BEYOND THE STRAIT: STRENGTHENING GCC LOGISTICS THROUGH INLAND CORRIDORS

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THE GCC LOGISTICS SYSTEM UNDER PRESSURE

The GCC has built one of the world's most commercially significant logistics systems. Saudi Arabia, the UAE, Qatar, Kuwait, Bahrain, and Oman have invested decades in port infrastructure, free zone ecosystems, and carrier partnerships that now underpin a freight and logistics market valued at roughly USD 83 billion[1]. Jebel Ali Port (the UAE) alone processes 15.5 million TEUs per year, functioning as the transshipment hub for the entire Gulf. The scale and sophistication of this system position the GCC as a global logistics leader.

This position has been built around a single geographic corridor: the Strait of Hormuz. The Strait, 21 nautical miles wide at its narrowest, is the only sea passage from the Persian Gulf to open ocean. Approximately 25% of global seaborne oil, 19% of global LNG, and one-third of seaborne fertiliser trade pass through this single corridor, with around 900 vessels transiting each week under normal conditions[2]. The concentration of trade through this corridor reflects the system's commercial efficiency, but it also means that the region's logistics performance is closely tied to the Strait's continued availability.

In late February 2026, this relationship was tested. The US–Israel conflict with Iran shut down commercial navigation through Hormuz within 48 hours of the first strikes. Daily vessel transits dropped from approximately 129 to negligible levels[3]. Major shipping lines suspended all Strait operations. Jebel Ali and Khalifa Port (the UAE), two of the largest ports in the region had their operations significantly impacted. The International Energy Agency (IEA) characterised the result as the largest disruption to global energy supply since the 1970s oil crises[4].

The GCC's response demonstrated that the region's logistics system possesses greater depth and adaptability than its hub-and-spoke design might suggest. Inland corridors, alternative maritime gateways, overland transport networks, and cross-border coordination mechanisms were activated to sustain trade flows under conditions the system was never originally designed to handle. Under normal conditions, these inland corridors serve an efficiency function, reducing port congestion and extending the reach of maritime gateways. Under disruption, they proved capable of taking on a fundamentally different role: maintaining trade continuity when the primary maritime gateway was no longer available. What emerged was a partial proof of concept for a networked logistics model, and a clear indication of where further investment would yield the greatest gains in regional resilience and connectivity.

This report analyses how GCC inland logistics corridors responded to the Strait of Hormuz disruption, identifies where targeted enhancements would strengthen the system's capacity, integration, and resilience, and outlines a set of prioritised measures. The objective is forward-looking: to define what the next generation of GCC logistics infrastructure should deliver.

[1]Mordor Intelligence, GCC Freight and Logistics Market Report, 2025.
[2]BCG, The Hormuz Strait: Which Sectors and Regions Are Impacted Most, March 2026.
[3]Farmdoc daily, University of Illinois, March 2026.
[4]Stimson Center, Global Markets and the Strait of Hormuz, March 2026.

THE SCALE OF DISRUPTION

The Strait of Hormuz is not an energy corridor alone. It is a multi-commodity industrial artery linking Gulf production to global markets.

The GCC's export exposure through the Strait extends across six major commodity categories:[5]

1. Crude oil and petroleum products account for approximately 20 million barrels per day, representing roughly 25% of global seaborne oil trade, with around 80% of these flows destined for Asian markets including China, India, Japan, and South Korea.

2. LNG volumes transiting the Strait represent approximately 19% of global trade, with Qatar dependent on the corridor for 93% of its LNG exports and the UAE for 96%.

3. Fertiliser: The GCC's fertiliser exports, including urea, ammonia, and sulphur, account for approximately 16 million tonnes per year and around a third of seaborne fertiliser trade, supplying agricultural markets across India, Brazil, and China.

4. Petrochemical exports, led by polyethylene (PE) and methanol, are strongly export-oriented. Saudi Arabia and the UAE account for around 20% of global polyethylene trade (the wider Middle East supplies roughly 40%), the region holds about 15% of global PE capacity, and around a third of global seaborne methanol trade passes through the Strait.

5. Aluminium: The region produces approximately 6 million tonnes of aluminium per year, around 5 million of which transits the Strait, accounting for around 8% of global primary output.

6. Helium: Qatar alone supplies 27 to 30% of global helium, a commodity with no readily available substitutes that is critical to semiconductor manufacturing, medical imaging, and aerospace. Almost all of it ships to South Korea, Taiwan, China, and Japan to supply their chip industries.

[5]Sources: IEA, EIA, IMF, World Bank, FAO, USGS, and the World Economic Forum, Argus, and ICIS

EXPORT CATEGORY	VOLUME THROUGH HORMUZ	GLOBAL TRADE SHARE	KEY DESTINATIONS
CRUDE OIL & PETROLEUM	~20M barrels/day	~25% of seaborne oil trade	China, India, Japan, S. Korea (~80% to Asia)
LNG	~112 bcm/yr (~10 Bcf/d)	~19% of global LNG trade	~83% to Asia
FERTILISERS	~16M tonnes/yr	~30% of seaborne fertiliser	India, Brazil, China
PETROCHEMICALS	~12.5M t PE + ~14M t methanol/yrl	~20% of global PE (GCC); ~33% of seaborne methanol	China, SE Asia, Europe
ALUMINIUM	~6M tonnes/yr produced (~5M via Strait)	~8% of global primary aluminium	USA, Turkey, Japan
HELIUM	~63 mcm/yr (Qatar)	~27-30% of global supply	South Korea, Taiwan, China, Japan

Table 1: GCC export commodities transiting the Strait of Hormuz

On the other hand, the GCC's import dependency is equally significant. The import exposure to the Strait of Hormuz also extends across six major commodity categories, serving the GCC region that depends heavily on seaborne supplies: [6]

1. Food and agricultural products account for the most critical dependency. The GCC imports up to 85% of its food, with Saudi Arabia at 80%, the UAE at 90%, and Qatar the most exposed at over 90%. Primary origins include India, Brazil, Australia, the EU, and South Africa. Around 70% of these food imports transit the Strait of Hormuz, with rice from India the most exposed at roughly 80%, while much of the region's grain instead arrives via the Red Sea.

