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Geoeconomic and Geopolitical Dynamics of Water Scarcity in Oil-Rich Economies: The Case of Kuwait

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INTRODUCTION

Global water scarcity is a growing international concern due to its implications for human survival. Freshwater can be considered a fundamental resource integral to our ecological and societal activities. The Freshwater-rising demand and shifting supply of freshwater in parallel with uneven and irregular distributed, are a source of significant friction among countries. Furthermore, unsustainable management practices can lead to substantial conflict among countries and communities as they attempt to secure their share, which can easily trigger violent confrontations (Gleick 1993; Michel 2020). Water availability has particular connotations in the Middle East; as water has emerged as a strategic resource that fuels disagreement and can easily translate into armed conflict.

Moreover, water is a vital resource as it drives ecosystems, prosperity, and growth as it has significant impact on accessibility and quality of life and well-being, which is critical for countries. As stated by Garlock et al. (2022), water is a significant element on the agenda of global leaders in their quest to balance freshwater resources, ecosystems, and human needs. According to the United Nations' environmental and sustainability goals (United Nations 2022), water is a precious and scarce resource that

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challenges the ability of countries' to grow and develop. The management of critical assets such as water and food is defined by substantial difficulties and challenges due to the fast development of nations, increasing levels of urbanization that translate into significant environmental challenges such as "climate change" as well as population growth and geopolitical instabilities (Salem, Pudza, and Yihdego 2022; Yuan and Lo 2022).

Furthermore, the geoeconomic and geopolitical dynamics of an oil-rich country such as Kuwait need to address water scarcity by connecting economic and political aspects of water security and conflict through oil revenues and diversification. The main research question to be addressed in this paper is outlined as follows: what are the geoeconomic and geopolitical implications of water scarcity for Kuwait? In addition, the study offers critical insights into the sustainability goals for oil-rich countries in their pursuit of economic diversification as they seek to transition toward a more sustainable economic model; it will also address the significance of an energy sustainable model that clearly mirrors a level of contradiction between global leaders commitment to the United Nations Sustainability Agenda and the developed economies' energy needs. The next section will critically present the water challenges faced by the GCC region and by Kuwait in particular, in the UN SDG context. Section 3 addresses Kuwait's sustainability dilemma. Section 4 delves into the geoeconomics and geopolitics of water. The final section concludes the discussions.

THE GCC, WATER AND THE UNITED NATIONS 2030 AGENDA

Regardless of the wealth and prosperity the Gulf Cooperative Countries (GCC) hold from their oil and gas revenue, the region faces important challenges regarding its long-term access to sustainable freshwater resources. Freshwater is a precious resource that cannot be replaced easily. This perhaps makes the situation more intense in the case of the region and in particular for Kuwait, where the absence of freshwater resources forces the country to rely heavily on water desalination processes (Akber and Mukhopadhyay 2021; Al-Fadhli et al. 2022; Al-Shayji and Aleisa 2018; Saif, Mezher, and Arafat 2014). The Gulf countries are ranked among the highest in terms of water and energy consumption, with water consumption per capita reaching 560 L/capita/day, (compared with the world average of 180 L/capita/day); the average energy consumption per capita in these countries was reported to be 18,000 kWh, whereas the global average was approximately 3000 kWh in

2018 (Al Bannay and Takizawa 2022; Al-Badi and AlMubarak 2019; Almasri and Alshitawi 2022; Hameed et al. 2019; Qureshi 2020; Salahuddin and Gow 2019; Salameh et al. 2022).

In addition, 30-50% of the GCC countries oil production is used for co-generating energy to support the energy demands of desalination plants' (Aleisa and Zubari 2017; Qureshi 2020). While in the GCC region, rising sea levels and high-temperature fluctuations endanger the availability of freshwater due to climate change-related issues, high evaporation levels and salinity intensity of the seawater are also impacting upon and placing a stress on the desalination process (Abulibdeh, Zaidan, and Al-Saidi 2019; Al-Saidi 2020; Keulertz and Allan 2019; Rambo et al. 2017). Moreover, the population is expected to continue to grow in the GCC region resulting in the intensification of pressures on freshwater, hence decreasing the availability of renewable freshwater resources; when combined with poor management and decision-making processes all these elements present a bleak future to the GCC. It is expected that in 2050 only 23% of the population's required needs will be met (Ben Hassen and El Bilali 2022).

