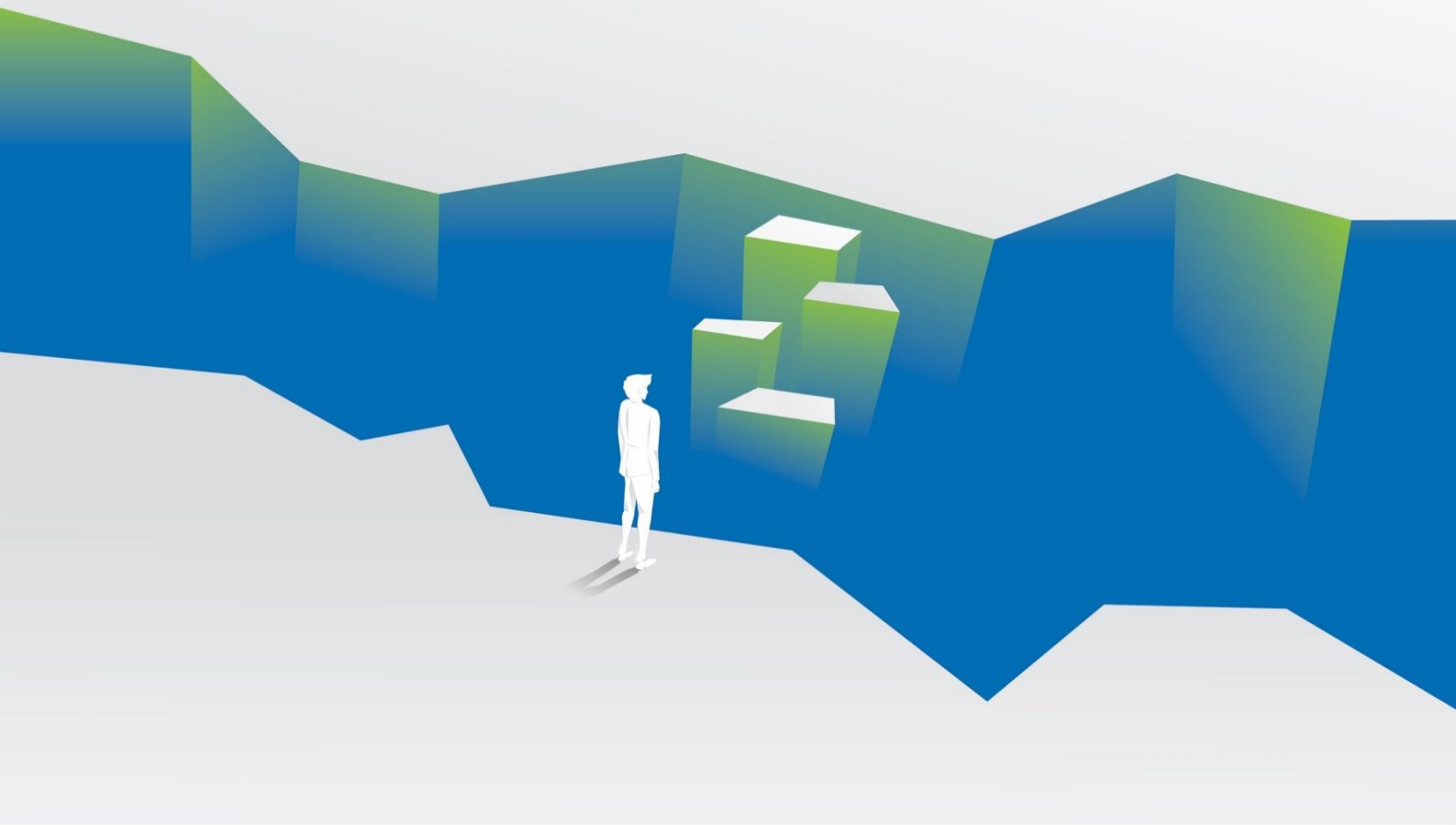
ESCAP FINANCING FOR DEVELOPMENT SERIES NO.5

SUSTAINABLE FINANCE

BRIDGING THE GAP IN ASIA AND THE PACIFIC



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FOREWORD

In 2022, the Asia-Pacific region experienced unprecedented weather catastrophes such as heat waves and droughts, typhoons, and floods that resulted in substantial human and economic losses and eroded hard-won development gains. Evidence is mounting that the severity and frequency of such catastrophes are increasing due to climate change, which is serving as a "threat multiplier" for existing social, political, and economic challenges.

These challenges have been further exacerbated by the ongoing war in Ukraine which caused a "polycrisis" related to food, energy, and finance, with cascading multifaceted effects on the global economy already severely impacted by the COVID-19 pandemic. To effectively respond to these crises – Covid, conflict and climate change – and to rebuild our economies in a manner consistent with the ambitions of the 2030 Agenda for Sustainable Development and Paris Agreement on climate change, substantial financial resources are needed. But it is also clear that, alarmingly, the gap between the resources required and those currently available is substantial and growing. To close this gap, especially to address climate change, the participation and commitment of all relevant stakeholders – governments, regulators, and private finance – is urgently needed.

The Asia-Pacific region is not on track to meet the SDGs by 2030 nor achieve climate ambitions, with current financial requirements far exceeding available resources. Thus, inaction to raise sufficient additional financing, or to channel available resources in support of SDGs and climate action, is not an option anymore. It is time for all stakeholders to commit to accelerated change by committing to net zero emissions and transforming their financing priorities, processes, and programs to meet the growing financing needs of the region.

This report focuses on *sustainable finance*, which, in a broader sense, refers to the financing of sustainable activities as well as finance that is sustainably managed. In this vein, the report examines the trends, challenges, and opportunities that policymakers, regulators, and private finance (banks, issuers, and investors) in Asia and the Pacific face to mobilize and deploy sustainable finance, particularly for climate action. It then presents specific recommendations for governments, regulators, and private finance – summarized in ten principles for action – to chart the way forward. We aim to spur more robust and informed debate amongst our member States, drive consensus on key policy and regulatory measures to move the region towards sustainability and bring greater clarity regarding the benefits and consequences of enhancing sustainable finance in both the short and long term.

I am confident that policymakers, regulators, private sector representatives as well as researchers in the Asia-Pacific region will benefit tremendously from our report. My team and I look forward to engaging with member States, partners, and other key stakeholders to translate the ideas presented in this report into practical measures so that the pressing financing gap can be closed.

Hamza Ali Malik
Director
Macroeconomic Policy and Financing for Development, ESCAP

EXECUTIVE SUMMARY

The Asia-Pacific region is not on track to meet the SDGs by 2030 nor achieve climate ambitions, with current financial requirements far exceeding available resources. The Sharm-el-Sheikh Implementation Plan, agreed at the 27th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in 2022 highlighted that the world will need between $4 trillion and $6 trillion per year to transition to a low-carbon economy. For developing countries the financing gap to meet their Nationally Determined Contributions (NDC) is estimated at close to $6 trillion for the period 2023-2030.

Urgent and systemic change is required to deliver funding at such a scale. It requires recognition and willingness by all countries to transform policies, regulations, and the financial system. In Asia and the Pacific this change has proceeded at too slow a pace. Policymakers still need to implement credible NDC financing plans, with corresponding resource mobilization strategies to achieve sequenced NDC targets that are progressively ambitious (and to adopt more ambitious NDC targets in the future). Regulators must act decisively to manage the risks that climate change and biodiversity threats pose to the financial system, while at the same time decisively shifting capital towards green objectives consistent with their NDCs.

In the private sector, banks and businesses need to adopt net zero commitments and implement credible transition pathways. As they do so, and the supply of net-zero aligned financing increases, the demand side for this capital also needs to increase. For this, projects, particularly in the energy transition and new green technologies, are needed at sufficient scale and quality to meet a range of investor needs. These projects need to be built through new financing partnership approaches. In this vein, multilateral development banks and development financial institutions will play a key role in providing catalytic capital with the right terms related to concessionality and risk-sharing. As they do so, local banks and investors in Asia-Pacific must decide increasingly to finance the net-zero transition, particularly in providing local currency financing, which is essential in today's difficult macroeconomic environment. Sustainable finance (and transition finance) frameworks, roadmaps, disclosure frameworks and taxonomies increase the integrity and clarity of financing sustainable activities, through the use of appropriate standards. Achieving increased regional alignment, convergence and interoperability in these standards will be highly desirable, which can reduce cross-border compliance costs and create an efficient and level playing field.

This report discusses challenges, opportunities, and recommendations for policymakers, regulators, and private finance in the Asia-Pacific region to bridge the gap in sustainable finance. It outlines two tracks of sustainable finance; Track 1 refers to use-of-proceeds or objective/outcome driven finance; and Track 2 refers to sustainably managed finance that manages environment, social, governance, and increasingly climate, risks in its deployment. The aim of this report is to spur a robust and informed debate amongst member States, establish consensus on key measures to move towards increased sustainable finance, and bring greater clarity regarding the benefits and consequences of various policy, regulatory and private finance choices.

What can governments do?

Policymakers have an important role to play in building sustainable finance markets and driving down risk and perceptions of risk. When commitments and priorities in climate action and sustainable finance are communicated clearly to markets, long-term investments can be accurately priced and undertaken with investor confidence. Policymakers are also responsible for budget allocations in terms of incentives or tariffs that affect the returns in fossil fuel dependent sectors, and in thus shifting the financing of the energy mix of sectors. Their actions have vast implications on various sectors of the economy that need to finance the shift to new and cleaner energy sources, reduce the carbon intensity of their output, track their emissions, and plan their transition to net-zero emissions.

Governments also have a role in shifting capital towards green objectives. There has been a promising increase by governments in the region in issuing sovereign green, social, sustainable and other bonds, labelled GSS+, that raise capital for specifically GSS+ uses. The global market for GSS+ bonds has grown to more than $3.8 trillion outstanding by the end of 2022[1], and annual

issuances in Asia and the Pacific increased from $5 billion in 2015 to $206 billion in 2022. Although corporate issuances dominate this market, sovereigns and jurisdictions are increasingly tapping into it, with Hong Kong, China; Indonesia; Malaysia; New Zealand; Philippines; Singapore; and Thailand issuing between $1 billion and $2.5 billion each in 2022.

Governments in the region also have a role in accessing multilateral climate funds (MCFs), such as the Adaptation Fund, the Global Environment Fund, or the Green Climate Fund. While the money available from MCFs will not be sufficient to close the financing gap, MCFs remain a critical source and channel for developed countries to meet their Paris Agreement obligations to developing countries. In 2021, for instance, according to the OECD[2], funds from MCFs provided more than $1.2 billion to Asia-Pacific countries. This source of sustainable finance is attractive because a large portion is available as grants — about 50 per cent in 2021, compared to 29 per cent of financing from bilateral donors and 3 per cent of financing from multilateral development banks.

Moving forward, the most immediate step for policymakers to take is to ensure that Nationally Determined Contributions are supported by concrete, targeted, and sequenced national financing strategies. Climate mitigation and adaptation activities need to be mapped out with expected sources of domestic public finance, international financial assistance, and private finance. Governments must accelerate the difficult work of translating national net zero commitments into net-zero commitments by financial institutions and businesses. In doing so, policymakers should ensure clarity, reliability, predictability and stability, thereby setting trusted signals to markets and investors who must make the long-term investments that underpin the net zero transition. Sustainable finance frameworks (such as roadmaps and taxonomies) can then further embed and clarify financing parameters to support the NDC financing strategies.

Finally, new climate finance partnerships are needed at scale to tackle the challenge. Policymakers can also drive sustainable finance at scale through engaging in multi-dimensional partnerships with donor countries and private financial institutions such as the recent Just Energy Transition Partnerships (JETPs) launched by Indonesia and Viet Nam in 2022. These JETPs coordinate national commitments to peaking emissions, phasing out coal, improving regulations and designing effective pipelines of bankable projects — all initiatives which provide a strong basis to mobilize even more private and public finance. While not every country in the region can and should replicate the JETP model, the engagement between policymakers and financial providers (whether public or private) from the planning and inception stages of energy transitions are mutually beneficial and serve to focus efforts, concentrate minds, and bridge the financing gap.

What can regulators do?

Regulators can increasingly ensure coherence and coordination across other regulators as well as policymakers. Regulators have an important role in preserving stability of the financial system, managing risks, and increasingly, shifting capital towards climate-related investments. To effectively tackle the scale of the sustainable finance challenge, financial regulators need to work increasingly closely with other regulators, such as environmental protection agencies, departments of industries that regulate the fiduciary duties of directors and trustees of fund and investment managers, competition and consumer regulators guarding against potential greenwashing of products and services, energy regulators and regulators related to the introduction of new green technologies. Such an integration of climate-related and increasingly nature-related risks into regulation also calls for substantial investment into building the right skills and capacities across the financial system.

Effective regulation requires clear, consistent, and comparable data. A major challenge to implementing regulatory approaches that would account for climate-related and nature-related financial risks is the lack of available quality data. Data challenges reported by supervisory authorities include the lack of granular, consistent, and comparable data reporting standards for counterparties and for financial institutions. The data required includes: the identification of sectors or economic activities that are vulnerable to physical, transition and liability risks; financial institutions' exposures to such sectors or economic activities; the geographical location of financial institutions' exposures most prone to physical risk; and reports on

carbon-related metrics, including Scope 1, 2, and 3 greenhouse gas emissions, by financial institutions and their counterparties. The International Sustainability Standards Board's (ISSB) inaugural standards for sustainability-related disclosures, issued in June 2023, is expected to establish a common global baseline for corporate sustainability disclosures. However, regulators in countries where institutions are not yet required to adopt ISSB standards will still face data challenges around the standards, costs, and verification aspects of the required data.

In addition to playing a supervisory role to manage finance sustainably (what this report refers to as Track 2 of the two types of sustainable finance), regulators can also decisively shift capital into low-carbon investments (Track 1 of the two types of sustainable finance). Their work in sustainable finance roadmaps, sustainable finance taxonomies, and GSS+ bond and loan frameworks create clarity, boost integrity, and signal to investors the credibility of intentions to undertake a sustainable finance trajectory. Emerging transition finance taxonomies have the potential to also credibly direct the market towards supporting the transition from brown to green activities and incentivize the reduction of emissions. Regulators can thus steadily encourage financial institutions and corporations to credibly transition through the implementation of voluntary and mandatory sustainable finance requirements.

The adoption of sustainable finance roadmaps is a promising first step, but their mostly voluntary nature may not accelerate urgent and widespread change. Net zero commitments, or any obligation to the net zero transition, are currently not mandatory across most of Asia and the Pacific. Coal financing and fossil fuel financing is still on the rise, powered by the increase in energy demand across Asia and the Pacific. Policymakers and regulators in the region must therefore take urgent and decisive action as the report outlines.

What can private finance do?

The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) 2023 highlights that there is sufficient global capital and liquidity to close the global investment gap. In Asia and the Pacific, trillions of dollars of capital are held predominantly in the bank lending market, and trillions are also held in capital markets. This private finance will now have to step up to the challenge. Regulators have an important role, as discussed, in incentivising this private finance to shift towards green objectives, and in creating an efficient and level playing field. The universe of private finance in Asia and the Pacific includes banks who lend to businesses in the real economy; capital market issuers of equity and debt securities; asset owners (pension funds, sovereign wealth funds, foundations, endowments, trusts, family offices); and asset managers (mutual fund managers, investment advisors, stockbrokers). Development financial institutions such as multilateral development banks (MDBs), bilateral development financial institutions, and national development banks play an increasingly critical and catalytic role in shifting risk, promoting standards, mobilising private finance and building capacity.

Historically, private finance has operated under traditional norms of fiduciary duty, which is now changing. The architecture governing both the duties of directors of companies as well as companies' climate-related and sustainability disclosures, which are mostly voluntary in Asia and the Pacific now, is being transformed. Financial institutions and companies will increasingly be required to comply with a strengthening mesh of sustainability requirements if they wish to continue operating in regulated markets. As they do so, and they increasingly commit to net-zero aligned operations, these Asia-Pacific private finance actors will have to increase the scale of their investing operations in net-zero aligned activities. This will infuse much needed local currency into the net zero transition in the region, if suitable projects and activities are present at scale.

On the supply side, much more needs to be done differently in terms of building green projects that are ready to meet the needs of a range of investors. Common transaction templates in new sectors and countries can be developed and shared by investors, creating a common transaction lexicon in uncharted territories. Investors also need to participate in pre-investment project-building, at earlier stages, despite the resource costs such efforts may entail, in order to bring first-mover projects in challenging sectors and locations to fruition, and then to replicate such projects. Private

financial institutions in Asia and the Pacific need to engage in learning how to invest in what may seem to be riskier projects, and how to build and assess capital structures that involve blended finance and a multiplicity of standards. For such green project pipelines to genuinely meet the needs and standards of multiple investors at scale, new partnership approaches are needed that move away from a deal-by-deal basis to a platform basis. This is a different way of doing business, and part of the transformation that is needed across the system.

Ten principles of action to bridge Asia-Pacific's sustainable finance gap

This report puts forward a ten-point action plan to accelerate sustainable finance in Asia and the Pacific. These ten actions summarize in-depth recommendations found in each chapter for governments, regulators and private finance. These ten actions below are grouped into actions to be taken by governments, regulators, and private finance.

Governments and regulators

1. New climate finance partnerships are developed through which governments, regulators, MDBs, and private finance commit to action around specific goals and contribute specific tasks in line with this shared goal. Just Energy Transition Partnerships, which are led and owned by countries, provide a useful model for the region, especially if execution can be accelerated.

2. Effective NDC financing strategies are developed, led by authorities with clear mandates, which signal credible transition pathways with interim targets and clear resource mobilization plans. This will provide a clear and vital signal to investors, businesses, and project developers that governments are committed to change. This signal of reliability, stability, and predictability is a core part of costs around projects.

3. Policy coherence and capacities are developed across key government ministries such as finance, energy, transport, and environment, ultimately reducing the costs of financing. Governments need to invest in both the effort for such coordination and the capacities for such coordination. This will also allow governments to better work with MDBs, DFIs, and development partners to obtain the assistance they need in the timeframe they need it in.

4. Decisive regulatory action takes place to shift capital in Asia and the Pacific towards the net zero transition. Asia and the Pacific is home to significantly large pools of capital capable of bridging the gap in sustainable finance. Regulators need to adopt a more active role in shifting capital towards climate action, recognizing that doing so will strengthen financial stability in the system, as well as create a level playing field for all. In doing so, regulators will also need to move towards consistent taxonomies and roadmaps across countries, to create a level playing field.

5. Investment in the capacities of financial personnel to assess climate risk, innovate green financial instruments, and supervise the transition path of the green economy is undertaken. International groupings such as the Network for Central Banks and Supervisors for Greening the Financial System (NGFS) or the Sustainable Banking and Finance Network (SBFN) can be effective to promote peer-learning among members.

6. Investment in much-needed sectoral and project-based financial data is undertaken. Common data platforms that share valuable data on ESG, climate, nature, contracts, clauses standards, targets, and deals (where possible) will streamline investment, assist benchmarking, strengthen credibility and ensure higher replicability.

Private finance - Asia-Pacific banks, investors and issuers.

7. Commitments to net zero pledges for 2050 with credible transition pathways including 2030 goals are made. The slowness of banks in Asia and the Pacific to commit to net zero and transition their lending and investing portfolios with interim 2030 science-based targets is a serious brake on driving finance towards climate action in the region.

8. Local-currency financing of energy transition projects as well as green technologies and other net-zero investments is increased. Local-currency financing is critical to accelerate the scale and pace of private finance because it can fund projects that do not have to reach a higher rate of return just to cover exchange rate risk as well as provide other benefits. Increased net-zero commitments by private finance in Asia and the Pacific (number 7 above) combined with a focus on investing in the energy transition in their local currency will leverage and bring forward the needed investment at scale.

9. Concessional financing and risk-sharing by multilateral development banks, bilateral development financial institutions, and public development banks is expanded and accelerated. This will de-risk otherwise sound projects and ultimately leverage significant private capital. A 1:5 ratio, like ADB's goal, can be one benchmark to ensure that concessional funds truly leverage private finance and go towards well-structured projects. This will also guarantee well-designed projects in which concessional finance truly catalyzes and mobilizes greater private finance. In doing so, however, it is critical to ensure the project is both high impact to support the net-zero-transition and commercially attractive.

10. Investment of time and effort with partners in project preparation is increased in more challenging markets, whether it is in the LDCs, SIDS, or in new green technologies. Setting up a modality in which project developers and financial institutions regularly meet and co-create green projects in a progressive and iterative manner can accelerate the preparation of effective pipelines of bankable green projects at scale. While large projects have lower transaction costs, investing in project preparation for smaller-ticket projects will ensure a long-term pipeline of large projects. Ultimately good project preparation brings down the risk of projects when implemented.

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Since its inception in 2015, the ESCAP biennial series on financing for development has published research on a range of critical issues on financing for development from the regional perspective of Asia and the Pacific. This research contributes to regional and national dialogues on strategies for the implementation of selected aspects of financing for development as advanced by the Addis Ababa Action Agenda.