2. Construction materials, including steel, cement, and timber, are essential inputs for the region's ongoing mega-project pipeline, including Vision 2030, NEOM, and other large-scale infrastructure programmes. The GCC sources these primarily from China, India, Europe, and Turkey.

3. Industrial raw materials, notably bauxite and alumina, feed the GCC's aluminium smelting industry, one of the largest globally. These inputs are sourced primarily from Australia, with Guinea, Ghana and Brazil as additional suppliers. A sustained supply disruption risks an uncontrolled smelter shutdown that can require 6 to 12 months to restart.

4. Pharmaceuticals and medical supplies represent a high-dependency, time-sensitive import category. Sourced primarily from the EU, India, and the USA, these goods require cold chain logistics and express handling, making them particularly vulnerable to maritime disruption.

5. Consumer goods and electronics serve the retail supply chains of over 50 million GCC residents, sourced primarily from China, the EU, and India. During the crisis, war-risk surcharges of up to USD 4,000 per container (typically around USD 1,500 to 2,000) were applied across the region, with onward overland trucking adding further cost.

6. Containerised general cargo encompasses the full breadth of seaborne trade into the Gulf. GCC ports collectively handle approximately 33 million TEUs per year, with Jebel Ali alone processing 15.5 million TEUs at a 65% transshipment and re-export ratio. The suspension of Jebel Ali cascaded disruptions to feeder services serving Kuwait, Qatar, and Bahrain, which together account for an estimated 1.2 to 1.5 million TEUs annually.

[6]Sources: World Economic Forum, Arab News, DP World, EGA, Gulf News, Hellenic Shipping News, Freightos, and the Hormuz Monitor

IMPORT CATEGORY	SCALE OF DEPENDENCY	PRIMARY ORIGINS	DISRUPTION IMPACT
FOOD & AGRICULTURE	85% of GCC food imported (~70% via Hormuz)	India, Brazil, Australia, EU	Fresh produce shortages; emergency airlifts
CONSTRUCTION MATERIALS	Steel, cement, timber for mega-projects	China, India, Turkey	Project delays; cost escalation
INDUSTRIAL RAW MATERIALS	Bauxite/alumina for GCC smelters	Australia, Guinea, Ghana, Brazil	Smelter shutdowns (6 to 12 months restart)
PHARMACEUTICALS	High import dependency	EU, India, USA	Time-sensitive; cold chain required
CONSUMER GOODS	50M+ GCC residents	China, EU, India	Up to USD 4,000 surcharge/container
CONTAINERISED CARGO	~33M TEUs/yr across Gulf ports	Global	Jebel Ali halted; feeder network collapsed

Table 2: Import categories at risk from Strait of Hormuz disruption

The closure of the Strait of Hormuz produced immediate and simultaneous effects across both the GCC's export and import flows. On the export side, commercial tanker traffic through Hormuz fell to negligible levels, from roughly 129 transits per day to a handful, halting the bulk of the approximately 20 million barrels per day of crude and products that normally transit the strait. Brent crude surged to USD 126 per barrel. The Petroline and ADCOP pipelines were activated as bypass routes, but their combined practical capacity of around 5 to 6 million barrels per day could replace only about a quarter to a third of the lost flow, leaving a gap of approximately 14 to 15 million barrels per day.

The impact extended well beyond energy: polypropylene prices in China jumped approximately 6% in a single day, methanol futures surged over 10%, and Qatar's Ras Laffan facility, damaged by strikes, halted production of helium, urea, polymers, and methanol, temporarily removing approximately one-third of global helium supply. Sulphur, with nearly half of global seaborne trade transiting the Strait, saw the GCC's role as a global price-setter effectively suspended.

On the import side, Jebel Ali and Khalifa Port, the UAE's two largest container ports, became unreachable. Shipping companies invoked wartime clauses, and container surcharges of up to USD 4,000 per container (typically around USD 1,500 to 2,000) were applied region-wide, with onward overland trucking adding further cost. Freight quotes from Europe to Jeddah surged from USD 3,500 to USD 17,000, excluding inland transport costs. Gulf states drew on strategic reserves estimated at four to six months for staple goods, but perishable items, pharmaceuticals, and time-sensitive industrial inputs could not be stockpiled and required alternative routing solutions.

The defining characteristic of this disruption was not the closure of a single route, but the simultaneous loss of the GCC's primary maritime gateway for both outbound and inbound trade, with no alternative sea route directly serving the inner Gulf ports. Export revenues were curtailed at the same time as import supplies stalled, placing the hub-and-spoke model under a level of stress it was not designed to absorb. In this context, the GCC's inland logistics corridors, including overland transport networks, alternative maritime gateways, and cross-border coordination mechanisms, became the region's primary means of maintaining trade continuity.

