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APEC Supply Chain Connectivity Framework Action Plan 2022–2026 (SCFAP III): Mid-term Review

APEC Policy Support Unit

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EXECUTIVE SUMMARY

This report presents a mid-term assessment of the APEC Supply Chain Connectivity Framework Action Plan 2022–2026 (SCFAP III), offering policy recommendations based on a set of indicators for measuring the progress made by APEC economies in addressing the five SCFAP III chokepoints.

The five chokepoints

Chokepoint 1	Inefficient digitalisation of end-to-end supply chains, including border procedures and trade documentation exchanges
Chokepoint 2	Inadequate infrastructure development to support robust multi-modal connectivity and logistics networks
Chokepoint 3	Insufficient cooperation on data flows and cross-border payments to support increasingly digitalised supply chains
Chokepoint 4	Lack of understanding on green supply chain management practices and increasing pressure for supply chains to be sustainable
Chokepoint 5	Lack of targeted support to facilitate MSMEs' access and integration into global supply chains

The APEC Policy Support Unit (PSU) identified 69 quantitative indicators across the five chokepoints in its 2023 report on 'Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III) 2022–2026'.

This mid-term review uses 43 of those indicators (subject to the availability of data) to assess progress by comparing aggregate values for APEC economies and several benchmark groups, including the Association of Southeast Asian Nations (ASEAN), the European Union (EU) and the Organisation for Economic Co-operation and Development (OECD).

While providing an overview of progress, the quantitative analysis in this report should be considered indicative and supplemented with qualitative analysis. Accordingly, this review provides an account of the policies implemented by APEC economies to address the chokepoints affecting supply chain connectivity.

Key findings

The key findings from the assessed quantitative indicators are:

- **Chokepoint 1** (inefficient digitalisation): Progress has been made on paperless trade facilitation, but improvement is needed in electronic sanitary and phyto-sanitary (SPS) certificates and sea cargo manifests.
- **Chokepoint 2** (inadequate infrastructure development): Resilience is demonstrated through advancements in information and communications technology (ICT) infrastructure, port capacity, and connectivity.
- **Chokepoint 3** (insufficient cooperation on data flows and cross-border payments): Progress has been made on paperless payments, exchange of trade-related data, and certification recognition – though legal framework gaps persist.
- **Chokepoint 4** (lack of understanding on green supply chains): Mixed results are seen, with increased sustainability reporting and renewable energy use, but setbacks in reducing greenhouse gas emissions.
- **Chokepoint 5** (lack of targeted MSME support): Weak progress on facilitating MSME trade, with declines in Single Window access and trade facilitation committee representation.

Policy practices

Based on the submissions from APEC member economies, this report has identified relevant best practices across the five chokepoints, highlighting initiatives that address supply chain bottlenecks:

- **Chokepoint 1:** Enhancing digitalisation by fostering interoperability, upgrading systems, reducing barriers, promoting innovation and leveraging emerging technologies.
- **Chokepoint 2:** Improving infrastructure development through digitalisation of ports and logistics, adoption of new technology and boosting regulatory efficiency.
- **Chokepoint 3:** Facilitating data flows and cross-border payments by establishing international standards, enhancing digital trade provisions and fostering a conducive FinTech environment.
- **Chokepoint 4:** Promoting sustainable supply chains through green management practices, the bio-circular-green (BCG) model and empowering MSMEs in eco-friendly initiatives.
- **Chokepoint 5:** Supporting the integration of MSMEs into global supply chains through digitalisation, capacity building and inclusive participation in Authorised Economic Operator (AEO) programmes.

The appendix to this report includes policy practice submissions from APEC economies aimed at addressing the five chokepoints. In total, the APEC PSU received 64 submissions from nine economies, showcasing APEC's substantial efforts to enhance supply chain efficiency, resilience, inclusivity and sustainability.

1. INTRODUCTION

1.1 BACKGROUND

The APEC Committee on Trade and Investment (CTI) finalised the APEC Policy Support Unit (PSU) report on 'Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III) 2022–2026: Indicators and Policy Practices' in 2023.[1] The report aimed to identify suitable indicators to measure progress on supply chain connectivity issues and to recommend policy practices that can contribute to resolving the five chokepoints under SCFAP III.

The report identified 69 relevant indicators related to the five chokepoints. The APEC PSU also compiled a set of policy practices that could help address the chokepoints. The identified indicators and policy practices represent the instruments for formulating this mid-term assessment of SCFAP III as well as the final assessment in 2027.

Table 1.1. The five chokepoints

Chokepoint 1	Inefficient digitalisation of end-to-end supply chains, including border procedures and trade documentation exchanges
Chokepoint 2	Inadequate infrastructure development to support robust multi-modal connectivity and logistics networks
Chokepoint 3	Insufficient cooperation on data flows and cross-border payments to support increasingly digitalised supply chains
Chokepoint 4	Lack of understanding on green supply chain management practices and increasing pressure for supply chains to be sustainable
Chokepoint 5	Lack of targeted support to facilitate MSMEs' access and integration into global supply chains

[1] APEC, "Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III) 2022–2026: Indicators and Policy Practices" (Singapore: APEC, 2023), https://www.apec.org/docs/default-source/publications/2023/9/223_psu_scfap-iii.pdf?sfvrsn=9934578a_2

In essence, to effectively implement SCFAP III and achieve the desired outcomes, it is crucial to:

- give priority to implementing the policy practices identified for each chokepoint, taking into account their unique challenges and opportunities.
- monitor and assess progress using the identified quantitative indicators to gauge the effectiveness of implemented measures and make necessary adjustments.
- continuously review and update policies and practices in response to emerging technologies, global trends and evolving market dynamics.
- strengthen regional and international cooperation to tackle cross-border challenges and promote innovation and digitalisation.

1.2 OUTLINE OF THE REPORT

Chapter two reviews the quantitative indicators that have been adopted to measure SCFAP progress, mostly using 2021 or 2022 as the base period. The analysis for this mid-term assessment focuses on indicators where updated data for 2023 (or latest available year) are accessible for comparison, both to identify areas of progress as well as areas that need particular attention and support.

Chapter three compiles and highlights the policy practices submitted by APEC member economies. The focus is on the practical applications and solutions implemented by these economies.

Chapter four synthesises the findings and analysis from the earlier chapters.

2. REVIEW OF QUANTITATIVE INDICATORS FOR SCFAP III CHOKEPOINTS

2.1 CHOKEPOINT 1: INEFFICIENT DIGITALISATION

Chokepoint 1 is inefficient digitalisation of end-to-end supply chains, including border procedures and trade documentation exchanges.

Twenty-nine indicators, from the Organisation for Economic Co-operation and Development (OECD) Trade Facilitation Indicators database and the United Nations (UN) Global Survey on Digital and Sustainable Trade Facilitation, were identified to monitor progress in APEC under Chokepoint 1.[2] Both datasets are updated every two years, with the OECD Trade Facilitation Indicators having reported data for 2022 and the UN Global Survey on Digital and Sustainable Trade Facilitation for 2021.

Since there are no updates for the OECD trade facilitation data, this round of review for Chokepoint 1 looks at the progress in APEC under the indicators selected from the UN Global Survey on Digital and Sustainable Trade Facilitation, which had released data for 2023 (Table 2.1).

Overall, APEC has witnessed improvement across most indicators under Chokepoint 1 between 2021 and 2023. Indicator A.26 on electronic exchange of customs declaration records the most significant improvement, with the APEC average score increasing by more than 11 percent, from 1.59 in 2021 to 1.76 in 2023. Enhanced ability to electronically share data from customs declarations with other economies on a regular and systematic basis, an increase in the number of economies one can electronically exchange customs declaration data with regularly, and a rise in electronic exchange of customs declarations with important trading partners[3] might have contributed to progress under this indicator.

The implementation rate of cross-border paperless trade facilitation measures, including those that enable cross-border mutual recognition and exchange of trade-related data and documents in electronic form (indicator A.15) in the APEC region has gone up by more than 5 percent between 2021 and 2023, rising from 64 percent to 67 percent. This is higher than both the OECD average of 65 percent as well as the world average of 47 percent.[4] While implementation gaps remain on most indicators across APEC members, there has been significant improvement in electronic payment of customs duties and fees (A.24). As of 2023, 15 of the surveyed APEC economies scored 3 (indicating that the relevant measures have been fully implemented) and three economies scored 2.

Between 2021 and 2023, the APEC region has seen weaker performance on some indicators under this chokepoint, namely electronic submission of sea cargo manifests (A.21), electronic exchange of sanitary and phyto-sanitary (SPS) certificates (A.28) and electronic application and issuance of SPS certificates (A.29). Average APEC scores for these indicators fell between

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[2] APEC, "Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III)."

[3] These measures are considered fully implemented if the exchanges accounted for more than 85 percent of an economy's trade. See: United Nations (UN) Regional Commissions, "Questionnaire: United Nations Global Survey on Digital and Sustainable Trade Facilitation 2023," 2023, https://www.untfsurvey.org/files/documents/2023-Survey-Questionnaire-English.pdf

[4] UN, *Digital and Sustainable Trade Facilitation: Global Report 2023, Based on the United Nations Global Survey on Digital and Sustainable Trade Facilitation* (UN, 2023), https://www.untfsurvey.org/files/documents/report-digital-sustainable-2023-global.pdf; APEC Policy Support Unit (PSU) calculations using data from the UN Global Survey on Digital and Sustainable Trade Facilitation.

2 percent to more than 6 percent. Implementation of electronic application, issuance and exchange of SPS certificates within APEC lags behind the OECD average in 2023.

Table 2.1. Performance of APEC economies on selected indicators under Chokepoint 1

No.	Indicator	APEC average			Range of values		Remarks
		2021	2023	% of change	2021	2023	
A.14	Implementation rate of paperless trade facilitation measures that involve the utilisation of modern ICT in trade procedures, such as Internet connectivity at border crossings and electronic Single Window systems	87%	88%	1.7%	30%–100%	37%–100%	Improved
A.15	Implementation rate of cross-border paperless trade facilitation measures that enable cross-border mutual recognition, and exchange of trade-related data and documents in electronic form through institutional arrangement and operational mechanisms	64%	67%	5.3%	0%–94%	0%–94%	Improved
A.16	Automated customs system*	2.83	2.83	0.0%	2–3	2–3	No change
A.17	Internet connection available to Customs and other trade control agencies*	2.83	2.89	2.0%	2–3	2–3	Improved
A.18	Electronic Single Window system*	2.61	2.67	2.1%	0–3	0–3	Improved
A.19	Electronic submission of customs declarations*	2.83	2.89	2.0%	2–3	2–3	Improved
A.20	Electronic application and issuance of import and export permits*	2.56	2.56	0.0%	0–3	0–3	No change
A.21	Electronic submission of sea cargo manifests*	2.89	2.83	-1.9%	2–3	2–3	Worsened
A.22	Electronic submission of air cargo manifests*	2.67	2.67	0.0%	2–3	2–3	No change
A.23	Electronic application and issuance of preferential certificates of origin*	2.28	2.39	4.9%	0–3	0–3	Improved
A.24	E-payment of customs duties and fees*	2.72	2.83	4.1%	0–3	2–3	Improved
A.25	Electronic application for customs refunds*	2.11	2.11	0.0%	0–3	0–3	No change
A.26	Electronic exchange of customs declarations*	1.59	1.76	11.1%	1–3	1–3	Significant improvement

No.	Indicator	APEC average			Range of values		Remarks
		2021	2023	% of change	2021	2023	
A.27	Electronic exchange of certificates of origin*	1.72	1.72	0.0%	0–3	0–3	No change
A.28	Electronic exchange of SPS certificates*	1.72	1.61	-6.5%	0–3	0–2	Worsened
A.29	Electronic application and issuance of SPS certificates*	2.22	2.17	-2.5%	0–3	0–3	Worsened

ICT=information and communications technology; SPS=sanitary and phyto-sanitary
Note: * Scored from 0 to 3, with 3 indicating that measures have been fully implemented.
Source: APEC Policy Support Unit (PSU) calculations using data from the UN Global Survey on Digital and Sustainable Trade Facilitation.

The APEC region showed stronger performance than the OECD in areas such as electronic Single Window (A.18), electronic submission of sea cargo manifests (A.21) and electronic exchange of certificates of origin (A.27). On the other hand, indicators where APEC is lagging behind the OECD include Internet connection available to Customs and other trade control agencies (A.17), electronic application and issuance of import and export permits (A.20) and electronic application for customs refunds (A.25). Although APEC has recorded significant progress in electronic exchange of customs declarations (A.26) and electronic payment of customs duties and fees (A.24), these areas continue to have the biggest implementation gaps compared to OECD members.

2.2 CHOKEPOINT 2: INADEQUATE INFRASTRUCTURE DEVELOPMENT

Chokepoint 2 is inadequate infrastructure development to support robust multi-modal connectivity and logistics networks.

A total of 21 indicators were identified to measure progress under Chokepoint 2.[5] While indicators from the World Bank Logistics Performance Index database are relevant for this chokepoint, the database had not been further updated as of August 2024. This round of review therefore looks at progress made under the eight indicators with updated data available, from UN Trade and Development (UNCTAD), International Telecommunication Union (ITU), DHL Global Connectedness Index, Speedtest Global Index and Network Readiness Index.

Overall, the APEC region has recorded improvements on seven indicators under Chokepoint 2 since 2021/2022 (Table 2.2). Indicators related to information and communications technology (ICT) infrastructure have fared well over the reporting period. Internet speed (both fixed and mobile broadband) increased by up to 29 percent between March 2023 and June 2024 (indicators B.19 and B.20). Broadband subscriptions per 100 inhabitants also went up by 3 percent (mobile) and 2 percent (fixed).

[5] APEC, "Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III)."

Table 2.2. Performance of APEC economies on selected indicators under Chokepoint 2

No.	Indicator	APEC average			Range of values		Remarks
		2021/ 2022	2023 or latest	% of change	2021/2022	2022/2023	
B.12	Container port throughput per 1,000 population (TEU)*	192	193	0.5%	37–6,871	20–6,615	Improved
B.14	Liner Shipping Connectivity Index, quarterly (average Q1 2023=100)**	*313.0*	318.6	1.8%	*24–1,176*	26–1,189	Improved
B.15	DHL Global Connectedness Index	*55.6*	55.9	0.4%	*43–79*	42–79	Improved
B.16	Fixed broadband subscriptions per 100 inhabitants	*25.4*	25.9	1.9%	*0–46*	0–47	Improved
B.17	Mobile broadband subscriptions per 100 inhabitants	*116.4*	120.2	3.2%	*11–232*	11–246	Improved
B.19	Internet broadband download speed, fixed broadband (median megabits per second)	122.0	151.1	23.8%	15–235	15–285	Significant improvement
B.20	Internet broadband download speed, mobile broadband (median megabits per second)	47.7	61.4	28.6%	18–120	21–139	Significant improvement
B.21	Network Readiness Index	63.5	61.5	-3.1%	47–80	46–77	Worsened

TEU=20-foot equivalent unit

Note:

* Values for indicator B.12 are the weighted average based on population.

** Scaling of indicator B.14 was changed from Q1 2006=100 to Q1 2023=100, reported data are for Q4 2022 and Q1 2024.

The 2021/2022 average and range of values in *italics* (indicators B.14 to B.17) have been updated from APEC PSU's 2023 report[6] due to revised data from the original sources.

