



# Supply Chain Resilience

Helping our clients manage supply chain  
disruptions proactively



April 2026

In today's interconnected world, achieving sustainable growth goes beyond simply navigating global markets. Challenges such as market volatility, supply chain disruptions, shifting consumer expectations and national security considerations demand a stronger focus on supply chain resilience (SCR) and adaptability.

At PwC, we specialise in enhancing supply chain capabilities across the Middle East. By developing and implementing resilience strategies and flagship programmes, we help our clients fortify their supply chains against uncertainties. Our solutions are designed to optimise operational efficiencies, build a flexible logistics network, ensure reliable sourcing, strengthen supplier relationships and harness technology to mitigate risks effectively.

We are proud to have supported multiple leading GCC public sector entities in designing and implementing PwC Middle East's Supply Chain Resilience Framework. Across these engagements, we aligned strategies with national priorities and resilience indices, strengthened governance and operational capabilities and enabled organisations to enhance preparedness and to build long-term resilience.

With our expertise in developing and executing supply chain resilience strategies and our dedication to sustainable practices, we stand ready to support you in building supply chains that thrive in the face of challenges and position your organisation for lasting success.



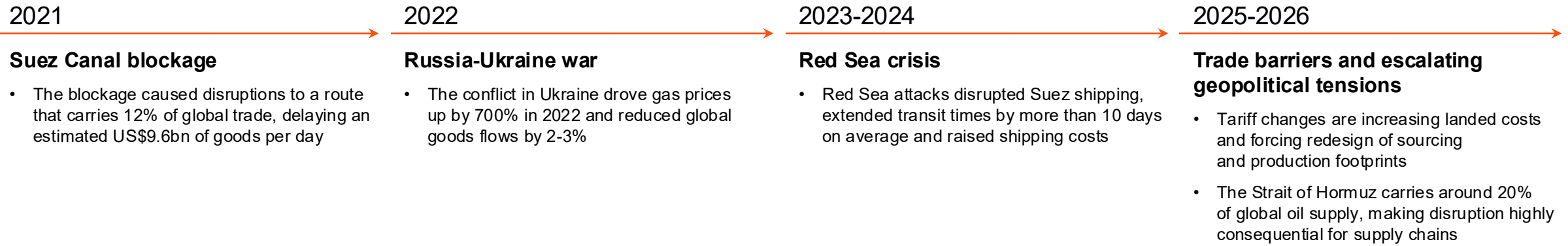
**Building resilient supply chains for a sustainable future**



# Supply chain resilience is becoming a strategic imperative as global disruptions grow in frequency, scale and cost

## Global supply chain disruptions

Non-exhaustive



## Impact areas

01

**Demand disruptions** and fluctuations can result from various factors, including competition, new product launches, pricing pressures, product cannibalisation and shifting customer preferences



02

**Supplier disruptions** can arise from breakdowns, workforce challenges, supplier financial instability or raw material shortages due to trade barriers, geopolitical conflicts or commodity-level shortages



03

**Logistics disruptions** and delays can result from demand – capacity mismatches, port congestion, strikes, regulatory changes, customs delays and force majeure events and can disrupt the flow of goods across the supply chain



04

**Production disruptions** in manufacturing operations can occur due to machine breakdowns or factory accidents, and can lead to temporary closures, reduced capacity and workforce availability challenges



05

**Digital and information disruptions** can occur due to cyberattacks, system failures or poor data visibility, and can lead to planning errors, reduced coordination and slower response to disruption



PwC's Digital Factory Transformation Survey revealed a **67% increase in the number of leaders** who believe that building **resilience and flexibility** is a key driver of supply chain transformation