FROM MARITIME TO OVERLAND: HOW THE GCC REROUTED TRADE UNDERDISRUPTION

As maritime routes through the Strait of Hormuz were severed, the immediate response was not a complete halt of trade, but a forced reconfiguration of logistics flows across alternative pathways. Three levers were activated to maintain supply chain continuity: alternative maritime gateways outside the disrupted zone, inland transport corridors connecting those gateways to consuming markets, and inland logistics hubs that absorbed, processed, and redistributed the redirected cargo.

Alternative maritime gateways

As congestion intensified across the Upper Gulf, regional supply chains reconfigured around alternative maritime gateways located outside the immediate conflict zone. On the Red Sea coast, Saudi Arabia's western ports emerged as the principal substitute gateways. Jeddah Islamic Port and King Abdullah Port absorbed a significant share of diverted traffic, supported by the rapid activation of a Logistics Corridors Initiative coordinated with ZATCA[7]. Tanker calls at Saudi Red Sea ports increased by approximately 55% during the disruption period[8].

Oman's Arabian Sea ports also played a stabilising role. Salalah (4.3 million TEU capacity) and Sohar (1.6 million TEU capacity) remained operational while Upper Gulf routes were restricted, and major carriers including Maersk continued accepting bookings through these ports. However, Salalah was subsequently forced to suspend operations following Iranian drone strikes on 11 March, highlighting the geopolitical exposure of even bypass infrastructure.

On the UAE's East Coast, Fujairah and Khor Fakkan gained strategic relevance due to their location outside the Strait on the Gulf of Oman. These ports operated as alternative discharge points supported by Landbridge connections into the UAE and wider GCC markets, demonstrating the increasing importance of multimodal flexibility and geographic diversification. These ports faced disruption too but at a scale lower than that of ports situated directly in the Arabian Gulf.

[7] Arab News / Saudi Press Agency, Saudi Logistics Corridors Initiative, March 2026.
[8] Windward Maritime AI, crisis-period vessel tracking data, March 2026.

Resilience provided by inland transport corridors

Once cargo entered through alternative ports, it was transported across the GCC via road and emerging rail infrastructure. Road transport absorbed the largest immediate shock. Trucking routes connecting Jeddah with GCC markets became critical emergency arteries, though freight rates escalated to between USD 4,000 and USD 9,000 per container, a level not commercially sustainable beyond short-term emergency operations.

Rail infrastructure demonstrated its strategic value in parallel. Etihad Rail maintained uninterrupted operations throughout the crisis, running more than 100 freight services over nine days, transporting approximately 459,000 tonnes of cargo and more than 7,900 containers. Additional services were introduced to Al Ghail Dry Port and the UAE's East Coast ports, reinforcing connectivity between maritime gateways and inland distribution centres[9].

Cross-border transit systems, including TIR Convention frameworks, were activated to facilitate movement across GCC borders. Qatar introduced fast-track lanes at Abu Samra, cleared through the Al Nadeeb single-window system, and Kuwait rerouted cargo through land crossings. However, all arrangements required manual coordination across six separate customs systems, exposing gaps in cross-border integration that constrained the effective throughput of these corridors.

[9]Over 100 trips in 9 days: Etihad Rail keeps UAE goods moving amid conflict | Khaleej Times

The role of inland logistics hubs

Corridors move cargo. Hubs absorb it. Without inland processing capacity providing temporal decoupling between cargo arrival and final distribution, the surge at alternative entry points would have overwhelmed the movement layer before it could reach consuming markets.

- Al Ghail Dry Port, located in Ras Al Khaimah (UAE) and connected to the Etihad Rail, absorbed the rail freight surge in the northern Emirates.
- KAEC (King Abdullah Economic City) staged Jeddah arrivals bound for the UAE, Qatar, Kuwait, and Bahrain preventing the Red Sea gateway from becoming a bottleneck.
- JAFZA, located in Dubai, with over 11,000 resident companies, provided the bonded warehousing and re-export infrastructure needed to process and redistribute inbound cargo across the wider region. Its commercial depth meant that diverted cargo could be cleared, broken down, and forwarded without building new commercial relationships from scratch.
- KEZAD in Abu Dhabi absorbed the emirate's industrial supply chain disruption, handling chemicals, metals, and construction materials that feed the UAE's manufacturing base.
- Riyadh Industrial City and Riyadh Dry Port served as Saudi Arabia's inland distribution gateway for truck convoys from Red Sea ports, staging cargo for onward movement to the eastern provinces and across borders.
- Abu Samra was reinforced as Qatar's primary food entry point with accelerated customs clearance, and Bahrain was sustained through a multi-leg relay from UAE East Coast ports through Saudi Arabia and across the King Fahd Causeway.

