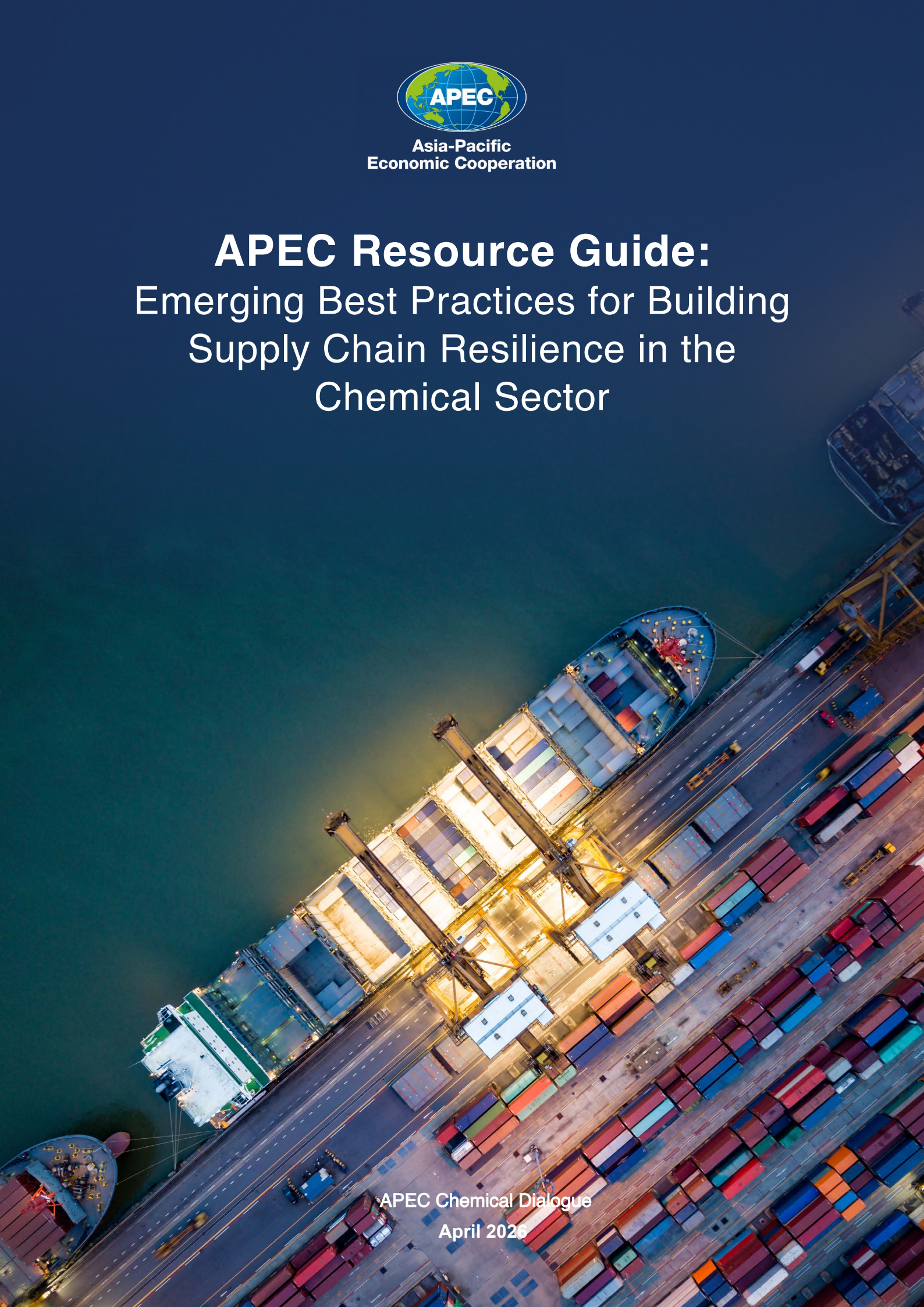
Asia-Pacific
Economic Cooperation

APEC Resource Guide:
Emerging Best Practices for Building Supply Chain Resilience in the Chemical Sector



