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Climate Change in the GCC:
Security Threats and Opportunities in International Cooperation

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Climate change is an emerging global threat. According to the Intergovernmental Panel on Climate Change (IPCC), human activities have caused an increase in global temperatures of 1.1°C in 2011-2020 compared to what it was in the years 1850–1900, leading to widespread loss and damage to nature and people.[1] The countries of the Gulf Cooperation Council (GCC) are particularly prone to climate change. The heat index, which is what the temperature 'feels like' when factoring in humidity, in the Middle East reached 152ºC in July 2023; this is the highest level that human beings can withstand, and the actual temperature in the GCC region is expected to continue rising by 1-2ºC by 2050.[2]

Climate change is generating multidimensional security threats to the GCC countries in terms of human habitats, public health, supply chains, food systems, and social stability. The fast-rising sea level is causing prominent threats to the habitats of GCC residents. It is estimated that more than 1,200 km^2 of the GCC territory will be submerged by the sea by the end of this century under the worst situation modeled by the IPCC (RCP8.5).[3]

In terms of public health, the rising temperature and extreme weather create conditions that favor communicable diseases, worsen air quality, and increase heatwave-relevant incidences. In the GCC countries, while the warming trend will make some areas increasingly inhospitable for certain vectors and human beings, other areas will reach temperature levels that subsequently boost pathogen transmission.[4]
In addition to communicable diseases, climate change is positively correlated with particulate matter (PM), as research suggests that a 1°C increase in summer corresponds to a 1.05 µg/m3 increase in PM2.5 concentration.[5] PM air pollution can lead to adverse health outcomes such as heart and lung diseases according to the World Health Organization.[6] In the GCC countries, such a climate-driven effect may further exacerbate high levels of PM pollution caused by natural dust and industrial, traffic, and household emissions.[7] Moreover, the heatwaves in the Gulf region can lead to more direct health risks including heat strokes and potential fatalities. For example, studies indicate that the heat stress during Hajj, an important Islamic pilgrimage, has reached dangerous levels in recent years and will continue to do so in the coming decades. This challenge is becoming more and more severe with the expansion of Islam and the growing number of Muslims visiting the region.[8]

Climate change can also cause instabilities in global supply chains and the food system, the interplay of which is prominent in the GCC region. Scholars found that heat may reduce the operating income of suppliers and their customers in global supply chain networks, and to mitigate potential risks, customers are more likely to end their relationships with suppliers and explore substitutes when their former suppliers' heat exposure exceeds historical expectations.[9] For Gulf countries, supply chains are particularly fragile and vulnerable because their economies are greatly dependent on imports of manufactured goods and food. The manufacturing output to total national output only accounts for 5.8% in Saudi Arabia and 2.6% in the UAE, while the proportions are 27% in China and 19% in Japan.[10] For the food and agriculture sector, nearly 85% of the food

demands in the entire region are satisfied by imports, including around 93% of cereals, 62% of meat, and 56% of vegetables.[11]

While GCC countries have implemented adequate financial buffers to secure a continuous supply of essential food imports, climate-induced disruptions in food structures, prices, and quantities make it necessary to reevaluate their long-term strategies for food supply chain management. On the one hand, changes in temperature and precipitation are found to be negatively affecting crop yields; on the other hand, the multi-modal transport and logistics activities of sourcing food can significantly contribute to carbon emissions.[12] The two processes consolidate, creating a vicious circle. Moreover, the global warming trend can deteriorate the farming conditions in agriculturally poor countries like the UAE and Saudi Arabia and challenge the transportation conditions of food imports. In this regard, Johanna Ralston, the CEO of the World Obesity Federation, said on Health Day at the 2023 Climate Change Conference (COP28) that the preference to import ultra-processed food which is more accessible and more transportable compared to fresher and more nutritious food has been worsening the obesity problem in the GCC region which is already among the most severe in the world.

Furthermore, climate change is not only an environmental issue but also a national and regional threat to peace and security. By increasing competition over natural resources, forced displacement, and chances of natural disasters, climate change acts as a risk multiplier that compounds existing social and political conflicts.[13] While climate actions often fail to incorporate security and peacebuilding concerns, social instability and crises can diminish adaptation efforts and make the communities that are already vulnerable even less resilient.[14] Research has suggested that the climbing water stress and unequal capacities of securing water sources have become a potential risk factor for regional conflicts in the Middle East and North Africa (MENA). Unlike the Gulf countries possessing leading water desalination and wastewater technologies, others suffer from a lack of financial and technical resources and water policy institutions. As water scarcity prevails in MENA, there are possibilities of unilateral development of water storage and weaponization of water as an instrument for leverage during armed conflicts.[15]

Confronted with security threats in environmental, economic, social, and political realms, the Gulf countries should actively develop domestic and regional adaptation and mitigation strategies to enhance social and economic resilience. To improve the prevention and management of public health risks, the GCC countries are advised to establish a Gulf-wide program for disease vector surveillance and increase research investment which enables a transdisciplinary approach and connects scholars in ecology, climatology, biology, and public policies.[16] Additionally, climate-resilient supply chains could be developed by scaling up the circular economy across the region, increasing the localization of certain food and manufactured goods, and promoting agricultural technology such as vertical farming and digital tools.[17] A deeper understanding of the climate-conflict nexus should be developed and integrated into policymaking as well as transboundary resilience-building and inequality-reduction efforts.

Besides domestic and regional initiatives, the Gulf countries need to also embrace the huge potential of international cooperation in addressing global climate change. In May 2022, the European Commission presented a Joint Communication on a strategic partnership with the Gulf. In this document, the European Union (EU) laid out its case to foster stronger collaborations with

the GCC states on energy security, clean energy transition, environmentally friendly food systems, trade and economic diversification, and climate agri-technology.[18] A more recent report in December 2023 of the EU-GCC Dialogue on Economic Diversification recognized that failures in climate mitigation and adaptation present short-term and long-term risks in both regions and called for greater collaboration across industries and countries.[19] Likewise, in the Joint Statement Following the Ministerial Meeting of the United States and the GCC on September 19, 2023, both sides stressed that climate change is an urgent issue collectively faced by both sides. They agreed to continue collective efforts on a wide range of topics, including emissions reduction, production of renewables, and adopting creative solutions and technologies towards the Paris targets.[20] Establishing mechanisms to constructively engage in these various fields, will allow the GCC to make the most of its connection with the international community as a means to effectively address climate change threats and work towards a more resilient future.

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