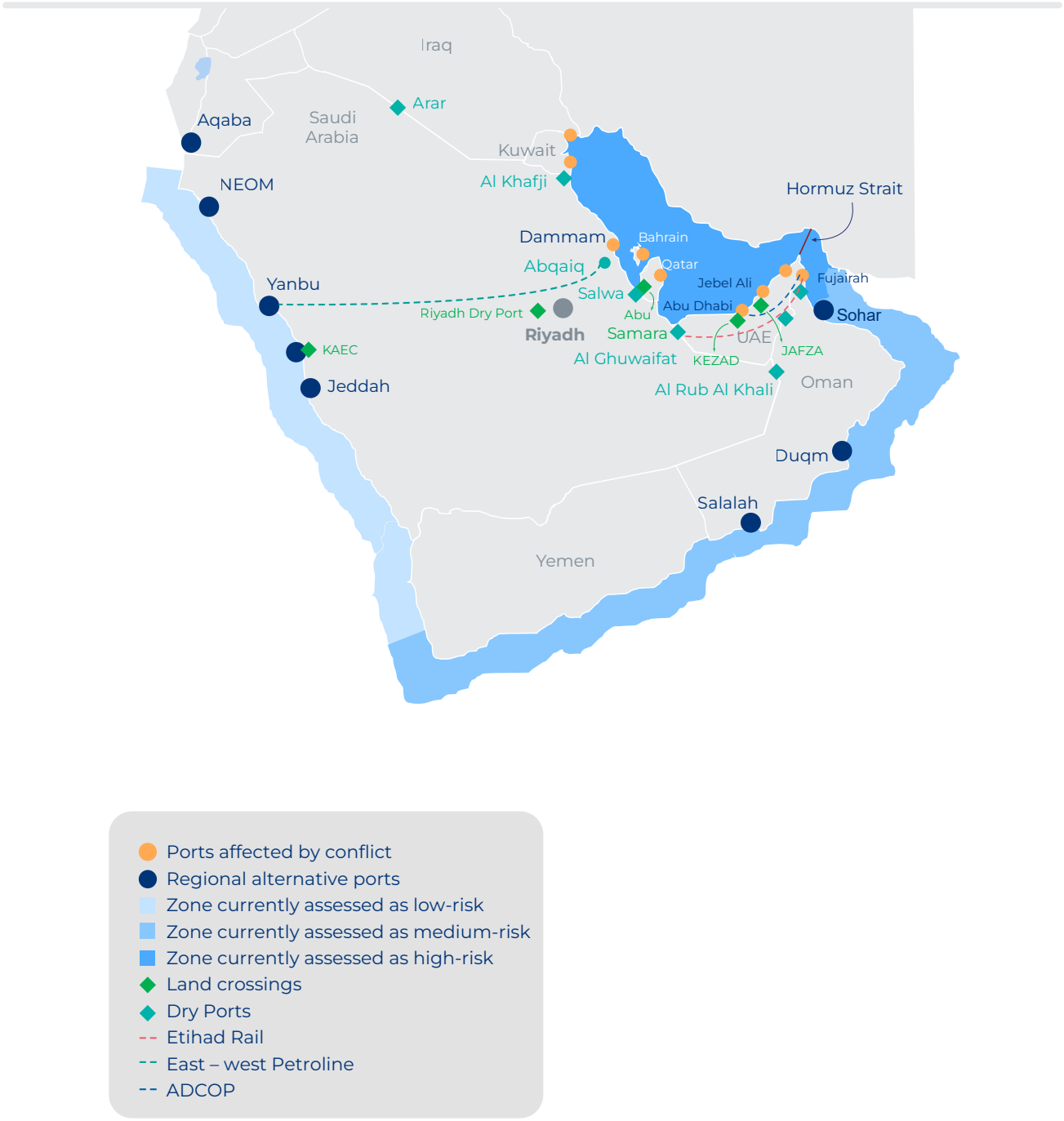


Figure 1: Maritime gateways, inland transport corridors and inland logistics hubs

The GCC's collective response: complementary roles across the region

The crisis demonstrated that each GCC member state contributed distinct and complementary capabilities to the regional logistics response, forming a networked system that proved more resilient than any single national infrastructure could have delivered alone.

Saudi Arabia served as the backbone of the regional overland response: its Red Sea gateways remained among the few ports broadly accepted by international carriers, its inland road network became the primary distribution platform for redirected cargo, and the Petroline was activated within 72 hours, reinforcing energy export continuity.

The UAE consolidated its position as the region's intermodal hub, with Etihad Rail's uninterrupted performance transforming inland corridor capacity into tangible supply-chain continuity, while Fujairah and Khor Fakkan operated as alternative maritime gateways. The ADCOP pipeline maintained crude exports throughout the crisis, and ADNOC has since announced plans to expedite development of the new west-to-east crude pipeline to expand bypass capacity, a direct investment in reducing the system's exposure to future Strait disruptions.

Oman contributed strategic depth as the region's maritime bypass, with Salalah and Sohar positioned outside the Upper Gulf and serving as buffer ports that expanded the regional maritime catchment area available to international carriers.

Qatar, Kuwait, and Bahrain each leveraged the wider GCC network to maintain import continuity. Qatar activated land-based supply routes through the Abu Samra border crossing with accelerated customs clearance, Kuwait rerouted cargo through neighbouring countries' overland corridors, and Bahrain sustained operations through multi-leg relay corridors via the UAE and Saudi Arabia. Their ability to draw on the collective regional infrastructure underscored the value of an interconnected GCC logistics system.

Taken together, the response demonstrated that the foundations of a networked, multi-nodal logistics architecture already exist across the GCC. The opportunity now is to formalise and strengthen these interdependencies so that they function as a designed system rather than an improvised response.