APEC Chemical Dialogue

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APEC Chemical Dialogue

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Table of Contents

1. Overview and Context

Chemicals are at the foundation of nearly every manufacturing supply chain — from energy, automotive and transportation, agriculture, semiconductors and EV batteries as well as many essential services including water treatment and healthcare. The Asia-Pacific region stands at the chemical industry's heart, representing more than 52% of the USD5.7 trillion global chemical manufacturing business (equivalent to 7% of global GDP).[1] Moreover, the industry is a leading investor in global research & development spending, which has helped drive more than USD40 billion in increased economic activity and supports 1.1 million high-skilled jobs in the Asia-Pacific.[2]

Disruptions caused by the COVID-19 pandemic, recent natural disasters, and geopolitical tensions illustrate the potential risks to the resiliency of chemical supply chains and by extension the many industries it supplies. These disruptions can be exacerbated, due to undiversified production and fragmented regulations. In August 2025 the APEC Chemicals Dialogue implemented a workshop titled "Building Chemical Supply Chain Resilience" to foster a dialogue on emerging best practices to support chemical supply chain resiliency. This included sharing economies' efforts to develop early warning systems, enabling them to monitor and proactively address industry chemical supply chain chokepoints. The workshop was informed by a landscape review of emerging best practices and policies within APEC and other groups active in supply chain policy, including the OECD, the G20 and the United Nations, and a survey of APEC economies (found under Annex 1).

The workshop also leaned heavily on APEC's Supply Chain Framework Action Plan III (SCFAP III, 2022–2026), which seeks to promote dialogue between APEC economies and the private sector on supply chain resiliency and reliability, with an emphasis on customs and digital infrastructure. Key chokepoints identified in SCFAP III include inefficient digitization; inadequate infrastructure development; insufficient cooperation on data flows to support increasingly digitized supply chains; insufficient integration of MSMEs (micro, small and medium enterprises); and challenges in introducing and implementing new green customs procedures. To address these chokepoints, SCFAP III emphasizes cross-border, public-private collaboration, the integration of digital tools to reduce bottlenecks and management of systemic risks.

The results of the APEC Chemical Dialogue workshop are presented in this resource guide: *Emerging Best Practices for Building Supply Chain Resilience in the Chemical Sector*. The guide includes both a discussion of the key chokepoints identified in APEC chemical supply chains and the emerging best practices. It builds on the SCFAP III framework action plan as it applies to chemical supply chains and highlights the respective roles of companies and economies in fostering resilience supply chains, offering emerging best practices that economies and companies can use as reference points in evaluating and proactively promoting supply chain resilience in the Asia-Pacific region.

Participants in this project look forward to continuing this dialogue in other APEC fora – including the Alliance for Supply Chain Connectivity (A2C2) – in 2026 and beyond.

[1] International Council of Chemical Associations & Oxford Economics (2019). The Global Chemical Industry: Catalyzing Growth and Addressing Our World's Sustainability Challenges.

[2] Ibid

2. Why Focus on Chemical Supply Chains?

Chemicals are a foundational input for a wide range of industries and emerging technologies —including packaging, electronics, automotive manufacturing, agriculture, water treatment, pharmaceuticals, and healthcare. As a result, the performance of chemical supply chains, in terms of visibility and reliability, influences resilience across multiple sectors. Strengthening supply chain continuity in the chemical industry therefore not only improves trade flows but also supports broader economic growth, domestic security, and crisis response capacity within APEC economies.

The ongoing digital transformation of supply chain management in the sector illustrates this multiplier effect. Increasing use of electronic documentation, digital customs systems, and standardized data formats is streamlining compliance processes and improving real-time visibility in the cross-border trade of chemicals. SCFAP III found that the APEC region is relatively advanced in the adoption of digitization of customs single windows, outperforming the OECD. But the region lags in electronic applications for specific sectors applications, such as chemicals, with many APEC economies still relying upon paper versions of chemical specific documentation. This reduces supply chain visibility, making it difficult for companies to forecast potential disruptions and to promote efficiencies that reduce shipping times and costs.