The 5th edition of the series was prepared by a core team at ESCAP led by Suba Sivakumaran (Chief, Financing for Development Section) and comprising of Chiara Amato, Pierre Horna, Alberto Isgut and Latipat Mikled from the Financing for Development Section of the Macroeconomic Policy and Financing for Development Division as well as external consultant Michael Coates.

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EXPLANATORY NOTES

- The United Nations Economic and Social Commission of Asia and the Pacific (ESCAP) is one of the five regional commissions of the United Nations Secretariat and promotes cooperation among its 53 member States and nine associate members in pursuit of solutions to sustainable development challenges. The Economic and Social Commission for Asia and the Pacific (ESCAP) is the most inclusive intergovernmental platform in the Asia-Pacific region.

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Groupings of countries and territories/areas referred to are listed alphabetically as follows:

- ESCAP region: Afghanistan; American Samoa; Armenia; Australia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; China; Cook Islands; Democratic People's Republic of Korea; Fiji; France; French Polynesia; Georgia; Guam; Hong Kong, China; India; Indonesia; Iran (Islamic Republic of); Japan; Kazakhstan; Kiribati; Kyrgyzstan; Lao People's Democratic Republic; Macao, China; Malaysia; Maldives; Marshall Islands; Micronesia (Federated States of); Mongolia; Myanmar; Nauru; Nepal; Netherlands (Kingdom of the); New Caledonia; New Zealand; Niue; Northern Mariana Islands; Pakistan; Palau; Papua New Guinea; the Philippines; the Republic of Korea; the Russian Federation; Samoa; Singapore; Solomon Islands; Sri Lanka; Tajikistan; Thailand; Timor-Leste; Tonga; Türkiye; Turkmenistan; Tuvalu; United Kingdom of Great Britain and Northern Ireland; United States of America; Uzbekistan; Vanuatu; and Viet Nam.

- Least developed countries: Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, Lao People's Democratic Republic, Myanmar, Nepal, Solomon Islands, Timor-Leste, Tuvalu. Samoa and Vanuatu were part of the least developed countries prior to their graduation in 2014 and 2020, respectively.

- Landlocked developing countries: Afghanistan, Armenia, Azerbaijan, Bhutan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Mongolia, Nepal, Tajikistan, Turkmenistan, and Uzbekistan.

- Small island developing States: American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Maldives, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor Leste, Tonga, Tuvalu, and Vanuatu.

- East and North-East Asia: China; Democratic People's Republic of Korea; Hong Kong, China; Japan; Macao, China; Mongolia; and the Republic of Korea.

- North and Central Asia: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan, and Uzbekistan.

- The Pacific: American Samoa, Australia, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

- South and South-West Asia: Afghanistan, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Maldives, Nepal, Pakistan, Sri Lanka, and Türkiye.
- South-East Asia: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste, and Viet Nam.

Owing to the limited availability of data, selected small island developing States are excluded from the analysis.

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The term "billion" signifies a thousand million. The term "trillion" signifies a million million.

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
AIFC	Astana International Financial Centre
AIIB	Asian Infrastructure Investment Bank
APAC	Asia-Pacific
ASEAN	Association of Southeast Asian Nations
AUM	Assets Under Management
BCBS	Basel Committee on Banking Supervision
BII	British International Investment
BIS	Bank of International Settlements
BoE	Bank of England
BOJ	Bank of Japan
BOT	Bank of Thailand
BSP	Bangko Sentral ng Pilipinas
BSTDB	Black Sea Trade and Development Bank
CAF	Capital Adequacy Frameworks
CBD	Convention of Biological Diversity
CBI	Climate Bonds Initiative
CBIT	Capacity-building Initiative for Transparency
CCLI	Commonwealth Climate and Law Initiative
CEB	Council of Europe Development Bank
CEO	Chief Executive Officer
CEPR	Center for Economic Policy Research
CGI	Climate Governance Initiative
CGIF	Credit Guarantee and Investment Facility
CGT	Common Ground Taxonomy of European Union and China
COP	Conference of the Parties
DFC	The United States International Development Finance Corporation
DFIs	Development Financial Institutions
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ESG	Environmental, Social, and Governance
ESMA	European Securities and Markets Authority
ESRM	Environmental and Social Risk Management
ETS	Emissions Trading Systems
EUR	Euro
FDI	Foreign Direct Investment
FIs	Financial Institutions
FMO	Dutch Entrepreneurial Development Bank
FSB	Financial Stability Board
G20	Group of Twenty
GBF	Global Biodiversity Framework
GBP	Green Bond Principles
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GFANZ	Glasgow Financial Alliance for Net Zero
GFSG	G20 Green Finance Study Group
GGGI	Global Green Growth Institute
GH2	Green Hydrogen Organisation
GHGs	Greenhouse Gas Emissions
GISD	Global Investors for Sustainable Development Alliance
GPIF	Government Pension Investment Fund of Japan
GRI	Global Reporting Initiative
GSF	Green and Sustainable Finance Grant Scheme
GSLS	Green and Sustainability-Linked Loan Grant Scheme
GSS+	Green, Social, Sustainability and Other Labeled
HKD	Hong Kong Dollar
HKMA	Hong Kong Monetary Authority
HTA	Hard to Abate
ICMA	International Capital Market Association
IEA	International Energy Agency
IFC	International Finance Corporation
IF-CAP	Innovative Finance Facility for Climate in Asia and the Pacific
IFRS	International Financing Reporting Standards
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
INFFs	Integrated National Financing Frameworks
IPCC	Intergovernmental Panel on Climate Change
IPG	International Partners Group
IPOs	Initial Public Offerings
IRENA	International Renewable Energy Agency
IsDB	Islamic Development Bank
ISSB	International Sustainability Standards Board
ITAP	Independent Technical Advisory Panel
ITMOs	Internationally Transferred Mitigation Outcomes
JETPs	Just Energy Transition Partnerships
KPIs	Key Performance Indicators
LDCs	Least Developed Countries
LDCF	Least Developed Countries Fund
LHoFT	Luxembourg House of Financial Technology
MAS	Monetary Authority of Singapore
MCFs	Multilateral Climate Funds
MDBs	Multilateral Development Banks

MRV	Monitoring, Reporting, and Verification
MSCI	Morgan Stanley Capital International
MSMEs	Micro, Small and Medium Enterprises
NDBs	National Development Banks
NDCs	Nationally Determined Contributions
NGFS	Network for Greening the Financial System
NGO	Nongovernmental Organization
Norfund	Norwegian Investment Fund
NPIF	Northern Powerhouse Investment Fund
NZBA	Net-Zero Banking Alliance
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OECD DAC	OECD Development Assistance Committee
OJK	Otoritas Jasa Keuangan (Financial Services Authority of Indonesia)
PCT	Preferred Creditor Treatment
PEPs	Politically Exposed Persons
PV	Photovoltaic
SBFN	Sustainable Banking and Finance Network
SBV	State Bank of Viet Nam
SDGs	Sustainable Development Goals
SERC	Securities and Exchange Regulator of Cambodia
SGD	Singapore Dollar
SGX	Singapore Exchange
SIDS	Small Island Developing States
SIFEM	Swiss Investment Fund for Emerging Markets
SLBs	Sustainability-linked Bonds
SLLs	Sustainability-linked Loans
SMEs	Small and Medium Enterprises
SPTs	Sustainability Performance Targets
SSE	Sustainable Stock Exchange
SUSREG	WWF's Sustainable Financial Regulations and Central Bank Activities
TCFD	Task Force on Climate-Related Financial Disclosures
tCO_2	Tons of carbon dioxide
TNFD	Taskforce on Nature-Related Financial Disclosures
UNCDF	United Nations Capital Development Fund
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
USD	United States Dollar
WBG	World Bank Group
WWF	World Wildlife Fund

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1. INTRODUCTION

The global financing gap to reach net zero emissions by 2050 is substantial. For example, the Sharm-el-Sheikh Implementation Plan of the COP 27 highlights that approximately $4 trillion per year needs to be invested in renewable energy alone until 2030 to reach net zero emissions by 2050.[3] In addition, the global transformation to a low-carbon economy is expected to require investment of at least between $4 and $6 trillion annually.[4] Developing countries need to put up an estimated $5.8-5.9 trillion[5] in the pre-2030 period to meet their Nationally Determined Contributions (NDCs). To adapt to climate change, according to the Intergovernmental Panel on Climate Change (IPCC), developing countries require $127 billion per year by 2030 and $295 billion per year by 2050. But the disparities are stark; funds for adaptation only reached 49 billion in 2019/20, accounting for about 6 per cent of tracked climate finance.[6] At the same time, the IPCC found that public and private financial flows for fossil fuels are greater than those directed toward climate mitigation and adaptation.[7]

Climate change under a high emissions scenario could impose Gross Domestic Product (GDP) losses of 24 per cent in the whole of developing Asia, 35 per cent in India, 30 per cent in South-East Asia, and 24 per cent in the rest of South Asia by 2100.[8] According to ESCAP,[9] the region faces increasing frequency and severity of storms, flooding, heat waves, and droughts due to climate change. Of the 10 countries most affected by these disasters globally, six are in Asia and the Pacific, where climate-related impacts have disrupted food systems, undermined economies and damaged societies.[10] Across the region, the average economic losses resulting from disaster-related and other natural hazards in Asia and the Pacific costs an estimated $780 billion per year. This is forecast to increase to $1.1 trillion in a moderate climate-change scenario and $1.4 trillion in a worst-case scenario.[11] On the other hand, economic losses as a percentage of GDP have risen faster in Asia and the Pacific than at the global level.[12] Natural resource–based sectors, such as agriculture and fisheries, that are directly affected by climate, account for around one-third of total employment in the region.[13] Beyond threatening the livelihoods of Asia's poor, climate change may also put at risk regional and global food security. For these reasons, climate action is at the heart of 2030 Agenda for Sustainable Development for the region.

Asia-Pacific economies urgently need to step up action to tackle the climate challenge. The Asia-Pacific region is home to five of the 10 largest emitters in the world and accounts for almost half of the world's greenhouse gas emissions. It is also one of the most vulnerable regions to climate change. Economic growth in the region has relied heavily on emission-intensive activities, with the emission intensity of GDP estimated to be 41 per cent higher than the rest of the world.[14] Additionally, there is a climate ambition gap,[15] with Asia-Pacific regional NDCs falling short of the required climate ambition to effectively reduce greenhouse gas emissions in support of the 1.5ºC global warming pathway.

The Sixth Assessment Report of the IPCC 2023 highlights that there is sufficient global capital and liquidity to close the global investment gap.[16] However, there are barriers to deploy capital for climate action, both within and outside the financial sector and in the context of increased economic vulnerabilities and indebtedness facing developing countries.[17] Reducing the obstacles to scale up financial flows requires clear signalling and government support, including stronger alignment from public finances to lower the real and perceived regulatory cost, and market barriers and risks while improving the risk-return profile of investments. At the same time, depending on national contexts, financial actors — including investors, financial intermediaries, central banks, and financial regulators — can address the systemic under-pricing of climate-related risks and reduce sectoral and regional mismatches between available capital and investment needs.[18] These insights are echoed in our analysis, consultations, and interviews and are further elaborated in this report.

In addition to financing climate action, a separate stream of public and private finance is required for biodiversity and nature objectives. Countries will have to further align both climate and nature financing approaches with their commitments to the landmark Kunming-Montreal Global Biodiversity Framework (GBF), adopted by 188 countries[19] to halt and reverse nature loss, as well as the Paris Agreement. The Kunming-

Montreal GBF includes four overarching goals and twenty-three accompanying targets to be achieved by 2030, together with four long-term goals to achieve the 2050 Vision for Biodiversity. To achieve these biodiversity objectives, it aims to mobilize $200 billion per year globally by 2030 to implement national biodiversity strategies. Additionally, a target to increase financial flows from developed countries to developing countries to at least $20 billion per year by 2025 and $30 billion per year by 2030, has also been set. Furthermore, deforestation driven by land-use change and agriculture contributes around 11 per cent of annual global greenhouse gas emissions, according to the IPCC, reducing the effectiveness of existing carbon sinks. As such, it has been suggested that the global economy will not be able to reach net zero by 2050 without ending deforestation by 2025.[20]

The polycrisis brings further complexity to the choices that need to be made to increase sustainable finance. The term polycrisis, defined as the simultaneous occurrence of related global adversities with compounding effects,[21] aptly describes the current set of interlocking challenges that countries face. Rising inflation, high public debt levels and increased debt servicing burdens, combined with projections of moderate economic growth across the globe, places limits on fiscal manoeuvrability. Meanwhile, the food and energy crisis spurred by the war in Ukraine has had wide-ranging detrimental global impacts. The need to ensure that the world limits global warming to between 1.5 ºC and 2ºC above pre-industrial levels, while also addressing rising poverty and inequality, has increased the importance of making clear and sustainable financing choices.

Delivering sufficient sustainable finance to achieve climate and biodiversity goals will require a transformation of the financial system. It will also require engagement with governments, central banks, securities and exchange commissions, ministries of environment, energy and transport, commercial banks, institutional investors, and other private finance actors — to name just a few. In this moment of interconnected crises, there is heightened recognition and willingness among all actors to systemically transform policy, regulation, and finance. If chaos breeds opportunity, then this is an opportunity for systemic transformation that should not be missed.

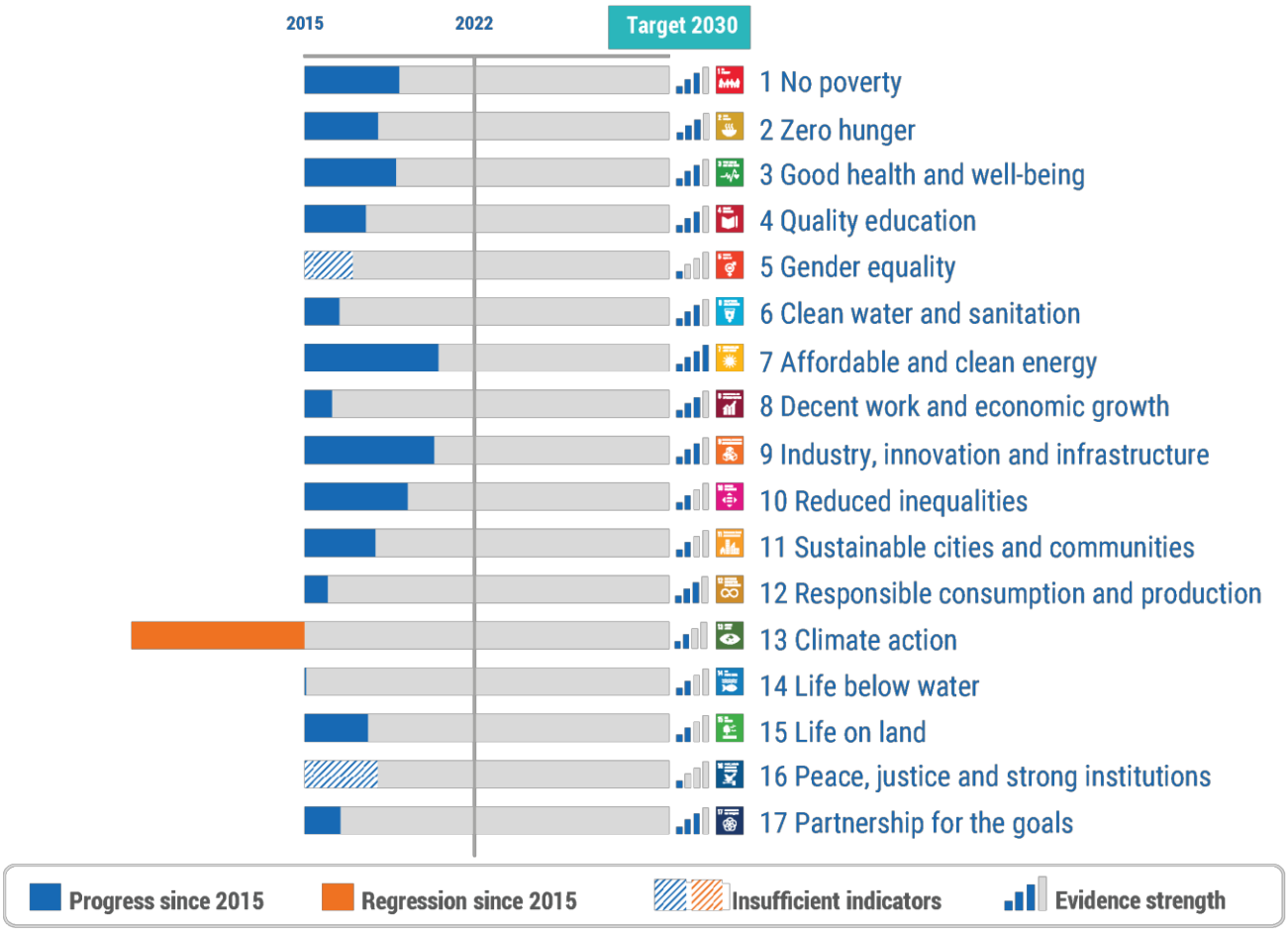
In this report, we discuss the choices and implications that policymakers, regulators, and private finance institutions in Asia and the Pacific face. The decisions and investments made today will have long-term consequences for the region. In this biennial report, the fifth within ESCAP's Financing for Development series, we examine the trends, challenges, and opportunities for policymakers, regulators, and private finance (banks, issuers, and investors) in Asia and the Pacific to mobilize and deploy sustainable finance, particularly for climate action. We then put forward ten principles for action for our member states to chart the way forward. Our focus in this report is to help policymakers, regulators and private finance actors understand the implications of choices that need to be made to bridge the financing gap in the region. The report aims to spur a robust and informed debate amongst member States, drive consensus on key measures to move the region towards sustainability and bring greater clarity to the short- and long-term benefits and consequences of these policy and financing choices.

A. Progress in the Asia-Pacific region towards the Sustainable Development Goals

The region is falling behind on achieving the Sustainable Development Goals

As of 2022, the region is not on track to achieve any of the SDGs, as seen in Figure 1.1. While the region has progressed relatively more in Goals 7 (Affordable and clean energy) and 9 (Industry, innovation, and infrastructure) and 10 (Reduced Inequalities) since 2015, it has regressed significantly in Goal 13 (Climate action) – a major focus of sustainable finance. This is the case for all five subregions of ESCAP. On the other end of the spectrum, although no SDG is on track in any subregion, progress on Goals 1 (No poverty), 3 (Good health and well-being), and 9 (Industry, innovation and infrastructure) was higher than 50 per cent of being on track in at least three of the five subregions.

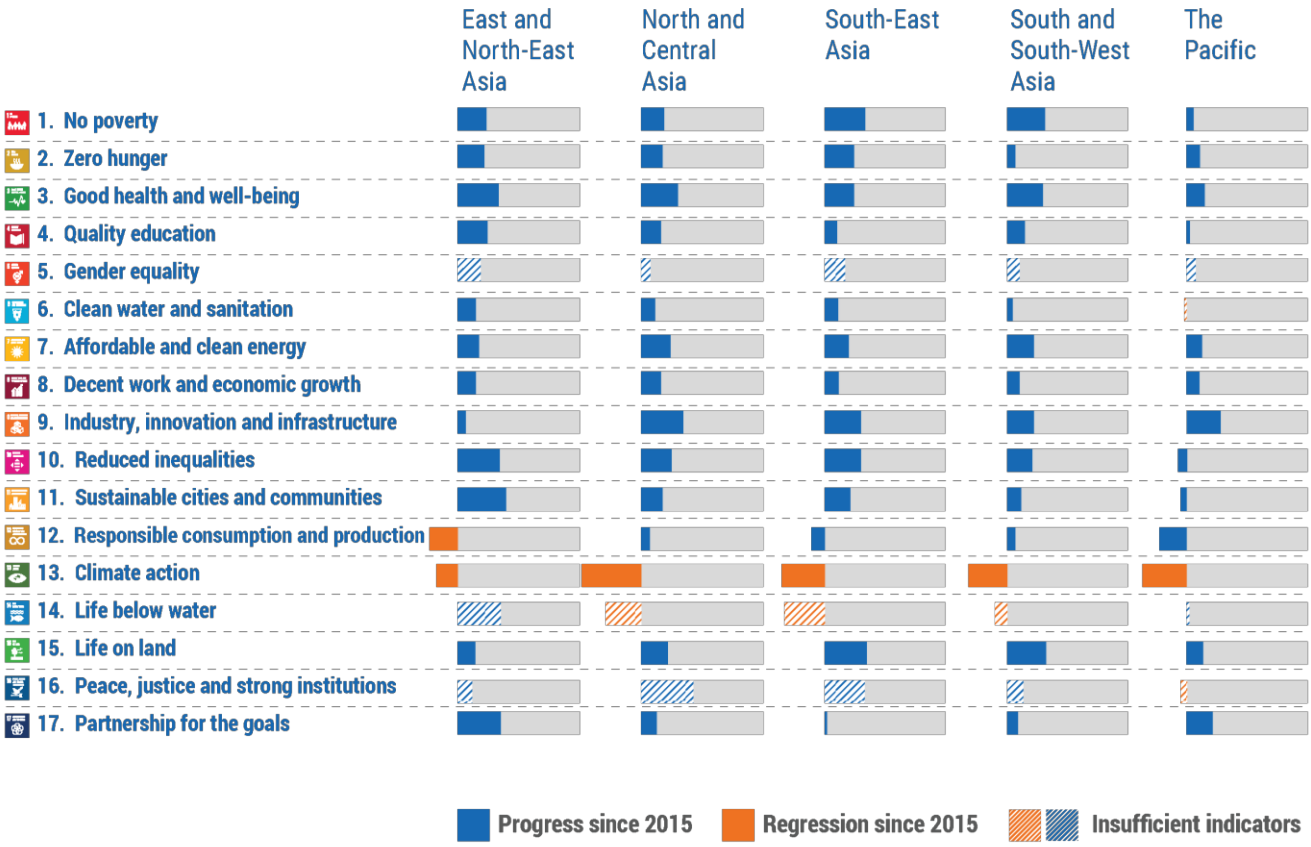
Figure 1.1: Progress in achieving the SDGs in Asia and the Pacific as of 2022.