	MARITIME GATEWAYS	INLAND TRANSPORT CORRIDORS	INLAND LOGISTICS HUBS
Core resilience providers			
Saudi Arabia	• Red Sea ports (Jeddah, King Abdullah Port) acted as primary alternative gateways for rerouted cargo	• West-to-East trucking corridors (Jeddah → Riyadh → Eastern Province → GCC) enabled cross-border redistribution • Petroline Oil pipeline	• Inland logistics zones and dry ports (e.g., Riyadh) enabled cargo clearance, staging, and redistribution
United Arab Emirates	• Fujairah and Khor Fakkan acted as alternative discharge ports outside constrained Gulf routes	• Strong road network and Etihad Rail enabled inland cargo transfer across UAE and into KSA/GCC • Fujairah Oil pipeline	• Free zones and logistics parks enabled re-export, consolidation, and redistribution
Oman	• Sohar and Salalah operated as key bypass ports outside Strait disruption zone	• Cargo moved inland into UAE and Saudi Arabia via cross-border trucking • Supported onward distribution into wider GCC	• Limited inland absorption role compared to UAE/KSA
Dependent nodes			
Qatar	• Limited role in alternative maritime entry due to reliance on Gulf shipping routes	• Activated land-based supply routes via Saudi Arabia • Leveraged TIR and expedited border processes for cargo continuity	• Abu samara consolidation hub • Focus on efficient customs clearance and last-mile distribution
Kuwait	• Minimal role in alternative maritime routing; high exposure to disrupted Gulf routes	• Rerouted cargo (including air cargo) via land corridors through KSA/UAE	• Focus on efficient customs clearance and last-mile distribution
Bahrain	• No significant role in alternative entry; dependent on external ports	• Relied on Saudi land corridors (via King Fahd Causeway) for cargo inflow	• Focus on efficient customs clearance and last-mile distribution

Figure 2: GCC's response to the crisis

CAPACITY, INTEGRATION, AND RESILIENCE GAPS EXPOSED BY THE HORMUZ DISRUPTION

The GCC's logistics system absorbed an unprecedented disruption and maintained trade continuity through a combination of alternative gateways, inland corridors, and cross-border coordination. That response confirmed the system's underlying strength. It also revealed three areas where targeted enhancements would significantly increase the system's ability to sustain operations over longer durations and at greater scale: capacity, integration, and resilience. Each area presents a distinct set of opportunities, and together they form the basis for the next phase of the GCC's logistics development.

Capacity: Scaling Overland and Alternative Infrastructure

Expanding rail bypass capacity

Etihad Rail's current container capacity stands at 50,000 TEU per year. This is 0.3% of Jebel Ali's normal throughput. The rail network proved its value during the crisis (459,000 tonnes in nine days), but this volume represents a fraction of what would be needed for sustained substitution over weeks or months. Qatar, Bahrain, Kuwait, and Iraq have zero viable rail bypass capacity. The GCC's most commercially efficient transport mode, rail, is also its least developed for crisis scenarios.

Scaling overland alternatives beyond emergency response

Trucking rates surged to USD 4,000 to 9,000 per container. Freight quotes from Europe to Jeddah increased from USD 3,500 to USD 17,000 before onward inland transport. Road-based substitution functioned as an emergency measure but cannot serve as a structural alternative at scale. Driver shortages, fleet constraints, and fuel costs compound the problem over any period longer than a few weeks.

Accelerating the Saudi Landbridge

The Saudi Landbridge, a proposed 1,300 km rail link from Jeddah to Dammam via Riyadh, would provide 50 million tonnes per year of capacity and 18-hour end-to-end transit[10].It is the only non-maritime, non-aviation route that could substitute for Hormuz at scale, connecting Red Sea gateways directly to Gulf coast markets and eastern provinces. As of May 2026, the Jeddah to Riyadh segment has not broken ground. Had it been operational, the cargo that overwhelmed road corridors would instead have moved by rail in 18 hours.

[10] Saudi Landbridge Company / Eurogroup Consulting, 2026.

Closing the pipeline bypass deficit

The combined practical bypass capacity of the Petroline (approximately 4 to 4.5 million bpd at Yanbu loading terminals, despite 7 million bpd pipeline capacity) and ADCOP (1.5 million bpd to Fujairah) is approximately 5 to 6 million barrels per day in practice. Against the approximately 20 million barrels per day that normally transits Hormuz, this leaves a gap of approximately 14 to 15 million barrels per day that no existing infrastructure can bridge.

For LNG, petrochemicals, and containerised cargo, no overland bypass exists at all. These commodities are entirely dependent on maritime access through the Strait.

It is important to note that UAE is already developing a new oil pipeline, west-east line, with a capacity of 1.5 million bpd to Fujairah and is scheduled to begin operations in 2027.

Expanding alternative port surge capacity

Red Sea and East Coast ports absorbed a surge they were not designed for. Jeddah, King Abdullah Port, Fujairah, Khor Fakkan, and Sohar are capable facilities, but they lack the equipment capacity and hinterland road and rail connections needed to replace the Gulf's primary ports for an extended period. Congestion at these alternative ports became visible within the first two weeks of the crisis, indicating that even a moderate extension of the disruption would have overwhelmed these gateways.

Integration: harmonising customs and cross-border coordination

Establishing a unified customs platform

The GCC operates six separate national customs platforms: ZATCA in Saudi Arabia, Mirsal in Dubai, Bayan in Kuwait, and equivalents in Qatar, Bahrain, and Oman. There is no unified single window for cross-border transit. Every bonded transit movement during the crisis required separate documentation at each border crossing, manual coordination between national customs authorities, and activation of transit regimes that had not been pre-planned for crisis scenarios.

