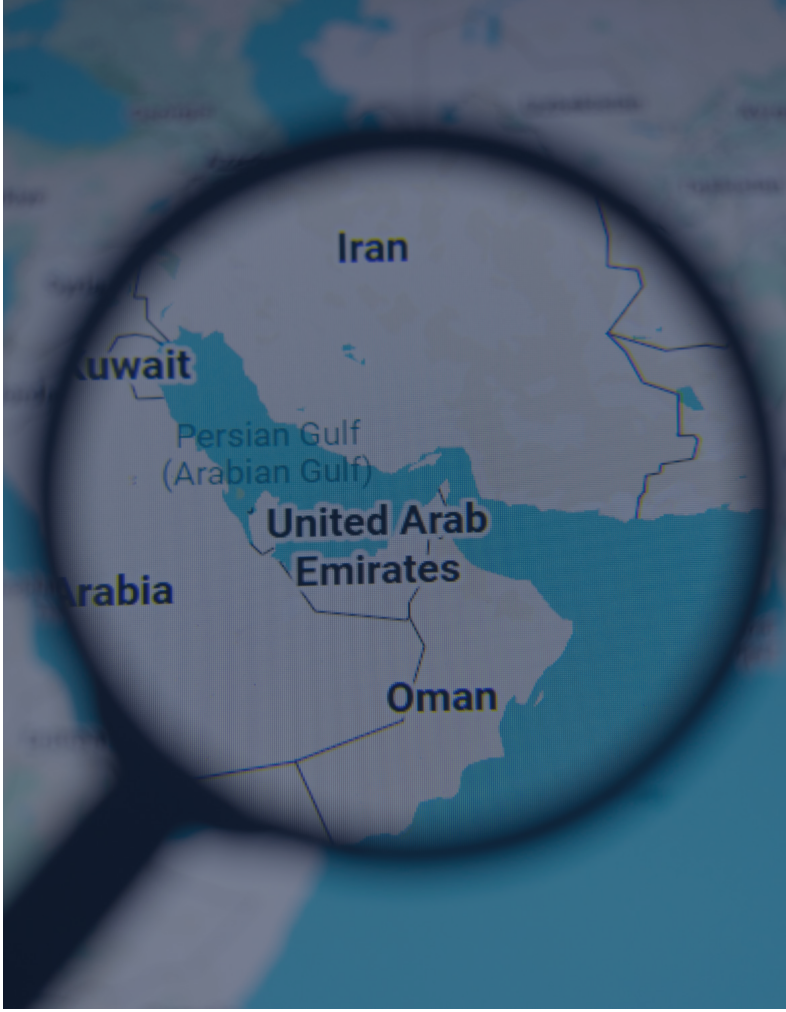
HUNGARIAN INSTITUTE OF INTERNATIONAL AFFAIRS



Caught in the Crossfire: Gulf States and the Iran Crisis

LILLIAN ZSÓFIA ARONSON & NOELLA SÜDI

HIIA Perspective
Regular publication of the Hungarian Institute of International Affairs.

Publisher:
© Hungarian Institute of International Affairs, 2026.

Author(s):
Lillian Zsófia Aronson, Noella Südi

Copy editor(s): Andrea Kulcsár

The views expressed in this analysis are solely those of the author(s) and cannot be considered the official position of the Hungarian Institute of International Affairs or the Hungarian government

For more publications, see the homepage of the Institute (www.hiia.hu).

Source of cover photo: Shutterstock

March 31, 2026

Lillian Zsófia Aronson, HIIA
Noella Südi, HIIA

CAUGHT IN THE CROSSFIRE: GULF STATES AND THE IRAN CRISIS

The Israeli and American intervention against Iran, launched on February 28, 2026, represents a turning point for the Gulf states' foreign policy strategy developed over the past decades, which has centered on preserving stability, maintaining a degree of neutrality or non-alignment, and positioning themselves as international mediators. While U.S. actions against Iran advance a broader strategic agenda that could ultimately benefit the Gulf states, they must simultaneously manage the immediate consequences on the ground, some of which have been severe, especially on the economic front. Iranian missile and drone strikes have repeatedly hit the strategic and energy infrastructure of the United Arab Emirates, Bahrain, Oman, Qatar, Kuwait, and Saudi Arabia, and the effective closure of the Strait of Hormuz presents further challenges. So far, the states have demonstrated notable restraint, keeping their responses largely defensive rather than offensive and avoiding further escalation.[1] The crucial questions going forward are whether they will join the war as active participants, how they will manage the economic fallout, what the future of their relationships with Iran, Israel, and the United States will look like, and whether the war will strengthen intra-GCC cooperation.

