

Migration and Climate Change: The Case of the GCC Countries

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Executive Summary

The migration literature has mainly focused on the impact of the climate on migration. Little attention is given to the impact of migration on the climate. The GCC countries offer an opportunity to examine what happens to the local environment when large numbers of people move in (relatively fast). In its quest to diversify the local economy, the region has to find ways for expatriates to contribute to the world's pursuit of fighting climate change.

Introduction and Motivation

The migration literature has long focused on the impact of immigrants on economic indicators such as labor markets in destination countries (for instance see Docquier et al., 2014) or on development in the origin countries (see Ratha et al., 2016). As the academic literature on the impact of migrants has matured, more research is linking people's movements with climate. On one side, climate can be a main factor behind displacement, such as Somali farmers having to relocate due to severe drought in the Horn of Africa, and flooding that pushed millions in Afghanistan, Pakistan, and the South of Sudan to leave (United Nations High Commissioner for Refugees, 2022d). On the other hand, a large intake of people could potentially exacerbate environmental conditions at the destination location. This policy note examines the latter approach focusing on the Gulf Cooperation Countries (GCC).

Climate and the Gulf Region

The Gulf region lies in a harsh climate zone of mostly arid desert, extended summer days with extremely high temperatures, and lack of rainfall (average precipitation per year across the region is 90 mm ranking all six countries in the bottom 10 in terms of average precipitation; World Development Indicators [WDI], 2023). There are already serious concerns about the potential impact of climate change on the region as evidenced by the push of the local governments to be active global negotiators on issues related to climate (Al-Sarihi, 2023). Climate can for instance cause a rise in sea level affecting all coastal areas in the region with a specific impact on islands. Bahrain projects land loss of anywhere between 5 and 11% by 2100 (Al-Olaimy, 2021). Such loss is expected to impact food security through fauna and fish stocks in the region. Some 13 species of the United Arab Emirates' fish stock have already been depleted beyond sustainable levels (Zaman, 2016) even though the local government has engaged in programs to counter this with

some early evidence of success (National, 2021). The GCC region struggles with water availability as most groundwater reservoirs become depleted. As the population grows, the demand for water for direct consumption and for agriculture is expected to put further pressure on desalination activities.

The countries in the Gulf region are expected to experience temperature growth in the next 20 to 40 years with Kuwait leading the way with an expected 2.9-degree Celsius average increase, followed by Saudi Arabia, Qatar, Bahrain (2.3), the UAE (2.1), and Oman (1.6) (Azour and Duenwald, 2022) placing the region in the high exposure quadrant of climate hazards. Another forecast suggests the rise in temperature will be 5 degrees Celsius by the end of the century leading to long periods of heat waves and making some areas of the region simply uninhabitable. Saudi Arabia is already experiencing climate-related threats such as flash floods, sand and dust storms, and severe droughts (Keynoush, 2023).

According to the Ecological Footprint per person report, the GCC countries' residents' demand for planet re-sources surpasses what is currently available on earth (at the individual level) with Bahrain, Kuwait, Qatar, and the UAE having some of the largest footprints in the world (Raouf, 2008; WWF, 2022).

In short, the region is already facing challenges related to the climate while also pursuing an optimistic agenda of economic development. The residents in the region have one of the highest ecological footprints in the world and with plans to further pursue large and remarkable projects, an important question is brought to mind: what and how can local governments learn about the impact of migrants on the climate challenge?

Migration and Climate Change

The Gulf region has been the destination of millions of expatriates for the last few decades. The region's population grew from less than 15 million in 1981 (Naufal, 2014) to more than 56 million in 2021 (Gulf Labour Markets and Migration, 2023) while also welcoming more than 40 million tourists each year between 2015 and 2020 (GCC-Stat, 2020). The region's growth has been supported by an immense investment in transportation infrastructure such as shipping vessels, ports, and airline carriers. Saudi Arabia is working towards achieving more than 120 million travelers through its airport hub as early as 2030 (Castelier, 2023).

The latest policy changes to labor and residency laws (such as green residency, golden visa, real estate ownership, etc. see PWC, 2022 for more detail) only suggest that the population in the GCC will grow even further in the next decade to over 20% (Al-Badi and AlMubarak, 2019). Saudi Arabia, the largest GCC country in terms of size and population, is expected to see a population growth of 77% by 2050 (Al-Olaimy, 2021). The projected population growth will most likely come from a further flow of expatriates as marriage and fertility rates of nationals have been steadily declining, contributing to the local population accounting for the lowest proportion of the total population in 2021 (Al Flaiti, 2023). A recent survey shows that the majority of locals working in the private sector in the United Arab Emirates (UAE) would consider a move to the public sector, highlighting a further need for foreign labor (Bin Braik, 2023). As Al-Badi and AlMubarak (2019) point out, labor migration has led to the rise of residential and commercial energy consumption, bearing a direct impact on the environment.