Additionally, chemicals supply chains require deep and continuous coordination between government authorities, regulators, producers, distributors, and end users. Strict regulatory compliance, safety risks from hazardous materials, and the resulting difficulty of securing capacity on transportation vessels play a key role in chemical supply chains. Because of these considerations, efforts to improve coordination within this sector can serve as a practical model for enhancing public–private cooperation across other supply chains in the Asia-Pacific region.

Finally, growing demand for energy-efficient, circular, and bio-based products is reshaping expectations for chemical suppliers and their customers. Addressing these new requirements through coordinated supply chain strategies can support APEC's goals in green customs, including trade in recycled goods, and renewable energy. In this way, strengthening chemical supply chain resilience contributes not only to sectoral stability, but also to the region's broader transition toward low-carbon and sustainable economic development.

The Challenge

Chemicals often have different handling, transportation and safety requirements than other goods, and logistics and customs issues can be significant chokepoints for chemicals due to classifications of chemicals as hazardous goods. Standing in between raw materials and finished goods, supply chain disruptions in chemicals are often a warning sign of similar disruptions for other goods.

In addition, many APEC economies are increasingly seeking to enhance visibility of production and distribution via early warning systems in supply chains that are critical to domestic and economic security, as undiversified supply chains are at greater risk of disruption.

This resource guide identifies chokepoints in chemical supply chains that may affect supply chain resilience, impacting not only the chemicals sector but other sectors that rely on chemicals within the Asia-Pacific, and offers recommendations of emerging best practices for APEC's consideration in supporting supply chain resilience moving forward.

3. Identified Chokepoints and Challenges

Introduction

Across APEC economies, chemical and materials supply chains play a foundational role in supporting industrial production, trade, and innovation. However, the increasing complexity of global value chains, combined with evolving environmental and regulatory expectations, has exposed a range of chokepoints that threaten their efficiency and resilience. These challenges not only hinder the movement of goods and data across borders but also limit the region's ability to respond to shocks—whether from geopolitical tensions, pandemics, or natural disasters.

Addressing these systemic vulnerabilities is central to achieving the objectives of the Supply Chain Connectivity Framework Action Plan (SCFAP) III, which calls for greater resilience, inclusivity, reliability, and sustainability across regional supply chains. The following section summarizes key challenges identified through the SCFAP, an APEC Chemical Dialogue Supply Chain Survey conducted in May 2025[3], and the APEC Chemical Dialogue Workshop on Building Supply Chain Resilience (August 2025), with stakeholders from government, industry, and academia, highlighting areas where policy coordination and technological innovation can deliver measurable improvements.

1. Fragmented Risk Identification and Regulation

- **Risk management in the chemical sector remains highly fragmented** across many APEC economies. Government agencies responsible for trade, environment, and customs often monitor risks independently, without integrated mechanisms for information exchange or joint decision-making. This siloed approach can lead to duplicated efforts, delayed responses, and conflicting policy implementation.
- **Inconsistent regulatory and standards frameworks**—such as those governing Extended Producer Responsibility (EPR), labeling for chemical safety, and the differing information needs for and processes to protect Confidential Business Information (CBI) during chemicals registration versus customs clearance—create compliance challenges for industry. The absence of alignment across these frameworks complicates trade facilitation, raises transaction costs, and discourages smaller enterprises from engaging in cross-border trade.

  In the Chemical Dialogue supply chain survey, Peru noted that regulatory fragmentation creates administrative delays and undermines planning for chemical operations. Indonesia emphasized the operational burdens are created by overlapping or conflicting rules, especially at the border.

2. Limited Visibility and Traceability

- **Visibility into supply chains remains a critical gap** affecting the reliability of chemicals trade. The lack of harmonized digital standards limits transparency across feedstock flows, trade, production outages, and recycling inputs. This impedes real-time monitoring and early warning systems that could help governments and industry anticipate disruptions.

[3] Survey responses from Chile; Indonesia; Korea; Malaysia; Peru; the Philippines; Chinese Taipei; Thailand; and the United States are reflected in the identified challenges

The Chemical Dialogue supply chain survey responses and workshop presentations revealed that economies see digitalization as essential—but unevenly implemented. Malaysia emphasized the need for expanded digital trade systems and highlighted gaps in customs automation and electronic submission of technical documents. Indonesia noted that overlapping procedures and limited digital integration across border agencies remain key barriers to efficient movement of chemicals.