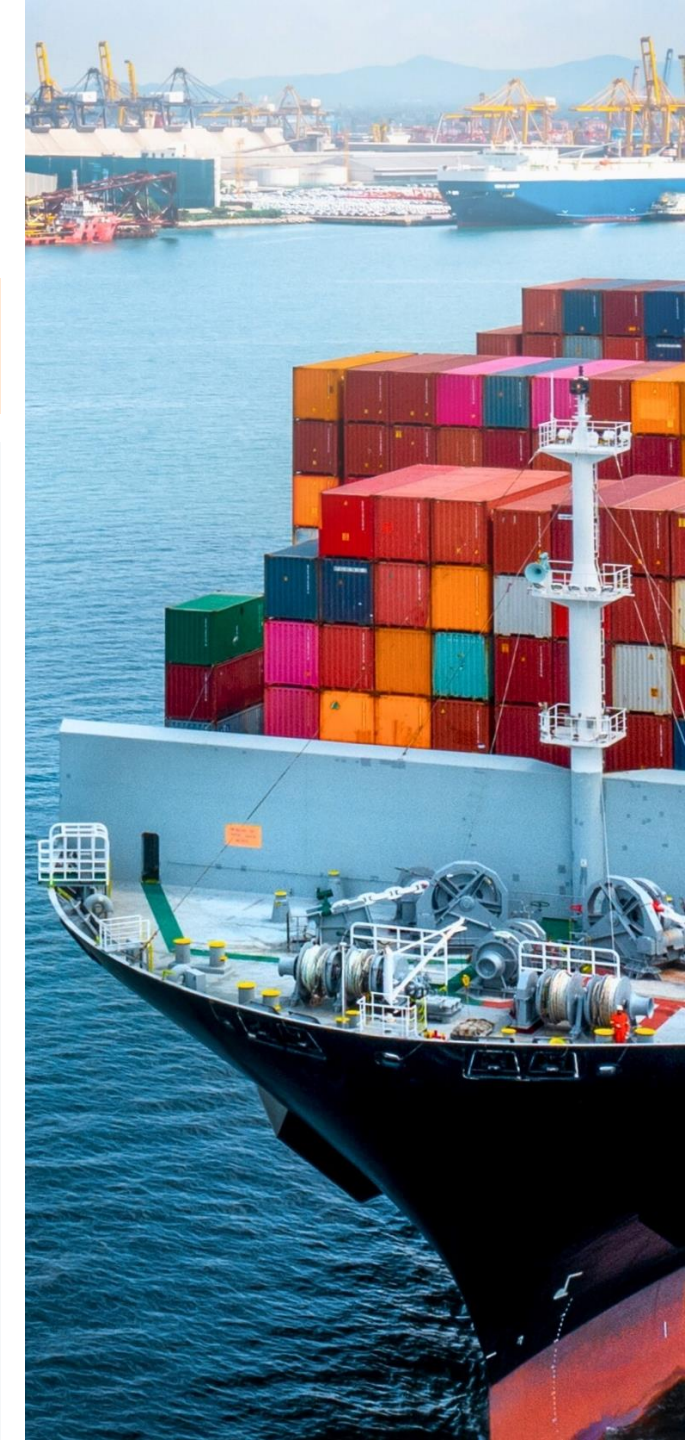
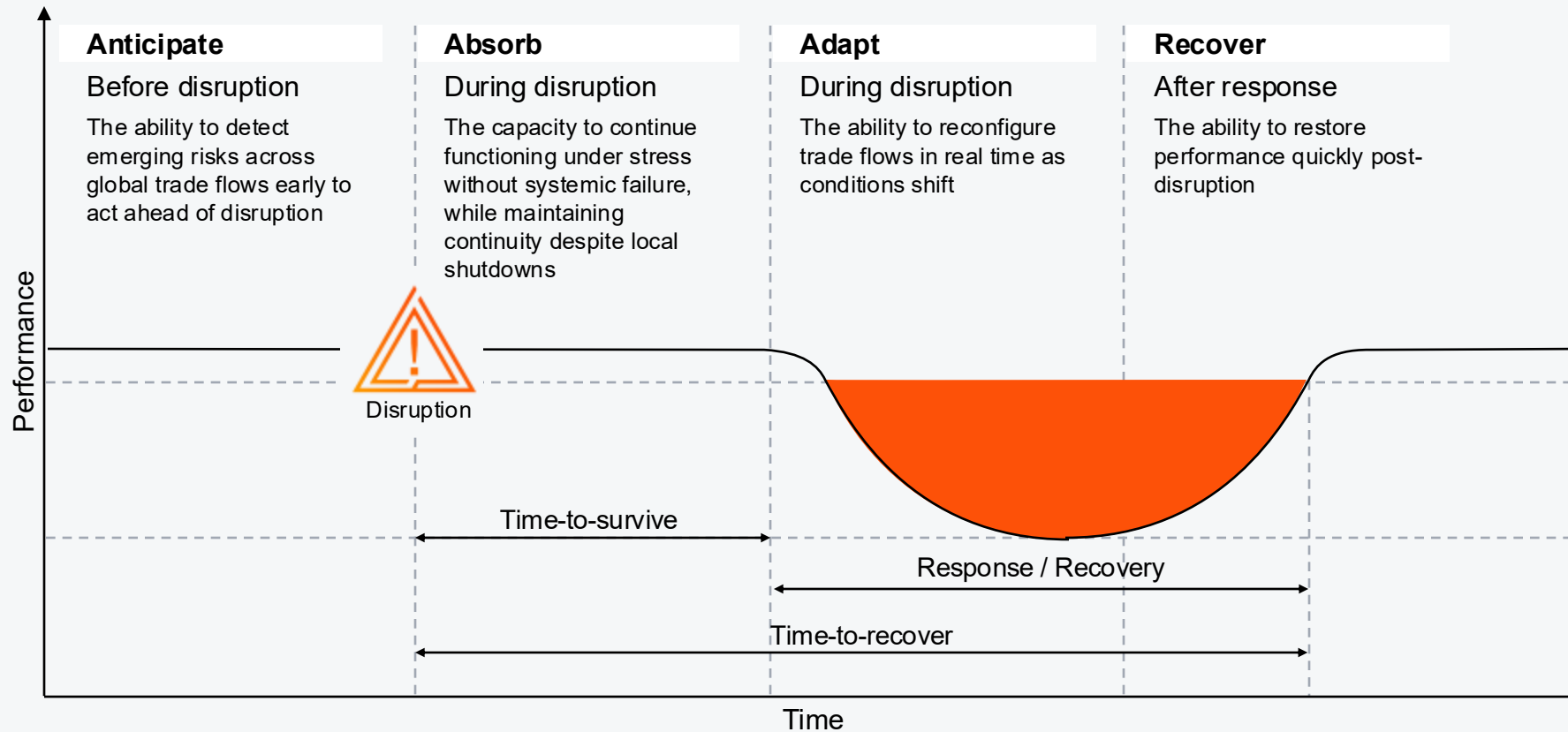
# Supply chain resilience overview