Source: ESCAP Statistical Database.[22]

Among the five subregions, the largest challenges are faced by the Pacific subregion, where six out of the 17 SDGs show regression in 2022 compared to 2015. Across subregions, as seen in Figure 1.2 below, the top performer economies are in the East and North-East Asia and South-East Asia subregions, particularly on SDG 1 (No poverty) and SDG 15 (Life on Land) in East and North-East Asia and SDG 11 (Sustainable cities and communities) and SDG 10 (Reduced inequalities) in South-East Asia. Unfortunately, for all SDGs across subregions in the table, SDG progress as of 2022 is less than half of its 2030 target.

Figure 1.2: Progress in achieving the 2030 SDGs targets in Asia and the Pacific by subregion and goal as of 2022.



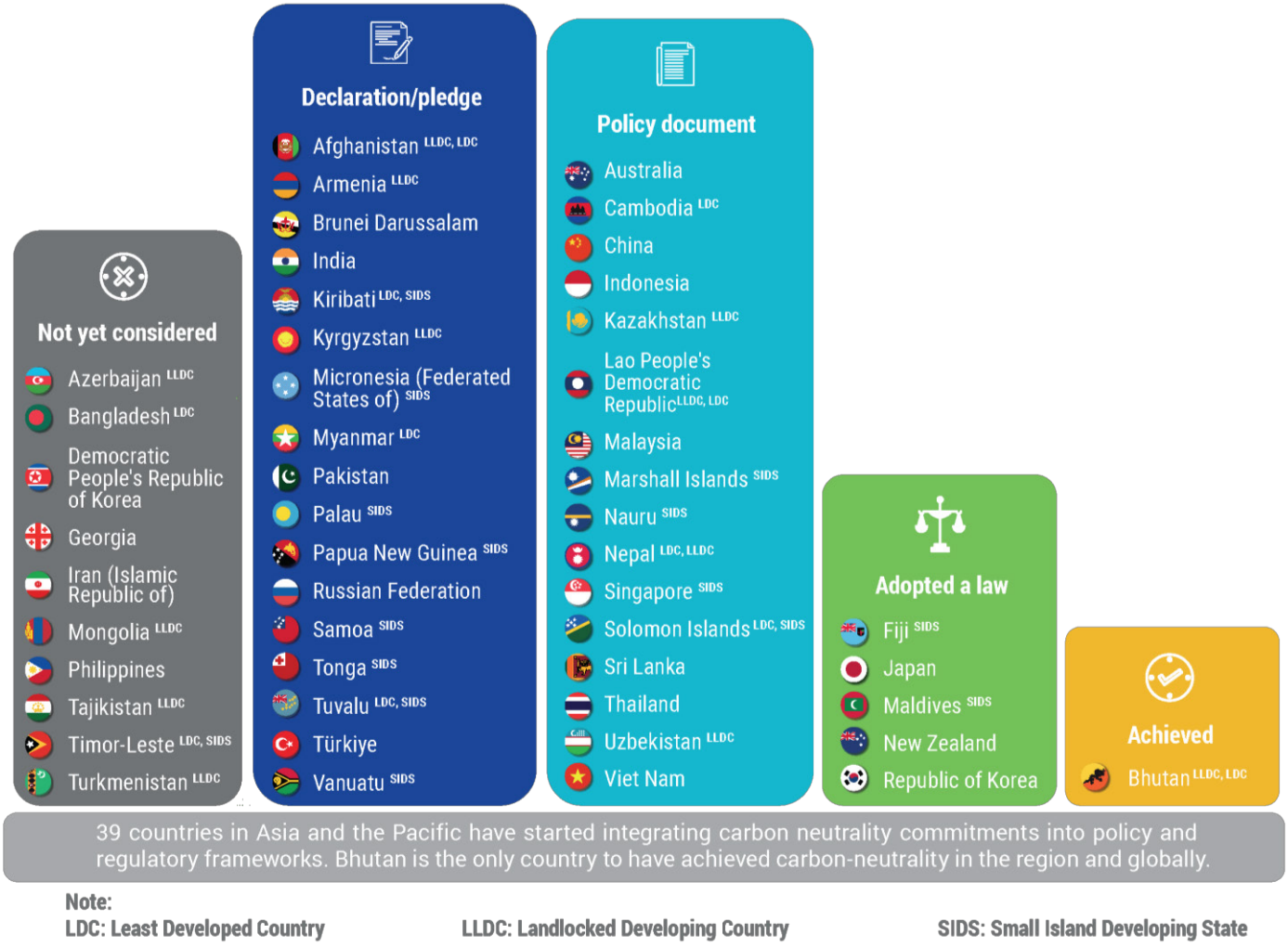
Source: ESCAP Statistical Database.[23]

With regards to estimates of the financial needs of developing countries to implement the Sustainable Development Goals (SDGs), there is wide variation. This indicates both different methodologies as well as a lack of data. In 2014, the United Nations Conference on Trade and Development (UNCTAD) estimated the annual financial gap at $2.5 trillion globally, but after the pandemic this estimate surged to $4.3 trillion per year.[24] A similar figure was cited at a recent meeting between global business leaders that are members of the Global Investors for Sustainable Development (GISD) Alliance and the Secretary General of the United Nations to discuss solutions to bridge the SDG financing gap.[25] For Asia and the Pacific, ESCAP estimated in 2019 an average annual financing gap to achieve the SDGs of $1.5 trillion per year — equivalent to 5 per cent of the aggregate GDP of the region's developing countries.[26] With regards to Asia and the Pacific, there is substantial heterogeneity across countries and subregions. For instance, the annual gap estimated by ESCAP in 2019 was as high as 16 per cent of the GDP for the region's least developed countries, and 10 per cent for the South and South-West subregion.[27] More recently, the International Monetary Fund estimated the SDG financing gap of Asia-Pacific emerging market economies and low-income developing countries, respectively, as 5.4 per cent and 10.6 per cent of the GDP.[28] While such estimates vary, all of them show that the SDG financing gap is substantive.

The lack of progress on climate action in Asia and the Pacific is alarming

Carbon neutrality commitments are still being translated into policy and regulatory changes in the region. Figure 1.3 below shows the policy and legislative status of the existing carbon neutrality commitments of Asia-Pacific member states as of December 2022. Bhutan is the only country to have achieved carbon-neutrality in the region and is the world's first carbon-negative country.

Figure 1.3: Status of carbon neutrality commitments of ESCAP members, 2022.

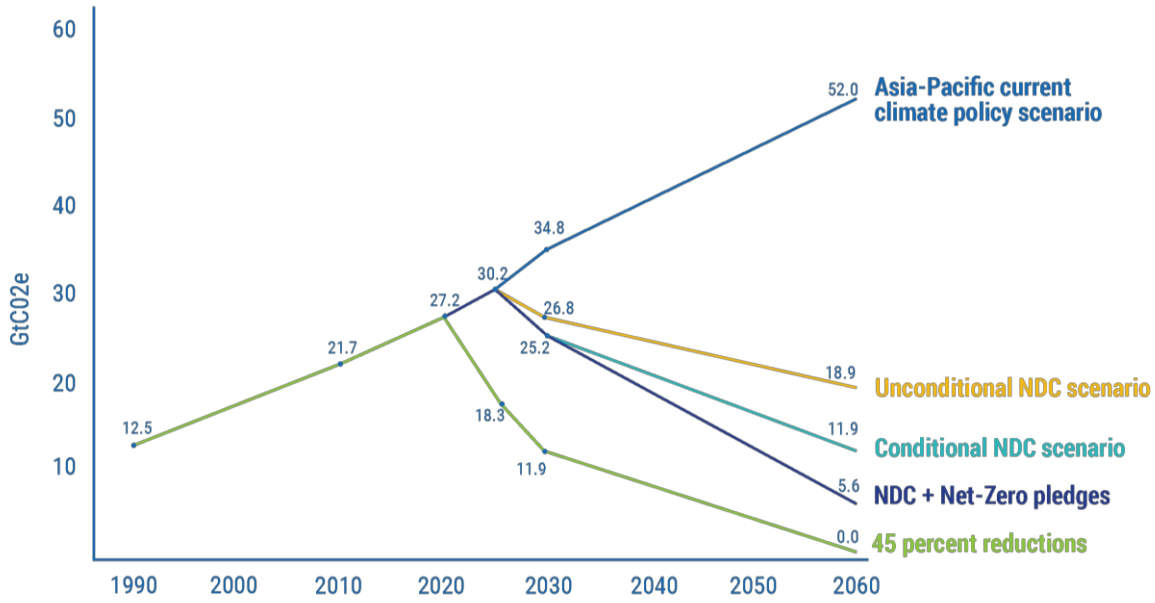


Source: ESCAP based on ESCAP, UNEP, and UNICEF (2022).

Most countries have not yet assessed and reported the financial needs to meet their Nationally Determined Contributions (NDCs). At the time of writing, of 51 Asia-Pacific countries that are party to the UNFCCC, only 17 reported that information in their latest NDCs, and only 7 have a breakdown of financial needs for adaptation and mitigation. This points to a significant need in the region to develop effective NDC financing strategies to meet clear financial needs.

Furthermore, the latest NDCs at both the global and regional levels have been assessed as not being ambitious enough to contain global warming to between 1.5°C and 2°C. The Sixth Assessment report of the IPCC[29] shows that emissions of greenhouse gases from human activities are responsible for approximately 1.1°C of warming since 1850-1900 and estimated that the average global temperature will reach or exceed 1.5°C of warming in the next 20 years. A recent analysis using global data finds that reaching a temperature rise of between 1.5°C and 2°C goal would require cuts in global greenhouse gas emissions (GHG) by 2030 of between 25 and 50 per cent compared to 2019. However, current country pledges in NDCs would cut only 11 per cent, if fully implemented.[30] This is also referred to for the Asia-Pacific region in Figure 1.4 below. Similarly, in Asia and the Pacific, GHG emissions are expected to decline by only 7.6 per cent between 2020 and 2030, which falls significantly short of the 45 per cent reduction required by the 1.5°C pathway for the region, as shown in Figure 1.4.[31]

Figure 1.4: Asia-Pacific scenarios for GHG emissions.



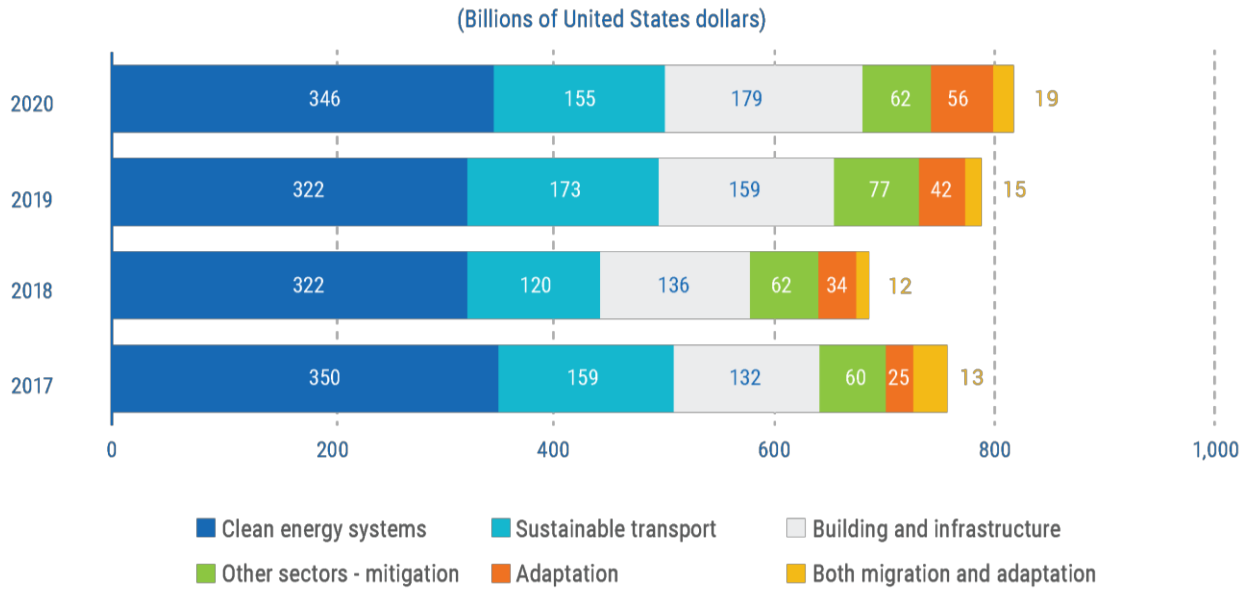
Source: ESCAP, based on ESCAP, UNEP and UNICEF (2022).

Note: The provided scenarios, which are developed on the data in the NDCs include: (i) Unconditional NDCs (the level of GHG emission reduction a country can achieve on its own); (ii) conditional NDCs (the level of GHG emission reductions a country can achieve subject to some conditions, e.g. support from international financing, capacity building, existence of favourable condition, carbon market, etc.) (iii) NDC + net zero pledges (the level of GHG emission reductions based on NDCs, and current net-zero pledges) (iv) 45 per cent reductions (a 45-per cent GHG emission reduction from 2010 level is required to keep the world within the 1.5 ℃ temperature rise.

Estimates of financing requirements range higher and are frequently being revised upwards the more the action is delayed. The Report of the Independent High-Level Expert Group on Climate Finance states that emerging markets and developing countries (excluding China) will need to spend approximately $1 trillion per year by 2025 (4.1 per cent of GDP compared with 2.2 per cent in 2019) and around $2.4 trillion per year by 2030 (6.5 per cent of GDP) on three investment and spending priorities:[32] (i) the transformation of the energy system, (ii) responding to the growing vulnerability of developing countries to climate change; and (iii) investing in sustainable agriculture and restoring the damage human activity has done to natural capital and biodiversity in terms of degraded land, deforestation, and damage to water supplies and the oceans.

Financing gaps for climate mitigation, adaptation, and transition face different challenges. According to UNFCCC,[33] as seen in Figure 1.5 below, global climate finance flows were 12 per cent higher in 2019–2020 than in 2017–2018, reaching an annual average of $803 billion, with the trend being driven by an increasing number of mitigation actions in buildings and infrastructure and in sustainable transport, as well as by growth in adaptation finance. While mitigation finance constituted the largest share of climate-specific financial support through bilateral, regional, and other channels, at 57 per cent, the share of adaptation finance continues to be small. However, adaptation finance from the private sector is difficult to keep track of because governments do not maintain a centralized system that can account for private funds.[34]

Figure 1.5: Global climate finance flows in 2017-2020 by sector.



Source: ESCAP based on UNFCCC (2022a)

Finance for adaptation needs to rise dramatically. According to the World Resources Institute, quoting the IPCC, developing countries alone will need $127 billion per year by 2030, and $295 billion per year by 2050, to adapt to climate change.

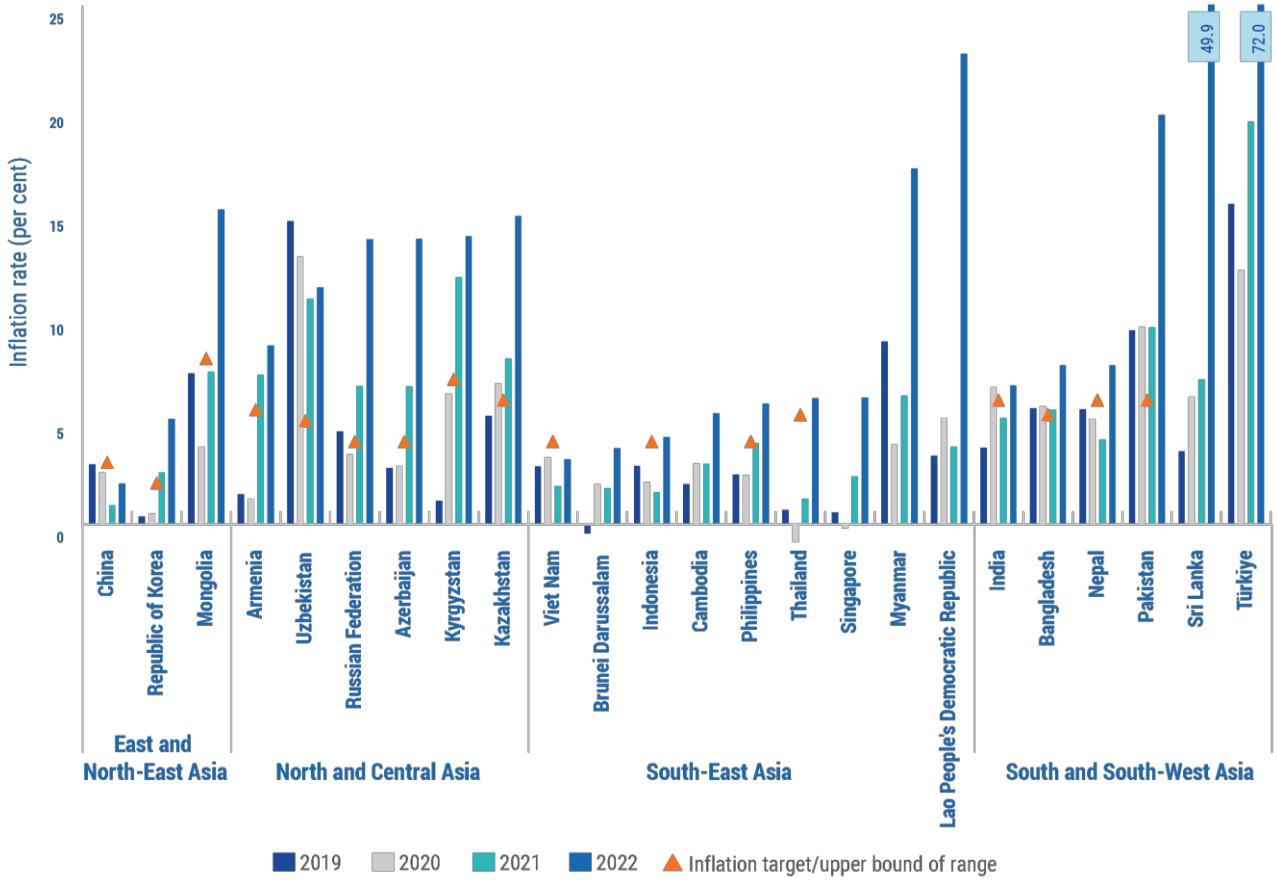
In addition to the climate finance gap, there is a large biodiversity financing gap.

According to the Kunming-Montreal Global Biodiversity Framework (GBF), $700 billion per year will be needed to close the biodiversity finance gap. To progressively close this gap, Target 19 of the GBF aims to mobilize $200 billion per year by 2030 globally from all sources, including by increasing financial flows from developed countries to developing countries to at least $20 billion per year by 2025 and $30 billion per year by 2030, to implement national biodiversity strategies. Beyond the need to meet agreed-upon biodiversity financing targets, it is vital to recognize the strong reliance of economies on nature, particularly in low and lower-middle-income countries. According to the World Bank,[35] low and lower-middle-income countries stand to lose the most in relative terms if ecosystem services collapse, severely hampering prospects to grow out of poverty. For example, South Asia would suffer a 6.5 per cent contraction of real GDP in the case of a severe disruption to the natural environment and healthy ecosystems by 2030.[36]

The macroeconomic environment in Asia and the Pacific has become challenging in recent years.