- **Inconsistent classification and definitional systems for chemicals**—combined with delayed implementation of harmonized standards—reduces interoperability and confidence in shared data. Without common digital and legal frameworks, APEC economies face difficulties in mapping supply chain vulnerabilities or tracing the origin of recycled materials, undermining regional resilience and circular economy objectives.
- **Geopolitics and increasing calls for diversified production,** to reduce the potential risks of supply disruption from concentrated or illicit production, are another driver of policies to reduce risk via enhanced visibility and transparency.

3. Logistics and Infrastructure Vulnerabilities

- Chemical supply chains rely heavily on critical infrastructure such as ports, pipelines, and specialized terminals. **Concentration of trade flows through a small number of routes or suppliers amplifies risks** associated with congestion, geopolitical instability, or natural disasters. Limited diversification in the supply of specialized shipping containers and vessels compounds these vulnerabilities. Via the Supply Chain workshop, Thailand highlighted reliance on imported feedstocks as a strategic vulnerability, while in the survey of Chemical Dialogue economies, Peru identified insufficient port and logistics capacity as a recurring bottleneck for chemical shipments. The Philippines determined via an assessment of its chemical industry that supply chain challenges included weak domestic production capacity and limited local technical expertise, which could heighten exposure to global disruptions, if potential shortfalls are not addressed via other means.
- **Many customs and logistics processes for chemical products lack "fast-track" or priority treatment,** resulting in delays during periods of high demand or emergency response. The absence of digitized systems and incomplete integration of chemical shipping information into domestic "single window" platforms further hampers efficiency, creating administrative bottlenecks that can ripple across entire value chains in the region.

4. Sustainability Pressures

- **Lack of common methodologies and verification systems** presents new challenges. Suppliers increasingly face requirements for sustainability metrics, lifecycle assessments, and recycled content targets, but definitions and measurement frameworks vary widely across economies, as well as the cooperation mechanisms between private and public

sectors to implement these new requirements. The resulting limited availability of data and shared platforms for sustainability information constrains collaboration and comparability. Many economies highlighted circularity as a strategic priority within the Chemical Dialogue supply chain survey, with Thailand explaining how its Bio-Circular-Green (BCG) model is already guiding domestic policy incentives for biochemicals and engineered plastics. Malaysia noted emerging demand for sustainable materials but pointed to insufficient recycling capacity and regulatory complexity as obstacles. Chile and Peru emphasized challenges in environmental management systems and waste-handling infrastructure, noting that circularity is often constrained by inconsistent definitions of waste, feedstock, and recycled content.

5. Workforce and Skills Gap

- Emerging technologies—such as artificial intelligence, blockchain, and green chemistry—require specialized expertise that is not evenly distributed across the region. **Smaller companies, in particular, struggle to invest in technical training or to meet certification standards** like ecolabels and digital traceability requirements. This uneven distribution of capabilities widens the gap between large multinational firms and small and medium enterprises (SMEs). Indeed, SCFAP III found that APEC progress in extending the participation in and benefits from trade facilitation for MSMEs is still limited, which reduces cost efficiencies and hampers innovation.
- **Mismatches between existing workforce training programs and the evolving needs of specific value chain segments,** such as transport of hazardous goods, data harmonization and advanced waste management systems, continue to be a challenge. Strengthening capacity-building initiatives, vocational training, and regional knowledge exchange can help close these gaps and equip the workforce to meet the demands of a rapidly changing industrial landscape.

  The Philippines noted shortages in skilled personnel within the chemical sector, including inspectors and technical specialists. Malaysia and Thailand emphasized the need for more training on digital tools, logistics management, and circular manufacturing. Chile and Peru highlighted limited technical capacity in environmental compliance, sustainability monitoring, and chemical safety systems.

4. Emerging Best Practices and Recommendations

Introduction

Building on the identified chokepoints and challenges, APEC economies and stakeholders are identifying public and private approaches to enhance resilience within key supply chains, including chemicals. These emerging best practices offer actionable models that can be scaled across the region to foster more reliable and future-ready supply chains.