## SCR Introduction

Supply chain resilience is the ability to anticipate, absorb and adapt to disruptions while maintaining the continuous flow of goods, services and information across the supply chain and continuing to meet customer needs

## Supply chain resilience capabilities



# We have developed a best-in-class and comprehensive framework to build a strong Supply Chain Resilience capability

## Supply chain resilience framework

### Strategy

SCR scope, priorities and policy

### Operating philosophy and governance mechanism

#### Realisation thrusts

#### Assessing resilience

Supply chain mapping for critical goods

Risks and chokepoints identification

Digital replica development and network stress-testing

Detailed next



#### Building resilience

Sensitivity analysis of critical supply chain parameters

Resilience levers/strategies identification

Early warning system



#### Continuous improvement

Monitor supply chain risks

Track SCR performance

Business continuity reporting and alignment



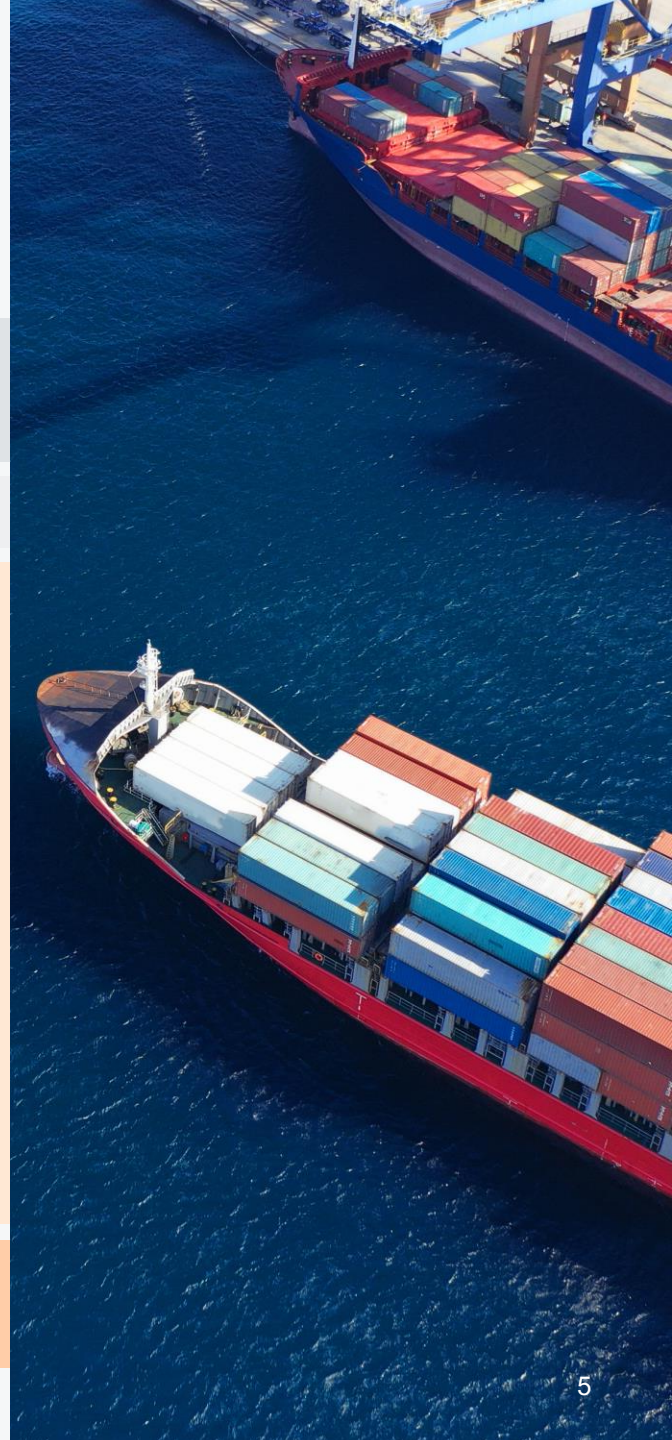
#### Operating model

SCR governance, Business Continuity Management and SC roles

SCR processes and procedures

Supply Chain resiliency metrics

Supply Chain mapping tools and early warning platforms



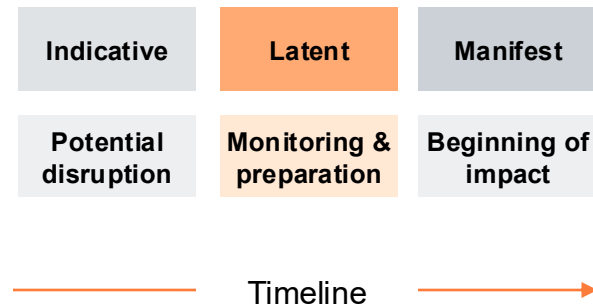
This includes an early warning system that continuously monitors external and internal signals to anticipate potential risks and provide advance notice before disruption materialises

## PwC Axis - Early warning system capability

### Early warning capability

AI-powered early warning capability that monitors real-time data to anticipate disruptions and trigger alerts across markets, trade routes and stock levels

Its core purpose is to flag threats at the earliest stage to enable proactive response