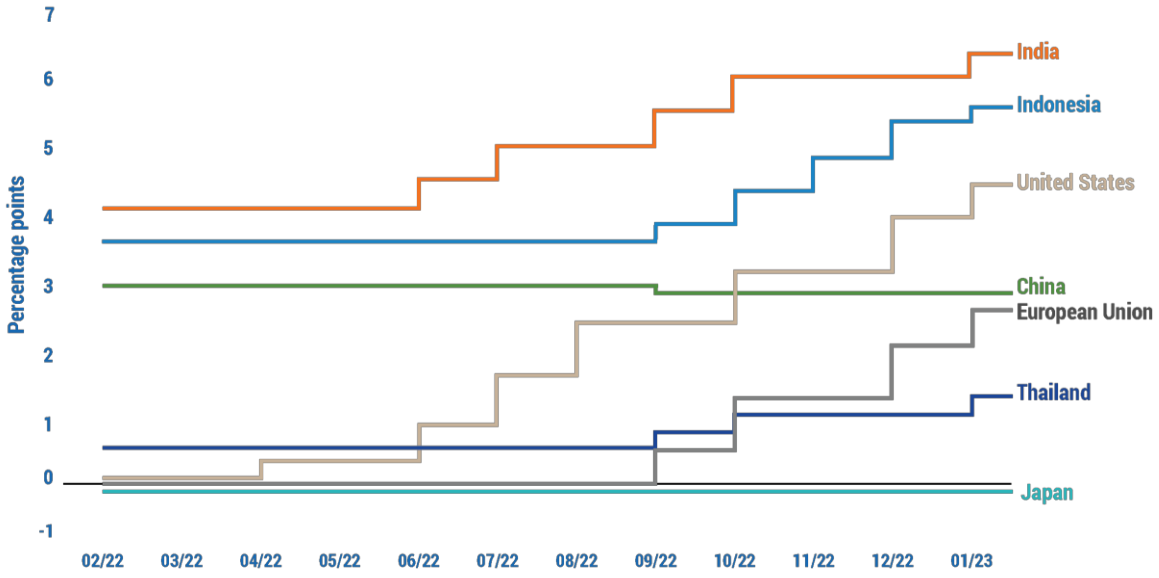
The ability of governments to spend public finances on climate action is becoming increasingly constrained due to unfavourable economic conditions, which is worsening the financing gap. As the figures below show, rising inflation accompanied by rising interest rates, and rising risk premiums on sovereign bonds, suggest that the cost of borrowing is rising. For private sustainable finance, the key consideration is that with more costly capital, projects, and investment opportunities will have to provide greater, and substantially higher, hurdle rates (i.e. the minimum acceptable rate of return) to investors. This will have serious implications for the volume, quality, terms, and tenors of sustainable finance available to close the gap.

Figure 1.6: Inflation rate in Asia and the Pacific and the upper bound of inflation target, 2021-2022.



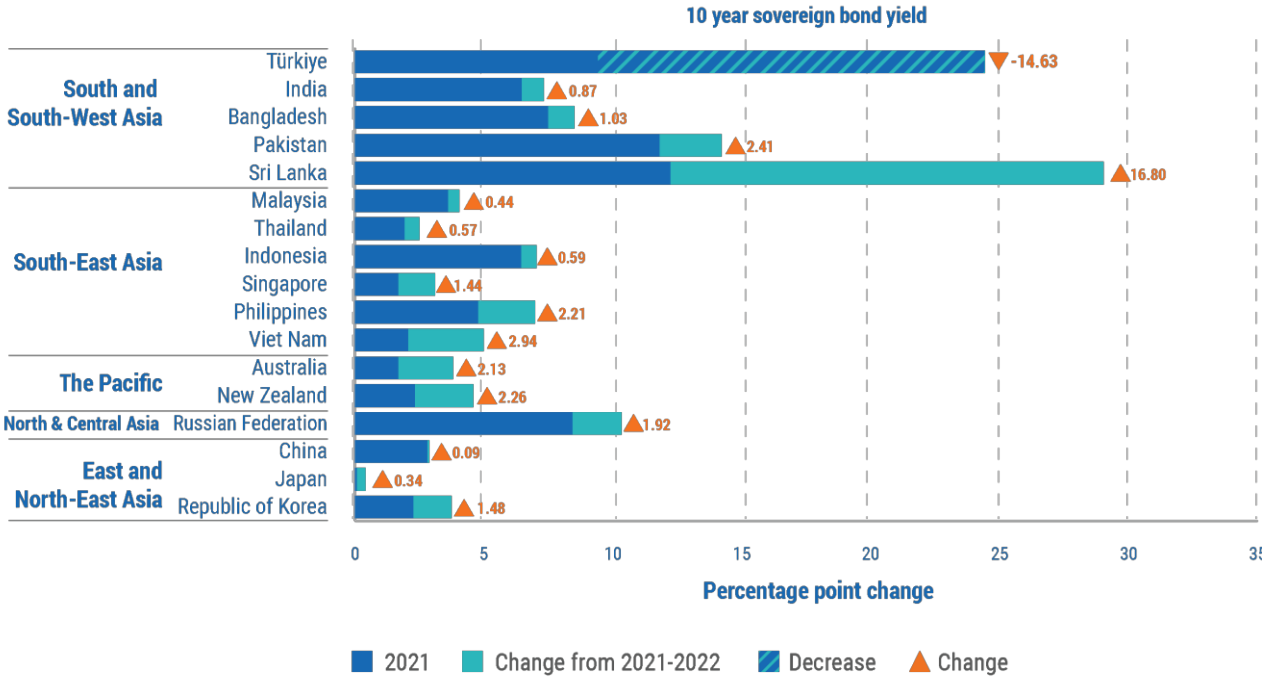
Source: ESCAP based on CEIC, accessed on 15 February 2023

Figure 1.7: Interest rates in Asia-Pacific economies follow monetary tightening in selected economies.



Source: ESCAP based on CEIC, accessed on 15 February 2023.

Figure 1.8: 10-year sovereign bond yield in selected economies in Asia and the Pacific, as of end of 2022.



Source: ESCAP based on World Government Bonds, accessed on 1 March 2023.

Note: The 10-year sovereign bond yield is at the end of the period.

In conclusion, the need to redirect more finance towards climate mitigation and adaptation goals in the region as well as nature and biodiversity goals is critical. Although raising public and private liquidity is challenging in the current macroeconomic environment, significant measures can be taken to increase and accelerate sustainable finance by removing policy, regulatory, and institutional barriers to climate action. In the next section, we explore definitions surrounding sustainable, green and climate finance, which are relevant for policymakers and regulators in the region as they continue to engage in transforming financial systems.

B. What is sustainable finance?

Sustainable finance encompasses a wide set of definitions, with binding and non-binding implications. It has an evolving lexicon. Definitions are important because they define not only the volume of sustainable finance available, but also its integrity. Definitions also guide future choices about the allocation of capital. We list below in Table 1.1 the most used definitions and their sources, so that policymakers can understand the nuances in differences between definitions. The implications of the definitions of climate finance are further discussed below.

Table 1.1: Examples of sustainable finance definitions.

Body	Definition
European Union (Regulation EU 2019/2088)	The definition of 'sustainable investment' in Regulation EU 2019/2088 includes investments in economic activities that (i) contribute to an environmental objective and (ii) do not significantly harm any environmental or social objective. The regulation covers six predominantly environmental objectives: climate change mitigation, climate change adaptation, the sustainable use and protection of water and marine resources, the transition to a circular economy, pollution prevention and control, and the protection and restoration of biodiversity and ecosystems.[37]
G20 Sustainable Finance Roadmap	The G20 Sustainable Finance Roadmap released in October 2021 encourages jurisdictions that intend to develop their own approaches to align finance and sustainability to refer to a set of voluntary principles. These include: Principle 1: Ensure material positive contributions to sustainability goals and focus on outcomes; Principle 2: Avoid negative contribution to other sustainability goals (i.e. do no significant harm to any sustainability goal requirements) Principle 3: Be dynamic in adjustments reflecting changes in policies, technologies, and state of the transition Principle 4: Reflect good governance and transparency; Principle 5: Be science-based for environmental goals and science- or evidence-based for other sustainability issues; and Principle 6: Address transition considerations.
The International Capital Market Association (ICMA)	Sustainable finance incorporates climate, green, and social finance while also adding wider considerations concerning the longer-term economic sustainability of the organizations being funded, as well as the role and stability of the overall financial system in which they operate. ICMA's definition is based on market usage and draws on the G20 and European Union references, according to ICMA.[38]
International Finance Corporation's Sustainable Banking and Finance Network [39]	Sustainable finance refers to policies, regulations, and practices by regulators, supervisors, industry associations, and financial institutions (FIs) to (i) reduce and manage environmental, social, and governance (ESG) risks resulting from and affecting financial sector activities, including the risks of climate change; and (ii) encourage the flow of capital to assets, projects, sectors, and businesses that have environmental and social benefits.

A balance of definitions that both incorporate rigour and act as an incentivizing and inclusive force is necessary.

By no means are these definitions exhaustive or mutually exclusive. While the broadness of sustainable finance definitions has also contributed at times to confusion, or to claims that some sustainable finance is less 'sustainable' than purported (conveying a false impression, or 'greenwashing'), broad definitions of sustainable finance allow at this stage more stakeholders to participate and classify their activities as sustainable. As exemplified by the European Union Taxonomy Regulation, the definitions of sustainable finance and their subsequent use in regulation can be progressively strengthened over time. And while the term is well-understood and well-embedded in finance, regulations, and policy in more mature markets, it is nevertheless also true that wide swaths of stakeholders still need to be convinced of the value of sustainable finance activities.

Definitions are important to guide regulators and policymakers. Evolving sustainable, green and transition taxonomies in certain countries in Asia and the Pacific further try and clarify to the financial sector how financing of activities can be considered green, sustainable, or transitioning from brown to green. It is thus important for policymakers, who are considering voluntary and mandatory approaches in sustainable finance, to understand the differences in definitions, so that they can guide the financing of sustainable, green or transition activities in the real economy. With regards to the definition of climate finance, we discuss this further below.

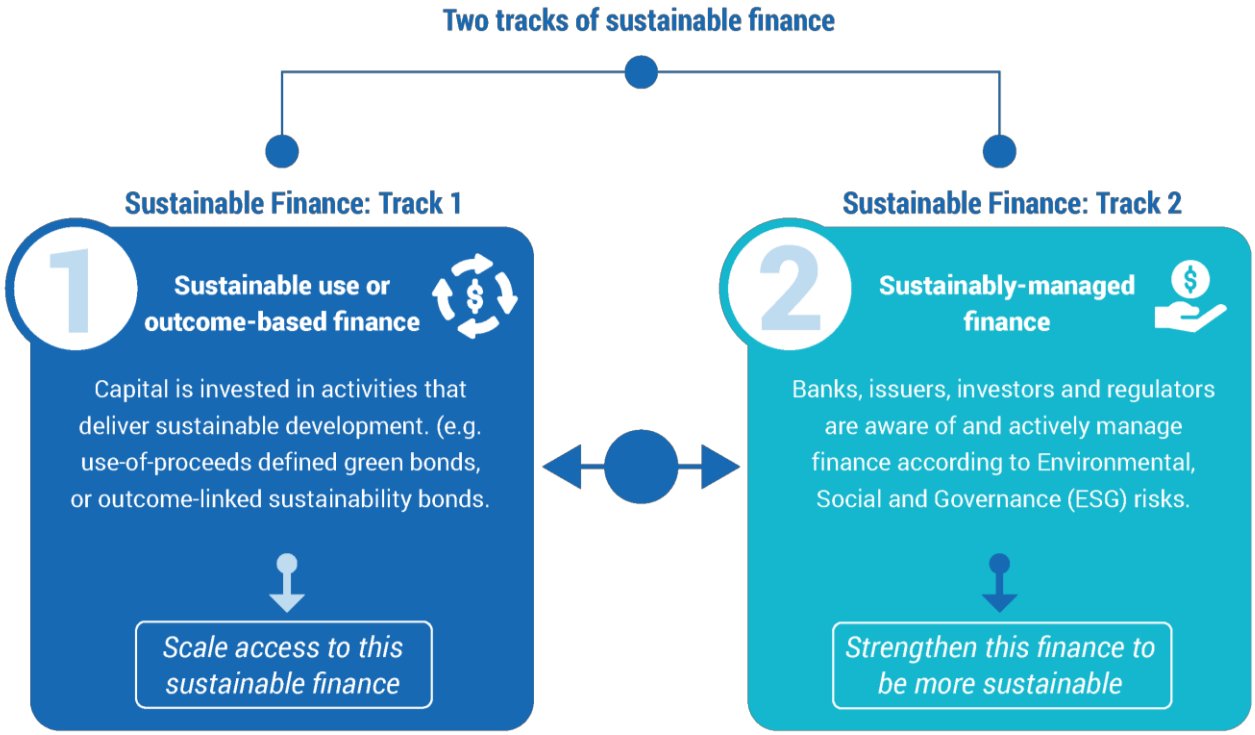
The two tracks of sustainable finance

Sustainable finance can be categorized by two tracks. Both foster sustainable economic, social, and environmental development, but there are two different routes towards fostering that impact.

Track 1 refers to the financing of sustainable activities. Track 1, as shown in Figure 1.9 below, refers to use-of-proceeds defined sustainable finance, in which the proceeds go towards clearly demarcated, pre-defined, sustainable, green, or climate-oriented uses, activities, objectives, or outcomes. With regards to green finance, for example, the G20 Green Finance Study Group describes it as "the financing of investments that provide environmental benefits in the broader context of environmentally sustainable development."[40] Again, there is no single universal agreed-upon definition. Climate finance, as defined by UNFCCC,[41] refers to local, national, or transnational financing – drawn from public, private and alternative sources of financing – that seeks to support mitigation and adaptation actions that will address climate change. This definition is objective-based, and it falls within Track 1 of sustainable finance.

Track 2 refers to sustainably-managed finance. The second track is not about where the investment goes or which activities are financed but, rather, how sustainability or climate or green-related risks materially impact the financial performance of the investment and how those risks should be managed. For example, when environmental, social and governance (ESG) risks are analysed with respect to how they would affect the financial returns of the investment, the resulting investments are often labelled as ESG investments. Here, greening finance refers to the mainstreaming of environment and climate risk management in the financial sector. For example, the purpose of the Network for Central Banks and Supervisors for Greening the Financial System (NGFS), launched at the Paris One Planet Summit in 2017, is to enhance the role of the financial system in managing risks and capital for green and low carbon investments in the broader context of environmentally sustainable development. While green finance falls within Track 1, greening finance falls within Track 2 of sustainable finance. We refer to this track as sustainably-managed finance.

Figure 1.9: The two tracks of sustainable finance: use-of-proceeds-based and sustainably-managed finance.



Source: ESCAP

ESG standards in risk management do not necessarily mean high ESG impact.

ESG-related investment risks have come under increasing scrutiny by investors in recent years, and these risks also include non-financial considerations which can affect a company's financial performance, reputation, and long-term sustainability. ESG investing, or ESG finance, has come to the fore of public consciousness worldwide as sustainable social and environmental practices have become a strategic imperative for businesses. Much of the critique on ESG in the global narrative has been due to its lack of standardization for compliance and the risks of so-called greenwashing.[42] It is therefore important to understand what constitutes ESG and what does not.

The assessment of ESG risks is important for both the banking sector and capital markets. There is a fast-emerging and increasingly well-established regulatory risk management framework that incorporates environmental and social risk considerations into banking and fund management. Typically known as Environmental and Social Risk Management (ESRM), the framework has been widely adopted by nearly all central banks in the Asia-Pacific region, though the specifics vary across countries. ESRM frameworks measure how risks will affect the banking sector and thus managed, but importantly, they are not designed to evaluate social or environmental impact — i.e. the institution's activities on the environment or its communities.

Corporate governance risks (the G) on the other hand are determined separately, and usually carry a different weight than the 'E' and the 'S'. Corporate governance risks around shareholder and board practices, politically exposed persons (PEPS) on boards and their involvement in decision-making, as well as complicated family ownership structures within businesses are also assessed by financial institutions that employ ESG risk management practices. ESG risk management frameworks for different sectors and products apply different weights and analytical approaches to the E, S and G components of ESG risks. Strengthening E, S and/or G standards are the subject of continued difficult political conversations between financial institutions, businesses, and policymakers.

ESG risk assessments in capital markets use the principle of whether ESG risks are material to the financial performance of the company's stock or the fund's performance. Morgan Stanley Capital International (MSCI), one of the leading providers of ESG ratings to corporates and funds, defines ESG investing in capital markets as the consideration of environmental, social and governance factors, alongside financial factors in the investment decision-making process. This is further echoed by Morningstar Sustainalytics, another leading ESG rating provider and industry standard setter. Sustainalytics' ESG risk ratings measure a company's exposure to industry-specific material ESG risks and evaluate how well the company is managing those risks. Their multi-dimensional way of measuring ESG risk combines the concepts of management and exposure to arrive at an absolute assessment of ESG risk.

MSCI's ESG ratings are designed for one purpose: to measure a company's resilience to financially material environmental, societal and governance risks.[43] ESG risks are therefore evaluated in the assessment of a company to understand how such ESG risks may impact current and future *financial* performance – not *sustainability* performance. MSCI notes that "Our ESG ratings provide a window into one facet of risk to financial performance. They are not a general measure of corporate 'goodness,' a barometer on any single issue or a synonym for sustainable investing... They are not climate ratings."[44] To add further clarity, MSCI considers three methods of ESG investing: a) ESG integration, b) impact investing, and c) values-based investing. Of these three methods, the first is by far the most frequently adopted method of ESG investing in markets today. As an extreme example, a fossil fuel investing fund can still be labelled as an ESG fund if it considers and actively manages ESG risks as it invests in fossil fuels.

Furthermore, the UN's Principles for Responsible Investing notes that there is "no single definitive list of ESG issues".[45] This has led a to plethora of different standards, due diligence processes, analytical methods, and measurement methods around ESG assessment by companies, banks, investors, funds, and markets across the world. Movements are underway to centralize standards, as through the inaugural standards in June 2023 of the International Financing Reporting Standards (IFRS) Foundation's International Sustainability Standards Board (ISSB), which recommends a comprehensive global baseline of sustainability-related disclosures.

Use or outcome-based sustainable finance (Track 1) is mutually strengthened by sustainably managed finance (Track 2), and both are critical to a resilient financial system. These two aspects of sustainable finance are of course not mutually exclusive; use-based sustainable finance can have, and frequently does have, strong ESG risk management and safeguards. Some ESG-rated investing will also be directed to sustainable uses even if that is not explicitly measured yet. Importantly both are critical to the robust functioning and stability of the financial system. The ability to manage risks, including climate-related risks, leads to the stable provision of sustainable finance and strengthens the transition to a low-carbon economy.

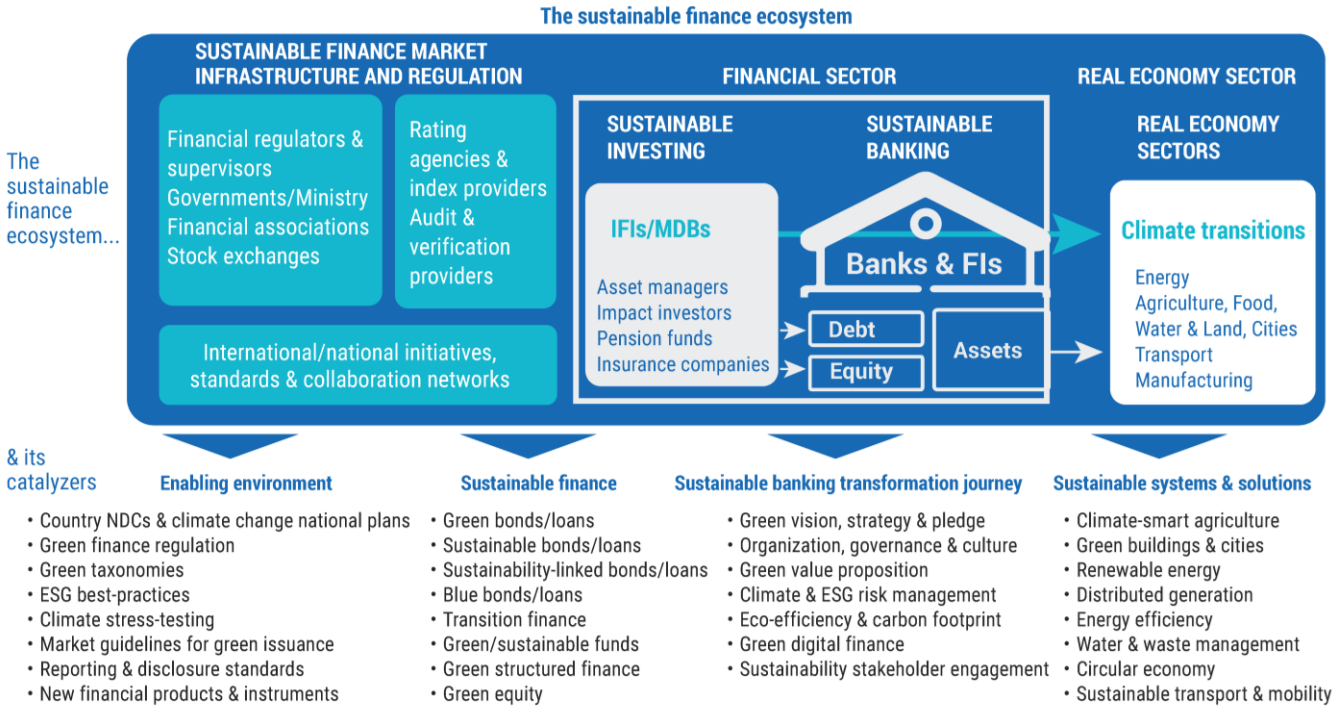
Who are the key constituents of the sustainable finance ecosystem?