THE STRATEGIC CALCULUS OF GULF INVOLVEMENT

The Arabian Gulf is a closed, strategically significant region in which smaller states operate under the geopolitical pressure of Iran, Iraq, and Saudi Arabia. Given their military vulnerability, these states rely primarily on the security guarantees of external powers, such as the United States and the United

1 Bilal Y. Saab, "Should Gulf Arab States Join the War Against Iran?," Chatham House, March 19, 2026, https://www.chathamhouse.org/2026/03/should-gulf-arab-states-join-war-against-iran.

Kingdom.[2] However, the current war clearly highlights the limits of these arrangements: With small populations, a high proportion of foreign workers, and a heavy dependence on energy resources, their internal stability largely relies on external support and the redistribution of state revenues, making the Gulf states particularly vulnerable to regional tensions and threats from Iran. To understand Iran–Gulf relations, the current war should be seen not as a starting point, but as the outcome of a long-term process in which the ideological legacy of the Iranian Revolution, regional power competition, and the regional order built on external security guarantees has mutually reinforced the conditions for today's confrontation.

Foreign powers have maintained a continuous presence in the region since the early nineteenth century, with Great Britain gradually gaining dominance due to the need to protect Indian colonial trade routes. The 1820 General Maritime Treaty obliged local sheikhdoms to accept British maritime hegemony in exchange for protection against external threats.[3] Subsequent bilateral agreements effectively created a protectorate system, ensuring the internal autonomy of local ruling families while relying on London for foreign policy and defense. By the mid-twentieth century, the region's significance grew further with the discovery of hydrocarbon resources, which attracted new external actors. After World War II, the United States gradually assumed the leading role, first through economic means through American oil companies and later increasingly in security policy.[4] The British "East of Suez" withdrawal (1968–1971) ended the traditional British military presence, allowing Washington to safeguard regional stability according to its strategic interests, building the military and political infrastructure necessary to protect the flow of oil.[5]

When the Gulf states gained independence in 1971, they inherited a security framework in which external actors, particularly the guarantees provided by Washington, played a central role. This legacy continues to fundamentally shape Iran–Gulf relations and the broader regional balance of power. While the Gulf

2 Sarah Shamim, "Who Are the Gulf's Military Allies and How Are They Helping in Iran War?," *Al Jazeera*, March 20, 2026, https://www.aljazeera.com/news/2026/3/20/who-are-the-gulfs-military-allies-and-how-are-they-helping-in-iran-war.

3 James Onley, *Britain and the Gulf Shaikhdoms, 1820–1971: The Politics of Protection* (Georgetown University, 2009), 4.

4 Anoushiravan Ehteshami, "Security and Strategic Trends in the Middle East," in *The Transformation of the Gulf – Politics, Economics and the Global Order,* ed. David Held and Kristian Ulrichsen (Routledge, 2012), 266.

5 Wm. Roger Louis, *The End of the British Empire in the Middle East, 1952-1971* (Oxford University Press, 2025), 385–390.

states gradually integrated into the U.S. security and economic system, Iran followed a radically different political path after the 1979 Iranian Revolution. The revolution not only brought domestic transformation but also introduced a new foreign policy doctrine: the export of the Islamic revolution, which posed a direct security challenge to the Gulf monarchies. From the outset, the revolutionary ideology claimed a universal mission: leveraging Shiite identity to legitimize support for Shiite communities abroad and, more broadly, for "oppressed Muslims."[6] As a result, Iran became an active regional actor, using the export of the revolution—particularly among Shiite communities—as a tool that directly threatened the political stability of the Gulf states by fostering local Shiite discontent and internal tensions. In practice, Iran also built a proxy network to project its influence through allied non-state actors. Classic examples include Lebanon's Hezbollah and Yemen's Houthis, which the Gulf states perceive as instruments of Iranian expansion that pose a serious security challenge.[7]

The Gulf states' room for maneuver has, therefore, always been severely limited: Defense guarantees reliant on external powers, British and later American influence, and Iran's radical shift in foreign policy have created a long-term structural framework that continues to shape the decisions of these small states today.