Considering that water scarcity has become a significant key element in the UN 2030 Agenda and Sustainable Development Goals (SDGs), this issue has trickled down to national governments and it will be an important element for the political and economic agenda in the years to come. Clean water and sanitation as well as their relationship with "climate change" are represented in SDG 6 and SDG 13 of the 17 SDG; Achieving these goals by 2035 for the Middle East and in particular for the case of Kuwait emerges as being particularly challenging (Ait-Kadi 2016; AlDousari et al. 2022; Baggio, Qadir, and Smakhtin 2021; Di Vaio et al. 2021; Sherif et al. 2023).

Furthermore, water is one of the main components of economic, social and human welfare, with the adverse impact of "climate change" on some areas more than others which are impacted upon by the change in rainfall patterns. Kuwait is considered to be one of the most affected states within the GCC region, being ranked as the third of the countries with the lowest total freshwater flows (AlDousari et al. 2022; Alharbi and Csala 2021; Hereher 2022; Salem, Yihdego, and Muhammed 2021; Zittis et al. 2022). As a small country in an arid region of the Arabian Gulf, Kuwait is a developed country that holds a significant position among the leading oil-producing countries within the area, with the world's sixth-largest oil reserves and a high-income economy (Naegele et al. 2020). The country has been at the center of many economic and political tensions within the GCC region, as its geographical, geological, and political

position places it in a very fragile place, given that it is a country with virtually no freshwater resources.

KUWAIT SUSTAINABILITY DILEMMA

Kuwait is one of the world's most poorly endowed countries regarding access to freshwater resources, and it is considered as one of the world's most water-stressed states (Abdullah, Zhang, and Matsubae 2021; Abdulrahman 2020). In contrast, Kuwait's oil reserves are significant, as the country boasts the ninth rank in terms of global oil production; oil revenue is thus the primary driver of the country's economic model, and this is a controversial aspect when considering the world's sustainability challenges (Gelan, Hewings, and Alawadhi 2021; Alkhateeb and Mahmood 2020; Shehabi 2020; Nasir et al. 2019). The country is significantly overreliant on its oil resources to secure its population's water needs and to support its business and heavily oil-dependent economic model. However, water scarcity aggravates the country's ability to pursue an economically sustainable agenda, as there is a high dependence on oil to guarantee the desalination process of seawater to obtain much needed fresh water for Kuwait (Al-Fadhli et al. 2022; Hindelang 2021; Mabrok et al. 2022). Therefore, climate conditions could lead to political and unsettled social events.

Seawater desalination plants consume a significant amount of energy, with added pressures as a result of "climate change" that intensifies freshwater security problems. Kuwait faces a significant dilemma as the country needs to find a balance between securing its population's demand for freshwater by desalination and meeting the world organisation's plan to become a greener and sustainable economy. Diversifying away from oil production could be a significant problem for Kuwait, as it has been for several decades a mono-product economy. The country and its people's survival are closely tied to the fortunes of oil production and exporting derived petroleum products.

While individual circumstances vary for each country within the Gulf region, most countries share the threat of water scarcity. Furthermore, the rapid population increase and harsher climate conditions combined add to the ongoing water crisis, as water stress is increasing and becoming a leading cause of migration (Borgomeo et al. 2021). Moreover, additional factors add complexity to the country's fragile water security situation, including conflict arising from wars in neighboring countries such as Yemen and Syria that have intensified migratory trends

toward the Gulf states (Hitman 2019). Lastly, additional challenges have emerged due to political and economic instability affecting countries such as Egypt, as for example, the Egyptian population have been forced into political exile to some Gulf Countries (Tsourapas 2018). Global economic and political instability is contribution to the region's increased population growth and imbalance in the demographics within the GCC countries that result on rising pressures with regard to fresh water availability.