The sustainable finance ecosystem captures a nexus of national commitments, public and private sector incentives and standards, and financing relationships between policymakers, regulators, and private finance stakeholders. Sustainable financial markets are made up of a large ecosystem of actors, as shown below in Figure 1.10 (adapted from the International Finance Corporation). However, the activities financed by this ecosystem are contained within the real economy, or within sectors such as power, transportation, trucking, agriculture, forestry, manufacturing etc. Therefore, financing sustainable activities follows, or lags behind, developments in the real economy. Net-zero pledges by financial institutions can drive financing towards net-zero related activities, but only if the projects and activities by corporations and households themselves qualify as net-zero related activities.

The frontier where the actual work will be done to accelerate sustainable finance is thus within the real economy. In particular, it will take place within the businesses that adapt their choices, make meaningful net-zero commitments, and measure and disclose sustainability impacts. A serious pivot is required immediately if the 2015 Paris Agreement commitments — in which 196 countries pledged to limit global average temperature increase to well below 2°C above pre-industrial levels and make efforts to halt the temperature increase to 1.5°C above pre-industrial levels[46] — is to be met. Whilst we limit our discussion in this sustainable finance report to policymakers, regulators, and private finance, it is no exaggeration to say that the scope and scale of the change required in the real economy in the Asia-Pacific region is breath-taking, exacerbated by the urgency of the time frame in which it must do so.

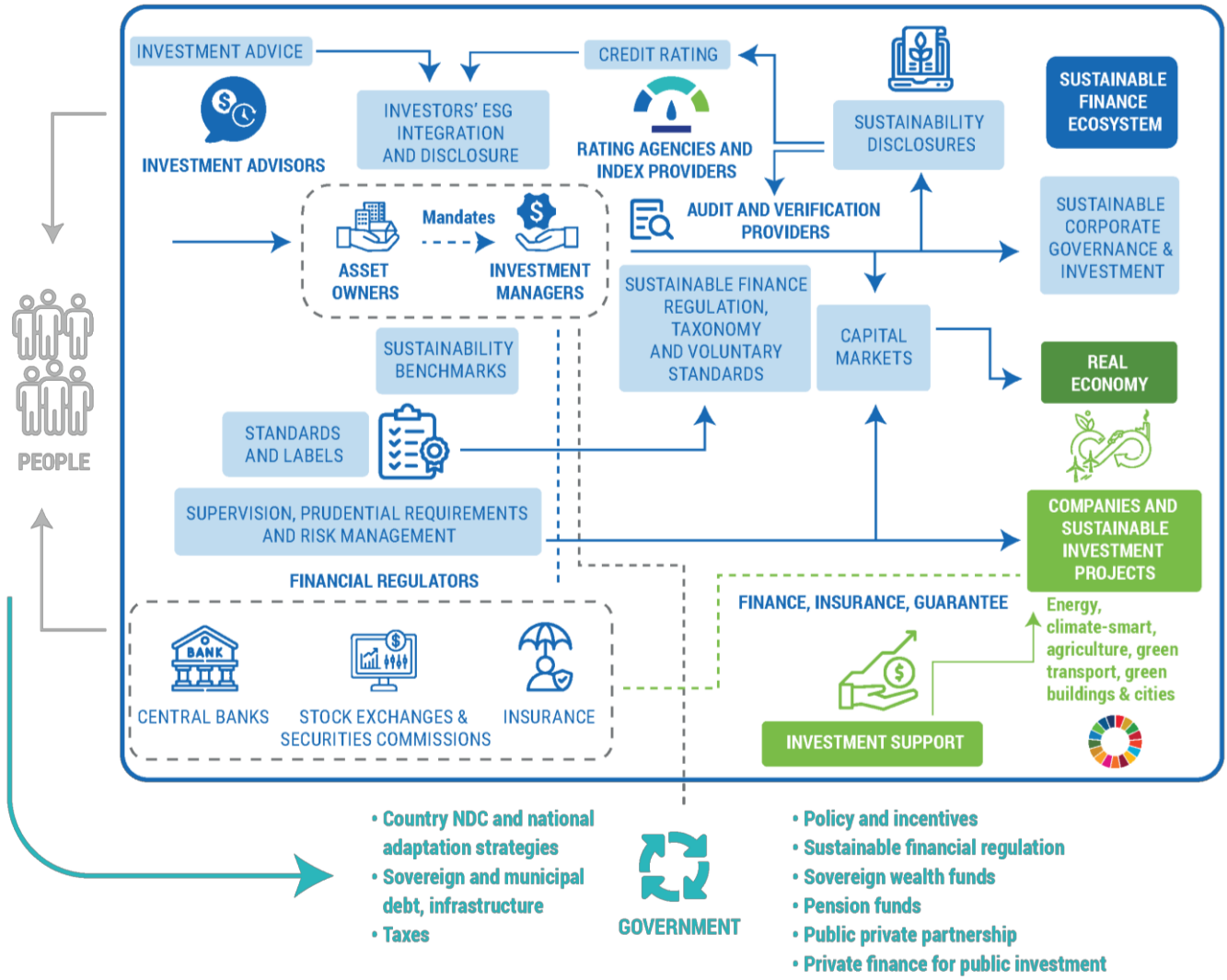
The sustainable finance ecosystem has many stakeholders. While Figure 1.10 shows the traditional financial sector's role in sustainable finance, Figure 1.11 below depicts the universe of private finance actors that are instrumental for determining whether private finance is sustainable and how it can be deployed to more sustainable uses. This universe represents a set of stakeholders and countries that need to mobilize in a systematic and coherent fashion (through setting coordinated policy and regulatory actions). For example, incorporating sustainable or green elements into the compliance and disclosure burden; the tax regime; and the fees from advisory, verifiers, and auditors that asset owners bear, can change the flow of capital in this sustainable finance ecosystem.

Figure 1.10: The sustainable finance ecosystem.



Source: ESCAP adapted from the International Finance Corporation

Figure 1.11: Sustainable finance stakeholder mapping.



Source: ESCAP

An evolving definition of climate finance

The UNFCCC definition of climate finance includes binding commitments for developed countries with implications for recipient developing countries. The United Nations Framework Convention on Climate Change (UNFCCC) refers to climate finance as local, national, or transnational financing —drawn from public, private and alternative sources of financing — that seeks to support mitigation and adaptation actions that will address climate change.[47] The definition of climate finance has acquired scrutiny due to the implications for the COP15 pledges made by developed countries in 2009[48] to mobilize $100 billion per year by 2020 and until 2025 to support climate action in developing countries.[49] While this goal has yet to be met ($83.3 billion was mobilized in 2020 – the last available estimate at the time of writing), the work of the Standing Committee on Finance of the UNFCCC indicates that this is an area of continued debate, stating, "there are varying understandings of what climate finance encompasses, including which sectors and activities are covered, the range of financial instruments available and which tracking and reporting processes apply, as well as different perspectives of what definitions of climate finance should include and the detail with which associated concepts should be defined."[50]

There are at least nine key variables relevant to any definition of climate finance. The Standing Committee on Finance's report shows nine components necessary to operationalize a given definition of climate finance for reporting purposes, as shown in Table 1.2 below.

The complexity described here can seem daunting, but it adds valuable clarity to policymakers, regulators, and private finance actors from developing countries (to whom these commitments have been made). Climate finance is objective-based and falls within Track 1 of the two tracks discussed earlier.

Table 1.2: Range of potential approaches to accounting for climate finance flows.

Factors	Range of approaches						
Geographic scope	International flows only		Domestic flows only		Global flows		
Recipient	Public sector		Private sector		NGOs and civil society		
Objective	Programmed or budgeted climate objectives		Addresses climate as one of multiple objectives		No stated climate goals but possible co-benefits		
Causality	Direct finance	Finance mobilized as co-finance	Finance mobilized through support for project preparation or technical assistance	Finance mobilized through support for enabling environments			
Instruments	Grants	Concessional loans	Non-concessional loans	First loss/ patient equity	Equity	Guarantees	Insurance
Total or incremental cost	Total cost of a project or action			Incremental cost of a climate project or action compared to the baseline case			
Point of measurement	Commitments: Counting finance when the commitment is made, irrespective of when the finance will be disbursed (e.g. over several subsequent years of a project)			Disbursements: Counting disbursed and received finance			
Cost of expenditure	Nominal value: The face value of a loan			Subsidy cost: The cost of providing the loan measured by discounted cash flows			
Gross/net flows	Gross flows: The amount spent or committed over a given year			Net flows: The amount spent accounting for repayments over time (e.g. loans)			

Source: UNFCCC (2022c).

Does more sustainable finance translate into progress towards the Sustainable Development Goals?

There is currently no overall Sustainable Development Goal or sub-target that measures the flow of sustainable finance. In addition, financing the SDGs does not always directly correlate with improved SDG indicators for several reasons. For example, use-based sustainable finance directed towards the provision of environmentally sustainable renewable energy would affect Goal 7,[51] which can be measured by the proportion of the population that relies mainly on clean fuels and technology (indicator 7.1.2); the share of renewable energy out of total energy consumption (indicator 7.2.1); and/or how much money is flowing to countries for clean energy research (7.a.1).[52] However, the corresponding results are not always visible for many reasons. Firstly, reporting use-based proceeds within most of the currently accepted sustainable finance frameworks does not include reporting on SDG impacts. Secondly, national statistics agencies and bodies do not have the resources to measure all 17-interlinked goals and 231 indicators. Thirdly, improvement in SDGs may take considerable time and may be affected by other trends occurring in parallel, making it difficult to isolate the impact of sustainable finance alone. This was noted earlier in the Roadmap for Financing the 2030 Agenda for Sustainable Development, which pointed out that misaligned incentives and regulations, limited awareness, and difficulties in identifying, measuring, and reporting on sustainable investments impede private investment[53] in the SDGs at scale.[54] The lack of hard evidence to justify sustainable finance in terms of the SDGs need to be counterbalanced by greater awareness of how sustainable financing works. This lack of reporting ability is thus an important hurdle to overcome, so as to better drive national conversations and choices towards financing for development as well as to advocate more clearly for increases in climate finance.

C. Concluding remarks: How can countries raise sufficient sustainable finance?

The sums are staggering, whichever estimate of the financing gap is used. Yet while the gap to finance the SDGs will continue to be substantial, the discrepancy between need and availability of funds for financing climate action to achieve the 1.5-2°C target looms larger and larger. There is no single silver bullet to mobilize the finance needed in the short time frame needed. Instead, only concerted and targeted action by all stakeholders will transform the region's pathway. As the Sharm-el-Sheikh action plan noted, delivering such funding will require a transformation of the financial systems and its structures and processes, engaging governments, central banks, commercial banks, institutional investors, and other financial actors.

How can countries increase the volume of sustainable finance in the time frame needed? The central question for this report, therefore, is "How can countries in Asia and the Pacific, especially developing countries including the Least Developed Countries (LDCs) and the Small Island Developing States (SIDS) increase the quantity and quality of sustainable finance available in the time frame needed?" We focus particularly on the environmental aspects of sustainable finance, already heavily weighted in most sustainable finance definitions, and in international and regional regulatory and policy norms and processes. This includes a focus on green and climate finance. We also further note that LDCs and SIDS have contributed disproportionately little to GHGs but are significantly impacted by regional and global emissions. Their ecosystems are also particularly prone to and affected by the collapse of biodiversity; however, they do hold a disproportionate amount of high biodiversity assets.

The challenges are greater for LDCs and SIDS. LDCs and SIDS face a set of interconnected challenges in scaling sustainable finance. LDCs and SIDS are generally far more exposed to the impact of climate change related extreme weather events due to their reliance on subsistence agriculture in the former, and their exposure to sea-level changes in the latter. LDCs and SIDS are also highly exposed to the negative implications of growing global macroeconomic uncertainties. Finally, the limitations of government revenue means that public finance is naturally constrained in implementing the adaptation changes required to protect the livelihoods and lives of their vulnerable populations. LDCs and SIDS also face difficulties obtaining the data and building the capacities needed to track and accelerate sustainable finance.

We thus propose action by three sets of stakeholders who are the subject of this report: policymakers; regulators; and private finance. We analyse trends, challenges, and opportunities faced by these three main stakeholders and aim to answer the following policy questions:

- What can government policymakers do?
- What can regulators do?
- What can private finance do?

The goal of this report is to contribute to a better-informed debate that can guide timely choices amongst our member states. Our focus is to outline the choices that stakeholders face, as well as discussing the evidence, data, and current debates around such choices. We hope that this will better inform much-needed actions, and spur accelerated action.

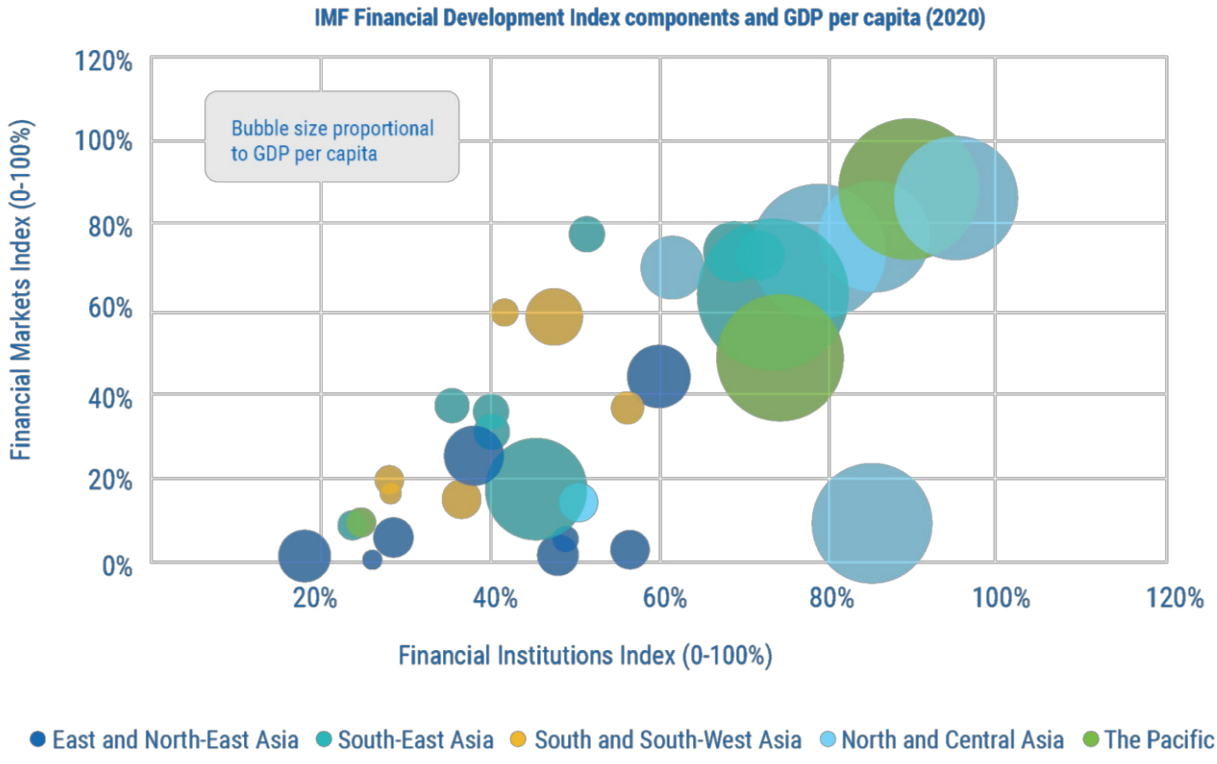
2. WHAT CAN GOVERNMENTS DO?

A. Introduction

In this chapter we examine the trends, challenges, and opportunities that policymakers within governments face in unlocking further sustainable finance, and particularly climate finance, from public and private stakeholders. We then propose recommendations for policymakers which are aggregated in our final chapter into our ten point action plan for the region.

There is a strong link between financial sector development and GDP growth. According to the World Bank, "countries with better-developed financial systems tend to grow faster over long periods of time, and a large body of evidence suggests that this effect is causal: financial development is not simply an outcome of economic growth; it contributes to this growth."[55] However, there is substantial debate over the extent to which the financial sector contributes to growth, which types of financial systems are most beneficial to growth, and even whether all growth in the financial sector is beneficial to society.[56] What is clear is that a positive correlation exists between GDP per capita and the International Monetary Fund's (IMF) financial development index, as seen in Figure 2.1 below. Nevertheless, it is important to note that the growth of sustainable finance markets depends on the depth, integrity, and liquidity of countries' financial systems.

Figure 2.1: Strong correlation between IMF Financial Development Index and GDP per capita.

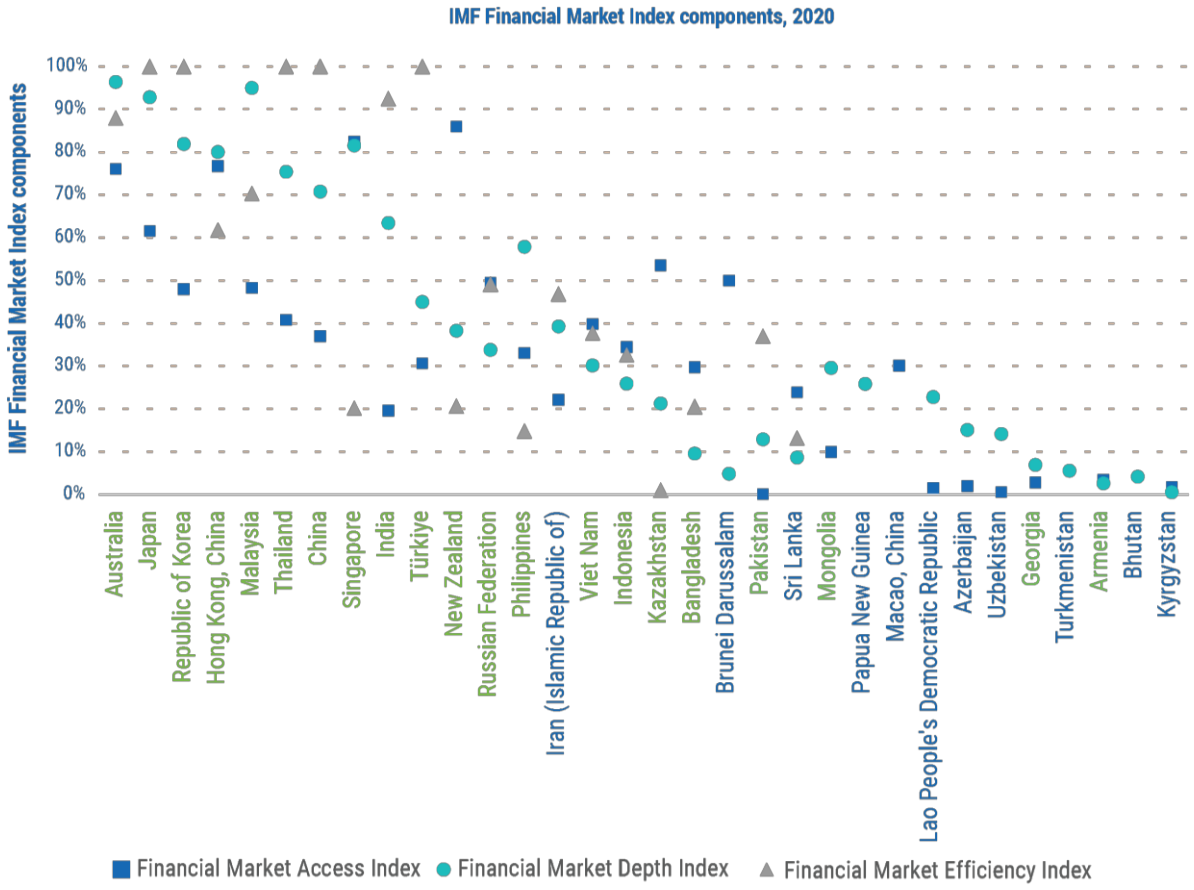


Source: ESCAP based on IMF, Financial Development Index Database, accessed on 8 February 2023; World Bank, accessed on 8 February 2023.

Note: The IMF Financial Development Index is an aggregate measure that summarizes how developed financial institutions and financial markets are in terms of their depth, access, and efficiency. There is significant correlation between the Financial Institutions index and GDP per capita (corr = 0.73, p <0.001) and between the Financial Market index and GDP per capita (corr = 0.62, p <0.001).[57] Both GDP per capita values and IMF Financial Market Index and Financial Institution Index values are from 2020. Countries lacking sufficient information on Financial Market Index components were excluded from the analysis due to missing data. The figure shows countries in Asia and the Pacific based on ESCAP groupings at sub-regional level.