### Alert types

#### Global and market risks alerts (Upstream)



Price volatility dashboard



Export ban index



Weather/conflict alerts



Alert Staging Panel



#### National buffer and demand alerts (Downstream)



Stock buffer vs demand



Threshold-based alert panel



Survival estimation tool



Inventory Dashboard



### Lifecycle of an early warning system

01  
Data collection



02  
Risk monitoring



03  
Alert generation



04  
Decision support



05  
Continuous feedback

# A digital replica to stress test the network under disruption scenarios and enable identification of most critical vulnerabilities

## PwC Axis - Digital replica development and network stress-testing

Illustrative



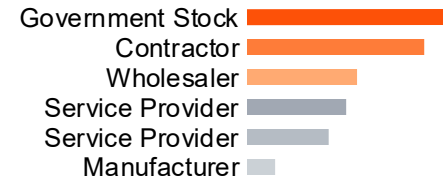
### Digital replica of inventory ownership and inbound shipments

Integrating real-time data

#### Stock health by commodity

Wheat

##### Levels by sector (Metric Tons)



##### Total Stock (Metric Tons)

84,219 MT

##### Stock Health



#### Geographic exposure to imports

Rice

##### Top five Importing countries



Country	Volume (MT)
Russia	34,222
India	21,432
China	14,820
Bangladesh	9,157
Philippines	4,463

##### Risks

61% of rice imports from South Asia

39% of rice imports pass through the Strait of Malacca

#### Inbound shipment tracker



Shipment	Status	Port of Departure	ETA
Shipment 1	In transit	Shanghai Port	04-08-2025
Shipment 2	In transit	Nhava Sheva	06-08-2025
Shipment 3	Planned	Port of Houston	14-10-2025
Shipment 4	Arrived	Jebel Ali Port	28-07-2025

### Simulation of potential disruptions and impact

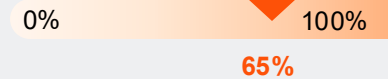
**01** The digital replica enables organisations to simulate and stress test the supply chain against identified risks, providing informed decision-making capabilities