GULF STATES' STRATEGIC DILEMMA IN NAVIGATING THE IRANIAN THREAT

The current war is of a different nature. The intervention that began on February 28 goes beyond the usual proxy-conflict logic, which Gulf monarchies have traditionally managed primarily as a security issue. This conflict is not only unfolding across multiple theaters, but also simultaneously involves key state actors, led by Israel and the United States, alongside networks of non-state actors—such as Hezbollah—thereby making Lebanon one of the main fronts of the war.[8] Unlike previous conflicts, it has assumed a distinct political dimension

6 László J. Nagy, *Az arab országok története a XIX–XX. században* [The History of the Arab Countries in the 19th-20th Centuries] (Eötvös József Könyvkiadó, 1997), 149–150.

7 Harrison Kass, "What Role Have Iran's Proxies Played in the War?," *The National Interest*, March 16, 2026, https://nationalinterest.org/blog/buzz/what-role-have-irans-proxies-played-in-war-hk-031626.

8 Caroline Alexander and Fadwa Hodali, "Lebanon Rebukes Iran as Israel Strikes on Hezbollah Escalate," *Bloomberg*, March 20, 2026, https://www.bloomberg.com/news/features/2026-03-20/lebanon-rebukes-iran-as-israel-strikes-on-hezbollah-escalate.

that is shaping the strategic calculations of the Gulf states, which must now weigh whether to simply defend against Iranian attacks or—following the logic of Middle Eastern power projection—also respond, risking the perception of openly siding with Israel.

For the Arab Gulf states, any counterattack would primarily serve as a means of self-defense and deterrence, aiming to curb Iranian strikes and prevent future attacks. Protecting critical infrastructure, mitigating economic impacts, and maintaining domestic stability also provide strong incentives. The Gulf states could also leverage the capabilities of the U.S.–Israeli coalition, although U.S. military support is likely to prioritize the Jewish state above the Gulf countries. However, a strong argument against the Gulf states' military escalation is that escalation would mean they would be openly fighting alongside Israel. Although the United Arab Emirates and Bahrain participated in the normalization efforts of the Abraham Accords prior to the Gaza war, the October 7 attack by Hamas has presented a challenge for the rapprochement process, and joining the war would have serious consequences for the political elites of the monarchies, severely undermining the leaders' credibility in the eyes of the public.

Iran's communication strategy partly aims to prevent an escalation by the Gulf states: The official narrative frames the attacks as targeting primarily U.S. and Israeli military assets, thereby reducing the pressure on Gulf countries to respond militarily and thus justifying the Iranians' attacks as self-defense. In practice, however, much of Iran's focus is on undermining the critical infrastructure of the wealthy Arab oil monarchies,[9] simultaneously shifting the war's destructive impact onto the Gulf states and, indirectly, their Western allies, to end the war, while using energy infrastructure and potential blockades of the Strait of Hormuz to exert global economic pressure.[10] Its warnings that any U.S. or Israeli strikes on Iranian power plants would trigger retaliation against energy infrastructure across the Middle East reinforce this approach, signaling a deliberate effort to deter intervention, maintain strategic leverage, and externalize the economic

9 Amr Hamzawy, "Iran Is Pushing Its Neighbors Toward the United States," Carnegie Endowment for International Peace, March 4, 2026, https://carnegieendowment.org/emissary/2026/03/iran-collective-security-gulf-states-us-security.