Base year and end point: B.12: 2021–2022; B.14: 2022–2024; B.15: 2021–2022; B.16: 2022–2023; B.17: 2022–2023; B.19: 2023–2024; B.20: 2023–2024; B.21: 2022–2023.

Source: APEC PSU calculations using data from UNCTADstat; DHL Global Connectedness Index; International Telecommunication Union (ITU) DataHub; Speedtest Global Index; Network Readiness Index.

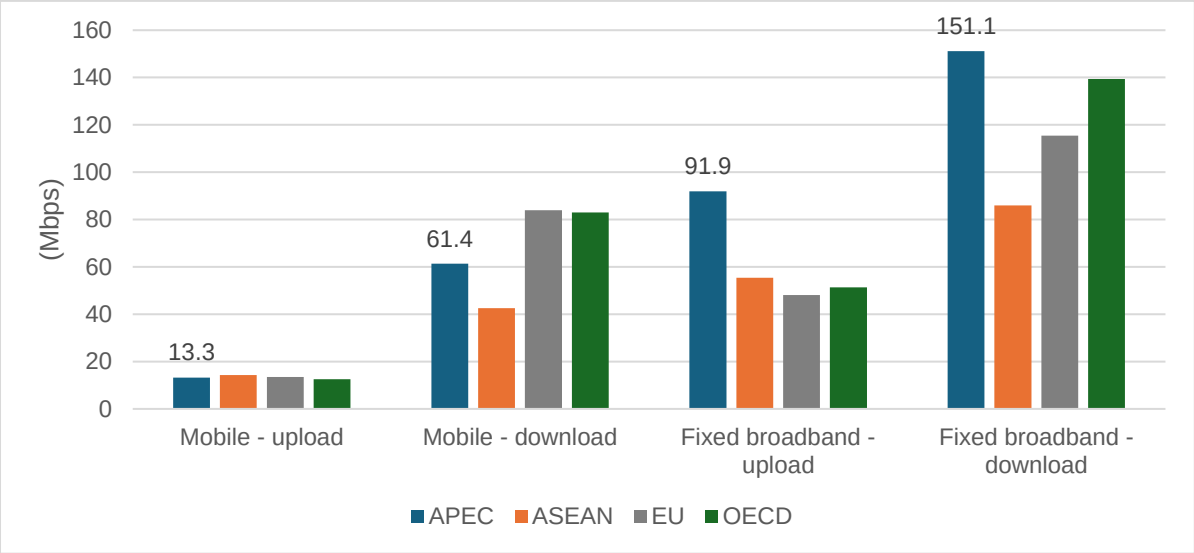
APEC members boast impressive Internet speeds that often top the global rankings.[7] As of June 2024, the fixed broadband median download speed in APEC reached a remarkable 151 megabits per second, exceeding the corresponding values for the Association of Southeast Asian Nations (ASEAN), the European Union (EU) and the OECD (Figure 2.1). While the APEC fixed broadband upload speed was slower at 92 megabits per second, that still significantly outperforms ASEAN, the EU and the OECD. Internet speed for mobile broadband is lower than fixed broadband connections, with APEC lagging behind the EU and the OECD in median download speed.

[6] APEC, "Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III)."

[7] Speedtest, "Speedtest Global Index," updated August 2024, https://www.speedtest.net/global-index

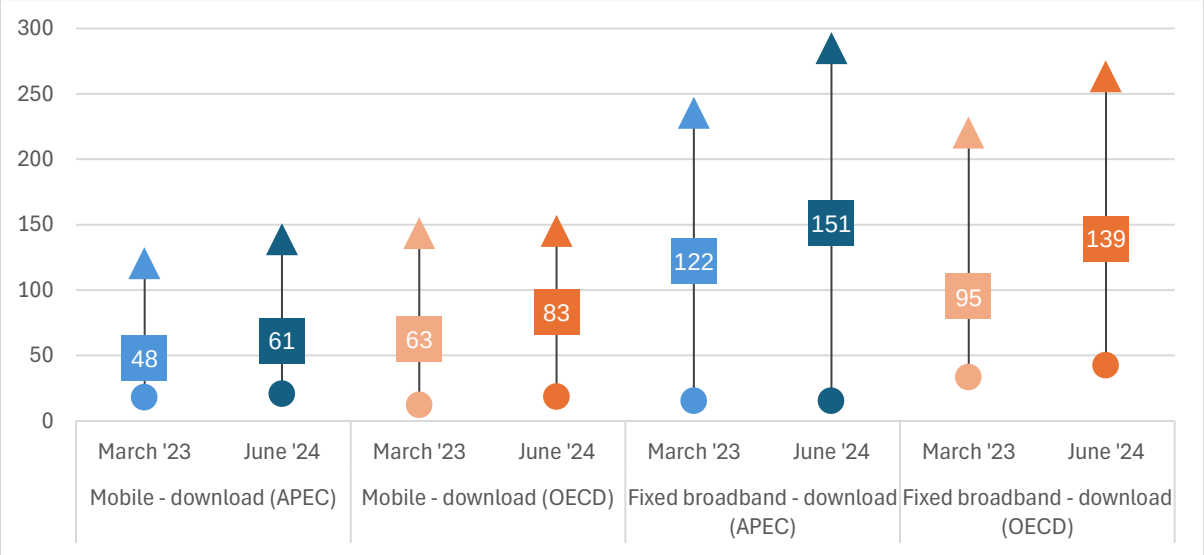
Between March 2023 and June 2024, the median Internet download speed in APEC increased significantly, but the gap between members also widened (Figure 2.2). APEC members posted higher median fixed broadband download speeds than the OECD both in 2023 and 2024, but the performance gap between members was visibly larger. In terms of mobile broadband download speed, there is room for APEC members to catch up with the OECD.

Figure 2.1. Internet broadband speed (median), June 2024



Source: APEC PSU calculations using data from the Speedtest Global Index.

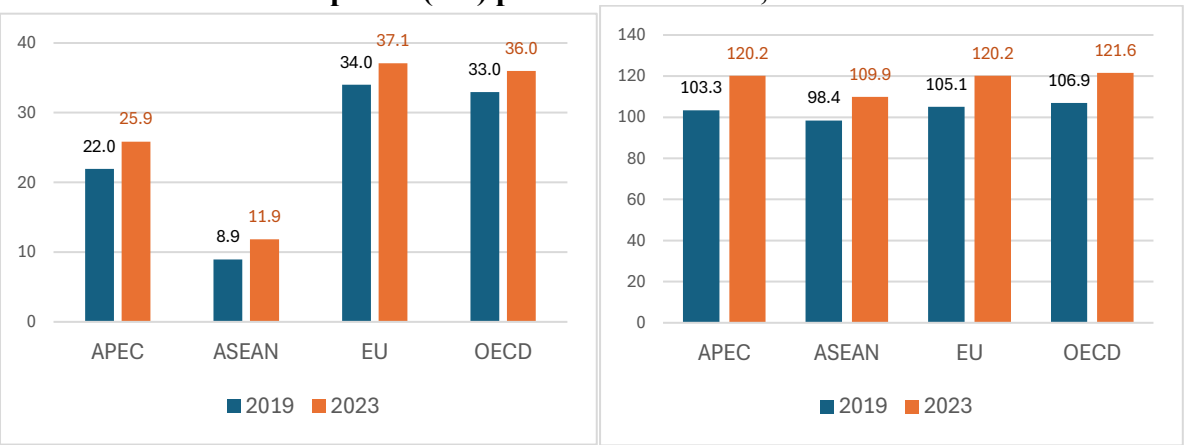
Figure 2.2. Internet broadband download speed (median), 2023 and 2024



▲=maximum value ■ =simple average ● =minimum value
Source: APEC PSU calculations using data from the Speedtest Global Index.

Broadband Internet penetration has improved in APEC and the benchmark groups (ASEAN, EU, OECD) between 2019 and 2023 (Figure 2.3). Mobile broadband subscriptions per 100 inhabitants in all groups have well exceeded 100, with APEC closing the gap with the EU and the OECD. Fixed broadband subscriptions remain lower than mobile broadband subscriptions, and APEC members are not yet on par with their EU and OECD peers.

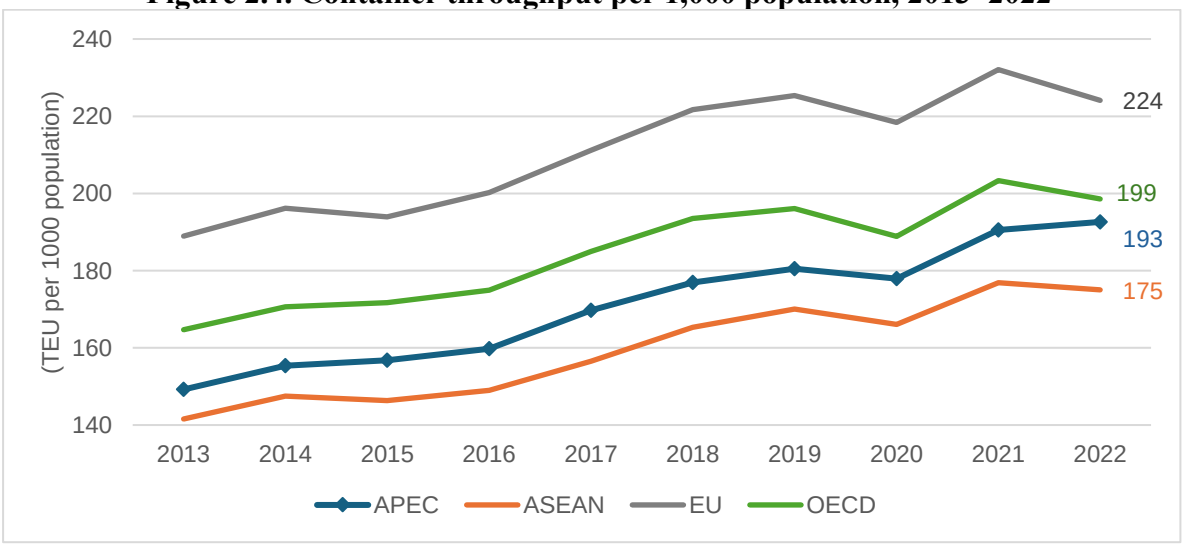
Figure 2.3. Fixed broadband subscriptions (lhs) and active mobile broadband subscriptions (rhs) per 100 inhabitants, 2019 and 2023



lhs=left-hand side; rhs=right-hand side.
Source: APEC PSU calculations using data from ITU DataHub.

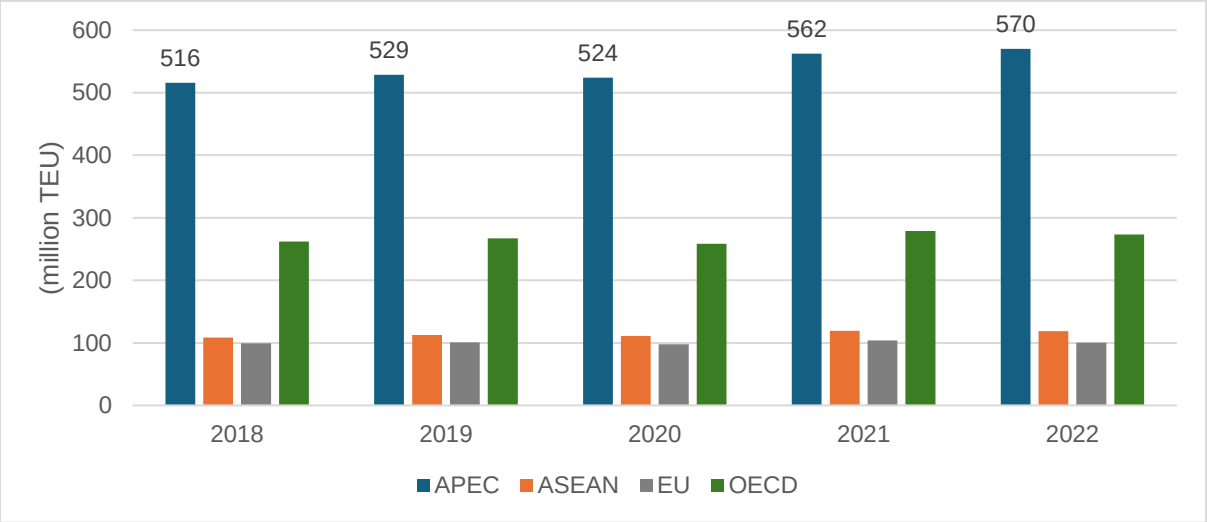
Data on port capacity and connectivity shows progress for APEC. Post-pandemic recovery can be seen from the increase in container throughput (per 1,000 population) after 2020. In 2022, APEC registered a marginal increase of 0.5 percent in the number of containers handled at ports, reaching 193 twenty-foot equivalent units (TEUs) per 1,000 population. Although this figure remains lower than the corresponding figures for the OECD and the EU, APEC was the only region to report an increase in 2022 (Figure 2.4). This improvement can be attributed to APEC's higher total container throughput in 2022, rising from 562 million TEUs to 570 million TEUs, exceeding the combined figure for ASEAN, the EU and the OECD (Figure 2.5).

Figure 2.4. Container throughput per 1,000 population, 2013–2022



Source: APEC PSU calculations using annual container port throughput data from UNCTADstat and population data from the World Bank World Development Indicators.

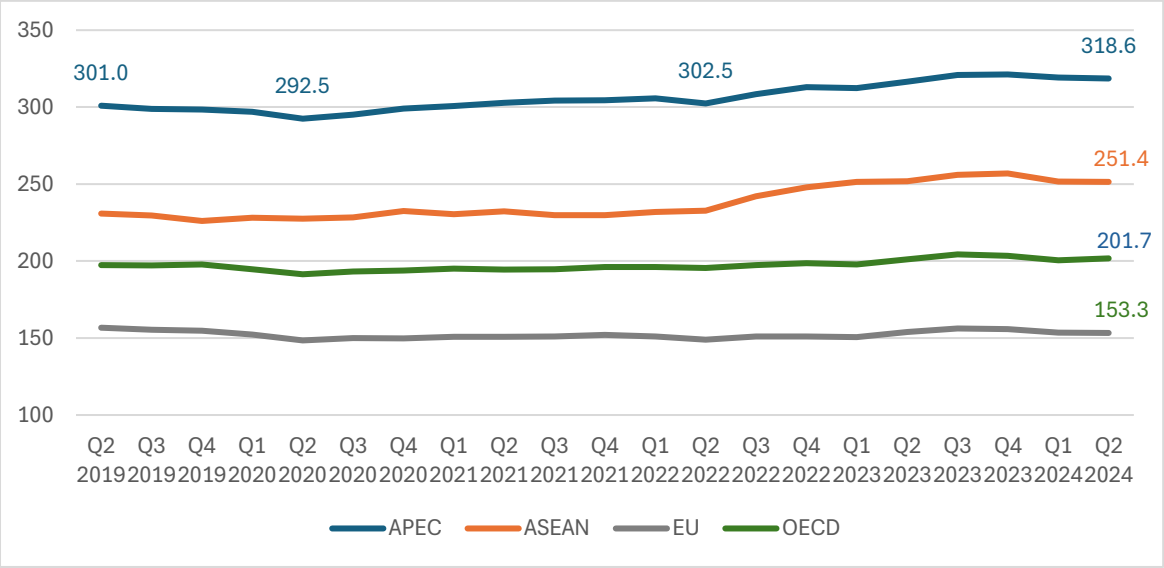
Figure 2.5. Container throughput, 2018–2022



Source: APEC PSU calculations using annual container port throughput data from UNCTADstat.

