org/10.1215/1089201X-2072694.

Al-Nakib, F., 2014. Revisiting Hadar and Badu in Kuwait: Citizenship, Housing and the Construction of a dichotomy. Int. J. Middle East Stud. 46 (1), 5–30. https://doi.org/10.1017/S0020743813001268.

Al-Nakib, F., 2016. Kuwait Transformed: A History of Oil and Urban Life. Stanford University Press, Stanford.

Al-Nakib, F., 2022. Kuwait's Changing Landscape: Palace Projects and the Decline of Rule by Consensus. In: Blaydes, L., Hamzawy, A., Sallam, H. (Eds.), Struggle for Political Change in the Arab World. University of Michigan Press, Ann Arbor.

Alosairi, Y., Alsulaiman, N., Rashed, A., Al-Houti, D., 2020. World Record Extreme Sea Surface Temperatures in the Northwestern Arabian/Persian Gulf Verified by in Situ Measurements. Mar. Pollut. Bull. 161, 111766 https://doi.org/10.1016/j.marpolbul.2020.111766.

Al-Ragam, A., 2017. Negotiating the Politics of Exclusion: Georges Candilis, Housing and the Welfare State. Int. J. Urban Reg. Res. 41 (2), 235–250. https://doi.org/10.1111/1468-2427.12456.

Alsahli, M., Al-Harbi, M., 2023. Environmental Justice in Kuwait Metropolitan Area: A Spatial Analysis of Land-Use Impact on Environmental Quality Variability. Local Environ. 28 (1), 80–98. https://doi.org/10.1080/13549839.2022.2119378.

Al-Sarihi, A., Mason, M., 2020. Challenges and Opportunities for Climate Policy Integration in Oil-Producing Countries: The Case of the UAE and Oman. Clim. Pol. 20 (10), 1226–1241. https://doi.org/10.1080/14693062.2020.1781036.

Azar, E., Raouf, M., 2017. Sustainability in the Gulf: Challenges and Opportunities. Routledge, London.

Beaugrand, C., 2018. Borders and Spatial Imaginaries in the Kuwaiti Identity. Geopolitics 23 (3), 544–564. https://doi.org/10.1080/14650045.2017.1341407.

Boodrookas, A., 2020. 'The Making of a Migrant Working Class: Contesting Citizenship in Kuwait and the Persian Gulf, 1925-1975,' PhD Thesis, New York University.

Bulkeley, H., Edwards, G., Fuller, S., 2014. Contesting climate justice in the city: examining politics and practice in urban climate change experiments. Glob. Environ. Chang. 25, 31–40. https://doi.org/10.1016/j.gloenvcha.2014.01.009.

Bulkeley, H., 2021. Climate changed urban futures: environmental politics in the Anthropocene city. Environmental Politics 30 (1–2), 266–284. https://doi.org/10.1080/09644016.2021.1880713.

Chay, C., 2015. The Diwaniyya Tradition in Modern Kuwait: An Interlinked Space and Practice. J. Arabian Stud. 6 (1), 1–28. https://doi.org/10.1080/21534764.2016.1195125.

Chu, E., Michael, K., 2019. Recognition in urban climate justice: marginality and exclusion of migrants in Indian cities. Environ. Urban. 31 (1) https://doi.org/10.1177/0956247818814449.

Cohen, D., 2018. Climate Justice and the Right to the City. Current Research On Sustainable Urban Development, Penn.

Crystal, J., 1990. Oil and Politics in the Gulf: Rulers and Merchants in Kuwait and Qatar. Cambridge University Press, Cambridge.

Deboulet, A., Mansour, W., 2022. Middle Eastern Cities in a Time of Climate Crisis. CEDEJ, Egypt.

Dito, M., 2015. Kafala: Foundations of Migrant Exclusion in GCC Labour Markets. In: Khalaf, A., Alabi, O., Hanieh, A. (Eds.), Transit States, Labour, Migration and Citizenship in the Gulf. London: Pluto Press, 79-100. https://doi.org/10.2307/j.ctt183p1j8.

Environment Public Authority (EPA). 2019. Kuwait National Adaptation Plan. Kuwait.

Fisher, S., 2015. The emerging geographies of climate justice. Geogr. J. 181 (1), 73–82. https://doi.org/10.1111/geoj.12078.