The following recommendations highlight practical steps that APEC economies, industry partners, and multilateral organizations can take to increase visibility and reduce disruptions in chemical supply chains, while continuing to support trade and innovation through the transition to a more circular economy. These recommendations are generated from the APEC Chemical Dialogue Supply Chain survey (noted above) that was conducted in May 2025, as well as the APEC Chemicals Dialogue workshop "Building Chemical Supply Chain Resilience", which was implemented in August 2025 in Incheon, Korea.

1. Invest in Digital Trade and Supply Chain Visibility

- **APEC economies should support both public and private investments in digital infrastructure, artificial intelligence (AI), and blockchain technologies.** This will enable real-time visibility into supply chain conditions, reduce customs lead times, and identify opportunities to enhance traceability. Digitizing customs processes specific to chemicals trade and logistics, such as by managing proforma invoices, Safety Data Sheets (SDS) hazardous materials declarations and recycled content, would allow for more seamless and secure exchange of chemicals data between customs, chemicals management regulators, and industry.

  In the Chemical Dialogue supply chain survey, Korea emphasized the value of digitalization for export competitiveness and highlighted its existing investments in automated logistics systems to improve the development of domestic industries through technological advancement. Korea also highlighted the importance of establishing reliable cooperation frameworks with trusted partner economies.

  Peru noted that it actively participates in forums such as the Pacific Alliance and APEC. Domestically, the economy promotes the Single Window for Foreign Trade (VUCE) as a tool to streamline procedures and enhance interoperability between regulatory agencies. In addition, Peru has undertaken a significant modernization of its customs system, including the adoption of digital technologies to facilitate trade and reduce clearance times. This includes pre-arrival cargo processing, electronic risk-based controls, and integration with VUCE to improve efficiency, transparency, and traceability along the supply chain.

- **APEC economies should invest in standardized data taxonomies and access protocols** to enable secure, interoperable data sharing on chemicals shipments, customs procedures, and logistics reducing duplication and delays. Furthermore, economies can reduce regulatory burdens for companies, as well as addressing enforcement gaps by developing voluntary, industry-led standards for traceability and emerging Extended Producer Responsibility (EPR) regimes, helping align digital compliance systems with trade facilitation objectives.

The United States highlighted the role that voluntary standards play, in establishing means to share chemical information within the supply chains to promote circularity, while protecting intellectual property. The United States further highlighted examples of established industry standards, including material declarations and formats for data exchange in the electronics and building materials industries.

2. Adoption of Circular Economy Principles

- **APEC economies can strengthen supply chain resilience and support innovation by embedding circular economy principles into supply chain and trade policies.** Governments may encourage innovation and adoption of advanced recycling and resource-efficient production through fiscal incentives, targeted R&D programs, and technical assistance. Applying the Bio-Circular-Green (BCG) model, spearheaded by Thailand, to supplier onboarding and investment decisions can ensure sustainability criteria are embedded at every stage of procurement and production.
- **Common principles should be developed to ensure consistency between domestic approaches on EPR implementation and recycling standards.** Sharing best practices on chemical safety and environmental standards including standardized data taxonomies for recycled content—can promote harmonization across the region.

  In the Chemical Dialogue supply chain survey, Chile noted that its National Sustainable Consumption and Production Program was updated in 2024, with a work horizon until 2030. Three priorities were highlighted in the update, including: sustainability in the productive sectors; sustainable consumption and lifestyles; and efficient use of resources. An additional mechanism used by Chile is the Sustainable Public Procurement, through which companies are encouraged to incorporate sustainability criteria in the procurement process.
- To facilitate circular economy adoption, **APEC should identify and remove regulatory and policy barriers that inhibit circular innovation,** particularly in developing economies.

3. Investment in Capacity and Network Management

- Resilient chemical supply chains require strategic investment in digital and transportation infrastructure, and logistics, as well as identifying diversified sources of production and feedstocks. **Governments and private investors should prioritize regional infrastructure programs for chemical logistics**—such as terminals, pipelines, specialized vessels, and bio-based feedstocks—to reduce and mitigate chokepoints. These efforts will enable more flexible and reliable regional networks capable of adapting to sudden disruptions or shifts in market demand. In the Chemical Dialogue supply chain survey, Indonesia highlighted its Mutual Recognition Arrangements (MRA) on Authorized Economic Operator (AEO) Program. Indonesia is actively involved in negotiating AEO MRAs within ASEAN and beyond to promote cross-border cooperation, secure trade lanes, and seamless connectivity.