The Liner Shipping Connectivity Index (LSCI) measures how well economies are integrated into the global liner shipping networks, with a higher index score representing better connectivity. The index is based on the number of scheduled ship calls, their container carrying capacity, the number of services and companies, the size of the largest ship and the number of other economies connected through direct liner shipping services.[8] Over the past five years, the APEC region has maintained significantly higher LSCI scores than ASEAN, the EU and the OECD (Figure 2.6). Notably, APEC economies sustained an upward LSCI trend during 2019–2024, demonstrating resilience during challenging times.

Figure 2.6. Liner Shipping Connectivity Index, quarterly (average Q1 2023=100), Q2 2019 to Q2 2024

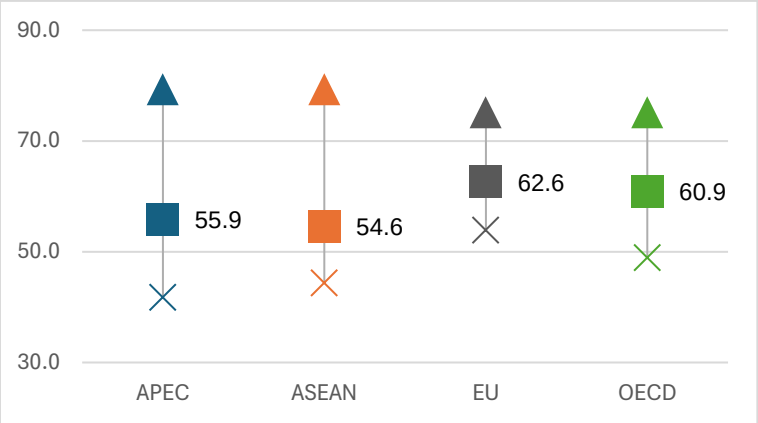


Source: APEC PSU calculations using data from UNCTAD Liner Shipping Connectivity Index.

[8] UN Trade and Development (UNCTAD), "Liner Shipping Connectivity Index, Quarterly," accessed 20 September 2024, https://unctadstat.unctad.org/datacentre/reportInfo/US.LSCI

The DHL Global Connectedness Index, which measures an economy's integration reflected in international flows of trade, capital, information and people,[9] increased across APEC as well as ASEAN, the EU and the OECD in 2022. APEC members, however, averaged a lower score than the EU and the OECD, with a wider gap between its members compared to other regional groups (Figure 2.7).

Figure 2.7. DHL Global Connectedness Index 2022



▲=maximum value; ■ =simple average; X=minimum value
Source: APEC PSU calculations using data from the DHL Global Connectedness Report 2024.

The APEC region reports an average index score of 61.05 for the Network Readiness Index in 2023, trailing the EU (63.85) and the OECD (65.45). The index measures network readiness across multiple dimensions: technology, people, governance and impact.[10] While APEC's average index score decreased in 2023, this pattern was also witnessed in other regional groups. Importantly, a lower score does not signify a decline in performance as the Network Readiness Index scores and rankings are not directly comparable across years.[11] Despite their limitations, Network Readiness Index scores can offer insights, such as revealing a wider gap between APEC members than in the EU and the OECD.

2.3 CHOKEPOINT 3: INSUFFICIENT COOPERATION ON DATA FLOWS AND CROSS-BORDER PAYMENTS

Chokepoint 3 is insufficient cooperation on data flows and cross-border payments to support increasingly digitalised supply chains.

Similar to Chokepoint 1, indicators identified to measure progress under Chokepoint 3 draw from the OECD Trade Facilitation Indicators database and the UN Global Survey on Digital and Sustainable Trade Facilitation. In the absence of new data for the OECD Trade Facilitation Indicators as of August 2024, this mid-term review reports progress for four indicators from the UN Global Survey on Digital and Sustainable Trade Facilitation 2023 (Table 2.3).

[9] S.A. Altman and C.R. Bastian, *DHL Global Connectedness Report 2024* (DHL, 2024), https://www.dhl.com/content/dam/dhl/global/delivered/documents/pdf/dhl-global-connectedness-report-2024-complete.pdf
[10] "Network Readiness Index 2023," accessed 23 September 2024, https://networkreadinessindex.org/
[11] S. Dutta and B. Lanvin, eds, "Network Readiness Index 2023: Trust in a Network Society: A Crisis of the Digital Age?" (Portulans Institute, 2023), https://download.networkreadinessindex.org/reports/nri_2023.pdf

Table 2.3. Performance of APEC economies on selected indicators under Chokepoint 3

No.	Indicator	APEC average			Range of values		Remarks
		2021	2023	% of change	2021	2023	
C.4	Implementation rate of cross-border paperless trade facilitation measures that enable cross-border mutual recognition and exchange of trade-related data and documents in electronic form through institutional arrangement and operational mechanisms	64%	67%	5.3%	0%–94%	0%–94%	Improved
C.5	Laws and regulations for electronic transactions*	2.44	2.50	2.3%	0–3	0–3	Improved
C.6	Recognised certification authority*	2.39	2.67	11.6%	0–3	0–3	Significant improvement
C.7	Paperless collection of payment from a documentary letter of credit*	1.82	2.06	12.9%	0–3	0–3	Significant improvement

Note: * Scored from 0 to 3, with 3 indicating that measures have been fully implemented.
Source: APEC PSU calculations using data from the UN Global Survey on Digital and Sustainable Trade Facilitation.

APEC fared well across available Chokepoint 3 indicators in 2023. Paperless collection of payment from a documentary letter of credit (C.7) recorded the most significant improvement, increasing 12.9 percent compared to 2021. This can be attributed to better recognition of the legal status of key electronic documents for trade finance (e.g., electronic commercial invoice, electronic bill of lading), and wider availability of digitalised trade finance facilitation services provided by banks.[12] Despite the progress, APEC is still lagging the EU and the OECD, whose average scores were 2.37 and 2.43, respectively.

The availability of recognised third-party certification authorities[13] to issue digital certificates to traders to conduct electronic transactions (C.6) also recorded significant progress of nearly 12 percent between 2021 and 2023. In 2023, APEC scored an average of 2.67 for this indicator, higher than ASEAN (2.10) and the EU (2.61) but lower than the OECD (2.75).

APEC economies need to strengthen legal frameworks, particularly on measures that enable the legal recognition of electronic data or documents from trading partners. This includes introducing domestic laws and regulations with provision(s) for legal recognition of electronic trade-related data and documents originating abroad. Slower progress was reported in 2023, and APEC continues to lag behind the OECD.

[12] UN Regional Commissions, "Questionnaire: United Nations Global Survey on Digital and Sustainable Trade Facilitation 2023."
[13] Examples of recognised third-party certification authorities include the Controller of Certification Authorities in Malaysia and Singapore. See UN Regional Commissions, "Questionnaire: United Nations Global Survey on Digital and Sustainable Trade Facilitation 2023."

Table 2.3 suggests that the implementation gap between APEC economies remains unchanged between 2021 and 2023. Nonetheless, there has been encouraging progress as more APEC economies have reported higher levels of implementation between 2021 and 2023 (Table 2.4).

Table 2.4. Progress of APEC economies on selected Chokepoint 3 indicators, 2021 and 2023

No.	Indicator	2021 No. of economies scoring				2023 No. of economies scoring			
		0	1	2	3	0	1	2	3
C.5	Laws and regulations for electronic transactions	1	0	7	10	1	0	6	11
C.6	Recognised certification authority	2	0	5	11	1	0	3	14
C.7	Paperless collection of payment from a documentary letter of credit	5	0	5	7	3	0	7	7

Note: Scores are coded 0=not implemented; 1=pilot stage of implementation; 2=partial implementation; 3=full implementation.
Source: APEC PSU calculations using data from the UN Global Survey on Digital and Sustainable Trade Facilitation.

2.4 CHOKEPOINT 4: LACK OF UNDERSTANDING ON GREEN SUPPLY CHAINS

Chokepoint 4 is lack of understanding on green supply chain management practices and increasing pressure for supply chains to be sustainable.

Of the six indicators measuring progress under Chokepoint 4,[14] five indicators with data updates are assessed (Table 2.5). Overall, APEC demonstrates mixed progress across most of the indicators, suggesting room for improvement in stabilising emissions and enhancing environmentally sustainable measures in supply chains within the APEC region.

Table 2.5. Performance of APEC economies on selected indicators under Chokepoint 4

No.	Indicator	APEC average			Range of values		Remarks
		2020/ 2021	2023 or latest	% of change	2020/ 2021	2023 or latest	
D.1	Number of companies publishing sustainability reports (as share of listed domestic companies)*	*7.0%*	8.1%	15.4%	*0%–41%*	0%–49%	Significant improvement
D.2	WEF Energy Transition Index	*58.0*	59.3	2.3%	*48.3-62.9*	48.4–64.1	Improved
D.3	Share of renewable energy in total electricity generation (%)	*27.1%*	28.0%	3.3%	*0%–81%*	0%–87%	Improved
D.4	Natural resources depletion (% of GNI)	2.11%	4.69%	120.7%	0%–10.8%	0%–20.6%	Worsened
D.5	Carbon dioxide damage (% of GNI)	*1.84%*	1.80%	-2.0%	*0.4%–4.8%*	0.4%–4.8%	Improved
D.6	Greenhouse gases emissions per capita (in tonnes of carbon dioxide equivalent)**	*8.*4	8.7	2.1%	*1–17*	1–17	Worsened

GNI=gross national income; WEF=World Economic Forum
Note:

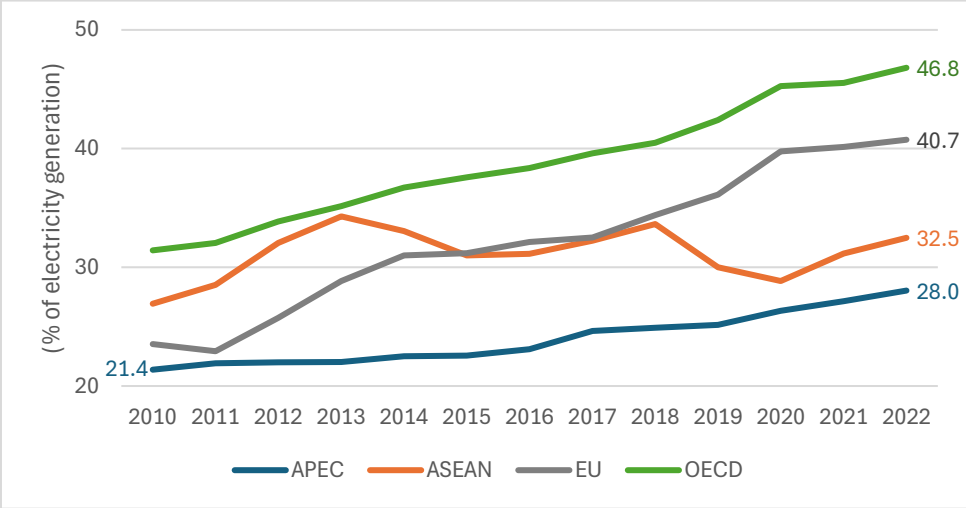
[14] APEC, "Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III)."

* APEC and OECD values for indicator D.1 are the weighted average based on number of listed domestic companies.
** Values for indicator D.6 are the weighted average based on population.
The 2021/2022 average and range of values in *italics* (indicators D.1, D.2, D.3, D.5 and D.6) are updated from APEC PSU's 2023 report[15] due to data update at data sources and/or change in methodology for average calculations.
Base year and end point: D.1: 2021–2022; D.2: 2021–2024; D.3: 2021–2022; D.4: 2020–2021; D.5: 2020–2021; D.6: 2021–2023.
Source: APEC PSU calculations using data from UN Sustainable Development Goals (SDG) Indicators; WEF Energy Transition Index; International Renewable Energy Agency Statistics; World Bank World Development Indicators; Statistical Review of World Energy.

On average, more companies in APEC have made efforts in business sustainability reporting (indicator D.1). In 2022, more than 8 percent of businesses in APEC published information on sustainability, a 15 percent increase from 2021. While this number has increased since 2017, APEC businesses still lag behind other regions.

Renewable energy is growing in APEC, with 28 percent of its electricity coming from renewable sources in 2022 (D.3). This represents a 3.2 percent growth from 2021 and a 31.2 percent growth compared to 2010. While APEC is on track to meet the goal of doubling the share of renewable energy in the energy mix from 2010 levels by 2030 as set out in the Aotearoa Plan of Action,[16] other regions including ASEAN, the EU and the OECD are ahead in efforts to grow renewable energy share (Figure 2.8). Among APEC members, the share of renewable energy can range from less than 1 percent to more than 80 percent, a wider disparity than that in ASEAN and the EU.

Figure 2.8. Share of renewable energy in total electricity generation, 2010–2022



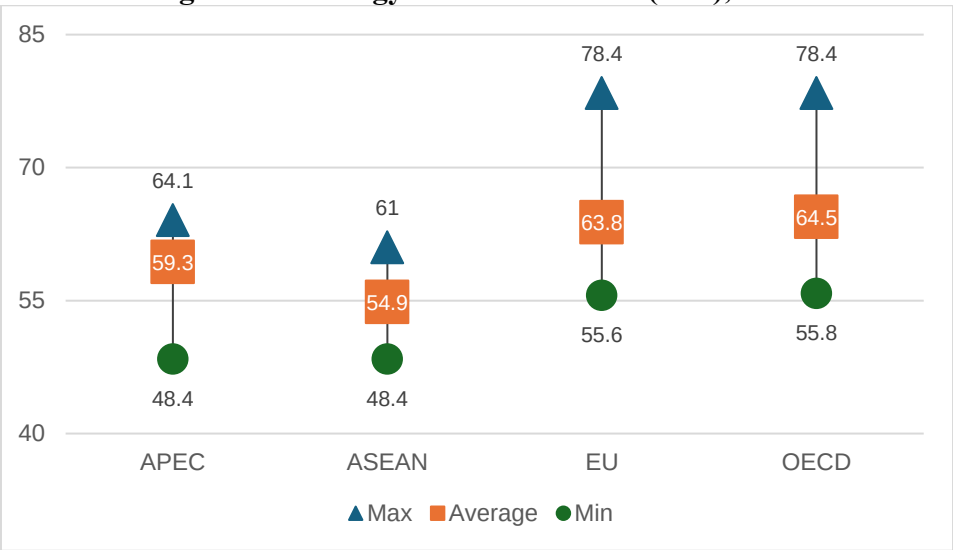
Source: APEC PSU calculations using data from International Renewable Energy Agency Statistics.

The APEC region remains behind the EU and the OECD in the transition to cleaner energy sources, as measured by the performance of its energy system and transition readiness (D.2). In 2024, APEC members posted an average score of 59.3 for the Energy Transition Index (ETI),[17] a smaller improvement from 2023 compared to the EU and the OECD, and in essence

[15] APEC, "Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III)."
[16] APEC, "Annex: Aotearoa Plan of Action," 2021, https://www.apec.org/meeting-papers/leaders-declarations/2021/2021-leaders-declaration/annex-aotearoa-plan-of-action
[17] APEC PSU staff calculations based on data from World Economic Forum (WEF), "Fostering Effective Energy Transition 2024" (Geneva: WEF, 2024), https://www.weforum.org/publications/fostering-effective-energy-transition-2024/

a setback to the 2022 level. APEC's ETI score is visibly lower than that of the EU and the OECD, with some members falling significantly behind the group's average performance (Figure 2.9).