Fraser, N., 2000. Rethinking Recognition. New Left Rev 3, 107–120.

Freer, C., 2024. Culture, Politics and Citizenship in Kuwait. In: Zweiri, M., Cengiz, S. (Eds.), The Making of Contemporary Kuwait. Routledge.

Gelan, A., Atkinson, G., 2022. Climate change and food security: assessing the prospect for Kuwait using an economy-wide model. Kuwait J. Sci. 49 (4) https://doi.org/10.48129/kjs.15943.

Goh, K., 2020. Urbanising climate justice: constructing scales and politicising difference. Cambridge J. Regions, Economy Soc. 13, 559–574. https://doi.org/10.1093/cjres/rsaa010.

Granberg, M., Glover, L., 2021. The Climate Just City. Sustainability 13, 1201. https://doi.org/10.3390/su13031201.

Günel, G., 2018. Air Conditioning the Arabian Peninsula. Int. J. Middle East Stud. 50 (3), 573–579. https://doi.org/10.1017/S0020743818000570.

Hanieh, A., 2011. Finance, oil and the Arab uprisings: the global crisis and the gulf states. Socialist Register 48 (48).

Jabareen, Y., 2015. City planning deficiencies & climate change – The situation in developed and developing cities. Geoforum 63, 40–43. https://doi.org/10.1016/j.geoforum.2015.05.017.

Krane, J., 2020. Climate action versus inaction: balancing the costs for Gulf energy exporters. Br. J. Middle Eastern Stud. 27 (1) https://doi.org/10.1080/13530194.2020.1714269.

Lefebvre, H., 1996. Writings on Cities. Blackwell Publishers, London.

Lehman, J., Kinchy, A., 2021. Bringing climate politics home: Lived experiences of flooding and housing insecurity in a natural gas boomtown. Geoforum 121, 152–161. https://doi.org/10.1016/j.geoforum.2021.02.022.

Longva, A.N., 1997. Walls Built On Sand: Migration, Exclusion, And Society In Kuwait. Routledge, Boulder.

Luomi, M., 2014. The Gulf Monarchies and Climate Change: Abu Dhabi and Qatar in an Era of Natural Unsustainability. Oxford University Press, New York.

Luomi, M., 2021. Climate Change Policy in the Arab Region. In: Mills, R., Sim, L. (Eds.), Low Carbon Energy in the Middle East and North Africa. Springer International Publishing, Cham, pp. 299–332. https://doi.org/10.1007/978-3-030-59554-8_11.

Mason, M., 2019. Climate Change and Conflict in the Middle East. Int. J. Middle East Stud. 51 (4), 626–668. https://doi.org/10.1017/S0020743819000709.

McArdle, R., 2021. Intersectional climate urbanism: towards the inclusion of marginalised voices. Geoforum 126, 302–305. https://doi.org/10.1016/j.geoforum.2021.08.005.

Menoret, P., 2014. Cities in the Arabian Peninsula. Cities: Analysis of Urban Change Theory and Action 18 (6). https://doi.org/10.1080/13604813.2014.962891.

Merlone, A., Al-Dashti, H., Faisal, N., Cerveny, R.S., AlSarmi, S., Bessemoulin, P., Brunet, M., 2019. Temperature Extreme Records: World Meteorological Organization Metrological and Meteorological Evaluation of the 54.0°C Observations in Mitribah, Kuwait and Turbat, Pakistan in 2016/2017. Int. J. Climatol. 39 (13), 5154–5169. https://doi.org/10.1002/joc.6132.

Mitchell, T., 2011. Carbon Democracy: Political Power in the Age of Oil. Verso, London.

Municipality of Kuwait, 2021. Transport Strategy: Technical Paper Summary. 31 January.

Ottesen, A., Banna, S., Alzougool, B., Damrah, S., 2023. A Greener Kuwait: how electric vehicles can lower CO2 emissions, LSE Middle East Centre Kuwait Programme Paper 18. http://eprints.lse.ac.uk/id/eprint/120091.

Pearse, R., 2017. Gender and climate change. WIREs Clim. Change 8, e451. https://doi.org/10.1002/wcc.451.

Porter, L., Rickards, L., Verlie, B., Bosomworth, K., Moloney, S., Layia, B., et al., 2020. Climate justice in a climate changed world. Plan. Theory Pract. 21 (2), 293–321. https://doi.org/10.1080/14649357.2020.1748959.