Figure 2.2 below shows the relative state of financial market development in the region. Interestingly, one may intuitively expect countries with more financially developed systems to be further along in adopting sustainable finance taxonomies or regulation and experiencing higher sustainable finance flows. For example, Cambodia and Viet Nam, which have seemingly less developed financial systems, have nevertheless issued maiden green bonds using green or sustainable finance taxonomies. This suggests that countries can leapfrog traditional timelines of financial system maturation in developing sustainable finance systems. Such sustainable finance flows often include new types of investors for developing countries; investors who specifically seek sustainable/green impact investments even in the face of high sovereign or currency risk. For issuers, such diversification in investors expands the depth of the market.

Figure 2.2: Status of IMF financial market and financial institutions index components, 2020.



Source: ESCAP based on IMF, Financial Development Index Database, accessed on 8 February 2023.

Note: The IMF Financial Market Index measures how developed financial markets are in terms of their depth, access, and efficiency. Countries/jurisdictions highlighted in green represent countries/jurisdictions that have issued a green bond. Countries lacking sufficient information on Financial Market Index components were excluded from the analysis due to missing data. In case of insufficient information on financial markets' depth, access and efficiency, only available information on the other components is shown in the figure.

To grow, sustainable finance markets need depth, access, efficiency, and stability. According to the Center for Economic Policy Research (CEPR), in traditional financial markets, 'depth' means that financial institutions and financial markets are of a sufficient size. 'Access' reflects the degree to which economic agents use financial services. 'Efficiency' means that financial institutions can successfully intermediate financial resources and facilitate transactions. Finally, 'stability' refers to low market volatility and low institutional fragility.[58] These elements are also necessary for an increase in sustainable finance flows.

LDCs and SIDS face particular challenges in financial sector development, which affects their ability to attract private finance. Many LDCs and SIDS in the Asia-Pacific region continue to face challenging fiscal situations, which are exacerbated by low levels of tax revenue and domestic savings, disruptions in the tourism sector for SIDS, low productivity, and volatile GDP growth. Many LDCs and SIDS also frequently struggle to expand capital markets and deepen financial sectors, especially with regards to attracting private and/or foreign capital. For example, of all the private finance mobilized globally between 2012 and 2018, LDCs received only 6 per cent,[59] — approximately US $13.4 bn between 2012 and 2018. The majority flowed to upper middle income countries, which received 41 per cent, or $84 bn. Meanwhile, lower middle income countries were the recipients of 33 per cent, or $68 bn. Given the low share of LDCs in global GDP, this may seem to be a substantial amount; however, in light of the discrepancy between sustainable finances and what is required, a significant increase in private investment is vital. With 10 out of the 12 LDCs in Asia and the Pacific en route to graduation, official development assistance will need replacement with alternative sources of public and private finance, particularly to support the Sustainable Development Goals.

"Data limitations for adaptation projects, high transaction costs, and small project sizes make it difficult for SIDS to attract investments and compete for or access climate resilience financing. The climate and development finance systems need to adequately take into account SIDS unique needs and vulnerabilities, whilst ensuring a more consistent, long-term focused, and systematic way to attract climate finance working alongside national stakeholders" – Peseta Noumea Simi, Chief Executive Officer, Ministry of Foreign Affairs and Trade of Samoa

What is the role of policymakers in supporting sustainable finance?

The financing of sustainable development, including the financing of climate action, requires strong leadership and commitment to implement the Nationally Determined Contributions (NDCs) in time. The Paris Agreement, now ratified by 193 countries, requests each country to outline and communicate their post-2020 climate actions, known as their NDCs. These NDCs form the basis for countries to achieve the objectives of the Paris Agreement, and contain information on targets, policies and measures to reduce national emissions and adapt to the impacts of climate change. In Asia and the Pacific, countries have started to implement the NDCs domestically by (i) mainstreaming climate activities into national development plans, policies, strategies and roadmaps; (ii) creating an institutional framework; (iii) mobilizing resources; and (iv) elaborating transparency measures to monitor and evaluate climate action. However, as outlined earlier, the state of climate ambition in Asia and the Pacific (as manifested in the NDC commitments collectively) is insufficient to meet the global goal of limiting temperature rise to 1.5 degrees Celsius.

Importantly, even where (insufficiently ambitious) NDCs are in place, NDC financing plans lack progress. A 2020 assessment by ESCAP suggests that 26 countries in the region, well more than half, have not taken any steps to integrate NDC actions in national budgetary processes; 29 countries have no relevant policy frameworks for aligning private sector actions with NDCs; and 22 countries do not have frameworks for aligning lending with NDCs.[60] While this is improving, concerted and systematic efforts to devise and implement comprehensive financing strategies for the NDCs are not advancing fast enough.

Nevertheless, progress has been made in certain areas. The issuance of green, social, and sustainable bonds continues apace. Climate budget tagging — the practice of identifying, measuring, and monitoring climate relevant expenditures — is slowly increasing. More countries are exploring the viability of debt-for-climate or debt-for-nature swaps, especially in situations of potential debt distress. Several countries are developing and implementing integrated national financing frameworks (INFFs), which could strengthen planning processes and drive sustainable financing. These are promising trends. But to avoid fragmentation, they should be accompanied by a national vision that is central, overarching, and integrated to finance both the NDCs and the SDGs together.

Policymakers have an important role to play in signalling credible intentions and presenting national climate action priorities to markets. Such intentions and national priorities are closely watched by markets, who use them to price long-term investments. Emissions-reducing investments — whether it is phasing out of coal or the adoption of new technologies in carbon capture, utilization and storage — require upfront, lump sum payments of significant amounts to finance capital expenditure in equipment, factories, renewable energy installations, and technologies. Meanwhile returns are collected over a long-term basis, and often in the later years of the project. Policy signals thus need to act to reduce both the actual risks and the perceptions of risks associated with such long-horizon, upfront investments.

For public and private sustainable finance to flow towards the NDCs, contradictions in the enabling environment of sustainable finance need to be resolved. Firstly, it is important to recognize the scale of the transformation currently underway in sustainable finance. Regulations, taxonomies, standards, and markets are in flux, alongside countries' evolving NDC implementation plans. Policymakers are responsible for budget allocations in terms of incentives or tariffs that affect the returns in, for example, coal versus green hydrogen offtake, and in shifting economic structures away from using traditional energy sources to cleaner energy sources. This has vast implications for real economy industries, which have to adapt to new and cleaner energy sources, reduce the carbon intensity of their output, track their emissions, and plan for transition. In turn, this affects those who finance such industries and companies, whether it is public or private finance. Therefore, when regulation and policy are constantly evolving, investment returns are difficult to forecast with predictability or stability and affect go-no-go financing decisions with deleterious effects on long-term investment projects. Coherence across policies and sectors along with an enabling environment is thus critical to accelerate sustainable finance.

"The enabling environment signals an incoherence in policies: for example, with a subsidized coal industry on one part and a different picture for the renewable energy market, which lacks competitiveness as a result of the returns emerging due to challenges on the regulatory front." – *Anonymous*

Sustainable finance roadmaps are one tool that governments can use to signal their priorities to markets. In many cases, though such roadmaps are announced by governments and their ministries of finance, the design and implementation of such roadmaps are led by regulators. These roadmaps can chart a path for the development of a sustainable finance market, often by creating priorities and timelines for the development of key enabling tools such as (i) sustainable or green taxonomies; (ii) green, social, and sustainable bond frameworks; (iii) corporate sustainability reporting; (iv) climate disclosures; (v) and net-zero transition reporting; and other similar requirements. However, while sustainable finance

roadmaps lay out the planned trajectory of a sustainable finance market, policymakers still need to grapple with how underlying sectors in the real economy (which is financed by sustainable finance) can be guided to transition in time.

Furthermore, it is important to distinguish between the standards and ambition of sustainable finance roadmaps in developed countries versus least developed countries. LDCs, SIDS and other countries with special situations should be able to attract enough capital required for climate action and the SDGs. The danger is that by imposing strict ESG standards on risk management (Track 2), or on use of proceeds (Track 1), capital ends up being diverted away from more challenging markets that already face high sovereign risk and deter investors. The ASEAN taxonomy for example is a multi-tiered framework that takes into account differences amongst its member states.

Policymakers also have a role in advocating for and mobilizing committed climate finance from developed countries. In 2009 at COP15, developed countries committed to a goal of jointly mobilizing $100 billion a year by 2020 to address the needs of developing countries in the context of meaningful mitigation actions. This funding would come from public and private, bilateral, and multilateral sources, including grants as well as concessional and non-concessional debt. In 2016, parties to the Paris Agreement decided that they shall "set a new collective quantified goal from a floor of $100 billion per year, taking into account the needs and priorities of developing countries before 2025".[61] In 2021, at COP26 in Glasgow, parties decided to initiate deliberations to establish a new collective quantified goal that are to be concluded in 2024, and are to include inter alia, quantity, quality, scope and access features as well as sources of funding.[62] In spite of strong commitments, funding has fallen short of the goal of $100 billion annually ($83.3 billion was mobilized in 2020, according to the latest data available at the time of writing). Nevertheless, on the demand side, developing countries can continue strengthening their ability to seek access to these funds through concrete financing plans and strategies.

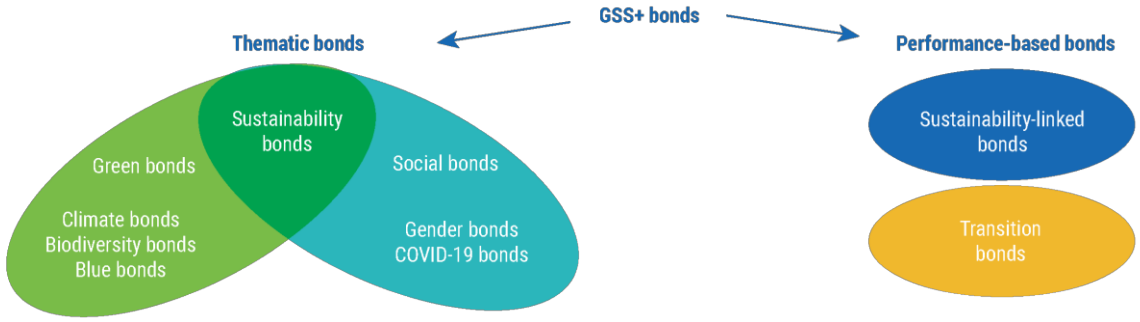
B. Trends and opportunities

This section discusses recent trends among governments and policymakers across Asia and the Pacific which are strengthening the depth, access, efficiency, and stability of sustainable finance markets. These trends, which are largely positive, point to increasing policy momentum across the region and are a positive harbinger of further sustainable finance at an imperative scale and pace. We discuss, in particular: the growth of green, social, sustainability and other labeled (GSS+) bonds; the role of carbon pricing; potential of debt for climate swaps; trends in accessing multilateral climate funds; and the potential offered by the Just Energy Transition Partnerships (JETPs).

Sovereign green, social, sustainability and other labeled (GSS+) issuance

Many countries in the region are increasingly issuing sovereign bonds that finance climate action and sustainable development. Green, social, sustainability, sustainability-linked bonds, and transition bonds, together referred to as GSS+ bonds or thematic bonds, fall within Track 1 of sustainable finance, whereby their proceeds are explicitly directed to fund green, social, or sustainable activities, as seen in Figure 2.3 below. While green, social and sustainability bonds follow a strict use-of-proceeds criteria, sustainability-linked bonds (SLBs) are used by issuers who commit explicitly to future improvements in the sustainability outcomes of their entity within a predefined timeline, and the proceeds of SLBs are intended to be used for general purposes.[63] SLBs therefore offer the issuer greater flexibility in terms of proceeds, while still setting specific targets for sustainable outcomes in a predefined timeline. Transition bonds are an emerging asset class whereby the issuer can either commit to use of proceeds terms directed to climate or just-transition purposes, or issue general purpose bonds aligned to sustainability linked bond principles.[64] On the London Stock Exchange, for example, transition bond issuers must publish a transition framework in line with ICMA's Climate Transition Finance Handbook, engage in climate-related financial disclosures, commit to net-zero targets and commit to report annually on its transition performance.

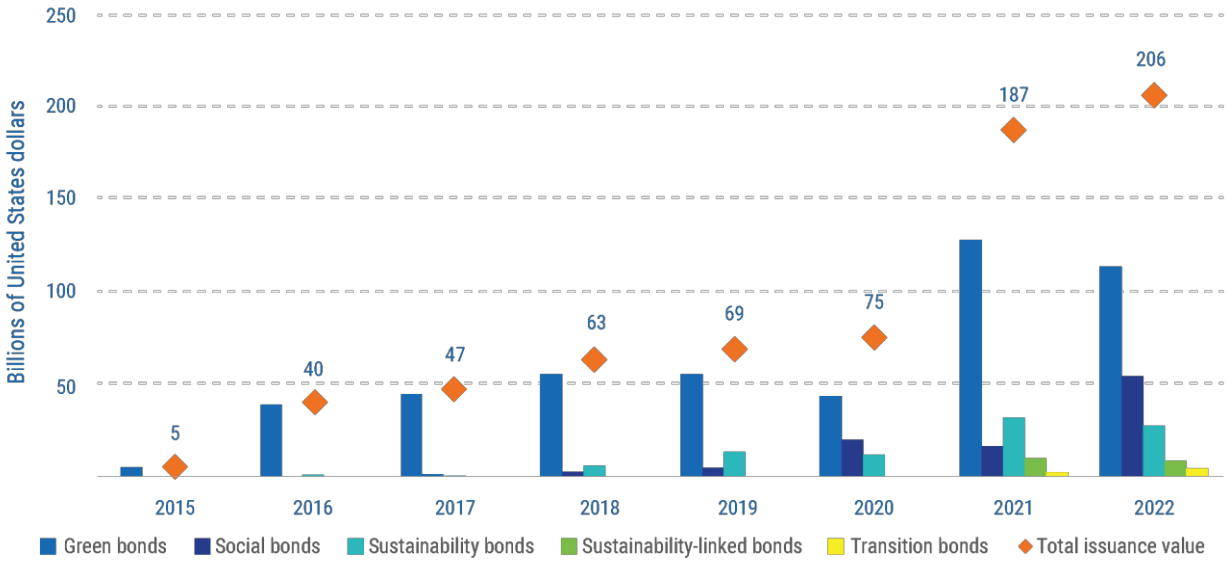
Figure 2.3: Thematic and performance-based bonds mapping.



Source: ESCAP

Figure 2.4 below shows the steep growth in GSS+ bonds in Asia and the Pacific from 2015 to 2022 and the promising growth of new asset classes. Globally, the market for GSS+ bonds (corporate and sovereign) has grown to around $3.8 trillion as of the end of 2022 (excluding transition bonds).[65] These new asset classes provide flexibility by issuers to meet different climate objectives and enable the issuer to obtain further unrestricted funding. While green bonds continue to dominate both corporate and sovereign bond issuances, sustainability bonds and more recent instruments, such as sustainability-linked and transition bonds, are making progress. The growth of these debt instruments, despite global turmoil in debt markets, is a proof of their resilience. Additionally, maiden issuances continued to grow and by the end of 2022, 43 sovereigns from five continents brought out debut GSS issues.[66] Of these, green bonds dominate the market with social bonds, sustainability bonds, and sustainability-linked bonds following.

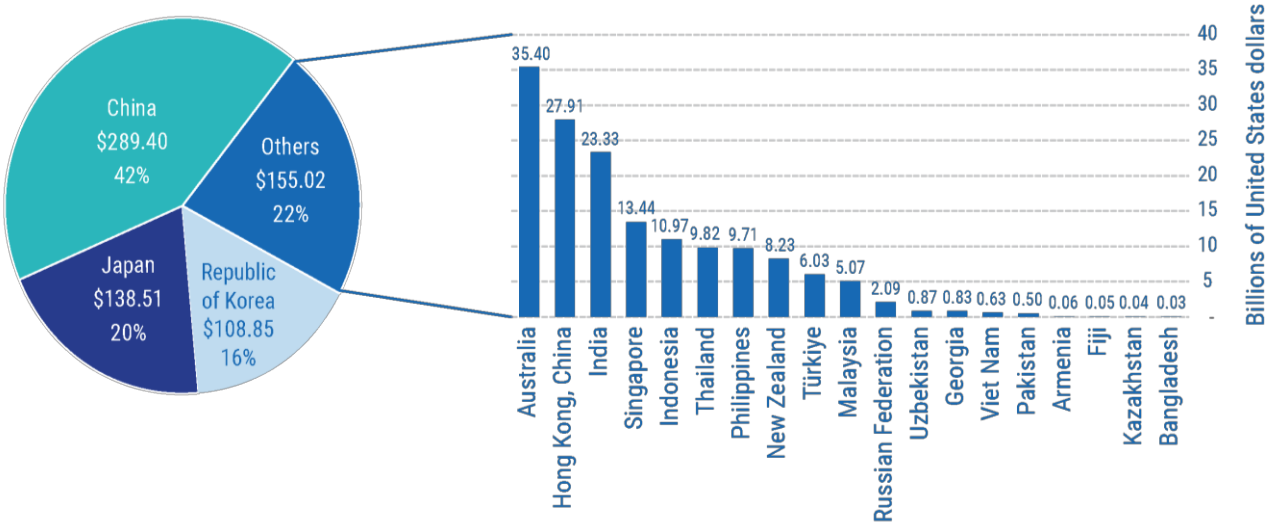
Figure 2.4: GSS+ bond issuance value in Asia and the Pacific, 2015-2022 (billions of United States dollars).



Source: ESCAP based on Environmental Finance data, accessed on 4 April 2023.

Note: The data labels show the total GSS+ bond issuance for the following countries and jurisdictions: Armenia, Australia, Bangladesh, China, Fiji, Georgia, Hong Kong, China; India, Indonesia, Japan, Kazakhstan, Malaysia, New Zealand, Pakistan, Philippines, Republic of Korea, Russian Federation, Singapore, Thailand, Türkiye, Uzbekistan, Viet Nam. It shows annual issuances and includes sovereign, financial and non-financial corporate and other public sector issuances.

Figure 2.5: Cumulative GSS+ sovereign, corporate and public bond issuance in Asia and the Pacific by country, 2015-2022 (billions of United States dollars).



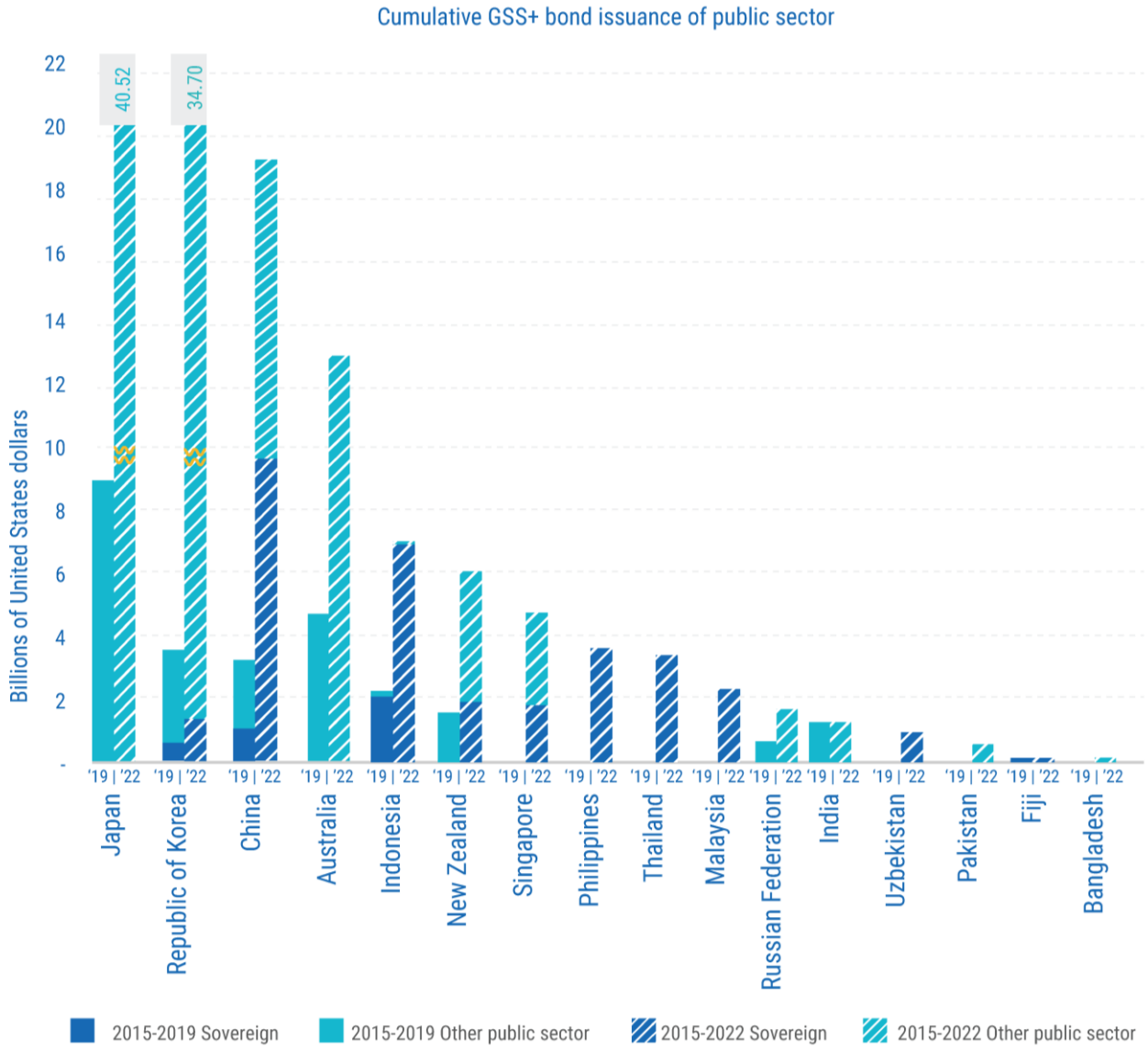
Source: ESCAP based on Environmental Finance data, accessed on 4 April 2023.