4. Harmonized Policy, Regulation, and Incentives

- A predictable and harmonized regulatory environment is essential for enabling private-sector innovation and cross-border trade. **APEC should promote the development of efficient, transparent, and harmonized regulatory frameworks,** especially in areas such as chemicals management, labeling, transportation and EPR. Streamlined processes will help reduce compliance burdens and foster operational continuity across the region.
- In 2023, the APEC Chemical Dialogue published the Risk Assessment Policy Toolkit, which included the APEC CD Regulatory Cooperation Report (completed in 2020), the Regulatory Cooperation Checklist (completed in 2021), and the Methods, Tools and Approaches for Risk Assessment (completed in 2022), as a resource for APEC economies to improve the efficiency and transparency of regulatory cooperation and harmonization. To improve coordination, **APEC economies should facilitate real-time information exchange between the public and private sectors on supply chain disruptions, policy updates, and standards development.** This could include digital portals, regular multi-economy dialogues, and public-private early warning mechanisms. Harmonization and mutual recognition of standards will also increase regulatory predictability and lower transaction costs across economies.

5. Strengthened Regional Cooperation

- Strengthening regional cooperation is critical to improving resiliency. **APEC economies should share information on domestic and private-sector initiatives related to supply chain monitoring, risk management, and resilience-building.** This will help identify synergies and avoid duplication of efforts amongst partners.
- **Domestic supply chain and chemicals institutes across APEC**—such as the Plastics Institute of Thailand and the Office of Supply Chain Resilience, at the Australian Department of Industry, Science and Resources —**can serve as conveners for multi-economy initiatives** that promote best practice exchange and innovation. The creation of multisectoral public-private partnerships through working groups, chambers of commerce, and regional forums can enhance alignment and co-investment opportunities in the Asia-Pacific.
- **APEC could promote model certification programs for origin and quality assurance** that facilitate trade and reinforce trust in recycled and sustainable materials across the region.

6. Workforce Development

- Human capital development remains central to enabling the transition toward digitalized supply chains. **APEC economies should scale training through regional institutes and technical centers, focusing on digital tools, environmental sustainability, and risk assessment practices.**
- **Collaborative public-private programs can help build capacity in emerging fields such as AI-driven logistics, feedstock identification for recycled content, and environmental compliance management.** Tailored skills training for technicians, customs inspectors, and logistics workers, particularly in developing economies, will ensure an inclusive transition to new technologies and regulatory systems.

7. Monitoring and Metrics

- A lack of data collection, inconsistent defintions of critical terms such as “waste” and “feedstock,” as well as a lack coherent approaches across economies to support adoption of international conventions, such as the Basel Convention Previously Informed Consent (PIC) procedures, make it difficult to develop shared metrics and efficient monitoring systems that can help build supply chain resilience.
- In the Chemical Dialogue supply chain survey, Chile and Peru highlighted inconsistencies in waste classifications, which may complicate the movement and reporting of recyclable materials. Malaysia cited the need for more robust domestic tracking systems, while Indonesia emphasized the importance of shared guidelines to reduce ambiguity across agencies.
- **Sharing best practices and guidelines and strengthening APEC coordination that support more consistent data collection and information sharing can help promote better metrics** to measure trade in new technologies, such as by aligning waste and trade flows with current and future availability of recycling technologies..

5. Conclusion

Strengthening the resilience and reliability of chemical supply chains is essential to advancing APEC's broader vision of open and secure trade. The region's experiences during recent global disruptions underscored how interdependent supply chains have become and how vulnerabilities in one link can quickly cascade across borders, particularly for MSMEs. The chokepoints identified—ranging from undiversified sourcing to fragmented regulation and limited visibility to workforce gaps—highlight the urgent need for digitization of chemicals data to enhance visibility and efficiency in shipping chemicals, while protecting confidential business information.