THE GEOECONOMICS AND GEOPOLITICS OF WATER

Water has played a significant role as an economic and political driver for nations throughout history. Access to fresh water is as critical as securing a water source and becoming a factor that would initiate wars between countries (Salameh et al. 2022). Scant natural freshwater has always been a severe obstacle for Kuwait, and for decades, diversifying away from seawater distillation has been in the government's plans (Beaumont 1977; Tariq et al. 2022). In a contract signed between Kuwait and Iraq in 1964, discussion occurred regarding establishing a water pipe network directly from Shatt Al-Arab to transport 545,520 m³/day to Kuwait. Unfortunately, this was not achieved due to the political conflict emerging between Kuwait and Iraq (Beaumont 1977; Jong and Remy 1989; Niblock 1982; Schofield 2004). Since then, the country's water demands have continued to grow. Therefore, the Kuwaiti government has made significant efforts to secure a more sustainable water source. In 2000, a joint British-Kuwaiti-Iranian firm offered to link both Gulf countries by establishing a pipeline network. This underground network runs from Al-Ahwaz in southern Iran to supply 760 million liters of daily fresh water to Kuwait. Iran declined this offer later due to water shortages and drought (Al Bawaba 2000). However, in 2003 another plan was mooted between the two countries to supply Kuwait with 900 million liters/day of freshwater through pipelines in a proposed two-million dollar constructed project between Kuwait, Iran, and the UK. The proposed pipelines were to run from the Karun River in southwestern Iran through the Arabian Peninsula seabed toward Kuwait, avoiding Iraq territory and further political threats from Saddam Hussain, who was still ruling Iraq at the time. The initial plans for the transnational water project were obtained after the two countries signed a Memorandum of Understanding (MoU) in 2003 (Amery 2012); two years later, this MoU expired due to a lack of progress in the legal formalities (IRNA. 2005). The on-and-off-again offer was overlooked two years

after the decline and again in 2005, whereas Kuwait's geopolitical considerations influenced the signing of the agreement.

Kuwait's decision to overlook the Kuwaiti-Iranian water exchange relationship minimized the future conflict. Moreover, growing tensions and conflict in the region are ongoing due to the rising disputes between Iran and other GCC countries fueled by the GCC-US relationship that ended with the pausing of the transboundary water agreement between Kuwait and Iran; the halting of this agreement is once again due to the intervention of the US by opposing the GCC and Kuwait from relying on Iran to supply water to the region, in the fear of Iran influencing the region's political states against the US. Kuwait was thus able to allow the sacrifice of losing its political relations with Iran and the possibility of securing a water source while gaining back its regional trust and cooperation with fellow GCC states (Amery 2012; Taremi 2005).

Another aspect to be considered relates to Kuwait's sensitive geographical location as a neighbor with countries with very different political orientations, which could result in important disruptions on the imports passageway, combined with unpredictable intra-regional affairs (Abdullah, Zhang, and Matsubae 2021). For example, in the past rising political tension periods, Iran had even threatened to close of the Strait of Hormuz, bearing in mind that 80% of Kuwaiti wheat imports pass through the Strait of Hormuz (Al-Hemoud et al. 2019), as this is the only maritime route. Nonetheless, Kuwait's strategic location has served the country well to play a mediation role which helped downscale the tension between Qatar, the Kingdom of Saudi Arabia, the United Arab Emirates and Bahrain. Thus, the GCC union was spared a possible fallout. Kuwait acted as a mediator to reduce tensions between Gulf states at the 2017 Gulf Summit, which in turn lowered political concerns and prevented the destruction of the region's security and stability (Al-Mutairi and Ali 2022). In other words, its own geography and privileged location has enabled Kuwait to become a significant player in the security and political stability of the Gulf Region, as it is acting as a neutral member (Ahtiok 2023).

FINAL REFLECTIONS AND CRITICAL INSIGHTS

Oil and water resources have led to many wars and conflicts between countries throughout history. The control of natural resources emerges as a major source of conflict. In the context of the GCC, oil has been frequently used as a political tool to initiate and drive conflict that, on many occasions, has materialized into wars. The Arabian Gulf Countries, especially Kuwait,

have suffered from freshwater scarcity throughout history; this has always been a significant concern and this could emerge as a future source of armed conflict. Freshwater is a critical strategic element for Kuwait, as it continuously defines its relationship with neighboring countries. Water is the most fundamental resource for human needs; any disruption in its availability could trigger an immediate confrontation between countries and communities, leading to social, economic, and political upheavals and posing significant challenges to security worldwide.

Surprisingly, the academic literature examining the geopolitics and geoeconomic dynamics of water scarcity is quite limited. In particular, there is a significant research gap in understanding the relationship between geoeconomics, geopolitics, and freshwater in the GCC region, specifically in Kuwait. This gap exists in both the analytical focus on certain practices and the set of theories that attempt to explain and influence obtaining of freshwater. This research paper has identified the relevance of these geopolitical and geoeconomic dynamics for freshwater scarcity.

The deep connection between food, water, and energy resources has also been identified as the water-energy-food nexus. In understanding the link better management and policy making could be achieved with debates across these three resources, then could help manage water scarcity, avoiding the potential increase of rising conflicts. Further research is needed to examine water, food, and energy as interdependent resources. The research study mapped the links between freshwater scarcity situations where geopolitical and geoeconomic practices are essential, adding a practical case study that helps to shed light on the close interconnection between geopolitics and geoeconomics.

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No potential conflict of interest was reported by the authors.

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