Note: Figure shows cumulative values across countries for the period 2015-2022. It includes sovereign, corporate, and other public sector issuances.

In Asia and the Pacific, China, Japan and the Republic of Korea have issued 78 per cent of the GSS+ bonds between 2015 and 2022. Among developing countries, India, Singapore, Indonesia, Philippines, and Thailand have issued GSS+ bonds for over $65 billion in the last seven years, as seen in Figure 2.5. Globally, according to Climate Bonds Initiative, 2022 saw GSS+ issuance hold its 5 per cent share of the global bond market despite an overall decline in GSS+ volume to $863.4 billion from more than $1 trillion in 2021.[67] Of these, green bond issuance comprised just over half of the labelled bond issuance in 2022 ($487.1 billion), followed by sustainability bonds ($166.4 billion), social bonds ($130.2 billion), SLBs ($76.3 billion), and transition bonds ($3.5 billion).

Sovereigns lag behind corporate issuers of GSS+ but their share is growing, sending important signals to the market. Sovereign GSS+ issuance is still about 5 per cent of the total debt issuance globally, while corporates are globally issuing 8 per cent of their issuance in GSS+ instruments. Similarly, international financial institutions are raising more than 30 per cent of their total bond issues via green instruments.[68] Sovereign green issuances catalyze domestic market development and send important signals to markets about the direction and commitment of policymakers to climate and sustainability goals. In Asia and the Pacific, the growth in sovereign and other public issuance by countries in the region has been substantial between 2019 and 2022, as seen in Figure 2.6 below.

Figure 2.6: Cumulative GSS+ bond issuance value of public sector in Asia and the Pacific by country and issuer type since 2015, as of end of 2019 and 2022 (billions of United States dollars).



Source: ESCAP based on Environmental Finance data, accessed on 4 April 2023.

Note: Other public sector includes development banks, municipal government, and public enterprises.

Countries with less developed financial systems have also moved ahead to mobilize sustainable finance markets. Despite the challenges associated with emerging regulation for new GSS+ markets, increased premiums due to lower sovereign credit ratings, and a nascent base of issuers and investors in GSS+ bonds, there have been promising maiden issuances in Asia-Pacific countries over the past two years — a trend that signals growth and continued strength of sustainable finance markets across the region.

Table 2.1: First time GSS+ bond issuers in 2021–2022.

Country	Bond label	Issuer type	Issuance year	Issuance value (million US dollars)
Bangladesh	Green	Public sector	2021	11.58
	Green	Corporate	2021	17.16
Pakistan	Green	Public sector	2021	500
Uzbekistan	Sustainability	Sovereign	2021	233.82
	Sustainability	Sovereign	2021	635
Viet Nam	Green	Corporate	2021	200
	Sustainability	Corporate	2021	425

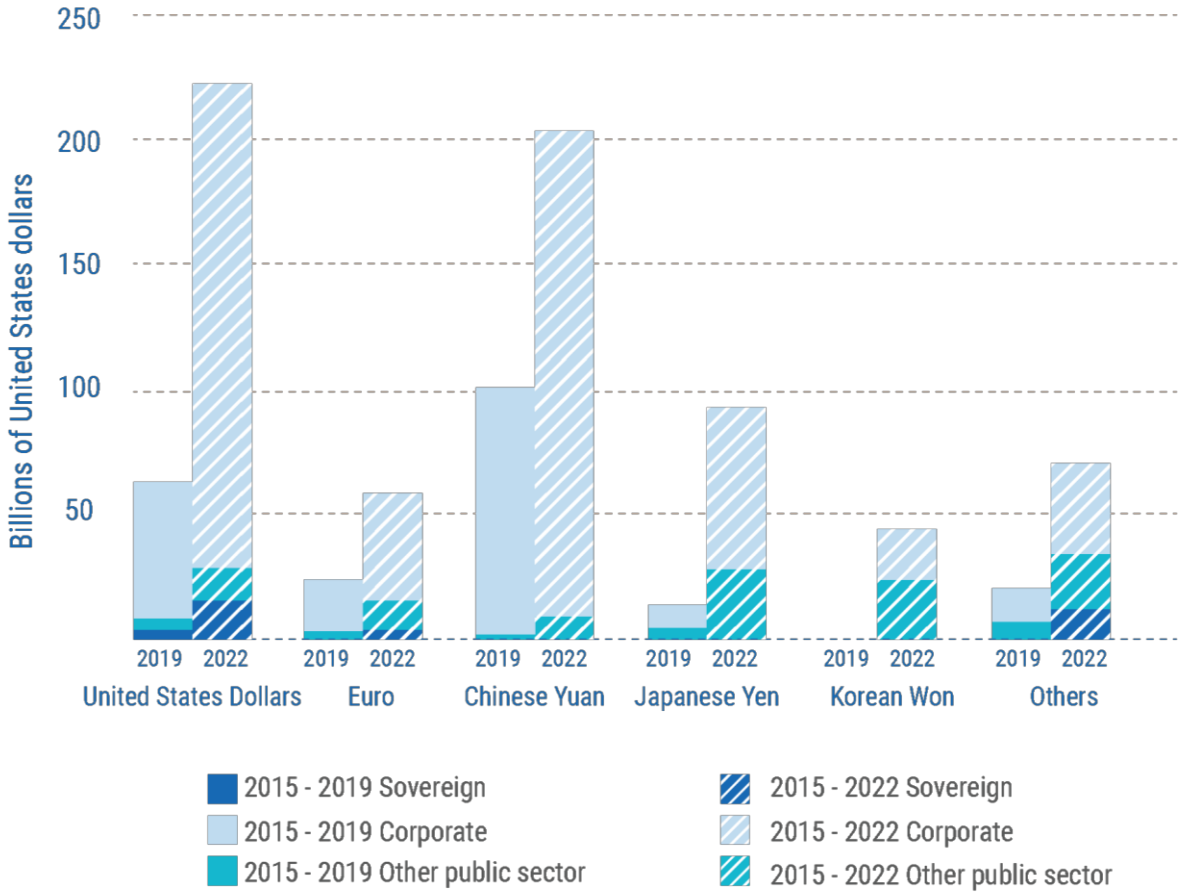
Source: Source: ESCAP based on Environmental Finance data, accessed on 4 April 2023.

Note: No GSS+ sovereign bonds were issued by ESCAP members for the first time in 2022. It is expected more ESCAP members will issue a GSS+ bond for the first time in 2023, including Mongolia and Cambodia.

There is also promising local-currency issuance of GSS+ bonds, signalling uptake of GSS+ bonds by local investors. This not only increases the depth of the GSS markets but importantly signals that investment appetite is no longer driven solely by international investors. Ensuring the participation of local investors in sustainable finance markets is essential to achieving a country's climate objectives. As seen in Figure 2.7 below, there has been significant local currency issuances of GSS bonds by both corporate and public actors. This signals that domestic investors are understanding and purchasing these securities and signifies the promise of depth and access in these markets.

Importantly, it also means projects financed by such green bonds do not need to add a premium to overcome hard-currency financing costs, which are aggravated by the depreciation of local currencies against the United States dollar. This unlocks larger volumes of sustainable finance that can meet environmental objectives at a higher and faster scale. Finally, as seen in Figure 2.8 below, there has been substantial issuance in many local currencies in Asia-Pacific countries that do not necessarily have an investment-grade rating. This also shows that investors have an appetite for what may be perceived as more risky local currency financing, in the GSS+ asset class. Interestingly, some of these GSS+ bonds are also being used as long-term financing instruments (with maturities beyond five years), which is essential as a potential tool to finance capital expenditure-heavy, upfront investments in climate action.

Figure 2.7: Cumulative GSS+ bond issuance value in Asia and the Pacific by currency and issuer type, 2015-2019 and 2015-2022.

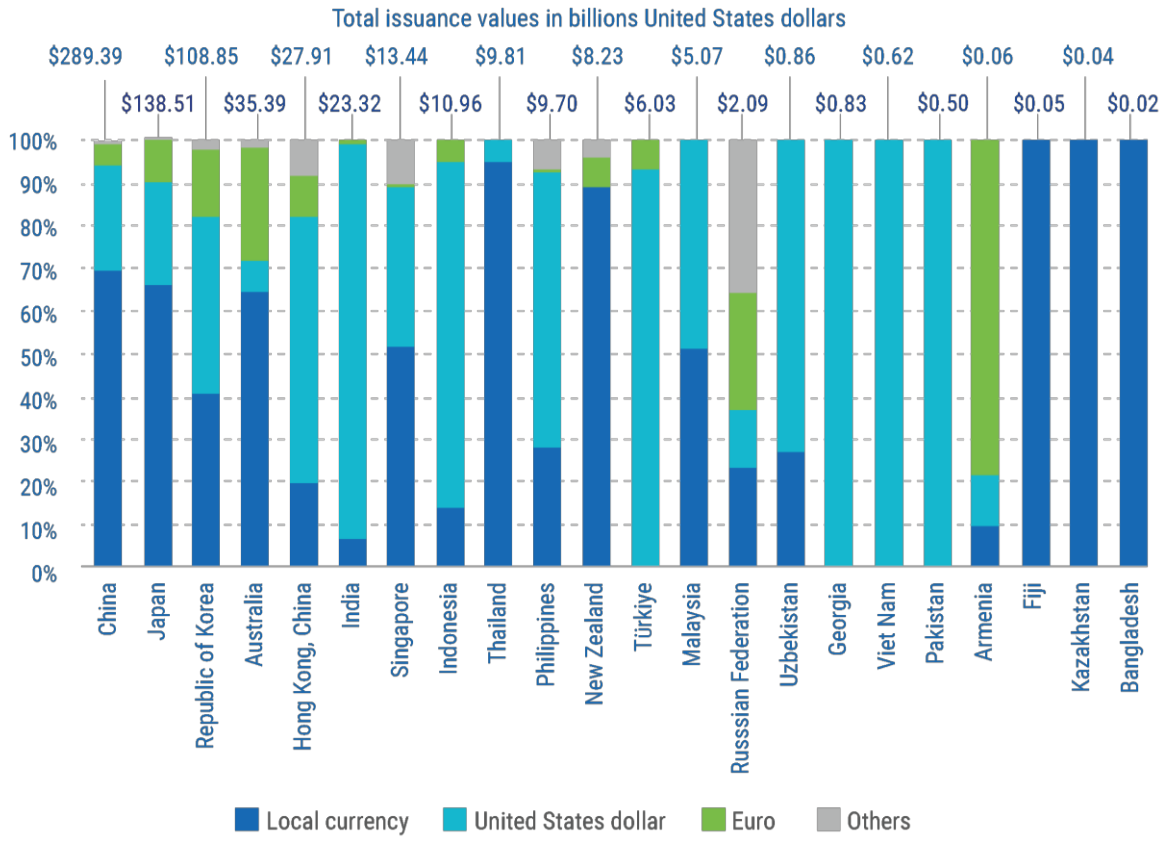


Source: ESCAP based on Environmental Finance data, accessed on 4 April 2023.

Note: 1) Other public sector includes development banks, municipal government, and public enterprises. Corporate refers to both financial and non-financial corporations.

2) Note that the issuance values of Chinese yuan, Japanese yen, and Korean won are among the top issuance currencies in Asia and the Pacific during 2015-2022. However, these were mostly domestically issued in local currencies. Ninety-nine per cent of issuance in Chinese yuan were in China, 99 per cent of issuance in Japanese yen were in Japan, and 100 per cent of issuance in Korean won were in the Republic of Korea.

Figure 2.8: Cumulative GSS+ bond issuance in Asia and the Pacific by currency (per cent), 2015-2022.



Source: ESCAP based on Environmental Finance data, accessed on 4 April 2023.

The emergence of sustainability-linked bonds (SLBs) could allow the financing of projects with direct impact in cutting GHG emissions. While green bonds are directed to financing green projects under green bond criteria, they are usually not linked to financing the reduction of emissions. SLBs are instruments with pre-defined sustainability performance targets that the issuer commits to meet by a given date (the "penalty event date"). If the targets are not met, the issuer is typically subject to a penalty, a mechanism that is absent in the case of conventional green bonds. SLBs can be linked directly to reduced greenhouse gas emissions through the contractual choice of the Sustainability Performance Target (SPTs). Data for the first half of 2022 shows that 58 per cent of SLB issuances were tied to greenhouse gas emissions – and 28 per cent of these covered scope 1, 2, and 3 emissions.[69]

Furthermore, mainstream green bonds tend to be concentrated in green infrastructure (buildings and transport) and renewable energy but SLBs are issued across a more diverse range of sectors. Alongside the financial services and utilities sectors, which are responsible for a combined total of 30 per cent of all SLB issuance in 2021 and H1 2022, the industrials, materials, and consumer sectors have a sizeable share of the market, with a combined total of almost 50 per cent of all SLB issuance, suggesting that companies in a wider range of sectors are using the instrument to help finance their net zero or low-carbon transitions.[70]

Trends show that sovereign issuances tend to raise overall sustainable bond standards. According to the Bank of International Settlements (BIS), the inaugural issue of sovereign green bonds tends to tighten standards for overall green issuance in that country. After such an issue, not only does the annual number of corporate issues tend to increase across jurisdictions, but so does the percentage of corporate issuance with second-party opinions. This tendency is apparent in both advanced and emerging market economies.[71] This further enhances the integrity of the markets and allows investors to trust and trade. According to BIS, while all sovereign issuers have solicited a seal of approval from an external reviewer, in contrast, as many as one-fifth of corporate green bonds globally are self-labelled as green by the issuer without any external review.[72]

Sovereign sustainable finance instruments can potentially finance other SDG objectives as well, including gender equality. While the sustainable finance market keeps expanding, investors' requests for more inclusive and innovative financial instruments that address social issues are also growing. These include financial products which include women's leadership, employment or incorporation into investment strategy and analysis. Social bonds, Sustainable Development Goal bonds,[73] gender bonds, sustainability bonds, and sustainability-linked bonds can help direct capital to reduce the financial and economic inequalities between women and men. Such instruments can enable capital to flow to fund social projects targeting specific populations. However, green or sustainability-linked bonds which include a gender or diversity dimension remain scarce.

Governments are increasingly active in carbon markets

In addition to fostering the development of the GSS+ bond markets in the region, carbon markets should be seriously considered by governments for climate action. Voluntary carbon markets remain predominantly global in nature, but in the region, China, Thailand, Japan, the Republic of Korea, Singapore, Australia and New Zealand have also developed emissions trading schemes or carbon credit markets, as can be seen in Figure 2.9 below and Annex D. New carbon markets in Asia and the Pacific are also expected to go live in 2023, when Indonesia will launch the first phase of mandatory carbon trading for coal power plants.[74]

Figure 2.9: Carbon pricing initiatives at national and sub-national level in Asia and the Pacific.

Source: ESCAP based on World Bank Carbon Pricing Dashboard[75] and UNCTAD Sustainable finance regulations platform.[76]
Note: Carbon pricing initiatives are considered "scheduled for implementation" once they have been formally adopted through legislation and have an official, planned start date. Carbon pricing initiatives are considered "under consideration" if the government has announced its intention to work towards the implementation of a carbon pricing initiative and this has been formally confirmed by official government sources.[77] ETS refers to cap-and-trade systems, but also baseline-and-credit systems.[78]

Governments can allocate carbon pricing revenues to critical social and environmental policies to support sustainable development. The World Bank estimates that $84 billion in carbon pricing revenues was raised by governments in 2021, yet carbon pricing still only accounts for less than 5 per cent of global emissions. ESCAP's Economic and Social Survey 2020 highlights that phasing out fossil fuels and introducing carbon pricing could open up significant fiscal space for countries in the region. For example, at a carbon price of $70, the survey estimates that several countries in the region could increase revenues by over 2 per cent of GDP by 2030. In sum, if the revenue raised from carbon taxes is collected effectively and then partially channelled back into the economy to compensate low-income groups for the impact on energy and transportation costs, it can potentially increase the level of economic activity and reduce inequality and poverty, while simultaneously progressing towards emissions targets and reducing air pollution.

Several countries in the Asia-Pacific region have already adopted different forms of carbon pricing. This includes China (the largest carbon market in the world), Japan, Republic of Korea, Australia, Singapore, New Zealand, and Kazakhstan. In addition, several others are currently considering carbon pricing policies, including Thailand, Malaysia, Brunei Darussalam and Indonesia. (However, Indonesia recently announced it would delay the introduction of its carbon tax due to the impact of high energy prices). Furthermore, nascent discussions are underway to link compatible ETSs with each other to reduce costs, increase liquidity, and harmonize carbon pricing across jurisdictions. According to the World Bank,[79] 73 different carbon pricing instruments globally have been implemented as of the end of 2022 with a share of global GHG emissions covered around 23 per cent. Record high revenues from emission trading schemes and carbon taxes approached $100 billion. While both issuances and retirements of carbon credits fell compared to 2021, voluntary demand from companies remains the primary driver of market activity.

However, the carbon price remains well below what is needed to drive carbon neutrality. According to the World Bank, as of April 1, 2023, less than 5 per cent of global greenhouse gas (GHG) emissions are covered by a direct carbon price at or above the range ($40-$80 per metric ton of carbon dioxide) recommended by 2030[80] (in 2023), with most of these high-price instruments located in Europe.[81] Another estimate of what an effective carbon price range should be also came from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) which released its updated scenarios for central banks and supervisors in September 2022. NGFS modelling suggests that carbon prices need to be around $50 by 2030 in 2010 terms (or $69 in 2023 terms) and subsequently around $200 (or $276 in 2023 terms) by 2050 to achieve a below-2°C outcome.[82] The majority of current carbon prices remain far below this range, and such prices are commanded in high income countries, mainly in Europe and the United States.

Most countries have now included emission reductions targets in their NDCs. Carbon offsets are an integral part of the UNFCCC Paris Agreement, including the rules to establish pathways for their use. A carbon offset is equal to one metric tonne of carbon dioxide (or equivalent GHG) that has either been removed from the atmosphere or prevented from being released into the atmosphere. Critically for carbon offsets to serve their purpose of incentivizing abatement and encouraging countries to meet their international climate change obligations, they must have environmental integrity. Carbon offsets are created by certified activities that create and measure the number of tonnes of removals or reductions in GHGs from the atmosphere. Only additional removals or reductions in GHGs that happen because of the activities, and that would not have happened otherwise, can be counted and made into carbon credits.

Article 6 allows parties to the UNFCCC to use international trading in carbon offsets, referred to as internationally transferred mitigation outcomes (ITMOs) to help achieve their emissions reduction targets. ITMOs enable countries to buy and sell carbon offsets from each other to meet their obligations under the Paris Agreement. Importantly, this creates opportunities for developing countries to sell carbon offsets to developed countries.

Carbon markets are being explored by governments to accomplish their NDCs, while corporations are taking the initiative by establishing their own reduction targets and utilizing offsets to achieve them. Consequently, the demand for carbon offsets is increasing, with both mandatory compliance and voluntary markets becoming more widespread. It is hoped that Article 6 will provide a framework for integrating compliance and voluntary markets in the future.

Box 2.1: LDCs and SIDS and carbon offset markets.

Carbon offset markets are increasingly valuable to enable companies and governments to meet their emission reduction targets by purchasing carbon offsets. Carbon offsets are generated by projects that reduce or remove GHG emissions. Article 6 of the Paris Agreement encourages countries to use cooperative approaches that enable them to use carbon offsets to help achieve their emissions targets. These projects can include nature-based solutions, such as projects to reduce deforestation. Forests absorb carbon dioxide from the atmosphere — thus acting as natural sinks for GHG emissions — although they release GHGs when cleared or degraded. Reducing deforestation can, therefore, significantly enhance efforts to mitigate climate change.