The emerging best practices outlined in this report demonstrate that progress is both possible and already underway in some economies. By investing in digital trade infrastructure, adopting harmonized regulatory, customs and data frameworks, and expanding capacity in circular economy practices, APEC economies can transform current challenges into opportunities for innovation and competitiveness. Likewise, strengthening workforce capabilities and establishing shared monitoring and early-warning systems will ensure that economies are better prepared for future disruptions.

Going forward, collaboration among governments, industry, and regional institutions will be pivotal. Public-private partnerships—supported by aligned policy incentives—will help ensure that supply chains not only recover from shocks but evolve into more agile, resilient systems. Through these collective efforts, APEC can set a global example for how regional cooperation, and innovation can drive long-term resilience and prosperity across the chemical and broader manufacturing sectors.

6. Annex 1
Landscape Analysis of Supply Chain Initiatives

Overview

Chemicals are critical inputs to most key supply chains, but their relevance and importance is often not well understood. Additionally, new supply chain initiatives for end products or raw materials that may impact chemical production, trade and investment, do not engage the chemicals industry. This document serves as a resource guide of: global and regional supply chain initiatives; mechanisms; papers; and data tools that may be relevant for APEC economies as they explore opportunities to strengthen their chemical supply chains in the region.

Initiatives	Key Takeaways	Relevant Resources
Regional		
APEC Bangkok Goals on Bio-Circular-Green Economy (2022)	Encourages cooperation among APEC economies to create circular and resilient supply chains that align with environmental policies by: **Supporting global efforts to comprehensively address all environmental challenges,** including extreme weather and natural disasters, for a sustainable planet, particularly in terms of climate mitigation, adaptation and resilience. **Progressing sustainable and inclusive trade and investment** and ensuring that they are mutually supportive with environmental policies.	Partners: All 21 APEC economies Full Text: Bangkok Goals on Bio-Circular-Green (BCG) Economy
ASEAN Leaders' Declaration on Enhancing Supply Chain Connectivity (2024)	To enhance the innovation, competitiveness, and resiliency of supply chains by: • reducing costs and increasing efficiency of cross-border trade; • implementing disaster-preparedness strategies; • promoting diversification; • utilization of advanced technologies; • supporting capacity building for supply chain and logistics providers; • adopting sustainable and circular elements within supply chains; and • developing new initiatives that support resiliency.	Full Text: Leaders' Declaration

Mechanisms	Key Takeaways	Relevant Resources
OECD Mutual Acceptance of Data Program (MAD)	A multilateral agreement which ensures that a test performed in one economy is accepted in over 40 others. Requires that testing be carried out using OECD standards for test methods (OECD Test Guidelines) and for data quality and integrity (OECD Principles of Good Laboratory Practice - GLP). OECD members participate in the MAD System and the following non-OECD members: Argentina, Brazil, India, Malaysia, Singapore, South Africa and Thailand.	Overview OECD Mutual Acceptance of Data (MAD) System
WTO Trade Facilitation Agreement (TFA)	Objectives of the WTO TFA include expediting the movement, release, and clearance of goods, including those in transit; improving cooperation between customs and other authorities; and enhancing technical assistance and building capacity for the implementation of TFA. The TFA collects information on economy-level single window processes and import and export processes. Additionally, within the TFA, trade facilitation "shall include at least three of the following measures": • low documentary and data requirements, as appropriate; • low rate of physical inspections and examinations, as appropriate; • rapid release time, as appropriate; • deferred payment of duties, taxes, fees, and charges; • use of comprehensive guarantees or reduced guarantees; • a single customs declaration for all imports or exports in a given period; and • clearance of goods at the premises of the authorized operator or another place authorized by customs.	Full text WTO TFA
WTO Agreement on Technical Barriers to Trade (TBT Agreement)	The TBT Agreement aims to ensure that technical regulations, standards, and conformity assessment procedures do not create unnecessary barriers to trade. Below are excerpts of the TBT agreement highlighting relevant language as it relates to supply chains. • 2.2 "Members shall ensure that technical regulations are not prepared, adopted, or applied with a view to or with the effect of creating unnecessary obstacles to international trade. For this purpose, technical regulations shall not be more trade-restrictive than necessary to fulfil a legitimate objective…" • 2.4 "Where technical regulations are required and relevant international standards exist or their completion is imminent, Members shall use them, or the relevant parts of them, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued, for instance because of fundamental climatic or geographical factors or fundamental technological problems." • 15.2 "Each Member shall, promptly after the date on which the WTO Agreement enters into force for it, inform the Committee of measures in existence or taken to ensure the implementation and administration of this Agreement. Any changes of such measures thereafter shall also be notified to the Committee."	Full Text Agreement on Technical Barriers to Trade