10 The Unit for Political Studies, "Caught in the Crossfire: Gulf Security and Strategy in the US–Israel War on Iran," Arab Center Washington DC, March 19, 2026, https://arabcenterdc.org/resource/caught-in-the-crossfire-gulf-security-and-strategy-in-the-us-israel-war-on-iran/.

and political costs of the conflict.[11] Within the Arabian Peninsula, Saudi Arabia and the United Arab Emirates possess the most significant military capabilities, led by the Royal Saudi Air Force (RSAF) and the UAE Air Force, which could, in principle, confront an Iran weakened by Israel and the United States.[12] However, any retaliatory measures could escalate the conflict further, intensifying the pressure on the internal stability of the Gulf states. For them, a swift conclusion to the war is, therefore, a strategic priority. Provoking such a confrontation is not in Iran's interest either, as direct military responses carry significant risks for its own security and economic stability.

The Gulf monarchies' foreign policy strategy is fundamentally built around managing their economic and security vulnerabilities. Due to their military and demographic fragility, they rely on external security guarantees while consciously seeking to preserve autonomy and political space. This duality is managed through a multi-directional, flexible foreign policy: diversifying economic and security partnerships, maintaining active diplomatic engagement, assuming mediator roles in international conflicts, and increasing international weight through development and humanitarian initiatives.[13] Globally, they are becoming increasingly visible, particularly toward the Global South, extending their economic, infrastructural, and humanitarian influence across Africa, South Asia, and Latin America, while also competing with each other for prestige and influence.[14] This strategic model, however, is fundamentally based on stability, relying on a predictable regional environment and the manageability of conflicts. Initiatives such as Saudi Arabia's Vision 2030, the UAE's role as a logistics and aviation hub, and Qatar's Tourism 2030 all rely on the region remaining secure, open, and integrated into the global economy. A prolonged or escalating conflict directly undermines the feasibility of these long-term economic and political strategies.

11 "Iran Says It Will Hit Region's Energy Sites if US, Israel Target Power Plants," *Al Jazeera*, March 22, 2026, https://www.aljazeera.com/news/2026/3/22/iran-says-will-hit-regions-energy-sites-if-us-israel-target-power-plants.

12 Sarah Shamim, "Who Are the Gulf's Military Allies, and How Are They Helping in Iran War?," *Al Jazeera*, March 20, 2026, https://www.aljazeera.com/news/2026/3/20/who-are-the-gulfs-military-allies-and-how-are-they-helping-in-iran-war.

13 Layla Ali, *Middle Powers in a Multipolar World: The Evolving Role of Gulf States in Global and Regional Order* (Gulf Research Center, 2025), 2–3. https://www.grc.net/documents/68ef7f15cbc21MiddlePowersMultipolarWorldTheEvolvingRoleGulfStatesGlobalRegionalOrder2.pdf.

14 Maddalena Procopio and Corrado Čok, "Diversification Nations: The Gulf Way to Engage with Africa," European Council on Foreign Relations, March 24, 2025, https://ecfr.eu/publication/diversification-nations-the-gulf-way-to-engage-with-africa/.

The current war threatens this very foundation, as it not only represents a security challenge but also constrains the diplomatic and political space on which these strategies depend.

THE ECONOMIC FALLOUT OF A REGIONAL WAR

The economic impacts should not be underestimated. The effective closure of the Strait of Hormuz, through which around 20 percent of the world's seaborne oil and natural gas passed prior to the war,[15] mostly from the GCC countries, is wreaking havoc not only on the global economy but also the national economies of the countries in the region. Despite decades of diversification efforts, GCC economies are still heavily reliant on hydrocarbon exports, albeit to varying degrees. Saudi Arabia has seen its hydrocarbon revenues as a percentage of its GDP decline steadily in the twenty-first century, but these revenues still account for around 37 percent, and Bahrain has seen its dependency nearly double to 28 percent, for example.[16] With only a handful of ships now transiting the strait each day—on some days, none—compared to around one hundred prior to the war, exports have been severely disrupted, driven by both the dangerous conditions but also rising costs tied to higher insurance premiums and fuel prices.