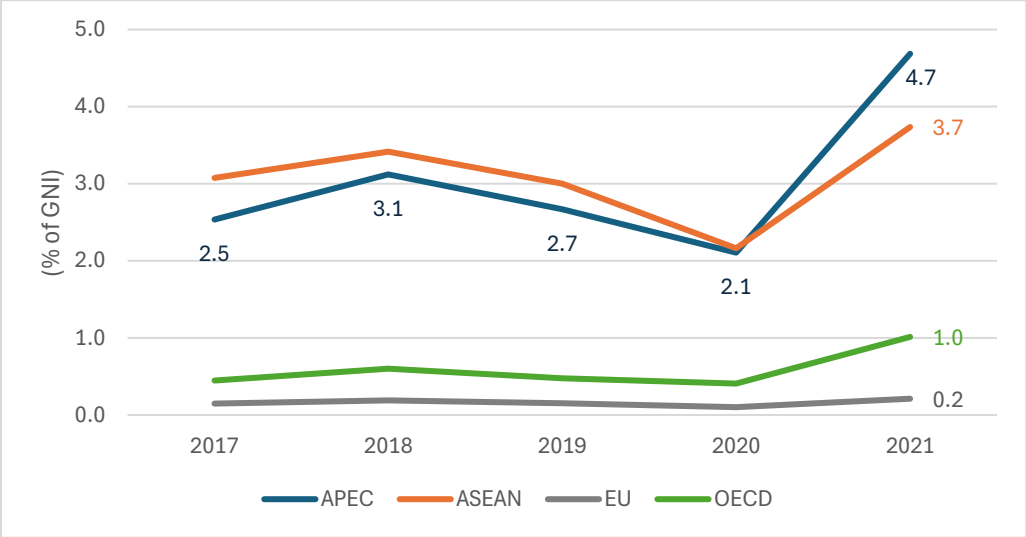
Figure 2.9. Energy Transition Index (ETI), 2024



▲=maximum value ■ =simple average ● =minimum value
Source: APEC PSU calculations using data from WEF ETI.

Natural resources depletion in APEC is a growing concern, as measured by the sum of net forest depletion, energy depletion and mineral depletion relative to gross national income (GNI) (indicator D.4). Depletion has worsened, spiking to 4.7 percent of GNI in 2021, more than doubling the 2020 level and placing APEC far above the EU (0.2%) and the OECD (1.0%) (Figure 2.10).

Figure 2.10. Adjusted savings: Natural resources depletion (% of GNI)

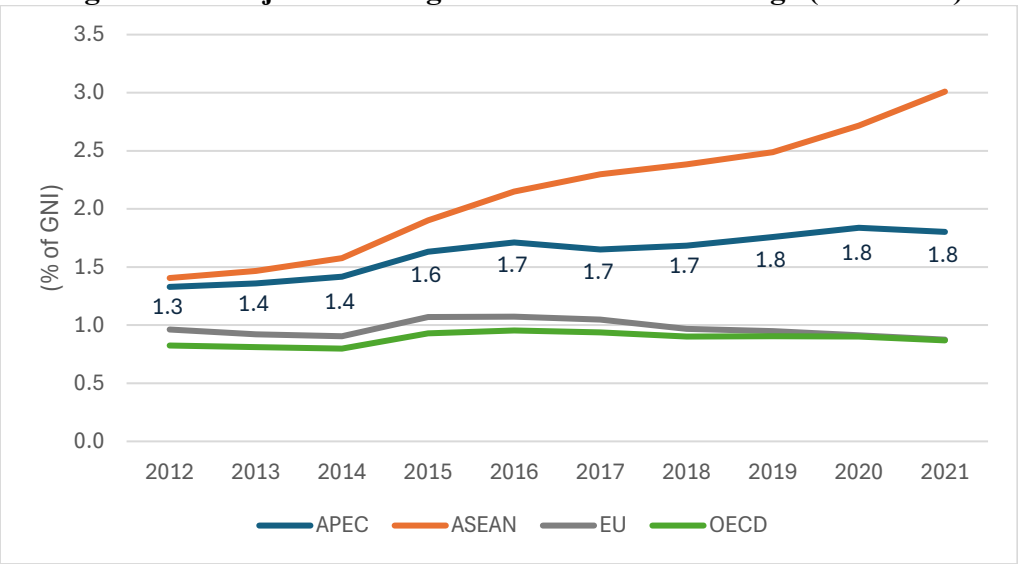


GNI=gross national income
Source: APEC PSU calculations using data from the World Bank World Development Indicators.

At the same time, APEC has witnessed mixed progress on greenhouse gas emissions and damage reduction. Carbon dioxide damage as a percentage of GNI (indicator D.5) has slightly improved, falling to 1.8 percent in 2021. While the negative impact of carbon dioxide emissions

increased rapidly from 1.3 percent to 1.7 percent of GNI between 2012 and 2016, this trend has since slowed. Nonetheless, the EU and the OECD remain significantly ahead, maintaining damage mostly below 1 percent of GNI (Figure 2.11).

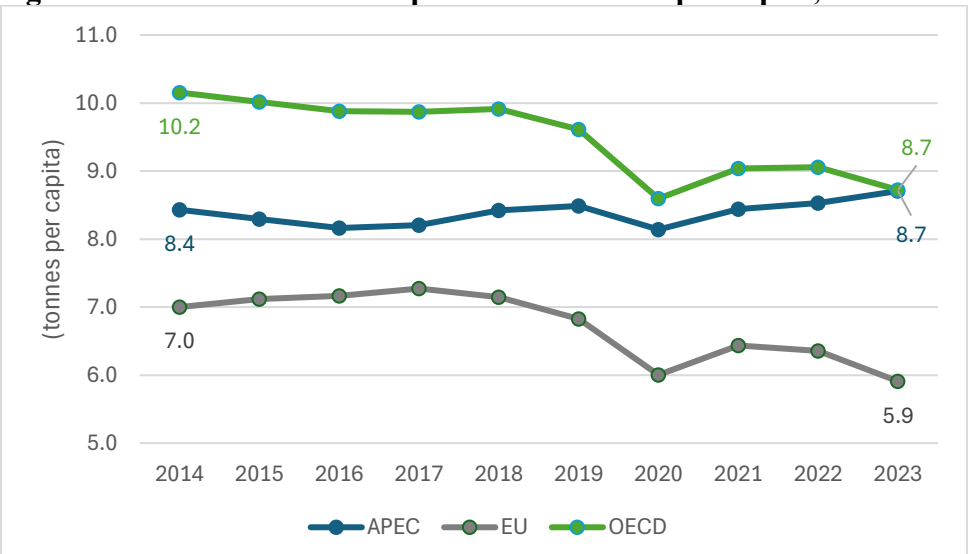
Figure 2.11. Adjusted savings: Carbon dioxide damage (% of GNI)



GNI=gross national income
Source: APEC PSU calculations using data from the World Bank World Development Indicators.

Greenhouse gas emissions per capita (D.6) in APEC have bounced back to 8.7 tonnes per capita from the temporary fall during COVID-19 and surpassed the level of 8.4 tonnes per capita a decade ago (D.6). As of 2024, APEC's contribution to global carbon dioxide equivalent emissions from energy, process emissions, methane and flaring remains nearly 64 percent, much higher than other regions such as the EU and the OECD.[18] On average, APEC residents emit nearly 1.5 times more greenhouse gases than their EU counterparts. Despite reporting per capita emissions equal to APEC's, OECD members have been bringing emissions down between 2014 and 2023 (Figure 2.12).

Figure 2.12. Carbon dioxide equivalent emissions per capita, 2014–2023



Source: APEC PSU calculations using data from the Statistical Review of World Energy.

[18] APEC PSU staff calculations using data from Statistical Review of World Energy 2024.

2.5 CHOKEPOINT 5: LACK OF TARGETED MSME SUPPORT

Chokepoint 5 is lack of targeted support to facilitate MSMEs' access and integration into global supply chains.

Six indicators from the UN Global Survey on Digital and Sustainable Trade Facilitation were identified to measure progress under Chokepoint 5.[19] Overall, progress in facilitating the participation of micro, small and medium enterprises (MSMEs) in global supply chains, particularly in trade facilitation, has been mixed (Table 2.6).

The rate of implementation of trade facilitation measures for SMEs has gone down in APEC, from an originally modest 57 percent in 2021 to 56 percent in 2023 (indicator E.1). This 2.6 percent decrease reflects setbacks in access of SMEs to Single Windows (E.4) and the representation of SMEs in National Trade Facilitation Committees (E.5). The participation of SMEs in the Authorised Economic Operator (AEO) scheme has seen no progress from 2021 (E.3). Globally, the AEO scheme is the least implemented measure for SMEs.[20] Despite the slow progress under this chokepoint, APEC remains ahead of other regions including ASEAN, the EU and the OECD, where the implementation rates of trade facilitation measures for SMEs are under 50 percent.

Areas where improvement has been made in APEC are ensuring easy and affordable access for SMEs to trade-related information (E.2) and other special measures for SMEs, such as deferred customs duty payment for SMEs and having a specific and publicly available action plan on trade facilitation measures for SMEs (E.6).

Table 2.6. Performance of APEC economies on indicators under Chokepoint 5

No.	Indicator	APEC			Range of values		Remarks
		2021	2023	% of change	2021	2023	
E.1	Implementation rate of trade facilitation measures for SMEs	57%	56%	-2.6%	0%–100%	0%–100%	Worsened
E.2	Trade-related information measures for SMEs*	2.56	2.61	2.2%	0–3	0–3	Improved
E.3	SMEs in AEO scheme*	1.33	1.33	0.0%	0–3	0–3	No change
E.4	SMEs' access to Single Window*	1.61	1.39	-13.8%	0–3	0–3	Worsened
E.5	SMEs in National Trade Facilitation Committees*	1.50	1.39	-7.4%	0–3	0–3	Worsened
E.6	Other special measures for SMEs*	1.81	1.88	3.4%	0–3	0–3	Improved

AEO=Authorised Economic Operator; SME=small and medium enterprise
Note: * Scored from 0 to 3, with 3 indicating that measures have been fully implemented.
Source: APEC PSU calculations using data from the UN Global Survey on Digital and Sustainable Trade Facilitation.

[19] APEC, "Measuring Progress on the Supply Chain Connectivity Framework Action Plan (SCFAP III)."
[20] UN, *Digital and Sustainable Trade Facilitation: Global Report 2023*.

3. ADDRESSING SUPPLY CHAIN CHOKEPOINTS: POLICY PRACTICES IN THE APEC REGION

Economies across the APEC region are actively addressing supply chain bottlenecks through a wide range of initiatives. Their policy practices, as described in their submissions for this mid-term review (see Appendix), focus on the five key chokepoints identified in APEC Supply Chain Connectivity Framework Action Plan 2022–2026 (SCFAP III):

- Chokepoint 1: Inefficient digitalisation

  Enhancing interoperability through electronic Single Windows; adopting international standards; improving supply chain visibility.

- Chokepoint 2: Inadequate infrastructure development

  Digitalising ports and logistics networks; fostering innovation; strengthening public–private partnerships.

- Chokepoint 3: Insufficient cooperation on data flows and cross-border payments

  Establishing standards; shaping digital trade provisions; creating FinTech-enabling environments.

- Chokepoint 4: Lack of understanding on green supply chains

  Promoting sustainable practices; embracing the bio-circular-green (BCG) economy model; using digital technology for eco-friendly resolutions.

- Chokepoint 5: Lack of targeted MSME support

  Reducing barriers; providing consultations; promoting digital tools; making Authorised Economic Operator (AEO) programmes accessible to micro, small and medium enterprises (MSMEs).

In total, the APEC Policy Support Unit (PSU) has received 64 policy practices from nine economies to address the five chokepoints.

Table 3.1. Policy practices submission from nine APEC economies

Chokepoints	No. of economies	No. of policy practices
Chokepoint 1: Inefficient digitalisation	7	17
Chokepoint 2: Inadequate infrastructure	5	10
Chokepoint 3: Insufficient cooperation on data flows and cross-border payments	4	7
Chokepoint 4: Lack of understanding on green supply chains	5	9
Chokepoint 5: Lack of targeted MSME support	8	21
		64

3.1 POLICY PRACTICES FOR CHOKEPOINT 1

Chokepoint 1 is the inefficient digitalisation of end-to-end supply chains, including border procedures and trade documentation exchanges.

Seven economies submitted 17 policy practices addressing the key challenge of inefficient digitalisation. These initiatives focus on several interconnected efforts in the development of electronic Single Window, adoption of international standards, modernisation and application of high-tech systems, improvement of supply chain visibility and advancement of trade facilitation efforts.

Fostering interoperability

Several initiatives target smoother trade procedures through interoperability. Hong Kong, China's Trade Single Window (TSW)[21] and Indonesia's Customs and Excise Information and Automation (CEISA) system integrate with other government agencies, port systems and potentially even Single Windows in other economies to streamline processes. Japan's support for the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) international standards fosters interoperability in data exchange and cross-border trade platforms.

Beyond streamlining procedures, the Singapore–China and Singapore–Netherlands collaborations create interoperable supply-chain-visibility networks through establishing track-and-trace capability.[22] The Singapore Digital Utility (DU) Stack provides the foundation for key digital transactions to be conducted seamlessly and securely, upon which businesses can innovate, build and deliver useful platforms and applications.[23]

Upgrading government systems

Several initiatives focus on digitalisation to upgrade trade processes. Indonesia's National Logistics Ecosystem and CEISA seek to upgrade logistics processes, by using high-end information technology (IT) systems and automation of customs services, through harmonising goods flow, documentation, and electronic data exchange, and improving collaboration, within a single ecosystem. Japan's SMART Customs initiative takes various approaches, such as modernising customs operations and procedures through digitalisation.[24] In line with this initiative, the certificate of origin (CO) data exchange under the Japan–Indonesia economic partnership agreement (EPA) has been implemented since June 2023;[25] such data exchange contributes to facilitating procedures for origin certification. Hong Kong, China has taken a government-wide approach. Their efforts to digitalise licences, services and forms reflect a broader commitment to upgrading and modernising public services.[26]

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[21] Office of Trade Single Window Operation, "Homepage of Hong Kong Trade Single Window," updated 29 August 2024, https://www3.tradesinglewindow.hk/portal/en/index.html

[22] Singapore Customs, "About Container Track and Trace Service," accessed 23 September 2024, https://www.customs.gov.sg/businesses/international-connectivity/containertrackandtrace/

[23] Infocomm Media Development Authority (IMDA), Singapore, "About the Digital Connectivity Blueprint," updated 30 May 2024, https://www.imda.gov.sg/how-we-can-help/digital-connectivity-blueprint

[24] Japan Customs, "SMART Customs Initiative 2020: Action Plan 2022 for the Realization of SMART Customs," accessed 23 September 2024, https://www.customs.go.jp/english/smart_e/index_e.htm

[25] Ministry of Foreign Affairs and Ministry of Finance, Japan, "First Ever the [sic] Certificate of Origin Data Exchange under the Japan-Indonesia EPA to Be Implemented in Japan," press release, 27 December 2022, https://www.meti.go.jp/english/press/2022/1227_002.html

[26] Digital Policy Office, Hong Kong, China, "Our Work," accessed 23 September 2024, https://www.digitalpolicy.gov.hk/en/our_work/

Reducing barriers and risks
Initiatives like Hong Kong, China's TSW and Indonesia's CEISA system focus on streamlining trade procedures. These initiatives reduce bureaucratic hurdles and delays, making it easier for businesses large and small to navigate the import and export process.