#### Simulation inputs: Scenario-based disruptions

Scenario input: War in Ukraine

Commodity: Wheat

Production shock input (%):



**02** An AI-powered engine processes the simulation inputs to quantify impact in terms of supplier dependency and how import volumes will be affected

### Simulation output: Consequences of the shock

The shock has an export magnitude of **383,000** tons of wheat

A total import deficit of **128,000** tons of wheat

#### AI-generated impact

##### Supplier dependency

Country	Volume (Tons)	% Change
Ukraine	128,000	65.00% ▼
India	75,000	5.67% ▲
China	32,000	3.23% ▲

# We bring unparalleled experience in shaping supply chain resilience frameworks for complex organisations across sectors

## Selected case studies

### 01 GCC government authority



Preparing a comprehensive plan to support state-level strategic inventory readiness in emergency situations

### 02 GCC water authority



Establishing a supply chain resilience organisation and developing capabilities to comply with the National Resiliency Index and the National Supply Chain Resilience Framework

### 03 GCC national water company



Enhancing supply chain resilience capabilities while aligning with National Resiliency Index requirements, addressing limited visibility, fragmented governance and increasing exposure to supply disruptions

### 04 GCC-based agri-food and agri-tech company



Developing a food security intelligence system (FSIS) to support the food security mandate through up-to-date insights, proactive decision-making and risk mitigation

## How we helped



We assessed the current minimum stock and recommended safety thresholds, designed a centralised warehouse database, developed supply chain resilience strategies, established strategic stock activation protocols and formulated national emergency response plan for various crisis scenarios



We assessed the client's supply chain risk maturity, established policies, procedures and governance for National Resiliency Index compliance. We identified 5,000 critical spare parts, mapped supply chains, identified risks and designed mitigation initiatives, including early warning system requirements



We developed an end-to-end supply chain resilience framework aligned with a National Resiliency Index. We then delivered critical goods mapping, risk identification and mitigation strategies and monitoring tools. We also supported the implementation through early warning system requirements, scenario-based analysis and training



We set up the AI platform for a strategic commodity, integrated key internal and external datasets into a centralised data environment and developed 13 end-to-end machine learning use cases. We also launched a decision-making portal to provide insights, reports and dashboards for optimised decisions

# For example, we applied a four-step methodology to evaluate and strengthen the country's supply chain resilience for 11 strategic commodities for a GCC government authority

## Our approach to supply chain resilience in food security



### Objective

**01**

#### Analyse current state

Develop a view of the country's readiness for disruptions and identify supply chain vulnerabilities

**02**

#### Design resilience framework

Develop a data-driven and integrated strategic stock and resilience framework

**03**

#### Activate resilience strategies

Translate strategy into actionable mechanisms for emergency response and food distribution

**04**

#### Test and enable readiness

Ensure operational readiness by building capabilities and conducting crisis simulations



### Key outcomes

**11** Strategic food commodities evaluated to identify supply, demand and storage capacity

**42+** Supplier networks mapped for strategic commodities

Supply risk drivers analysed to identify key vulnerabilities (e.g., import dependency)

Targeted resilience measures defined to address commodity-specific and system-wide risks

Tiered emergency response protocols established

**84+** Local warehouses mapped and **52+** alternative sourcing countries suggested

**8+** Food distribution mechanisms designed to enable scalable emergency response

Two-tier emergency basket developed using rationing models

Dynamic allocation logic established based on crisis severity and stock levels

**15+** Operational tools and templates created to enable activation

End-to-end emergency readiness validated through training and simulation exercises



### Resilience enablers

- End-to-end supply chain visibility across commodities
- Risk exposure assessment framework

- Multi-sourcing and supplier diversification model
- Governance and emergency response framework

- Scalable distribution and last-mile delivery network
- Data-driven allocation and activation tools

- Cross-entity coordination and response
- Early warning and risk monitoring framework

To strengthen and future-proof supply chain resilience, we have built a bespoke three-phase roadmap, with a faster route for rapid execution during disruption

## Supply chain resilience roadmap



### SCR 1.0

#### Baseline & Assess SCR

Assess the current state of Supply Chain Resilience

Identify critical products and associated risks

Develop SCR fundamentals (e.g., SCR dept. strategy, policy, procedures and governance model)



### SCR 2.0

#### Build SCR capability

Develop supply chain maps for critical products/services

Design the tailored Supply Chain Resilience strategies (supply chain level and/or product/service level)