Gulf producers are attempting to mitigate the disruption by rerouting exports through overland infrastructure that bypasses the Strait of Hormuz. Saudi Arabia's East–West pipeline to the Red Sea port of Yanbu can carry up to five million barrels per day, while the United Arab Emirates' pipeline from Abu Dhabi to Fujairah on the Arabian Sea adds another 1.5 million barrels per day of capacity.[17] Nevertheless, even at full capacity, the alternatives can offset only a fraction of the volumes that would typically transit the strait—roughly one quarter—so the chokepoint remains vital. These routes also remain within reach of both Iran, and its regional partners, like the Houthis in Yemen, who have not yet entered the war but could significantly disrupt exports if they did. And while they ease some disruptions to oil flows, they are not an option for LNG, with Qatar, the world's largest LNG producer, cut off from global markets entirely.[18]

15 Samantha Gross et al., "Why Iran's Disruption of the Strait of Hormuz Matters," Brookings, March 19, 2026, https://www.brookings.edu/articles/why-irans-disruption-of-the-strait-of-hormuz-matters/.

16 Frédéric Schneider, "Hooked on Fossil Fuels? Analyzing the Gulf States' Dependency on Hydrocarbons," Gulf International Forum, April 2, 2025, https://gulfif.org/hooked-on-fossil-fuels-analyzing-the-gulf-states-dependency-on-hydrocarbons/.

17 David Butter, "The Iran War is Exacting a Heavy Toll on Gulf Oil and Gas Exporters – and Creating Risk and Opportunity in North Africa," Chatham House, March 17, 2026, https://www.chathamhouse.org/2026/03/iran-war-exacting-heavy-toll-gulf-oil-and-gas-exporters-and-creating-risk-and-opportunity.

18 Gross et al., "Why Iran's Disruption of the Strait of Hormuz Matters."

Energy infrastructure has also been damaged in the strikes. Qatar halted all LNG production on March 2 following damage to QatarEnergy facilities at Ras Laffan and Mesaieed Industrial City.[19] An estimated 17 percent of Qatar LNG export capacity—equivalent to roughly $20 billion in annual revenue—has been knocked out for the next three to five years.[20] Saudi Arabia suspended the operations of Ras Tanura, its most important oil refinery the same day,[21] and a drone attack on the SAMREF refinery, near Yanbu, briefly interrupted the loading of oil for export at the port on March 19.[22] In the United Arab Emirates, the massive Habshan gas complex, Fujairah Industrial Zone, and the Shah Gas Field, leading to some shutdowns.[23] Other sites targeted have included Kuwait's Mina al-Ahmadi Refinery,[24] Bahrain's Bapco Energies Refinery,[25] and Oman's Port of Salalah and Port of Duqm.[26]

For the first time in years, the global price of oil has entered the triple digits, and it may stay there for years.[27] While higher spot prices could, in theory, help offset some of the loss in volumes for the GCC, they are unlikely to do so in this case given the magnitude of the damage. Still, the contracts held by the region's national oil companies have prepared for disruptions. The long-term nature of many contracts, especially those with Asian countries, provides a degree of insulation from short-term disruptions by supporting operational and financial stability.[28] Many also include clauses designed to mitigate the impact

19 Yousef Saba and Maha El Dahan, "Qatar LNG, Saudi Refinery, Israeli Oil, Gas Fields Down Due to Mideast Strikes," *Reuters*, March 2, 2026, https://www.reuters.com/business/energy/saudi-aramco-shuts-ras-tanura-refinery-after-drone-strike-source-says-2026-03-02/.

20 "Iran Warns It Will Show 'Zero Restraint' If Infrastructure Attacked Again," *Al Jazeera*, March 19, 2026, https://www.aljazeera.com/news/2026/3/19/iran-attacks-cut-17-of-qatars-lng-capacity-for-up-to-5-years-qatarenergy.

21 Saba and El Dahan, "Qatar LNG, Saudi Refinery."

22 Maha El Dahan et al., "Natural Gas Prices Soar as Iran, Israel Strike Middle East Energy Infrastructure," *Reuters*, March 19, 2026, https://www.reuters.com/business/energy/wrapup1-iran-targets-energy-facilities-across-gulf-after-israel-struck-its-key-2026-03-19/.