Singapore's TradeTrust enables trusted interoperability of electronic trade documents across digital platforms by using a public blockchain. TradeTrust ensures a tamper-proof record of transactions and document authenticity, further boosting trust and security in international trade. [27]

Building trust
Secure data sharing and digital data exchange infrastructures like Singapore's SGTraDex[28] aim to build trust in supply chains and among trade partners. SGTraDex enables parties to have full control of who they can share information with and what information can be shared. It also incorporates the TradeTrust framework, particularly the features supporting verifiability and traceability of data, thereby providing transparency and reducing the risk of errors or fraud.

Enhancing supply chain management
Singapore's Networked Trade Platform (NTP) leverages real-time visibility to empower better supply chain management and proactive risk mitigation at ports and customs. This real-time access to information allows for faster decision-making and smoother trade flows.

Peru contributes to trade facilitation by focusing on supply chain transparency, by demonstrating how electronic exchange of paperless traceability and environmental, social and governance (ESG) credentials help to facilitate international trade by identifying enablers, challenges and the implementation framework. [29] Further promoting transparency**,** Peru's programme empowers National Trade Facilitation Committees with tools like the automated online reform tracker. This facilitates collaboration and information sharing among government agencies involved in trade. Another initiative from Peru aims to improve healthcare management efficiency through the implementation of the World Trade Organization (WTO) Trade Facilitation Agreement (TFA), by establishing electronic platforms and instituting regulatory updates with a focus on five key components, namely, risk management, AEOs, procedures, collaboration and notifications.

On a regional scale**,** the Philippines leads the APEC Trade Repository.[30] This online platform serves as a central hub for trade- and tariff-related information that is accessible to all APEC member economies. This initiative fosters information sharing and collaboration across the Asia-Pacific region.

Promoting innovation and digital readiness
Hong Kong, China demonstrates its commitment to innovation by employing artificial intelligence (AI) and video analytics to improve security of public cargo working areas as well as by using blockchain technology for electronic issuance and verification of certain licences and certificates.[31]

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[27] TradeTrust website, accessed 23 September 2024, https://tradetrust.io
[28] SGTraDex website, accessed 23 September 2024, https://sgtradex.com/
[29] APEC, "APEC Project Database: Improving Supply Chain Transparency with Digital Exchange of Traceability and ESG (Environmental, Social and Governance) Credentials to Facilitate APEC Trade Flows," updated 6 August 2024, https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=3431
[30] APEC, "Study on Strategy to Promote the Utilization of the APEC Trade Repository" (Singapore: APEC, 2023), https://www.apec.org/docs/default-source/publications/2023/5/study-on-strategy-to-promote-the-utilization-of-the-apec-trade-repository/223_mag_study-on-strategy-to-promote-the-utilization-of-the-apec-trade-repository.pdf?sfvrsn=b8c1e7dc_2
[31] Digital Policy Office, Hong Kong, China, "Our Work," https://www.digitalpolicy.gov.hk/en/our_work/

Further demonstrating progress in digital readiness, Korea has implemented their Digital Trade Document Exchange System by updating the digital conformity certificate and test certificate document exchange system using blockchain in the existing National Paperless Trade Platform.[32]

Strengthening cooperation while utilising emerging technologies
Peru has evaluated the benefits of using an electronic bill of lading to show that doing so could facilitate the transmission of information and expedite customs procedures.[33]

The Singapore–China and Singapore–Netherlands track-and-trace system mentioned earlier also demonstrates the use of technology to enhance cooperation while maintaining digital trust and security.

3.2 POLICY PRACTICES FOR CHOKEPOINT 2

Chokepoint 2 is inadequate infrastructure development to support robust multi-modal connectivity and logistics networks.

The 10 submissions from five economies on the policy practices for Chokepoint 2 describe efforts in infrastructure digitalisation, adoption of advanced technology, public–private partnerships, cutting red tape and fostering innovation, as elaborated in the following.

Digitalisation of ports and logistics networks
Indonesia has employed a digital approach to improve port efficiency. Its Ministry of Transportation has launched SIMLALA, a traffic management information system, to support the digitalisation of ship traffic permit services, monitor maritime traffic and realise a transparent and standardised service. The ministry also launched INAPORTNET, an Internet-based electronic single service information system, to integrate standard port information systems in serving ships and goods. INAPORTNET is also integrated with the Indonesia National Single Window, creating a more streamlined and interconnected port ecosystem.

Similarly focused on digitalisation, Japan's Ministry of Land, Infrastructure, Transport and Tourism has initiated efforts to improve efficiency and productivity at container terminals through a system with functions such as time-specific booking and advance verification of delivery information; technology development to advance operations and cargo handling; and the introduction of remote-controlled rubber-tired gantry (RTG) cranes.

Adoption of advanced technology
Under the Smart Customs Blueprint, Hong Kong Customs and Excise Department developed the Smart Customs Interactive Response System and the Virtual Customs Ambassador, XiaoHui, in 2023.[34] The use of AI, natural language processing and machine learning in XiaoHui showcases the adoption of advanced technology to improve customer service and access to information.

Improving bureaucratic efficiency and regulation
Indonesia's SIMLALA and INAPORTNET aim to improve bureaucratic efficiency through digitising permits and integrating systems across multiple agencies. Indonesia's Ministry of

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[32] Ministry of Trade, Industry and Energy, Korea, "uTradeHub," accessed 23 September 2024, https://www.utradehub.or.kr/porgw/index.jsp?_locale=en&sso=ok#
[33] APEC, "APEC Project Database: Improving the Digitalization of International Trade: The Relevance of the Use of an Electronic Bill of Lading," updated 6 August 2024, https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=3454
[34] Customs and Excise Department, Hong Kong, China, "Hong Kong Customs Introduces Virtual Customs Ambassador XiaoHui," press release, 29 December 2023, https://www.customs.gov.hk/en/customs-announcement/press-release/index_id_4034.html

Trade has also established the necessary regulation to integrate the reporting of inter-island trade activity with the business process in the National Logistics Ecosystem and through Indonesia National Single Window.

Fostering a culture of openness toward innovation and change

Peru's project on promoting transparency in the logistics supply chain through sharing best practices and identifying optimal logistics solutions implies active collaboration to explore new ideas.[35] The Philippines' COVID-19 Impact Study, which seeks to understand the impact of the pandemic on the maritime sector, has implications for adapting to evolving conditions and finding innovative solutions to foster a resilient and sustainable maritime transport sector.[36] Indonesia's Maritime Single Window workshops demonstrate a proactive approach to sharing knowledge and assisting economies in their digital readiness journey.

3.3 POLICY PRACTICES FOR CHOKEPOINT 3

Chokepoint 3 is insufficient cooperation on data flows and cross-border payments to support increasingly digitalised supply chains.

There are seven submissions from four economies for this chokepoint. Key policy practices include efforts to build digital bridges, expand digital trade networks and enable FinTech.

Establishing arrangements and international standards for smooth cross-border data flows

Hong Kong, China and China have launched a pilot arrangement for a Standard Contract for the Cross-boundary Data Flow of Personal Information within the Guangdong–Hong Kong–Macao Greater Bay Area (GBA). This initiative aims to streamline procedures and reduce compliance costs associated with data transfers within the GBA.[37] Singapore's TradeTrust takes a wider approach, providing a framework for document interoperability across borders and systems. This framework leverages globally accepted standards – United Nations Commission on International Trade Law (UNCITRAL), UN/CEFACT, World Wide Web Consortium (W3C) – to ensure secure and trustworthy data exchange. Hong Kong, China has also been taking measures to make available more open data, such as through its online portal (data.gov.hk) that provides open data in machine-readable format for re-use for commercial or non-commercial purposes free-of-charge.[38] Recognising the importance of data privacy, Chinese Taipei participates in Cross-Border Privacy Rules (CBPR) initiatives to promote information privacy protection, a crucial element in supporting trusted data flows within the digital economy.

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[35] APEC, "APEC Project Database: Best Practices to Promote Transparency in the Logistic Supply Chain: Information Platforms of Logistic Services for Foreign Trade," updated 6 August 2024, https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=3459

[36] APEC, "APEC Project Database: Study on the Maritime Transport Sector in the COVID-19 Era: Challenges, Opportunities, and the Way Forward," updated 12 July 2023, https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=3248

[37] Digital Policy Office, Hong Kong, China, "Facilitating Cross-boundary Data Flow within the Greater Bay Area," last reviewed 25 July 2024, https://www.digitalpolicy.gov.hk/en/our_work/digital_infrastructure/mainland/cross-boundary_data_flow/

[38] Digital Policy Office, Hong Kong, China, "About Open Data," https://data.gov.hk/en/about-open-data

Enhancing digital trade provisions
Through several digital trade negotiations, Korea is proactively engaging in discussions to expand the digital trade network with the aim of facilitating e-commerce, enhancing data flow and providing a safe and predictable digital trade or business environment.[39]

Fostering an enabling environment for FinTech
Singapore takes a two-pronged approach to promoting FinTech in trade finance. SGTraDex provides a secure technology-based infrastructure for sharing trade- and sales-related data that is verifiable from the source, thereby increasing confidence for financing. The infrastructure allows for the ecosystem of companies to connect with other FinTech applications specifically tailored for trade finance needs without the need to have multiple technical integrations. By incorporating the TradeTrust framework, SGTraDex supports end-to-end digitalisation of verifiable and transferable electronic trade documents.

Other economies have also promoted FinTech development. Korea's support for the 2024 APEC SME Digital Finance and FinTech Innovation Forum fosters education and networking opportunities for small and medium enterprises (SMEs). The forum helps connect them with the latest digital finance solutions that can benefit their businesses.

3.4 POLICY PRACTICES FOR CHOKEPOINT 4

Chokepoint 4 is lack of understanding on green supply chain management practices and increasing pressure for supply chains to be sustainable.

Five economies have highlighted nine policy practices to address Chokepoint 4. Key themes include sustainable trade, the BCG economy, adoption of digital tools for sustainability and the empowerment of MSMEs.

Promoting green and sustainable supply chain management
The government of Hong Kong, China has been leading by example through Government Green Procurement.[40] By adopting sustainable purchasing practices, the government sets a strong example and encourages similar practices across different sectors and stakeholders, thus fostering a greener supply chain ecosystem.

Indonesia focuses on responsible trade practices. The customs authorities play an active role in preventing the illegal movement of hazardous waste. This action ensures environmentally responsible trade practices and promotes 'green customs' initiatives.

Peru hosted a workshop in August 2024. This workshop focuses on promoting Technological Solutions for Green Customs. The goal is to enhance the capabilities of customs administrations in identifying and controlling the illegal trade of environmentally sensitive goods, further strengthening green supply chains.[41]

Chinese Taipei takes a strategic approach with their Net-Zero Roadmap. This roadmap provides a structured plan for industrial decarbonisation, thus promoting a green transformation within the supply chain. Key industries such as steel, cement, petrochemicals, electronics, pulp

[39] Ministry of Trade, Energy and Industry (MOTIE), Korea, "Korea and Singapore Announce Conclusion of Korea's First Digital Trade Agreement, Korea–Singapore Digital Partnership Agreement (DPA)," press release, 15 December 2021, https://english.motie.go.kr/eng/article/EATCLdfa319ada/898/view; MOTIE, Korea, "Korea Completes Final Step for DEPA Membership," 4 March 2024, https://english.motie.go.kr/eng/article/EATCLdfa319ada/1704/view
[40] Environment and Ecology Bureau, Hong Kong, China, "Green Procurement," accessed 23 September 2024, https://www.eeb.gov.hk/en/susdev/green_procure/green_procure.html
[41] APEC, "APEC Project Database: Workshop on Technological Solutions for Green Customs in the Asia-Pacific Region," updated 6 August 2024, https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=3463

and paper (including printing) and textiles have collaborated to promote carbon reduction efforts.

Promoting the bio-circular-green (BCG) economy model
Indonesia aligns with the BCG model's focus on resource efficiency by establishing Bonded Recycling Zones. These zones provide economic incentives and infrastructure to support the conversion of waste materials into valuable products, promoting a more circular economy within Indonesia's supply chains.

Japan takes a comprehensive approach with their Circular Economy Strategy. This strategy goes beyond just infrastructure by establishing Circular Partners, a collaboration involving 400 private-sector actors, government agencies and academia. This multi-stakeholder approach fosters knowledge sharing and innovation in achieving supply chain sustainability.

Harnessing digital technology for eco-friendly dispute resolution
By opting into the APEC Online Dispute Resolution (ODR) Collaborative Framework,[42] Hong Kong, China promotes the use of ODR as an alternative dispute resolution mechanism that is both cost-effective and environmentally friendly, reducing the need for in-person proceedings.

Empowering MSME participation in green supply chains
Japan prioritises a collaborative approach for decarbonisation. Its initiatives extend beyond large companies, working with regional financial institutions, chambers of commerce and industry, and other economic organisations that have regular contact with SMEs. Such collaborations ensure access to resources and guidance, promoting decarbonisation throughout the entire value chain.

Chinese Taipei takes a similar approach with their mandatory collaborative approach. This programme mandates large enterprises and industry alliances to mentor smaller businesses on green practices. This creates a ripple effect, spreading knowledge and green practices throughout the economy.

3.5 POLICY PRACTICES FOR CHOKEPOINT 5

Checkpoint 5 is the lack of targeted support to facilitate MSMEs' access and integration into global supply chains.

Eight economies have attempted to address Chokepoint 5 with 21 policy practices. The policy practices focus on opening access to the global network, promoting a digital transformation, building capacity and creating tailored AEO programmes.

Supporting MSMEs in accessing and integrating into global supply chains
The government of Indonesia takes a multi-pronged approach to empower MSMEs in international trade. It provides subsidies for businesses in remote areas to utilise sea transport, offers free export consultations and guidance and extends import duty exemptions to reduce costs; it has also established Bonded Logistics Centers. These initiatives all aim to ease trade processes and enhance access to global markets.

Japan focuses on direct connections for their SMEs. Its Chief Executive Officer (CEO) Business Meetings and online business matching initiatives directly connect Japanese SMEs with foreign firms, aiding in finding new markets and building relationships. In a similar effort,

[42] Department of Justice, Hong Kong, China, "Online Dispute Resolution (ODR) and LawTech," accessed 23 September 2024, https://www.doj.gov.hk/en/legal_dispute/online_dispute_resolution_and_lawtech.html

Chinese Taipei is holding promotional events and trade fairs. These events assist businesses with supply chain integration and efforts to seek global opportunities.

In Mexico, the Women in Business initiative empowers women-led MSMEs through training. They also facilitate direct linkages with global business networks, allowing these businesses to explore new markets.

Addressing barriers in digitalisation and technological innovation

Hong Kong, China recognises the importance and needs of smaller businesses, in particular their difficulties in resolving cross-border disputes when trading across borders. By opting into the APEC ODR Collaborative Framework, Hong Kong, China actively promotes the use of ODR as a quick and cost-effective mechanism for MSMEs to resolve cross-border disputes, thereby facilitating their access to justice and supporting their fuller participation in global trade. eBRAM International Online Dispute Resolution Centre, an APEC-partnered ODR provider based in Hong Kong, China, provides cost-effective and accessible ODR tools, making dispute resolution more manageable and affordable for SMEs.