Reducing border processing times under surge conditions

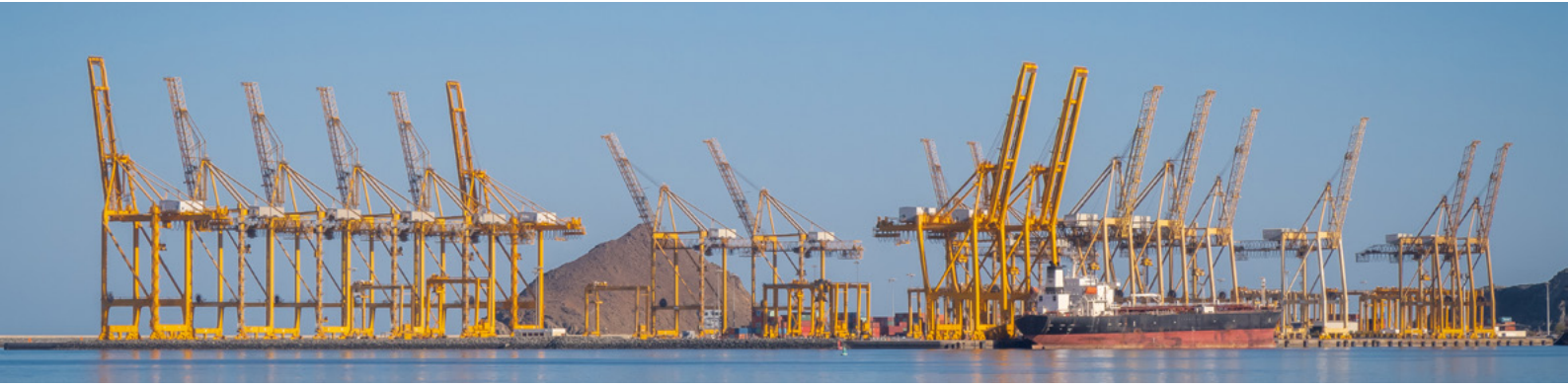
Even where physical road capacity existed, the inability to process customs declarations quickly enough created virtual bottlenecks. Trucks queued at border crossings while paperwork was processed manually. The effective throughput of overland corridors was constrained not by road width or truck availability, but by the speed at which six separate customs bureaucracies could clear cargo. This is a 21st-century logistics network operating with fragmented customs procedures that were never stress-tested for simultaneous regional disruption.

Formalising crisis transit protocols across all members

Qatar and Bahrain have zero alternative routes that do not transit Saudi territory. During the crisis, no pre-negotiated crisis transit protocols existed. Qatar Chamber negotiated fast-track lanes and accelerated clearance through Al-Nadeeb in real time. Bahrain received goods through a multi-leg relay from UAE East Coast ports through Saudi Arabia. These ad hoc arrangements worked, but at the cost of speed and predictability. Pre-planned protocols with guaranteed throughput commitments would have reduced response time from days to hours.

Coordinating carrier engagement at GCC level

Each GCC state engaged individually with international shipping lines to secure alternative bookings and landbridge solutions. There was no single point of contact for Maersk, CMA CGM, or Hapag-Lloyd to coordinate with the GCC as a system. This resulted in redundant negotiations, inconsistent messaging about which ports could accept cargo, and missed opportunities for coordinated capacity allocation. A unified carrier engagement mechanism would have been significantly faster and more effective.



Resilience: Extending Infrastructure Beyond Peacetime Parameters

Reducing the physical exposure of critical infrastructure

Jebel Ali, Khalifa Port, Fujairah, Salalah, and Duqm all came under attack during the crisis. Even Salalah, Oman's primary Arabian Sea bypass port handling 4.3 million TEU in 2025, was forced to suspend all operations after Iranian drone strikes on 11 March. Fujairah's storage infrastructure, while serving as a critical energy buffer, was also targeted, with missile strikes partially disrupting operations. The attack surface of a modern logistics system, encompassing physical ports, digital platforms, power supply, and GPS navigation, proved far larger than any peacetime risk assessment had acknowledged.

Developing cold chain capability on inland corridors

The inland rail or road corridors have very limited cold chain capability during the crisis. This is a critical gap given that the GCC imports 85% of its food and that fresh produce, dairy, meat, and pharmaceuticals all require temperature-controlled transport. The absence of refrigerated capacity on inland corridors forced emergency airlifts of perishable goods, adding significant cost and severely limiting the volume that could be moved. Lulu Retail airlifted 160 tonnes of meat and fresh produce as a stopgap measure that cannot scale.

Distributing strategic reserves to inland locations

While Gulf states maintained strategic food reserves estimated at four to six months for staples, these reserves were concentrated at coastal storage facilities. This means the reserve system itself is vulnerable to the same coastal attacks that disrupted the primary ports. Distributing a portion of strategic reserves to inland dry ports, logistics parks, and border zones would reduce this vulnerability, and position supplies closer to overland distribution corridors.

Hardening inland hubs for sustained operation

Dry ports, logistics zones, and border facilities that served as critical nodes during the crisis were not designed or equipped for sustained operation under conflict conditions. These facilities need redundant power supply, backup communications, physical protection, and the ability to operate autonomously when coastal infrastructure is under attack. Regional transport authorities have noted that land ports and logistics zones linked to inland corridors require strengthening to serve as reliable nodes during prolonged disruption.

Strengthening digital and cyber resilience

Over 1,100 vessels were GPS-spoofed in a single 24-hour window during the crisis[11]. AWS cloud facilities in the UAE and Bahrain sustained strike damage, disrupting digital supply chain management systems, port community platforms, and customs processing. Modern logistics operations are critically dependent on digital infrastructure that proved fragile under conflict conditions. The absence of sovereign, physically separated digital systems for customs, port operations, and rail control represents a systemic vulnerability.