23 El Dahan et al., "Natural Gas Prices Soar"; Sam Meredith, "Iran Targets UAE Energy Infrastructure as Gas Field Set Ablaze, Tanker Struck Near Strait of Hormuz," *CNBC*, March 17, 2026, https://www.cnbc.com/2026/03/17/iran-war-uae-energy-gas-field-oil-fujairah-strait-of-hormuz.html.

24 El Dahan et al., "Natural Gas Prices Soar."

25 "Bahrain's Bapco Announces Force Majeure on Operations," *Reuters*, March 9, 2026, https://www.reuters.com/business/energy/bahrains-bapco-announces-force-majeure-operations-2026-03-09/.

26 Tom Kool, "Iranian Drone Strike Hits Oman's Largest Oil Storage Facility," *OilPrice.com*, March 11, 2026, https://oilprice.com/Latest-Energy-News/World-News/Iranian-Drone-Strike-Hits-Omans-Largest-Oil-Storage-Facility.html.

27 John Liu, "Global Oil Price Stuck in Triple Digits. Goldman Sachs Says It May Stay There for Years," *CNN*, March 20, 2026, https://edition.cnn.com/2026/03/20/energy/oil-gas-prices-intl-hnk.

28 Rawan Oueidat et al., "Middle East Conflict: GCC Energy Value Chain Shows Exposures," S&P Global, March 3, 2026, https://www.spglobal.com/ratings/en/regulatory/article/middle-east-conflict-gcc-energy-value-chain-shows-exposures-s101673021.

of disruptions stemming from geopolitical tensions or trade restrictions beyond their control. The economic fallout goes beyond just oil and gas. For example, the region's airports have had to close and cancel, or reroute flights, including Dubai Airport, the world's busiest airport by international passenger traffic. Even just a 24-hour standstill at Dubai Airport could cost between several hundred million dollars and potentially even $1 billion.[29] At the end of the day, the main question remains how long the war will last. A shorter war would limit the damage, but a prolonged war could deal unimaginable damage. Regardless, there are early signs of stabilization, as missile and drone attacks across the GCC have declined markedly. In the United Arab Emirates, for example, which has been the most targeted, attacks decreased slowly but steadily from several hundred daily to just 29 on March 22.[30] These disruptions come at a particularly bad time for the Arab Gulf states, though, which are in the midst of "Vision" strategies designed to leverage hydrocarbon revenues to diversify their economies and build globally competitive service- and knowledge economies.[31] It is not clear how well they will be able to recover.

TOWARD A NEW GCC PARADIGM

Ultimately, the war is reshaping what many in the Gulf had begun to describe as a new regional "Cold War" dynamic between Iran and Saudi Arabia.[32] In the aftermath of October 2023, there was already much debate over whether Iran or Israel posed the greater threat to the GCC. With Iran and its "Axis of Resistance" weakened, and Israel adopting a more assertive regional posture—including involvement in arenas such as Yemen[33]—many in the Gulf began to see Israel as the more immediate concern, and the direct Israeli strikes on Doha in September 2025 only reinforced this perception. In the meantime, some of the Gulf states were cautiously pursuing a degree of rapprochement with Iran, reflected both in

29 "Rs 2,000 Crore a Day at Risk As Dubai's Economic Engine Grinds To a Halt," *NDTV*, March 1, 2026, https://www.ndtv.com/world-news/rs-2-000-crore-a-day-at-risk-as-dubais-economic-engine-grinds-to-a-halt-after-iran-strikes-on-airport-11153152.

30 Katherine Wells et al., "Iran Update Special Report: March 22, 2026," Institute for the Study of War, March 22, 2026, https://understandingwar.org/research/middle-east/iran-update-evening-special-report-march-22-2026/.

31 Frédéric Schneider, "The Costs of the Iran Conflict for the Gulf," Middle East Council on Global Affairs, March 8, 2026, https://mecouncil.org/blog_posts/the-costs-of-the-iran-conflict-for-the-gulf/.