Build the SCR-related digital toolkit (e.g., early warning system)



### SCR 3.0

#### Execute & Monitor SCR

Execute on SCR strategies

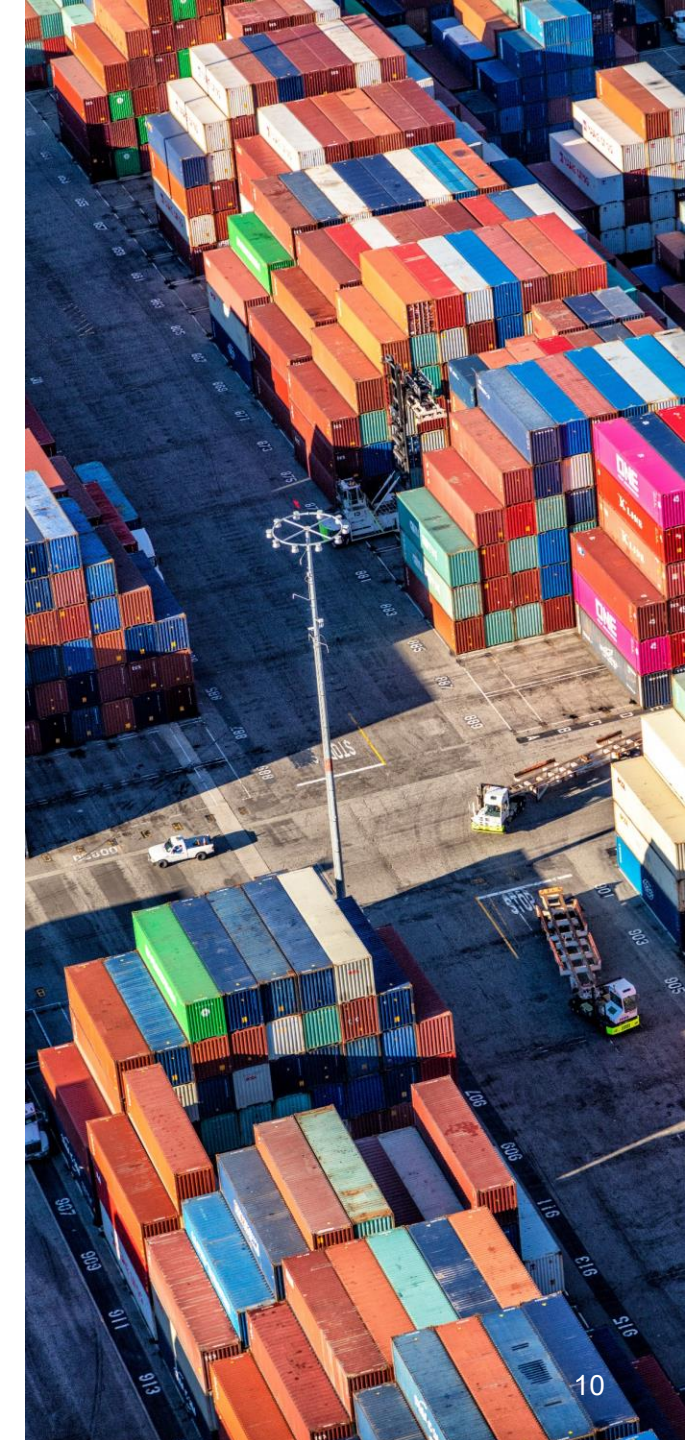
Monitor early warning systems, proactively mitigate any new risks

Measure SCR performance

Tweak/refine SCR approach (as needed)

Conduct training and awareness

Rapid execution





## Key contacts



**Nick Laborie**  
Partner  
Supply Chain and Efficiency  
+971 54 793 3768  
nicolas.laborie@pwc.com



**Bashar El-Jawhari**  
Partner  
Supply Chain and Efficiency  
+966 56 814 8501  
bashar.el-jawhari@pwc.com



**Oliver Sykes**  
Partner  
Resilience  
+971 56 480 2447  
oliver.sykes@pwc.com

Social media handles:

Twitter handle: @PwC\_Middle\_East

LinkedIn: PwC Middle East

Weblink: <http://www.pwc.com/me>

### About PwC

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With over 11,000 people across 12 countries in 30 offices, PwC Middle East combines deep regional insight with global expertise to help clients solve complex problems, drive transformation, and achieve sustained outcomes. Learn more at [www.pwc.com/me](http://www.pwc.com/me).

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