GAP	KEY FINDINGS	EVIDENCE
CAPACITY	Rail at 0.3% of demand; Landbridge unbuilt; road corridors overwhelmed; pipeline deficit of 11 to 12M bpd; alternative ports lack scale for sustained substitution	$4K to $9K per container; port congestion within 2 weeks; no LNG or petrochemical bypass
INTEGRATION	6 customs platforms with no single window; no crisis transit protocols for Qatar or Bahrain; no coordinated carrier engagement; manual border processing	Border dwell time spikes; bonded transit activated manually; ad hoc bilateral arrangements; inconsistent carrier messaging
RESILIENCE	Ports and bypass infrastructure physically exposed; digital and cyber systems vulnerable; no cold chain on inland corridors; inland hubs unhardened; strategic reserves concentrated at coast	Salalah, Fujairah, Duqm attacked; 1,100+ vessels GPS-spoofed; AWS disrupted; perishable airlifts required; land ports unprotected

Table 3: Summary of structural gaps

[11] Windward Maritime AI, crisis-period vessel tracking data, March 2026.

BUILDING A MORE RESILIENT GCC LOGISTICS SYSTEM: MEASURES ACROSS CAPACITY, INTEGRATION, AND RESILIENCE

The GCC's logistics system demonstrated considerable resilience during the Strait of Hormuz disruption, with inland corridors, alternative maritime gateways, and cross-border coordination mechanisms sustaining trade flows under conditions the system was never designed to handle. Etihad Rail, Saudi Arabia's Red Sea ports, and the region's inland logistics hubs each proved that the foundations of a networked logistics alternative already exist.

Building on this foundation, the preceding analysis identified three areas where targeted investment and coordination would significantly strengthen the system's capacity to operate under sustained disruption. On capacity, the region's rail, road, pipeline, and alternative port infrastructure absorbed the initial shock but would benefit from expanded throughput to support longer-duration scenarios. On integration, the GCC's six national customs platforms and bilateral coordination mechanisms functioned under pressure but could deliver substantially greater efficiency through harmonisation and pre-agreed crisis protocols. On resilience, the region's physical, digital, and cold-chain infrastructure performed within its design parameters, but extending those parameters to cover conflict conditions would materially reduce future risk.

The following sections outline strategic measures to enhance the system's performance across these three categories: capacity, integration, and resilience. Within each category, some measures build on existing infrastructure or institutional frameworks and can be delivered in the near term, while others require new construction, multi-sovereign coordination, or longer development timelines.

Capacity measures

The capacity gap is structurally important. Without sufficient overland throughput, no amount of customs harmonisation or digital investment will enable the system to function as a Hormuz substitute at scale. The following measures address this gap:

Expedite the construction of the Saudi Landbridge

The proposed 1,300 km rail link from Jeddah to Dammam via Riyadh would provide 50 million tonnes per year of capacity and 18-hour end-to-end transit. It is the only non-maritime, non-aviation route capable of substituting for Hormuz at scale[12].

Expand Etihad Rail's container capacity

The crisis proved the concept (459,000 tonnes in nine days). The task now is to scale from 50,000 to 500,000+ TEU per year through dedicated intermodal terminals at Fujairah and Khor Fakkan, and completion of Stage 3 (279 km)[13].

Establish the GCC Railway Authority

The 2,117 km GCC Railway project (targeting December 2030) requires a supranational body to prevent the project from advancing at the pace of its slowest member.

Accelerate near-term rail links

Hafeet Rail (UAE to Oman, 238 km, over 50% complete) and the Kuwait to Saudi Arabia rail link (650 km, groundbreaking 2026) provide incremental connectivity while the Landbridge and GCC Railway advance.

Expand alternative port capacity

Jeddah, King Abdullah Port, Fujairah, and Sohar should be treated as strategic reserve gateways with additional container handling, deep-water berths, and hinterland road and rail connections. Congestion appeared within two weeks of the crisis; these ports need built-in surge capacity.

Invest in strategic trucking fleet capacity

Pre-contracted emergency reserves with standardised container chassis, trained drivers, and pre-agreed pricing would prevent the cost surges experienced during the crisis.

[12] Saudi Landbridge Company / Eurogroup Consulting, 2026.

[13] Breakbulk Magazine, A Golden Age for Middle East Rail, 2026.

Develop the inland free zone network

Designating free zones along Red Sea to Gulf routes (Jeddah to Riyadh, Fujairah to Abu Dhabi) would incentivise commercial activity on these corridors during peacetime, building the operational relationships that become critical during disruption.

Pursue sequenced engagement with the Iraq Development Road

Running from Al Faw port on the Gulf to the Turkish border, this is the only overland corridor capable of bypassing both the Strait of Hormuz and Bab el-Mandeb simultaneously. Its core value for the Gulf is a faster, more resilient land route to European markets: pilot runs have moved cargo between the Gulf and Europe in roughly a week, against a minimum of around 14 days via the Red Sea and Suez. The World Bank estimates the corridor could attract up to 14 million tonnes of international freight and 20 million tonnes of regional freight by 2040. Multi-sovereign delivery across Iraq, Turkey, and GCC states places this corridor beyond the near-term horizon. However, investment positioning, port connectivity planning, and trade facilitation agreements should begin now so that GCC freight networks are already integrated when the corridor reaches operational readiness.

Integration recomemendations

The physical infrastructure for cross-border movement largely exists; what is missing is the regulatory harmonisation and institutional coordination to make it function as a single system rather than six separate ones. The following measures address this gap:

Implement the GCC Single Customs Window

Mandate full interoperability across all six national platforms (ZATCA, Mirsal, Bayan, and equivalents in Qatar, Bahrain, and Oman) and establish a pre-clearance Authorised Economic Operator programme that cuts crisis-period border dwell times to under one hour.