In Singapore, the SMEs Go Digital initiative takes a hands-on approach. It provides step-by-step guides and access to digital solutions, streamlining the adoption of emerging technologies like AI for SMEs. This empowers SMEs to leverage the benefits of digitalisation.

Looking at a longer-term perspective, Chinese Taipei has launched a multi-year APEC initiative. This initiative focuses on digital innovation for SMEs' green transformation. Following a year of awareness-raising in 2023, they will conduct capability-building workshops and prepare reports in 2024. These resources aim to enhance SME competitiveness through low-carbon business models, promoting both sustainability and digital adoption.

Capacity building

Mexico takes a holistic approach with the launch in June 2024 of the Alliance for the Digital Transformation of MSMEs. This initiative aims to boost MSME productivity, competitiveness and integration into value chains. They will achieve this by promoting digital tools, innovative technologies and crucial skills development. This promotes an inclusive and equitable digital transformation for all MSMEs.

Chinese Taipei has an initiative that goes beyond basic digitalisation. The programme specifically assists service SMEs to enhance their operations on multiple fronts, such as by optimising warehouse operations (by using AI to analyse orders and optimise storage locations) and fostering collaborations in cold chain logistics.

Inclusive engagement in AEO programmes

Hong Kong, China's AEO Programme[43] caters to the unique needs of SMEs. The programme's tailor-made two-tier system lowers entry barriers and offers benefits that directly enhance SME competitiveness and participation in global trade. The programme's emphasis on mutual recognition agreements (MRAs) with international partners further streamlines trade processes, providing additional advantages for SMEs.

Indonesia's AEO programme demonstrates flexibility in supporting MSMEs. The programme allows for requirements for AEO status to vary based on the role and responsibilities of different types of economic operators in the international trade supply chain. This ensures that the programme is accessible and beneficial to both small and large businesses.

[43] Customs and Excise Department, Hong Kong, China, "Hong Kong Authorized Economic Operator (AEO) Programme," updated 13 June 2024, https://www.customs.gov.hk/en/service-enforcement-information/trade-facilitation/aeo/index.html

4. CONCLUSION

This report has provided a snapshot of progress on the APEC Supply Chain Connectivity Framework Action Plan 2022–2026 (SCFAP III) through quantitative indicators and through a description of policies implemented by APEC member economies that address key chokepoints.

The following collates and summarises the notable improvements and challenges at the mid-point of SCFAP III across the five chokepoints.

4.1 CHOKEPOINT 1: INEFFICIENT DIGITALISATION

Areas of progress

- **Overall progress:** Most indicators under Chokepoint 1 show improvement between 2021 and 2023.
- **Cross-border data exchange:** APEC excels in cross-border paperless trade facilitation measures, with implementation rates above both global and Organisation for Economic Co-operation and Development (OECD) averages.
- **Electronic declaration and payments:** Substantial improvement in electronic exchange of customs declaration has been recorded (over 11% increase). Additionally, electronic payment of customs duties and fees shows progress.

Areas for continued focus

- **Sanitary and phyto-sanitary (SPS) certificates and sea cargo:** Weaker performance was seen in electronic submission of sea cargo manifests, electronic exchange of SPS certificates, and their electronic application and issuance.
- **Gaps compared to the OECD:** APEC lags behind the OECD in Internet connectivity for Customs and trade control agencies, electronic permit applications/issuance, and electronic applications for customs refunds.

Recommended policy practices

- **Targeted digital adoption:** Implement port efficiency-enhancing technologies (e.g., crane automation, Internet of things (IoT) sensors and data analytics for real-time tracking) and blockchain-based platforms to enhance visibility and trust.
- **Robust Single Window integration:** Develop a comprehensive, interoperable Single Window that centrally connects traders to multiple government agencies for regulatory clearances, seamlessly integrates port community systems to optimise cargo flow and documentation and employs standardised data formats (United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) standards) for cross-border communication.
- **Cross-agency collaboration:** Facilitate inter-ministerial collaboration for successful Single Window implementation, focusing on (1) data-sharing protocols between

Customs, port authorities, trade and other relevant agencies; (2) harmonisation of regulations and processes across agencies to streamline trade flows.

- **Whole-of-government strategy:** Create an economy-wide digital transformation plan for the public sector, aiming for clear leadership and governance structures for digital initiatives; prioritise capacity building and training across agencies to ensure effective adoption; promote secure and shared technological infrastructure to enable cross-agency data exchange.

4.2 CHOKEPOINT 2: INADEQUATE INFRASTRUCTURE DEVELOPMENT

Areas of progress

- **Overall progress:** Improvements have been recorded in seven out of eight indicators where data are available.
- **Information and communications technology (ICT) infrastructure:** APEC excels in Internet connectivity. Both fixed and mobile broadband speeds increased significantly between 2023 and 2024, and broadband subscriptions saw healthy growth.
- **Port capacity and connectivity:** Container port throughput recovered post-pandemic, and liner connectivity scores showed sustained improvement, even during challenging times (2019–2024). This indicates APEC's robust recovery in global trade supported by regional connectivity.
- **Overall resilience:** APEC demonstrates progress on most indicators under Chokepoint 2, showcasing resilience despite recent economic disruptions.

Areas for continued focus

- **Digital divide:** While APEC's average scores are impressive, there seems to be a widening gap in Internet speeds between member economies. Addressing this digital divide can increase overall supply chain efficiency within the region.
- **Catch-up in mobile broadband:** APEC lags behind the European Union (EU) and the OECD in median mobile download speeds. Improvements in this area will facilitate: (1) supply chain coordination and communication to support logistics digitalisation; (2) adoption of FinTech by micro, small and medium enterprises (MSMEs).
- **Boosting fixed broadband uptake:** Although fixed broadband subscriptions have increased, APEC still trails behind the EU and the OECD. Efforts to expand fixed broadband access could further bridge the digital divide and push for the wider adoption of digital solutions and innovation.
- **Network readiness**: Strengthen network readiness across multiple dimensions: technology, people, governance and impact.

Recommended policy practices

- **Targeted infrastructure investment:** Prioritise infrastructure development in remote areas with lower Internet speeds and connectivity gaps.

- **Affordable access programmes:** Make broadband more accessible, especially for lower-income groups and small businesses.
- **Digitalisation of ports and logistics networks under public–private partnerships:** Leverage private sector expertise and funding.
- **Promoting innovation and digital readiness:** Strengthen commitment to innovation by employing emerging technologies such as artificial intelligence (AI) and blockchain.

4.3 CHOKEPOINT 3: INSUFFICIENT COOPERATION ON DATA FLOWS AND CROSS-BORDER PAYMENTS

Areas of progress

- **Overall progress:** APEC shows progress across all Chokepoint 3 indicators, demonstrating strong strides in facilitating digital trade within the region.
- **Trade finance innovation:** Significant improvement has been seen in paperless collection of payments from letters of credit. This reflects the growing acceptance of electronic trade documents and availability of digital trade finance services.
- **Certification standards:** Notable progress has been made in recognition of third-party certification authorities, which is key for secure, trusted electronic signatures and documents for traders.

Areas for continued focus

- **Bridging implementation gaps:** While progress is evident, gaps in implementation levels across APEC economies remain. Collaborative initiatives could help less advanced members catch up.
- **Legal frameworks:** APEC member economies have been slower in strengthening their domestic legal frameworks for the recognition of electronic data and documents from trading partners. This area needs prioritisation to ensure cross-border compatibility.
- **Catching up with the OECD:** Despite improvements, APEC still scores behind the OECD on several indicators. Investigating the OECD's best practices could reveal areas for further development.

Recommended policy practices

- **Strengthening legal frameworks**: Encourage APEC members to align their laws with international standards, such as the Model Law on Electronic Transferable Records from the United Nations Commission on International Trade Law (UNCITRAL). This would promote cross-border legal recognition of electronic documents.
- **Fostering an enabling environment for FinTech**: Provide secure tech infrastructure for sharing financial data and promoting open data initiatives.

4.4 CHOKEPOINT 4: LACK OF UNDERSTANDING ON GREEN SUPPLY CHAINS

Areas of progress

- **Overall progress:** APEC has demonstrated progress across the five indicators, reflecting a strong commitment to green supply chains.
- **Sustainability reporting:** More APEC companies are publishing sustainability reports, demonstrating a growing commitment to transparent practices.
- **Renewable energy growth:** APEC is expanding its use of renewable energy, making progress toward its goals under the Aotearoa Plan of Action.

Areas for continued focus

- **Stabilising emissions:** APEC has made minor progress in reducing carbon dioxide damage and per capita greenhouse gas emissions. While these have stabilised since the pandemic-related economic slowdown, efforts must continue to bring these indicators down.
- **Natural resource depletion:** APEC faces a significant challenge in addressing the alarming increase in natural resource depletion. This must be a priority for the region to ensure long-term sustainability.
- **Catching up:** Although making progress, APEC lags behind the EU and the OECD on some sustainability indicators. Investigating their approaches could reveal strategies for APEC to accelerate its green supply chain transition.
- **Opportunity for collaboration**: The wide range of sustainability performance between APEC members suggests an opportunity for knowledge sharing and mutual collaboration.

Recommended policy practices

- **Promotion and adoption of sustainable trade principles**: Initiatives such as green customs, green procurement and green supply chains that are supported and led by key government agencies and large enterprises can have an economy-wide ripple effect.
- **Harnessing digital technology for green solutions:** Employing online dispute resolution, AI for smart logistics, and route optimisation provide a more sustainable approach to resolving common business issues.

4.5 CHOKEPOINT 5: LACK OF TARGETED MSME SUPPORT

Areas of progress

- **Overall progress**: Mixed findings can be seen on the six indicators, indicating slow progress on supporting MSMEs.
- **Affordable access to trade information:** APEC has made some progress in ensuring affordable access to trade information for MSMEs and offering special measures like deferred customs payments and specific action plans for MSMEs.

Areas for continued focus

- **Trade facilitation for MSMEs:** APEC has seen a decline in implementation of trade facilitation measures for MSMEs. This indicates a growing barrier to their participation in global supply chains.
- **Specific setbacks:** Access to Single Window systems and representation in National Trade Facilitation Committees have both diminished.
- **Authorised Economic Operator (AEO) stagnation:** There has been little progress in increasing MSME participation in AEO schemes, and they remain the least implemented measure globally.

Recommended policy practices

- **MSME-friendly AEO:** Implement inclusive engagement in AEO programmes through a flexible or tiered AEO programme with simplified requirements and a scaled approach for MSMEs. This could offer incremental incentives as MSMEs progress and grow in compliance and trade volumes.
- **Strengthen collaboration between large and small firms in global supply chains**: Promote and facilitate direct connections with large firms to aid in finding new markets and building supply networks.

APPENDIX. POLICY PRACTICES SUBMISSIONS FROM APEC MEMBER ECONOMIES

Table A.1. Policy practices for Chokepoint 1

Chokepoint 1: Inadequate infrastructure development to support robust multi-modal connectivity and logistics networks				
No.	Economy	Title of initiative	Progress	Brief description
1	Hong Kong, China	Development of Trade Single Window (TSW)	In progress (Phase 1 since 2018; Phase 2 since 2023)	Hong Kong, China has been pressing ahead with the development of the TSW in three phases to provide a one-stop electronic platform to lodge business-to-government trade documents for trade declaration and cargo clearance. The first two phases are operating smoothly and have been well-received. Phase 1, first rolled out in December 2018 covering 14 types of trade documents, is now in full service. Phase 2, covering an additional 28 types of trade documents, was rolled out successfully between May and December 2023 ahead of schedule. Hong Kong, China is working full steam ahead to develop the information technology (IT) system for Phase 3, which will cover all documents required for trade declaration and cargo clearance, and will also replace several cargo clearance systems as well as related back-end processing systems. The target is to roll out Phase 3 in batches from 2026 onwards. Upon full implementation of the TSW, it will have the technical capability to connect with the Single Window systems of other economies or commercial systems, when the need arises.
2	Hong Kong, China	Use of digital technology in government bureaus and departments	In progress since 2022	Hong Kong, China targets to digitalise all licences, services and forms involving application and approval by mid-2024. It has also launched 110 new digital government and smart city initiatives from 2024 to 2025, including using blockchain technology for electronic issuance and verification of certain licences and certificates, and employing artificial intelligence (AI) and video analytics to improve security in public cargo working areas. The majority of the digitalisation of government e-services is completed or seeing good progress.

3	Indonesia	National Logistics Ecosystem (NLE)	Gradually implemented since 2020. Full implementation targeted for 2024.	Based on the Presidential Instruction No. 5 on the NLE. The NLE is a logistics ecosystem that harmonises the flow of goods and documents from the arrival of the means of transport to the unloading of the goods and their arrival at the warehouse. The system also promotes collaboration between the government and the private sector through data exchange, simplifying business processes, and reducing repetition and duplication. The platform is supported by a high-end technology and information system that covers all logistics processes and connects to the existing logistics systems. NLE provides some systems to ensure seamless and efficient border management, namely Single Submission (SSM) and joint inspection by Customs and Quarantine, implemented at Tanjung Priok Port, Tanjung Mas Port and Tanjung Perak Port.
4	Indonesia	Customs and Excise Information and Automation system (CEISA) 4.0	In development since 2021. In March 2024, CEISA 4.0 enacted the eighth phase of mandatory implementation. Currently, there are 70 offices that are carrying out the mandatory implementation of CEISA 4.0.	CEISA is a paperless and automated information system to support customs services through an integrated application system. CEISA is integrated in all customs and excise offices throughout Indonesia and covers the automation of services ranging from import and export cargo processing, bonded zone monitoring and warehousing systems, consignment goods to customs clearance through electronic data exchange. CEISA has been connected to 20 Customs and Excise Regional Offices, 3 Customs and Excise Prime Services Offices, and 104 Customs and Excise Offices. Registered users include more than 15,000 customs officers and more than 20,000 service users.
5	Japan	Initiatives for realisation of SMART Customs	In progress as of April 2024	The Ministry of Finance, Japan published the SMART Customs Initiative 2020, the medium- to long-term vision for customs administration in June 2020, and the Action Plan 2022 for the Realization of SMART Customs in November 2022, including further promotion of digitalisation of customs procedures. In line with this initiative, the

				certificate of origin (CO) data exchange under the Japan–Indonesia economic partnership agreement (EPA) has been implemented since June 2023 and Japan will continue further discussions with other economies.
6	Japan	Fostering interoperability among paperless trade platforms	In progress as of April 2024	The Ministry of Economy, Trade and Industry, Japan has been promoting trade data linkage among paperless trade platforms in APEC economies to achieve digitalisation of end-to-end trade procedures.
7	Japan	Data standardisation	In progress as of April 2024	The Ministry of Economy, Trade and Industry, Japan has been promoting adaptation of the international standards established by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT). Japan is supporting a UN/CEFACT project on 'Buy/Ship/Pay data exchange structures for trade finance facilitation' to promote data exchange based on international standards.
8	Korea	Implementation of the Digital Trade Document Exchange System	Completed in 2022 and in progress to increase the number of Korean-accredited laboratories	To update the digital conformity certificates and test certificate document exchange system using blockchain in the existing National Paperless Trade Platform.
9	Peru	APEC Sub-committee on Customs Procedures (SCCP) Customs – Business Dialogue (ACBD) 2024: 'Digitalization	In progress (the Dialogue will take place in August 2024, in Lima, Peru).	The dialogue will compile recent initiatives and products developed by the region's private sector and Customs focused on building supply chain agility and visibility capabilities. It seeks to facilitate collaboration among their leaders that will enable the confluence of their plans and mutual leveraging of advances.

		end to end of supply chain: Latest developments and next steps'		
10	Peru	Improving the digitalisation of international trade: The relevance of the use of an electronic bill of lading	In progress as of April 2024 (working on the concept notes to contract an expert on logistics and trade)	This project will evaluate the benefits of the use of an electronic bill of lading. The project seeks to show that an electronic bill of lading can facilitate the transmission of information, expediting customs procedures, making the flow of goods faster and reducing associates' costs. Moreover, it could facilitate customs cooperation. It also proposed to enhance the capacity of APEC economies. The project objective will be achieved through a workshop and a survey which could help to identify best practices, technological development and regulations applied by APEC and non-APEC economies. This will include actions carried out by the private sector, including ocean carriers, freight forwarders and other stakeholder associations toward the use of electronic bill of lading.
11	Peru	Improvement of healthcare management efficiency within the framework of the implementation of the World Trade Organization (WTO) Trade Facilitation Agreement (TFA) in Peru	In progress as of April 2024 (including establishment of electronic platforms to be hosted on the Single Window, and regulatory projects for authorities to make system-level modifications)	The project was developed with the support of Swiss cooperation, within the framework of the SeCompetitivo Programme aimed at implementing the WTO TFA, modernising regulations related to healthcare management, and thus enhancing the competitiveness of Peruvian foreign trade. This initiative, based on the WTO TFA, has five components: (1) sanitary risk management (TFA Art. 7.4); (2) sanitary authorised economic operator (AEO) (TFA Art. 7.7); (3) test procedures (TFA Art. 5.3); 4) cooperation among border intervention agencies (TFA Art. 8); and (5) notification of reinforced controls or inspections (TFA Art. 5.1).