Rice, J., Long, J., Levenda, A., 2023. Urban Climate Justice: Theory, Resistance. University of Georgia Press, Georgia.

Rignall, K., 2019. Living Climate Change in the Middle East and North Africa. Int. J. Middle East Stud. 51, 1–4. https://doi.org/10.1017/S0020743819000710.

Rode, P., Gomes, A., Adeel, M., Sajjad, F., Koch, A., Murshed, S.M., 2020. Between Abundance and Constraints: The Natural Resource Equation of Asia's Diverging, Higher-Income City Models. Land 9 (11), 426. https://doi.org/10.3390/land9110426.

Sadliwala, B., 2022. Desert Days of the Forgotten: A Report on Migrant Shepards in Kuwait. The Forgotten Community Project. Accessed July 2024, https://desertdays.org/uploads/pdf/desert-days-Kuwait-research-report-en2.pdf.

Shahrokni, N., Sofos, S., 2023. Ecologies of Belonging and Exclusion in Urban Kuwait: Towards an Urban co-Designed Approach. LSE Middle East Centre Kuwait Programme Paper Series, 21. Accessed July 2024, http://eprints.lse.ac.uk/id/eprint/120519.

Sharp, D., 2022. Arab Climate Urbanism: An Ecological Fix?. In: Sowers, J., Lynch, M. (Eds.). Environmental Politics in the Middle East and North Africa, Project on Middle East Political Science, 46. Accessed July 2024, https://pomeps.org/arab-climate-urbanism-an-ecological-fix.

Sharp, D., 2022b. Social Theory: Henri Lefebvre. In: Mabon, S. (Ed.), Interventions, Accessed July 2024, https://www.sepad.org.uk/announcement/social-theory-henri-lefebvre.

Shi, L., et al., 2016. Roadmap towards justice in urban climate adaptation research. Nature Clim. Change 6. https://doi.org/10.1038/nclimate2841.

Simpson, I., 2019. Contradictions of citizenship and environmental politics in the Arabian Littoral. J. Indian Ocean Region 16 (1), 79–99. https://doi.org/10.1080/19480881.2020.1709374.

Sowers, J., 2019. Understanding Climate Vulnerability in the Middle East and North Africa. Int. J. Middle East Studies 51 (4), 621–665. https://doi.org/10.1017/S0020743819000692.
State of Kuwait, 2021. Nationally Determined Contributions *(Update)*. Kuwait.
Steele, W., Hillier, J., Houston, D., Byrne, J., MacCallum, D. 2018. 'The climate-just city'. In: Jafry, T. (Ed.). Routledge Handbook of Climate Justice, Routledge. 279-288.
Sultana, F., 2022. Critical climate justice. Geogr. J. 188, 118–124. https://doi.org/10.1111/geoj.12417.
Wagle, P., Philip, K., 2022. Climate justice is social justice: articulating people's rights to the city in Mumbai. Environ. Urban. 34 (2), 331–348. https://doi.org/10.1177/09562478221113632.
Waha, K., et al., 2017. Climate change impacts in the Middle East and North Africa (MENA) region and their implications for vulnerable population groups. Reg. Environ. Chang. 17, 1623–1638. https://doi.org/10.1007/s10113-017-1144-2.
Winter, T., 2016. Urban sustainability in the Arabian Gulf: Air conditioning and its alternatives. Urban Stud. 53 (15), 3264–3278. https://doi.org/10.1177/0042098015608782.
Zittis, G., Hadjinicolaou, P., Almazroui, M., Bucchignani, E., Driouech, F., El Rhaz, K., Kurnaz, L., et al., 2021. Business-as-usual will lead to super and ultra-extreme heatwaves in the Middle East and North Africa. Clim. Atmos. Sci. 4 (1), 20. https://doi.org/10.1038/s41612-021-00178-7.
Zittis, G., Almazroui, M., Alpert, P., Ciais, P., Cramer, W., Dahdal, Y., Fnais, M., et al., 2022. Climate Change and Weather Extremes in the Eastern Mediterranean and Middle East. Rev. Geophys. https://doi.org/10.1029/2021RG000762.
Zumbraegel, T., 2022. Political Power and Environmental Sustainability in Gulf Monarchies. Contemporary Gulf Studies. Springer Nature, Singapore.