6. Annex 1

Relevant Papers	Key Takeaways	Relevant Resources
APEC The State of APEC Supply Chains (Nov 2023)	This report was commissioned by the National Center for Asia-Pacific Economic Cooperation and prepared by Access Partnership as part of the APEC Business Advisory Council's (ABAC) work on supply chain resilience. • **APEC's supply chains are long, complex, and susceptible to disruptions.** Comparative advantages across the APEC's vibrant economies have led firms to optimize their supply chains, creating greater length and complexity. • **Recent disruptions offer lessons for policymakers and businesses.** Policy responses during the pandemic reveal a lack of understanding of how global supply chains are organized, what they depend on, and how distribution of key goods to communities happens. • **Post-pandemic, supply chains in APEC are more resilient – but they show cracks.** Across five key dimensions of resilience, the business survey revealed that firms in APEC have mostly invested in greater supply chain visibility and adjusted their business models after the pandemic. The majority remain vulnerable in terms of flexibility and connectivity.	Full Text: The State of APEC Supply Chains: Lessons learned, key strategies to strengthen resilience
OECD Keys to resilient supply chains: Increasing Supply Chain Resilience	OECD identified four key concepts on which any policy toolkit for supply chain resilience should build, including: • Anticipating risks • Minimizing exposure to shocks • Strengthening international cooperation • Invest in public-private sector partnerships	Full Text: Keys to Resilient Supply Chains
Australia Vulnerable Supply Chains: Productivity Commission Supply Chain Report	Focus on critical supply chain vulnerabilities that could impact Australia's domestic interest, defined as: • health, safety or wellbeing • economic stability and viability • domestic security • international partners. The report developed a new, data-driven approach to identifying imports which are vulnerable to disruption, and which form a critical input into an essential industry. Includes an extensive discussion of chemicals, both as primary inputs and the role that they play in manufacturing and essential goods and services, such as healthcare.	Full Text: Vulnerable Supply Chains: Productivity Commission Supply Chain Report

6. Annex 1

Relevant Papers	Key Takeaways	Relevant Resources
United States Understanding Water Treatment Chemical Supply Chains and the Risk of Disruptions	Drinking water and wastewater systems rely on a consistent, predictable supply of water treatment chemicals to fulfill their important public health mission. When supply chains for these critical water treatment chemicals are disrupted, water systems may face challenges in maintaining operations. While it is impossible to predict when supply disruptions will occur, a basic understanding of water treatment chemical supply chains can help systems identify potential risks and take steps to mitigate those risks.	Full Text: Understanding Water Treatment Chemical Supply Chains and the Risk of Disruptions
United States Department of Defense, Supply Chain Risk Management Guidebook	The Department operates within a vast global framework, utilizing domestic and international supply chains to develop and maintain critical weapon systems, products, and services. Ensuring the security and resiliency of these supply chains is crucial for preserving the operational effectiveness and freedom of our forces. By protecting against disruptions and vulnerabilities, especially those from adversarial nations, we can maintain the strength and effectiveness of our military. This guidebook provides an overview of recommended roles, best practices, and strategies for managing supply chain risk, aligning with the existing program risk management framework outlined in the DoD Risk, Issue, and Opportunity Management Guide.	Full Text: DoD Supply Chain Risk Management Guidebook

Relevant Papers	Key Takeaways	Relevant Resources
Asia Development Bank (ADB)	Includes global value chains indicators.	Key Indicators Database
OECD	Considers the value add by each economy in the production of goods and services that are consumed worldwide. TiVA indicators are designed to better inform policy makers by providing new insights into the commercial relations between nations.	Trade in Value-Added (TiVA)

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