12	Peru	Programme for Empowerment of National Trade Facilitation Committees (NTFCs) in Peru	In progress as of April 2024 (UN Trade and Development (UNCTAD) conducts constant monitoring of the use of the reform tracker, and the activities that remain pending are identified by the public sector. Capacity building for both the public and private sectors continues to be provided.)	The programme developed three products: a training module for entities linked to the NTFC, a reform tracker, and a rapid scan study of trade facilitation measures implemented during the COVID-19 pandemic. The reform tracker is a trade facilitation project management tool designed, stored and managed by UNCTAD to strengthen NTFCs in their role of coordinating trade facilitation initiatives, specifically those related to the WTO TFA. Through this online platform, NTFC teams can track the progress of their initiatives, allowing for task distribution automation, resource planning, team collaboration, report generation, among other functionalities.
13	Peru	Improving Supply Chain Transparency with digital exchange of traceability and environmental, social and governance (ESG) credentials to	In progress as of April 2024 (in tendering process to select contractor)	Demonstrate how supply chain transparency based on electronic exchange of paperless traceability and ESG credentials helps to facilitate international trade by identifying enablers, challenges and an implementation framework for easy replication. Provide capacity building to the voluntary member economies in using paperless electronic exchange of traceability and ESG credentials. Determine if the adoption is cost-effective for relevant stakeholders.

		facilitate APEC trade flows		
14	The Philippines	APEC Trade Repository (APECTR)	In progress as of April 2024 (updated annually)	An online platform that contains trade- and tariff-related information for each APEC member economy to contribute toward APEC's work on trade facilitation, transparency, information dissemination and connectivity.
15	Singapore	Networked Trade Platform (NTP) Container Track and Trace Service	In progress since 2023	Singapore Customs and the General Administration of China Customs (GACC) have launched the track-and-trace service to provide visibility of trade between Singapore and China, starting with the Port of Singapore and two China ports, namely Yangshan port (Shanghai) and Qinzhou port (Guangxi). Singapore Customs has reached in-principle agreement with GACC to expand the track-and-trace service to include all terminals in Shanghai port as well as Xiamen, Ningbo, Qingdao and Chongqing. Singapore Customs signed a memorandum of understanding with the Customs Administration of the Netherlands on 18 April 2024 to establish a track-and-trace service between Singapore and the port of Rotterdam.
16	Singapore	TradeTrust	In progress since 2019	TradeTrust is a framework that comprises globally accepted standards that connect governments and businesses to a public blockchain to enable trusted interoperability of electronic trade documents across digital platforms. As a middleware, TradeTrust is designed such that it can be utilised by any business application. This way, businesses are free to choose which systems they would like to use while retaining the ability for their systems to be interoperable with those of their business partners who have a similar choice; regardless of the systems used, TradeTrust Documents can be read, authenticated and managed the same way across all systems. TradeTrust Documents are also digitalised with cryptographic techniques and can assure (1) that they have not been tampered with and (2) provenance.
17	Singapore	SGTraDex	In progress (2022–present)	Digital infrastructure that facilitates trusted and secure sharing of business-to-business (B2B) data between supply chain ecosystem partners. SGTraDex serves as a single point of connection, enabling participants to connect to multiple parties for data

				exchange, with control of access rights to their data. It also builds trust as it allows traceability, verifiability and provenance of data/document shared.

Table A.2. Policy practices for Chokepoint 2

Chokepoint 2: Inadequate infrastructure development to support robust multi-modal connectivity and logistics networks				
No.	Economy	Title of initiative	Progress	Brief description
1	Hong Kong, China	Smart Customs Interactive Response System and Virtual Customs Ambassador, XiaoHui	In progress since 2023	Under the Smart Customs Blueprint, Hong Kong Customs and Excise Department developed the Smart Customs Interactive Response System and the Virtual Customs Ambassador, XiaoHui, in 2023. XiaoHui, through a combination of artificial intelligence (AI) technology, natural language processing, machine learning, etc., handles general enquiries from members of the public and travellers in relation to customs work in real time, providing them with information on control points. In the first phase, XiaoHui, is in service at four control points and on the Customs homepage. Hong Kong Customs is working on extending the service to other control points as well as their various social media platforms by the end of 2024 so as to help more travellers from around the world.
2	Indonesia	INAPORTNET	Implementation phases in progress, currently covering 264 ports in Indonesia	In 2016, Indonesia through the Ministry of Transportation launched INAPORTNET, an internet-based electronic single service information system to integrate standard port information systems in serving ships and goods from all related agencies or stakeholders. INAPORTNET services include incoming ships, moving ships, outgoing ships, mooring extension and service cancellation. INAPORTNET is also integrated with the Indonesia National Single Window (INSW) and connected to the systems of relevant government agencies such as the Directorate General of Maritime Transportation, Directorate General of Customs and Excise, Directorate General of Disease Control and Environmental Health, Directorate General of Immigration, Agricultural Quarantine Agency, Fish Quarantine Agency, Quality Control and Safety of Fishery Products, Port business entities and other relevant stakeholders in the port.
3	Indonesia	Ship Traffic Management Information	Implementation in progress, recently updated	In 2012, Indonesia through the Ministry of Transportation launched SIMLALA to support the digitalisation of ship traffic permit services.

		System (*Sistem Informasi Manajemen Lalu Lintas Angkutan Laut*/SIMLALA)	by Ministry of Transportation Regulation No. 23/2022	SIMLALA serves as an application for public services to monitor maritime traffic and realise a transparent and standardised service. SIMLALA services include support for the business licences of sea transport companies, sea transport operation licences, ship specification, ship operation plans and notification of foreign ship agencies.
4	Indonesia	Minister of Trade regulation on inter-island trade	In progress (regulation being revised to improve integration and the business process for cargo list reporting in inter-island trade activity)	The regulation was established by Minister of Trade Regulation No. 92/2020. As an archipelago, it is important for Indonesia to have a regulation to maintain a balance of trade in goods between islands. This is crucial to minimise price differences between islands. The regulation integrates the reporting of inter-island trade activity with the business process in the National Logistics Ecosystem (NLE) and through Indonesia National Single Window (INSW).
5	Indonesia	Conducting Maritime Single Window Workshop for International Maritime Organization (IMO) members	The workshop was conducted from 31 October to 2 November 2023.	The workshop for IMO member economies was attended by 13 delegates from 11 economies. This workshop was an initiative to support digitalisation and Indonesia's commitment to assist economies in need of knowledge on the implementation of the Maritime Single Window.
6	Japan	Improvement of processing capacity at container terminals' gates	In progress (3 years of implementation as of April 2024)	A system with functions such as time-specific booking and advance verification of delivery information has been introduced to reduce the waiting and processing time experienced by truck drivers at the gates of container terminals. This initiative is under Ministry of Land, Infrastructure, Transport and Tourism of Japan.
7	Japan	Promotion of technology	In progress (1 year of	Technology development to advance operations and cargo handling has been introduced to improve productivity and the working environment at container

		development at container terminals	implementation as of April 2024)	terminals. This initiative is under Ministry of Land, Infrastructure, Transport and Tourism of Japan.
8	Japan	Introduction of remote-controlled rubber-tired gantry (RTG) cranes	In progress (5 years of implementation as of April 2024)	Remote-controlled RTG cranes have been introduced to improve container handling capacity and the working environment at container terminals. This initiative is under Ministry of Land, Infrastructure, Transport and Tourism of Japan.
9	Peru	Best practices to promote transparency in the logistics supply chain: Information platforms of logistics services for foreign trade	In progress as of April 2024 (working on the concept notes to contract an expert on logistics and trade)	The objective of this project is to identify and share best practices on how logistic operators transmit information to users about their trade logistics services, and includes addressing issues such as avoiding double charges and/or hiring informal enterprises, calculating tariffs, choosing efficient operators, etc. It also identifies the logistic services to ensure transparency in the market. This will contribute to enhancing the competitiveness of the Asia-Pacific region's foreign trade, and will help foreign trade actors, especially customs services, since transparency is a key issue in securing the supply chain.
10	The Philippines	Study on the Maritime Transport Sector in the COVID-19 Era: Challenges, Opportunities, and Way Forward	In progress (2023–2024)	The study seeks to elaborate on the impact of the COVID-19 pandemic in the maritime transport sector and provide policy recommendations to foster a resilient and sustainable maritime transport sector

Table A.3. Policy practices for Chokepoint 3

Chokepoint 3: Insufficient cooperation on data flows and cross-border payments to support increasingly digitalised supply chains				
No.	Economy	Title of initiative	Progress	Brief description
1	Hong Kong, China	Facilitation of cross-boundary data flow within the Guangdong–Hong Kong–Macao Greater Bay Area (GBA)	In progress since 2023	In 2023, Hong Kong, China and China entered into a memorandum of understanding (MOU) and launched a pilot arrangement on a voluntary and consent-based facilitation measure under the Standard Contract for the Cross-boundary Data Flow of Personal Information within the GBA to streamline procedures and reduce compliance costs. The pilot arrangement was launched in December 2023. A review will be conducted in the second quarter of 2024 with a view to refining the arrangements.
2	Hong Kong, China	Making available more open data	In progress since 2018	The government of Hong Kong, China has been implementing measures to promote data availability and openness, and encourage release of data by both the public and private sector. An online portal (data.gov.hk) has been established to make open data available in machine-readable format for re-use for commercial or non-commercial purposes free-of-charge, with a view to facilitating the development of new solutions and innovations, as well as academic research and analysis.
3	Korea	Expansion of digital trade network	Ongoing: • (Bilateral) Korea–Singapore Digital Partnership Agreement (entered into force January 2023); (Plurilateral) Digital Economy Partnership Agreement (acceded May 2024) • (Multilateral) World Trade	Establishment of digital trade norms, and expansion of digital trade network through bilateral, plurilateral and multilateral negotiations to facilitate e-commerce, enhance data flow and provide a safe and predictable digital trade/business environment.

			Organization (WTO) Joint Statement Initiative on E-Commerce	
4	Korea	2024 APEC SME Digital Finance and FinTech Innovation Forum	In preparation to hold the event in November 2024	To improve understanding on digital finance among small and medium enterprises (SMEs), enable them to enter new digital finance markets, and network with SMEs from other APEC economies.
5	Singapore	TradeTrust	In progress since 2019	TradeTrust is a framework that comprises globally accepted standards that connect governments and businesses to a public blockchain to enable trusted interoperability of electronic trade documents across digital platforms. TradeTrust methods have been analysed in two United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) White Papers; it was found that they could contribute to the promotion of smooth cross-border data flows. TradeTrust is freely available open-source software for supply chain parties to use, so FinTech companies can use TradeTrust to manage digital transferable instruments such as bills of lading, bills of exchange, warehouse receipts, etc., as the TradeTrust software enables out-of-the-box compliance with the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Electronic Transferable Records (MLETR). TradeTrust utilises World Wide Web Consortium (W3C) Verifiable Credential standards as well as ERC721 standards. These standards are used to assure a document's authenticity and provenance as well as achieve compliance with MLETR requirements.
6	Singapore	SGTraDex	In progress since 2022	Digital infrastructure that facilitates trusted and secure sharing of data between supply chain ecosystem partners. SGTraDex incorporates the TradeTrust framework and supports end-to-end digitalisation of verifiable and transferable electronic trade documents across borders.

7	Chinese Taipei	Participating in the APEC Cross-Border Privacy Rules (CBPR) system	In progress since 2018	Participating in the CBPR system offers key benefits, such as information privacy protection, streamlined cross-border data flows, and a flexible and trustworthy instrument to protect customers, especially for micro, small and medium enterprises (MSMEs). Chinese Taipei recognises the benefits and has participated in the system since 2018, and it recommended that the Institute for Information Industry be recognised as an Accountability Agent in 2021. To support trusted data flows in the digital economy, Chinese Taipei will keep working with partner economies sharing a similar vision and promote the expansion of CBPR.