32 F. Gregory Gause, "Beyond Sectarianism: The New Middle East Cold War," Brookings Doha Center, July 2014, https://www.brookings.edu/wp-content/uploads/2016/06/english-pdf-1.pdf.

33 Elfadil Ibrahim, "Israel Playing with Fire in Yemen," Quincy Institute for Responsible Statecraft, September 3, 2025, https://responsiblestatecraft.org/israel-yemen-houthis/.

formal agreements such as the Iran–Saudi normalization deal and in more subtle diplomatic signaling like Omani Foreign Minister Badr bin Hamad Al Busaidi's statements at the 2025 Manama Dialogue.[34] The question now is how the current war will impact this dynamic.

For now, it seems that Iran is back to being enemy number one. Rebuilding trust between Tehran and the Gulf states will take years, particularly if the current regime remains in power. At the same time, Israel's demonstrated willingness—and capability—to escalate against a major regional power introduces a different kind of concern. An increasingly assertive Israel may, over time, be viewed as a more unpredictable threat than a weakened Iran—particularly among Gulf states that have yet to normalize relations. While the strategic rationale for normalization may grow, the political space for it could narrow if Israel's regional posture continues to harden, especially given its central role in starting a war that has inflicted significant damage on Gulf economies and infrastructure.

The conflict also raises questions about the future of GCC cooperation. The fact that all member states have been affected in one form or another may create new momentum for coordination, especially in the security domain. Yet structural constraints remain: the GCC is not a cohesive bloc but a grouping of states with distinct interests and a history of competition. As a result, cooperation is likely to remain selective and issue-specific, following a "hub-and-spoke" model rather than evolving into a broader integration on all fronts. One area where progress appears more plausible is air defense, where recent attacks may incentivize greater coordination on capabilities and intelligence sharing—especially as the United States, which remains the region's dominant security provider, signals a longer-term desire to reduce its regional footprint and shift towards other theaters like the Western Hemisphere and the Indo-Pacific.

At the same time, the war may force a reassessment of the GCC's preferred role as neutral mediators. In recent years, mediation has elevated their diplomatic standing and secured them a seat at the table on key global issues. The current conflict might offer them a degree of moral high ground in the sense that they can position themselves as victims and non-aggressors, but it also underscores the hard limits of their approach. Neutrality is increasingly difficult to sustain in a polarized and escalating global environment. The month may well mark a

34 Mahdi Ghuloom, "Between Mediation and Advocacy: Oman's Shifting Role in Gulf-Iran Relations," ORF Middle East, November 7, 2025, https://orfme.org/expert-speak/between-mediation-and-advocacy-omans-shifting-role-in-gulf-iran-relations/.

turning point, prompting Gulf states to balance their mediator roles with a more explicit alignment of strategic interests. In this sense, there could be impacts for their strategies of strategic hedging between great powers, although it is still too soon to tell exactly what a recalibration could look like.

CONCLUSION

The ongoing conflict in the Middle East is reshaping the broader regional order in ways that complicate the grand strategy of the Arab Gulf states. Although some are reportedly weighing joining the war, for now, they will likely maintain a defensive rather than offensive strategy to avoid escalation despite Iranian attacks directly targeting them, as their interests lie in maintaining relative stability and bringing the conflict to a swift conclusion to minimize the economic fallout. Trust in Iran will be shaken for a long time to come. Its continued ability to project power—both directly and through infrastructure disruption—ensures that it has taken its place as the Gulf's central threat, yet again, although Israel's increasingly assertive regional posture introduces a new layer of strategic uncertainty, and the Iranian regime's removal from the strategic chessboard could amplify concerns. Meanwhile, dependence on the United States for security will persist, though its limitations are becoming increasingly apparent, and the GCC may accelerate efforts to strengthen its own defensive capabilities. Ultimately, the Gulf states' ability to navigate this evolving geopolitical landscape will depend on whether they can adapt their existing models without sacrificing the economic transformation agendas on which their long-term resilience depends.

HUNGARIAN
INSTITUTE OF
INTERNATIONAL
AFFAIRS