Institutionalise Saudi Arabia's Logistics Corridors Initiative as a permanent crisis protocol

Pre-negotiated berthing windows, pre-cleared bonded transit routing for critical commodities, and pre-agreed surge capacity at Jeddah and King Abdullah Port. The LCI was improvised during the crisis; it should be codified as standing operating procedure.

Establish a GCC Crisis Logistics Coordination Centre

Within the GCC Secretariat, providing real-time cargo flow visibility, pre-agreed corridor activation protocols, standing liaison with major international carriers, and a single point of contact for coordinated GCC-level carrier engagement. During the crisis, each state negotiated individually with Maersk, CMA CGM, and Hapag-Lloyd; a unified engagement mechanism would have been faster and more effective.

Formalise crisis transit protocols for Qatar and Bahrain

Guaranteed access to Saudi corridors, expedited customs arrangements, and minimum throughput commitments during disruption. Both countries have zero alternative routes that do not transit Saudi territory; their current dependence on ad hoc bilateral arrangements is a systemic vulnerability.

Adopt mutual recognition of customs declarations

Cargo cleared at one GCC border should not require re-clearance at the next. This single measure would eliminate the friction that degraded corridor performance under surge conditions.

Establish a GCC-wide logistics data exchange platform

Shared real-time visibility of cargo tracking, corridor utilisation, and available capacity across all member states. This platform, building on existing national systems, would enable coordinated decision-making during disruptions and optimise freight allocation in normal conditions.

Resilience recommendations

The resilience gap is technically demanding. Logistics infrastructure was designed for commercial efficiency, not for operating under conflict conditions. Addressing this requires investment across physical hardening, digital sovereignty, supply chain preparedness, and geographic distribution of critical assets:

Build sovereign digital infrastructure

Customs, port community systems, and rail control platforms that are resilient to GPS spoofing, AIS interference, and cloud service disruption. Over 1,100 vessels were GPS-spoofed in a single 24-hour period during the crisis; AWS facilities in the UAE and Bahrain sustained strike damage. Physically separated, regionally hosted systems with redundant satellite positioning are required.

Distribute strategic commodity reserves to inland locations

Move a portion of food, fuel, and medical reserves from coastal storage to inland dry ports and logistics parks. This reduces the vulnerability of the reserve system itself to coastal attacks and positions supplies closer to overland distribution corridors.

Develop air defence and drone countermeasures at tier-1 logistics nodes

Jebel Ali, Khalifa Port, Jeddah Islamic Port, Fujairah, the Petroline terminus at Yanbu, and key inland hubs. The crisis demonstrated that logistics infrastructure is a military target.

Harden inland hubs and land ports

Dry ports, logistics zones, and border facilities must be treated as strategic infrastructure. This includes redundant power supply, backup communications, physical protection, and the ability to operate autonomously when coastal infrastructure is under attack. These facilities are the shock absorbers of the system.

Deploy cold chain reserves at inland logistics parks

KAEC, Riyadh Industrial City, Al Ghail, and KEZAD should have refrigerated staging capacity. Cold chain capability should also be embedded into Etihad Rail and the Saudi Landbridge from the design stage. The GCC imports 85% of its food; the absence of inland cold chain capability forced emergency airlifts of perishable goods during the crisis.

Establish geographically distributed backup logistics nodes

Always-ready standby capacity at locations outside the primary threat envelope, activating automatically when primary facilities are compromised. The concept is analogous to data centre redundancy applied to physical logistics infrastructure.

STRENGTHENING THE GCC LOGISTICS: INSIGHTS FROM THREE DECADES OF ALG EXPERTISE

The Strait of Hormuz disruption confirmed that the GCC already possesses the foundations of a networked logistics alternative to its traditional hub-and-spoke model. Etihad Rail moved 459,000 tonnes in nine days. Saudi Arabia's Red Sea corridors sustained multiple neighbouring markets. The East – west Petroline delivered immediate energy bypass capability. Inland hubs from Al Ghail to JAFZA to Riyadh Industrial City absorbed and redistributed displaced cargo at meaningful scale. These capabilities were tested under operational conditions and delivered measurable results.

The hub-and-spoke model remains commercially efficient under stable conditions, but a parallel, networked architecture is now both proven in concept and necessary in practice, with Saudi Arabia as the overland backbone, the UAE as the intermodal hub, Oman as the maritime bypass, and emerging assets including the Saudi Landbridge, the GCC Railway, and the Iraq Development Road as the connective infrastructure that links these roles into a coherent regional system.

The measures outlined in this report are not uniformly complex or expensive. Ten of the twenty measures fall into the Quick Strategic Wins category, building on existing infrastructure and institutional frameworks that can be actioned immediately: the GCC Single Customs Window, formalised crisis transit protocols, and Etihad Rail's container capacity expansion require political commitment and operational coordination rather than decades of construction.

The Strategic Bets, above all the Saudi Landbridge and the GCC Railway Authority, demand longer timelines and larger capital commitments, but their transformative potential justifies early and decisive commitment. The GCC states that move first on cross-border rail integration, unified customs systems, and inland logistics capacity will not only strengthen the region's resilience but will redefine how trade flows across the Gulf on a permanent basis, positioning the GCC as a logistics system that is structurally stronger, better integrated, and more competitive.

The findings of this report are informed by more than thirty years of ALG's experience supporting the development of transport, logistics, and infrastructure systems across the GCC, the Americas, Africa, and Europe. By combining analytical rigour, practical implementation experience, and a deep understanding of freight and trade dynamics, ALG works alongside public and private stakeholders to shape integrated logistics systems. The same approach underpins the case made in this report: inland corridors that improve connectivity, strengthen regional resilience, and broaden economic opportunity.

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