Table A.4. Policy practices for Chokepoint 4

Chokepoint 4: Lack of understanding on green supply chain management practices and increasing pressure for supply chains to be sustainable				
No.	Economy	Title of initiative	Progress	Brief description
1	Hong Kong, China	Supporting the use of online dispute resolution (ODR) to enhance eco-friendly and cost-effective dispute resolution for MSMEs in cross-border trade	In progress since 2020	By opting into the APEC ODR Collaborative Framework in April 2020 and continuing to support its implementation, Hong Kong, China encourages and supports the use of ODR as an eco-friendly and cost-effective form of dispute resolution to facilitate greater access to justice for MSMEs engaged in cross-border trade. eBRAM International Online Dispute Resolution Centre based in Hong Kong, China has been listed as an ODR provider under the Framework. Facilitating the efficient and effective resolution of cross-border disputes through ODR saves time and costs for businesses and encourages their greater participation in cross-border trade.
2	Hong Kong, China	Government Green Procurement	In progress since 2000	The government of Hong Kong, China has been leading by example by adopting green procurement. Having regard for the practices and standards generally adopted in the market, Hong Kong, China has developed a green procurement list with green specifications for products and services commonly used by the government, so that bureaux and departments (B/Ds) may practise green procurement in accordance with the relevant specifications. To promote the implementation of green procurement to all sectors of the community, the government has disseminated the green procurement list and other practical information through the government's website for reference by the public and encouraged the private sector to formulate trade-specific green procurement guidelines based on the trades' actual situations and needs. The current green procurement list covers 183 items of products and services in 24 categories. In 2022, government B/Ds altogether procured green products and services with a total value of HKD 6.63 billion, which is an increase of over 1.3 times as

				compared to HKD 2.80 billion in 2021. The government will review the green procurement list from time to time to keep abreast of the latest market developments and the procurement needs of B/Ds.
3	Indonesia	World Customs Organization (WCO) Green Customs Initiative	In progress since 2020	The Directorate General of Customs and Excise (DGCE) of Indonesia has played an active role in supervising WCO initiatives related to cross-border waste trade and capacity building: • WCO Asia-Pacific Plastic Waste (APPW) project, which aimed to strengthen the capacity of Customs administrations to mitigate and respond appropriately to environmental threats in the Asia-Pacific region. • Operation DEMETER, which aimed to intercept illegal shipments of hazardous waste, especially plastic waste, as well as ozone-depleting substances (ODS) and hydrofluorocarbons (HFCs) that contribute to global warming.
4	Indonesia	Bonded Recycling Zone/BRZ (*Kawasan Daur Ulang Berikat/ KDUB*)	Ongoing based on Government of Indonesia Regulation No. 32/2009 (updated with No. 85/2015) regarding Bonded Storage Areas	The BRZ is a customs facility to store imported goods for a certain period of time. During this period, recycling operations are carried out to convert waste materials into products with higher economic value and added value. Customs facilities provided include: • Deferred payment of customs duties and/or exemption from import tax • Exemption of value-added tax (VAT) for domestic goods and sales tax on luxury goods.
5	Japan	Strategy of Resource Autonomous Circular Economy for Growth	In progress as of April 2024	The Ministry of Economy, Trade and Industry (METI) formulated the Strategy for a Growth-Oriented, Resource Autonomous Circular Economy in March 2023. As a follow-up action toward the achievement of the strategy, METI launched Circular Partners, which has attracted 400 stakeholders from the private sector, government and academia as of March 2024.
6	Japan	Decarbonisation of the entire	In progress since FY 2023	In order to promote decarbonisation throughout the value chain, including SMEs, Japan has been implementing a model project to support engagement efforts with business

		corporate value chain		partners since FY 2023, and it has developed a guidebook on how to reach out to business partners. This initiative is under Ministry of Environment, Japan.
7	Japan	Locally based decarbonisation management support	In progress since FY 2023	Since FY 2023, Japan has been implementing a model project to spread decarbonised management among SMEs in the region in a push-type approach, in collaboration with regional financial institutions, chambers of commerce and industry, and other economic organisations that have regular contact with SMEs, as well as local governments. This initiative is under the Ministry of Environment, Japan.
8	Peru	Workshop on Technological Solutions for Green Customs in the Asia-Pacific Region	In progress (the workshop will take place in August 2024, in Lima, Peru)	This project aims to improve the capacity of customs administrations in the Asia-Pacific region in the identification and control of illegal trade of goods related to the Basel Convention, Montreal Protocol, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as well as wood, wildlife and hydrobiological products, with a focus on first-line controls assisted by customs laboratories, and through collaboration and technical assistance with academia, international organisations, non-governmental organisations (NGOs) and other providers as well as cross-fora cooperation in APEC.
9	Chinese Taipei	Industry Mutual Assistance System Public–Private Partnerships (Domestic)	In progress (growing awareness of this initiative since enhanced promotion in 2022)	The Ministry of Economic Affairs (MOEA) has released the 2030 Net-Zero Transformation Roadmap for the Manufacturing Sector to advance the transition of manufacturing toward net-zero emissions. This initiative is propelled by three primary principles: equipment improvement, energy conversion and the circular economy. With the encouragement of the MOEA, the Industrial Development Bureau (IDB) and private enterprises in key industries such as steel, cement, petrochemicals, electronics, pulp and paper (including printing), and textiles have collaborated to promote carbon reduction efforts. The IDB mandates state-owned enterprises and industry leaders to lead by example and encourages industrial associations and corporate members to adopt a ‘big enterprises first, small enterprises later’ approach. This model aims to guide smaller enterprises into green supply chain practices and fosters a ripple effect throughout the industry.

				Furthermore, in partnership with numerous industrial associations, the IDA has established the Industry Carbon Neutrality Alliance to collectively pursue the goal of achieving net-zero emissions by 2050.

Table A.5. Policy practices for Chokepoint 5

Chokepoint 5: Lack of targeted support to facilitate MSMEs' access and integration into global supply chains				
No.	Economy	Title of initiative	Progress	Brief description
1	Hong Kong, China	Hong Kong Authorized Economic Operator (HKAEO) Programme	In progress since 2012	Implemented in April 2012, the HKAEO Programme is an open and voluntary certification regime. Under the programme, local companies of different sizes which have met pre-determined security standards will be accredited as AEOs and enjoy appropriate customs facilitation. This partnership programme is open to all stakeholders – manufacturers, importers, exporters, freight forwarders, warehouse operators, carriers, etc. – involved in the international supply chain. To cater to the unique local business environment, where SMEs constitute over 98% of business establishments, Hong Kong Customs has tailored a two-tier accreditation system for SMEs to join the HKAEO Programme. The system makes it easier for SMEs to obtain Tier 1 AEO status as a start after meeting some general criteria and then upgrade to Tier 2 status after meeting additional security management criteria. Both Tier 1 and Tier 2 AEOs can enjoy HKAEO benefits. To further enhance the competitiveness of AEOs in Hong Kong, China with diversified benefits granted by overseas economies, Hong Kong Customs will explore opportunities for developing mutual recognition arrangements (MRAs) with other customs administrations. All these are manifestations of Hong Kong, China's devotion to securing the global supply chain and strengthening its competitive edge as a major international trading centre and regional logistics hub. With Hong Kong Customs signing the latest AEO MRA with Bahrain on 22 April 2024, a total of 15 MRAs have been signed with other customs administrations thus far.
2	Hong Kong, China	Supporting the use of online dispute resolution (ODR) to enhance eco-friendly and	In progress since 2020	By opting into the APEC ODR Collaborative Framework in April 2020 and continuing to support its implementation, Hong Kong, China encourages and supports the use of ODR as an eco-friendly and cost-effective form of dispute resolution to facilitate greater access to justice for MSMEs engaged in cross-border trade. eBRAM International Online Dispute Resolution Centre based in Hong Kong, China has been listed as an ODR provider under the Framework. Facilitating the efficient and

		cost-effective dispute resolution for MSMEs in cross-border trade		effective resolution of cross-border disputes through ODR saves time and costs for businesses and encourages their greater participation in cross-border trade.
3	Indonesia	Subsidies to MSMEs in remote areas for trade activity using sea transport	Ongoing, in cooperation with state-owned enterprises (SOEs) such as Pelindo and Pelni as part of their corporate social responsibility (CSR)	Indonesia, through its Ministry of Transportation, provides subsidies to MSMEs in remote areas for trade activity using sea transportation. MSME traders can take advantage of this subsidy to expand their sales to bigger ports for export commodities. This project is also managed by the Ministry of Trade to encourage MSME traders to sell their products through global supply chains.
4	Indonesia	Export consultation services (*Klinik Ekspor*)	In progress since 2018	Indonesia, through its Directorate General of Customs and Excise (DGCE) provides free consultation, guidance and assistance services to MSMEs that intend to export. DGCE assists in obtaining essential permits to set up a business entity, obtaining export permits, explaining export procedures and even assisting SMEs in gaining market access.
5	Indonesia	Import Duty Exemption Facility for MSMEs (*Kemudahan Impor Tujuan Ekspor Industri Kecil dan*	In progress since 2016	The facilities provided include exemption from import duties, value-added tax and luxury goods tax on raw materials, machinery and sample goods imports. Benefits of the KITE IKM facility include: • More accessible import and export procedures with exemption from prohibitions and restrictions • Lower production costs • Decrease in business capital and healthy cash flow • Increased competitiveness in the global marketplace

		Menengah, or KITE IKM)		
6	Indonesia	Bonded Logistics Center (*Pusat Logistik Berikat*)	In progress since 2018	The facility offers deferred payment of import duties and taxes. The Bonded Logistics Center is required to set aside 15% of its capacity for MSME goods, which could benefit MSMEs by providing easy access to raw materials and more efficient export procedures.
7	Indonesia	Authorised Economic Operators (AEO) for SMEs	In progress (currently analysing the best practices on AEO for SMEs from other economies)	The government has issued Minister of Finance Regulation No. 137/2023 regarding AEOs. One of the provisions stipulates that the fulfilment of the AEO status requirements may vary depending on the role and responsibilities of the economic operator in the international trade supply chain. This provision allows for flexibility in meeting the AEO conditions and requirements for different types of economic operators, including SMEs.
8	Japan	CEO Business Meetings	In progress as of April 2024	Business matching between Japanese SMEs and foreign firms that are screened and recommended by the Organization for Small and Medium Enterprises and Regional Innovation, Japan (SMRJ) and its foreign counterpart organisations. This initiative is implemented by SMRJ.
9	Japan	J-GoodTech	In progress as of April 2024	Online business matching website that connects leading Japanese SMEs with overseas companies. This initiative is implemented by SMRJ.
10	Korea	Supporting Global Logistics Supply Chain Diversification	In progress as of April 2024 (pilot project on providing Global Logistics Network Map)	This initiative aims to establish a global logistics (online) portal for MSMEs in the shipping industry to expeditiously secure alternative logistics networks.
11	Mexico	*Mujer Exporta* MX, 5th edition	In progress (1st edition 2020; 5th edition scheduled to be carried out in July 2024)	Focused on training and providing information and business links to MSMEs owned/led by women or women entrepreneurs to boost their exports and their inclusion in global markets.

12	Mexico	Partnering in business	In progress (the first call attracted 373 applications, with 74 women selected to be part of the programme. A second call is scheduled to be launched in July 2024)	A bilateral cooperation programme established between the Ministry of Economy of Mexico and the Federal Ministry of Economy and Energy (BMWI) of Germany. Over the course of 10 years, Mexican MSME leaders with foreign trade potential are prepared to explore new markets by making direct business contacts. In the beginning of 2024, the programme launched the Women in Business edition to align with the objectives of the MSME Promotion Policy, which highlights the role of women in the economy and the contribution to employment of MSMEs led by women. This edition is the first call exclusively for women and recognises the unique challenges that women entrepreneurs and executives face.
13	Mexico	Alliance for the Digital Transformation of Micro, Small and Medium Enterprises (MSMEs) in Mexico	In progress (to be launched in June 2024)	Promoting the digital transformation of MSMEs in Mexico for inclusive and fair development, through the adoption of digital tools, the use of current and innovative technologies, and the strengthening of skills and capabilities to improve their productivity, competitiveness and growth, increasing their visibility and promoting greater integration into value chains, leaving no one behind.
14	Peru	Exporting entrepreneurship: export promotion programme aimed at MSMEs, rural communities, women and young people	In progress (a workshop in June 2024 in Lima, Peru. A report on best practices and recommendations will be presented in August 2024)	The objective of this project is to compile the experiences and best practices of export promotion programmes through e-commerce and virtual customs mechanisms, with a focus on MSMEs, rural communities, women and youth.

15	Peru	Foreign Trade Logistics Observatory	In progress as of April 2024 (development of the Foreign Trade Logistics Observatory electronic platform; publication of regulation for implementation)	Strategic mechanism that allows the integration of data from public and private sources to generate, analyse, monitor and disseminate valuable information related to the logistics performance of the economy's foreign trade. Such information would facilitate and improve public and business policy decision-making.
16	Singapore	SMEs Go Digital	In progress (2017–present)	This programme aims to help SMEs adopt advanced digital solutions to go digital and use digital technologies and build stronger capabilities to seize growth opportunities in the digital economy. • Sector-specific Industry Digital Plans (IDPs) provide SMEs with step-by-step guides on the digital solutions to adopt and training for employees at different stages of their growth. To date, 22 IDPs have been launched, three of which have been refreshed (Food Services in 2022, Retail and Security in 2023) with additional features on how SMEs can protect their data, avoid cyberattacks and make use of advanced technologies such as artificial intelligence (AI)-enabled solutions. • Chief Technology Officer-as-a-Service (CTO-as-a-Service) was introduced in 2022 as a one-stop platform for SMEs to assess their digital health, find the right IDP, access a curated suite of close to 400 market-proven and cost-effective solutions and engage digital consultants when they need help. SMEs can seek support for adoption of ready-to-go solutions under the Productivity Solutions Grant (PSG) or pilot advanced and integrated solutions under Advanced Digital Solutions (ADS).

17	Singapore	Authorised Economic Operator (AEO) Programmes	In progress as of April 2024	Current AEO programmes include Customs and Trade Partnership against Terrorism (C-TPAT) with the US; an AEO programme with the European Union (EU); and the Secure Exports Scheme.
18	Chinese Taipei	APEC Digital Innovation to Facilitate SMEs' Green Transformation	Completed in 2023	Responding to the global trend of digital green transformation, Chinese Taipei launched a three-year initiative focusing on SMEs' green transformation through digital solutions. This initiative sought to assist SMEs to achieve sustainable and inclusive growth. A programme was proposed every year starting 2022, each of which applied the three stages of awareness enhancement, capacity building and outcome dissemination. In 2023, to raise awareness among SMEs, this initiative organised the APEC Digital Innovation Accelerating SMEs' Green Transformation Forum and published a feature report. The forum, and the accompanying report, sought to enable SMEs to better understand the international requirements for net-zero emissions.
19	Chinese Taipei	APEC Digital Innovation to Implement SMEs' Low-Carbon Transformation Initiative: Developing Digital Solutions of Low-Carbon Business Models	In progress as of April 2024	Following the initiative that was completed in 2023 (see previous row), the goal of this 2024 initiative is to assist SMEs to build green capabilities. There is a plan to hold the APEC SME Digital Innovation Low-Carbon Transformation Workshop in June 2024, and draft a report. Through this initiative, Chinese Taipei assists SMEs to enhance their green competitiveness.
20	Chinese Taipei	Assisting Small and Medium-sized Business Service Industries to	In progress as of April 2024	Assist service SMEs to enhance their operational efficiency, build innovate business models, and seize opportunities in the international market. This would help increase their brands' international visibility and influence, and facilitate expansion into overseas markets.

		Expand to Overseas Markets		• Guide chain and franchise operators to strengthen their logistics management, operational processes and business models to effectively utilise market information. Find business opportunities through avenues such as international chain and franchise exhibitions, matchmaking with overseas buyers. • Guide catering industry operators to develop new products or expand into new markets, increase exports and brand licensing, and develop overseas store expansion models. Chinese Taipei has organised international matchmaking and marketing activities, helping operators to launch products in Australia; Hong Kong, China; Japan; Singapore; the US; and the UK. • Assist businesses to optimise warehouse operations by using AI algorithms to analyse orders, thus optimising the storage locations, and refining the picking sequences of automated warehouses to improve operational efficiency. Collaborating with associations and cold chain logistics providers to export cold chain services to international markets. • Integrate temperature-controlled solutions and facilitate cooperation with the Philippines and Viet Nam on cold chain logistics projects.
21	Chinese Taipei	Help MSMEs Benefit from International Trade	In progress as of April 2024	As SMEs comprise 98% of enterprises in Chinese Taipei, the economy supports SME exports through various initiatives, such as: • Assisting exporters with integrated marketing schemes, building alliances across industries (e.g., green building materials and energy conservation) and ecosystems (e.g., software and hardware systems for disaster prevention) and establishing Chinese Taipei image pavilions. These initiatives help companies pursue business opportunities for supply chain restructuring. • Utilising digital technology to hold virtual and in-person trade expo activities abroad. These activities include business forums and trade fairs to assist Chinese Taipei companies to seize business opportunities within global supply chains. For example, conferences on resilient supply chain partnerships,

				conferences for distribution and procurement, and matchmaking meetings for various industries were organised.