As the region experiences additional growth, one expects a further increase in CO₂ emissions, as more than 90% of emissions come from human activities (expansion of construction projects such as cement production and fossil fuel burning) (Alharbi and Csala, 2021). Against world trends, per capita CO₂ emissions in the Gulf are increasing due mainly to energy consumption which is almost 3 times higher than that of the European Union. Such developments mark the Gulf region as one of the worst offenders environmentally, even though many of the new projects are designed to be sustainable. There are more than 30 envisioned mega real estate projects across the GCC countries spanning the next several decades estimated to value about \$1 trillion, with a common goal to use innovation and showcase culture and heritage (Abdallah et al., 2020).

While these mega projects are also designed with sustainability as a core component, it is hard not to wonder about the manpower and resources needed to complete them and the overall impact their construction will have on the environment. Initially, low-skilled workers are needed to complete the first phase of construction, but eventually, they will be replaced by higher-skilled workers who will live and work in future cities. The migration literature has studied the impact of climate on migration but little, if any, information is known on the impact of migrants on climate. The unique setting of the Gulf region presents an opportunity to examine this link and contribute to the migration literature.

An Environmentally Sustainable Future

The Gulf region is rapidly expanding and historically the focus has been to diversify local economies away from energy towards more sustainable drivers (such as tourism, finance, education, etc.). Another pressing goal should be achieving economic growth while leading a sustainable future in environmental terms. The GCC countries, excluding Qatar, have pledged to reach net-zero carbon emissions by 2050 (Castelier, 2023). The GCC countries have an opportunity to be world leaders, but actionable steps should be taken now. Potential actions include developing decarbonization technologies such as solar and wind energy (Alharbi and Csala, 2021). Other measures include regulations to achieve energy efficiency across all sectors. Examples of such policies are green building codes established by institutions such as the Saudi Energy Efficiency Center, Thermal Insulation Implementation in Bahrain, Energy Conservation Program in Kuwait, Green Building Regulations in the UAE, and the mandatory green building rating in Qatar (Al-Badi and AlMubarak, 2019). Another initiative is energy price reform to incentivize residents to consume less energy ultimately lowering consumption and reducing peak electricity demand.

Educating locals and expatriates is crucial to generate awareness and build critical support across the population. The region is now home to several large corporations' headquarters such as Fairmont Hotels and Resorts and the financial institution MultiBank Group. Collaboration between the private and public sectors and among GCC governments would ensure a better approach to addressing environmental dangers to the region. Ideally, a robust regional policy would be best to prioritize and identify a plan of action for the next several decades. For instance, the creation of a regional fund dedicated to climate change actions could be an option to address both short-term issues but also take on environmental threats beyond the GCC countries that could potentially guide future migration flows.

Investing in research related to climate is important to increase local knowledge and raise regional awareness. The research should focus initially on the impact of fast population growth (mainly fueled by migrants) on regional climate and environmental shocks. Second, it should model different climate scenarios and identify potential natural disasters (Keynoush, 2023). For instance, the GCC countries should lead innovation in research for lowering emissions from aircraft and container ships as those are at the heart of economic development in the region. Ultimately, the GCC countries are affecting the regional and global climate by growing at a rapid pace and taking advantage of the skills of workers from all over the world. One day in the near future, the reversal impact might occur where the climate will dictate migration in the region.

The above-suggested policies require the cooperation of all stakeholders but also rely on a ready and strong labor force (Huckstep and Dempster, 2022)-- a labor force that is trained to adopt and maintain green industries-- a labor force that is highly skilled and diverse enough to address the multi-dimensional facets of climate threats (weather, food, water, research, social, waste, transportation, etc.). Ultimately, however, what is crucial to linking all these different sectors is better data. Migration and labor force research in the region is focused on the number of expatriates and the share of the local population out of the total population. Yet, much more information is needed to guide the climate wave in the region. Accurate and current data is needed on population numbers and trends, industry growth rates, CO2 emissions by area and industry, transportation figures, type and level of expatriates' skills and areas of need, food and water usage, food waste, and more. For now, migration in the region affects climate change in the Gulf; in the future, it could very well be the other way around.

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