Blue carbon ecosystems, such as mangrove forests and seagrass meadows, also act as carbon sinks and contain more sequestered carbon per square meter than almost any other ecosystem. Importantly, projects must be certified according to agreed methodologies and have in place appropriate monitoring, reporting, and verification (MRV) protocols to guarantee that they create actual measurable reductions in GHGs, which increases compliance costs. However, if structured appropriately, a project designed to conserve a forest or blue carbon ecosystems can generate carbon offsets that can be sold, earning valuable income for local communities and governments that can contribute to broader sustainable development priorities. Regional partners — including Australia, Fiji, Papua New Guinea, among others — are working together to develop high-integrity carbon offset schemes in the Indo-Pacific region. The rich stock of biodiverse green and blue ecosystems within the Asia-Pacific region, particularly in LDCs and SIDS, means that carbon offsets generated from these types of projects have the potential to play a critical role in generating much-needed sources of climate finance for LDCs and SIDS in the region.

Debt for nature and debt for climate swaps

In the current context of high, and increasing, public debt levels amid a narrowing fiscal space in developing countries, the availability of public finance for climate action projects is curtailed. Debt for nature or debt for climate swaps represent a promising solution. Policymakers are increasingly exploring this tool.

A debt swap is an agreement between a creditor and a debtor by which the former cancels a portion of the latter's foreign debt in exchange for a commitment to invest in a specific environmental project. Debt for nature swaps have a precedent in the debt for nature swaps first implemented in the context of the global debt crisis of the 1980s. Debt for nature swaps invested mainly in conservation projects, and they are flexible instruments that can be funded through a variety of sources in addition to donor countries. These may include grants from philanthropical organizations, as in the Seychelles debt swap of 2015 — when nearly $22 million of debt was forgiven in exchange for greater ocean protection — or an issuance of a blue bond backed by political risk insurance by the US International Development Finance Corporation (DFC), as in the Belize debt-for-nature swap of 2021, through which approximately $107 million was dedicated to conservation projects amid debt restructuring.

A debt for climate swap is a type of debt swap that cancels foreign debt in exchange for a commitment to redirect savings in debt services towards climate-friendly objectives. Bilateral official creditors that are Annex II parties to the United Nations Framework Convention on Climate Change can make their funding of debt for climate count as part of the developed countries' commitment to provide $100 billion per year in climate finance to developing countries.[83] According to the IMF, "under bilateral debt swaps, previously committed debt service to official bilateral creditors is redirected to the financing of mutually agreed projects in areas such as nature conservation and climate.[84] Tripartite swaps involve buybacks of privately held debt financed by donors and/or new lenders, usually intermediated by an international nongovernmental organization (NGO), conditional on nature- or climate-related policy actions and/or investments. In the most common type of operation the NGO lends the funds to the debtor country at below-market interest rates, on condition that (1) the debtor uses the funds to buyback commercial debt at a discount, and (2) a portion of the resulting debt relief (the difference between the cost of the retired commercial debt and the new debt to the NGO) is used to fund climate-related actions or investments."[85]

Debt swaps are not the same as unilateral debt forgiveness. They are mutually beneficial agreements through which both the debtor and its creditors gain. Debtors benefit by reducing their debt burden and opening fiscal space for dedicated investments in climate projects. They also benefit by reducing pressure on the exchange rate, as their new obligations to invest in climate projects are in domestic currency. With regards to creditors, private bondholders can benefit from a buyback agreement at a price that exceed the market price, and bilateral official creditors can make their funding of a debt for climate swap deal count as part of the $100 billion commitment, as mentioned earlier. Table 2.2 provides a broader description of costs and benefits of debt swaps which policymakers can use to assess the suitability of these instruments.[86]

Table 2.2. Opportunities and challenges of debt swaps for the involved parties.

Advantages and positive outcomes for the debtor country	Advantages and positive outcomes for the creditor country	Shortfalls and challenges
▪ Through debt relief and conversion, the overall debt burden on the debtor country is lowered and the strain on the national budget is reduced. ▪ Since counterpart payments into environmental projects are generally made in local currency, debtor governments save scarce hard currency which they can then use to build foreign exchange reserves. ▪ Debt swaps have the potential to improve the overall macroeconomic situation of an indebted and developing country through alleviating its public debt burden in the medium term and creating fiscal space in the short term. ▪ Debt relief can strengthen economic stability, improve the credit rating of a debtor, and attract new investments. ▪ Environmental projects benefit from freed finance that would have otherwise gone towards the creditor's budget, often bringing economic and social benefits at a local level. ▪ Grants to environmental projects or local NGOs are typically distributed via a trust fund which is set up according to the original repayment schedule. This long-term regular funding facilitates investments in climate finance.	▪ From a financial perspective, creditor countries' remaining debt claims increase in value through such swaps, and creditors can recover either full or at least a larger part of their debt. Debt swaps are particularly beneficial if parts of the debt have been already written off, but full repayment remains unlikely. ▪ Creditors must mobilize less additional finance to meet their international climate commitments and, at the same time, can register the instrument as the provision of Official Development Assistance (ODA). Since the nominal value of non-concessional debt can be registered as ODA, many creditor countries have used this instrument to boost their ODA numbers. ▪ Further, creditor countries can raise their environmental credentials by mobilizing co-financing through international funding institutions. A debt swap that is carefully designed can guarantee an adequate use of funds and carry a greater weight than a single donation. ▪ Debt for climate swaps can help developed countries reach their COP26 target to mobilize at least $100 billion annually by 2023 while providing developing countries with additional resources to mitigate and adapt to climate change.	▪ If the write-off rate is low or even zero, no extra-budgetary room is provided, which leaves the overall macroeconomic situation unaffected. ▪ If the debt swap volume is small, the positive impact on the debtor's economic situation is negligible or might even be outweighed by the costs incurred when negotiating a swap and setting up a trust fund. ▪ Debtor countries must have sufficient funds to put into trust funds, and there exists a risk of inflation if debtor governments print money to pay the agreed amount in local currency. This risk does not apply to countries that do not have a national currency. ▪ Debt swaps carry the threat of crowding out other forms of finance that are potentially more effective. Debt swaps should be additional to the already delivered ODA and not substitute other channels of new aid. ▪ Climate-relevant debt swaps have to compete with other sectors (health, education, infrastructure) for a limited amount of eligible debt. ▪ Countries will need to negotiate with creditors specifying the conditions of the swap, reduced debt, selection of projects, implementation and monitoring, additional financial sources, connections with the SDGs and the Paris Agreement.

Source: ESCAP

Accessing multilateral climate funds and development finance

In addition to GSS+ bonds, carbon pricing, and debt for climate or debt for nature swaps to finance, accessing multilateral climate funds and/or development finance is another source of sustainable finance for policymakers.

Multilateral climate funds (MCFs) are a significant source of sustainable finance for developing countries but may be insufficient to meet their financing gaps. Multilateral climate funds were established through international agreements with a mandate to provide finance for the transition to a green, inclusive, and climate resilient economy in developing countries. The visions and missions of the MCFs are partially shared and mutually reinforcing in their support to developing countries to implement the United Nations Framework Convention on Climate Change and the Paris Agreement. They are to be accessed by developing countries for mitigation, adaptation or transition funding and use a variety of financing methods. They form a significant channel for the $100 billion per year promised by developed countries to developing countries. The main MCFs and their purposes are:

- Finance for adaptation in developing countries: The mission of the Adaptation Fund is to accelerate the quality of adaptation action in developing countries by financing concrete adaptation actions, innovation and multi-level learning that engage, empower, and benefit the most vulnerable communities through inclusive and country-driven processes.
- Finance to adopt new green technologies in developing countries: The Climate Investment Fund's mission is to mobilize its Multilateral Development Bank partners, governments, the private sector and local communities, to test and pioneer new technologies, create markets, and catalyze transformational change toward a more prosperous, equitable climate economy.
- Finance to meet climate goals by developing countries: The Global Environment Facility's (GEF's) mission is to safeguard the global environment by helping developing countries meet their commitments to multiple environmental conventions and by creating and enhancing partnerships at national, regional, and global scales based on the principle of sectoral integration and systemic approaches to project and program financing.
- Finance for LDCs to meet national adaptation programmes of action. The GEF operates the Least Developed Countries Fund (LDCF).
- Finance to adopt low-emission development strategies by developing countries. The Green Climate Fund's (GCF's) vision is to promote the paradigm shift towards low-emission and climate resilient development pathways in the context of sustainable development.

In Asia and the Pacific, $5.3 billion was mobilized by the multilateral climate funds between 2018 and 2021, based on OECD development finance statistics.[87] This is still a small proportion of overall climate finance flows, and of the climate finance gaps, and many developing countries in the region face challenges in applying for and meeting the requirements of financing from these funds. Table 2.3 below presents data on access to sustainable finance in Asia and the Pacific in 2021 from three main sources: multilateral climate funds, multilateral development banks, and bilateral donors.

Table 2.3: Climate-related development finance committed by developed countries to Asia-Pacific countries through various channels in 2021 (in millions of United States dollars).

	Multilateral climate funds		Multilateral development banks		Bilateral donors	
	Grants	Loans	Grants	Loans	Grants	Loans
South and South-West Asia	189	182	111	9,366	1,222	7,096
Afghanistan	3		103		173	
Bangladesh	0		1	906	188	2,181
Bhutan	12		1	23	35	
India	21	64	2	3,272	255	4,043
Iran (Islamic Republic of)	0				20	
Maldives	26		0	40	13	14
Nepal	27		1	67	133	
Pakistan	1	15	1	1,993	191	77
Sri Lanka	1		1	482	31	27
Türkiye	2			2,583	113	742
Subregional funding	95	103	1		71	11
North and Central Asia	77	12	151	1,742	274	593
Armenia	4			128	18	76
Azerbaijan	0			40	16	
Georgia	10			233	63	177
Kazakhstan	0		0	401	7	
Kyrgyzstan	12	6	38	57	20	
Tajikistan	9	7	113	59	48	
Turkmenistan	29			1	3	
Uzbekistan	12		0	823	15	338
Subregional funding	0				84	1
South-East Asia	157	53	5	2,905	1,057	1,966
Cambodia	7			61	104	340
Indonesia	51		0	1,303	298	821
Lao People's Democratic Republic	6			28	83	
Malaysia	4				19	
Myanmar	0				95	
Philippines	5			1,304	96	352
Thailand	23			11	14	
Timor-Leste	42		0	37	99	
Viet Nam	7	18	2	160	165	428
Subregional funding	13	35	3	0	83	25
East and North-East Asia	89	375	8	1,953	105	72
China	30		2	1,899	48	71
Democratic People's Republic of Korea	0				1	
Mongolia	52	130	1	54	48	
Subregional funding	7	245	5	0	8	1

	Multilateral climate funds		Multilateral development banks		Bilateral donors	
	Grants	Loans	Grants	Loans	Grants	Loans
The Pacific	97		178	157	908	
Fiji	0		1	49	60	
Kiribati	11				47	
Marshall Islands	6		18		16	
Micronesia (Federated States of)	22		40		10	
Nauru					6	
Niue	5				3	
Palau	0		1		8	
Papua New Guinea	26			84	305	
Samoa	0				42	
Solomon Islands	6		3	1	124	
Tonga	9		62		27	
Tuvalu	6		18		6	
Vanuatu	3		29	23	85	
Subregional funding	2		6		167	
Totals	613	623	461	16,124	3,788	9,758
Regional funding	4		9	0	221	32

Source: ESCAP based on OECD, Climate Change: OECD DAC External Development Finance Statistics.[88]
Notes: The table shows climate-related development finance in current United States dollars committed by bilateral and multilateral sources in 2021. Flows from bilateral donors are provided directly to an aid recipient country. A bilateral donor's contribution is considered multilateral if it is pooled with other contributions and disbursed by multilateral development banks or multilateral climate funds. The data in the table covers 96.3 per cent of the climate finance flows to the region in 2021. For simplicity, flows from private philanthropies and flows in the form of equity and mezzanine financing instruments from all sources, which contribute the remaining 3.7 per cent of the total, are not shown in the table. Regional and subregional funding is funding to the region or a specific subregion that does not identify the recipient countries.

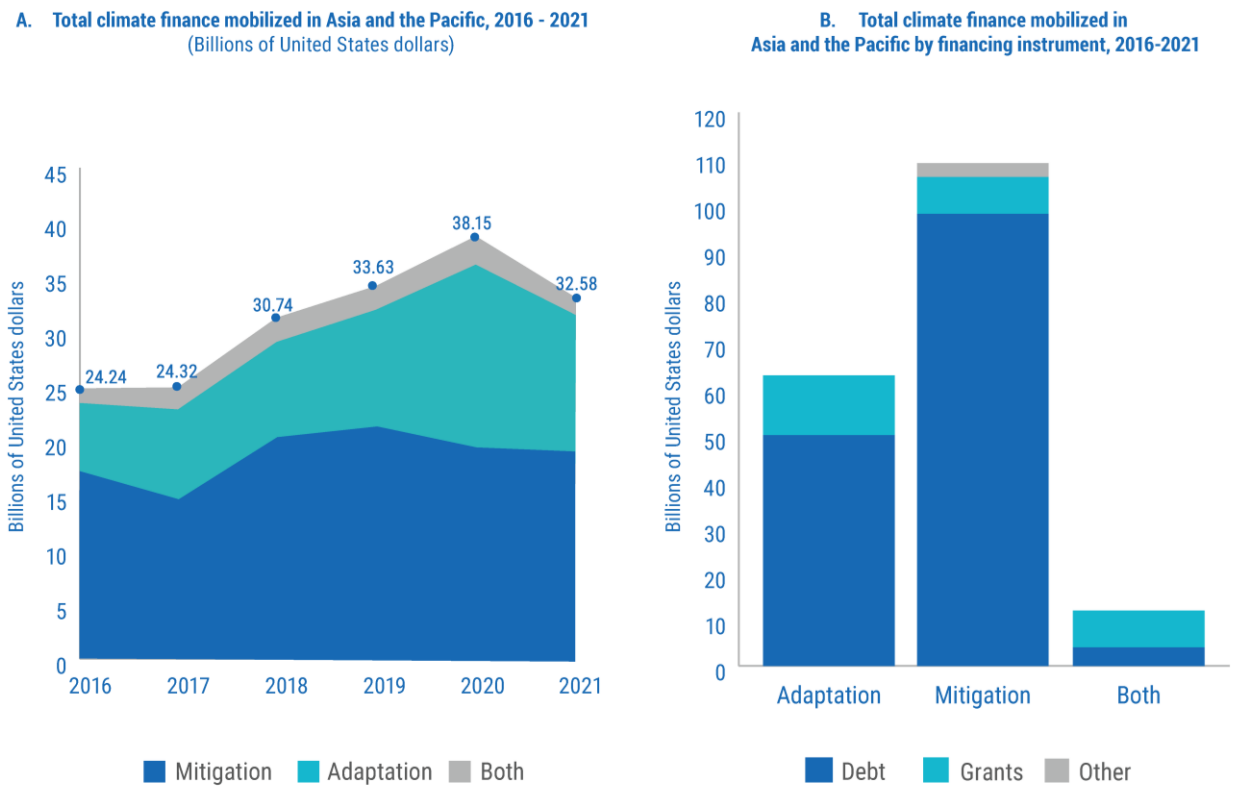
In total, Asia and the Pacific received $183.7 billion in climate finance between 2016 and 2021 from all such sources. The two main sources were multilateral development banks ($88.3 billion) and bilateral donors ($86.8 billion), followed by multilateral climate funds ($7.5 billion). In addition, private philanthropies contributed $1.1 billion during this period. As can be seen in Figure 10, Panel A, climate finance increased from $24.2 billion in 2016 to $38.2 billion in 2020, but it fell to $32.6 billion in 2021. The $5.6 billion drop in climate finance between 2020 and 2021 was due to bilateral donors, who decreased their flows to the region by $6.2 billion, while multilateral climate funds and multilateral development banks increased their financing slightly. A possible explanation of the drop in Official Development Assistance (ODA) channelled to climate finance in 2021 could be the increase in global ODA allocations towards COVID-19 related activities, from $12 billion in 2020 to $21.9 billion in 2021.[89]

The increase in climate finance between 2016 and 2021 has been largest for adaptation finance, 101 per cent from $6.2 billion in 2016 to $12.5 billion in 2021. Finance for mitigation increased by 11 per cent, from $16.7 billion in 2016 to $18.5 billion in 2021. As percentage of total climate finance from such sources, adaptation increased from 25.6 per cent in 2016 to 38.2 per cent in 2021 (Figure 2.10, Panel A).

Much of the financing has been debt creating, which is a concern when countries are already experiencing increased indebtedness. With regards to financing instruments, 82.8 per cent of the flows during 2016-2021 consisted of debt finance, 15.6 per cent consisted of grants, and 1.6 per cent consisted of other instruments such as equity and mezzanine financing.[90] The share of debt is higher for mitigation projects (90 per cent) and lowest for projects where there is an overlap of mitigation and adaptation (37 per cent). (See Figure 2.10, Panel B).

Over 70 per cent of the climate finance received by the region between 2016 and 2021 was concentrated in four sectors: Transport & Storage (29.6 per cent of total climate finance flows in 2016-2021), Energy (22.7 per cent), Water Supply & Sanitation (9.9 per cent), and Agriculture, Forestry, Fishing (8.9 per cent). Within the transport sector, rail transport was the main subsector (18 per cent of total climate finance flows in 2016-2021), followed by road transport (6 per cent), and Transport policy and administrative management (3.7 per cent). Within energy, the main subsectors were Electric power transmission and distribution (5 per cent), Energy policy and administrative management (4 per cent), Energy generation, renewable sources - multiple technologies (3 per cent), Hydro-electric power plants (2.5 per cent), Solar energy for centralized grids (1.9 per cent), and Energy conservation and demand-side efficiency (1.3 per cent).

Figure 2.10: Climate finance to Asia and the Pacific over time and by financing instrument.



Source: ESCAP based on data from OECD[91].

Note: The figures show total climate finance measured in current United States dollars committed by developed countries from multilateral climate funds, MDBs, and bilateral sources.

Achieving climate goals requires developing countries to go beyond reliance on promised funding from developed countries. It is encouraging that publicly sourced climate finance to Asia-Pacific developing countries is on the rise. However, even if these flows continue growing at an annual rate of 12 per cent, as they did between 2016 and 2020, the amounts will not suffice to cover the large financial gaps faced by countries in the region for the transition to a low carbon economy, nor will the funds be enough to meet the investment required for the energy transition.

The Just Energy Transition Partnerships

The Just Energy Transition Partnerships (JETPs) present a promising model of partnership between policymakers, regulators, donors, and private investors for the region. While it is not feasible for every country in the region to participate in a JETP, policymakers can nonetheless take away several key lessons from the initiative.

The Indonesia Just Energy Transition Partnership (JETP) was launched in November 2022. Following the South Africa model, this is a country platform of coordinated policies, regulatory improvements, (anticipated) project pipelines, and financing commitments that together aim to mobilize $20 billion from 2023 to 2028 to accelerate a just energy transition. Ten billion US dollars of public money will be contributed by the International Partners Group (IPG) members (France, Germany, the United Kingdom, the United States of America, and the European Union), and at least $10 billion of private finance will be mobilized and facilitated by the Glasgow Financial Alliance for Net Zero (GFANZ) Working Group.

The Viet Nam Just Energy Transition Partnership launched in December 2022 will rally an initial $15.5 billion of public and private finance over the next three to five years to support Viet Nam's green transition. Initial contributions to Viet Nam's JETP include $7.75 billion in pledges from the IPG together with the Asian Development Bank and the International Finance Corporation. This is supported by a commitment to work to mobilize and facilitate a matching $7.75 billion in private investment from an initial set of private financial institutions coordinated by the Glasgow Financial Alliance for Net Zero (GFANZ), including: the Bank of America, Citibank, Deutsche Bank, HSBC, Macquarie Group, Mizuho Financial Group, MUFG, Prudential PLC, Shinhan Financial Group, SMBC Group, and Standard Chartered.

The Indonesia and Viet Nam JETPs provide a model to the rest of the region to focus their financing strategies. Their JETPs coordinate national commitments to peaking emissions, phasing out coal, improving regulations and ensuring bankable projects for private finance as well as public finance. In turn, this commitment and coherence at the national level has attracted private finance commitments in addition to donor finance. For the rest of the region's developing countries, the model suggests that pragmatically focusing on coherence and change within a specific sector can yield results. Strong policy and regulatory commitment in a specific sector and area signals to investors that pricing risks around regulatory and policy uncertainty will likely subside, reducing the cost of financing (or the "uncertainty premium").

C. Challenges

This section discusses some of the challenges faced by governments, particularly in developing countries, to strengthen the depth, access, efficiency, and stability of sustainable financial markets; and to bridge the gap by mobilizing enough sustainable finance to meet national goals.

The lack of policy coherence by policymakers affects the amount of sustainable finance flows to countries and the integrity (standards) of these flows. A lack of coordinated policymaking between goals, trade-offs, activities and resources between ministries, departments, and agencies responsible for designing and implementing climate-related mandates and financial sector mandates adversely affects transaction costs and reduces efficiency. It also negatively drives risk perceptions about the reliability, predictability, and stability of the policy and regulatory regime.

Coherence between policy commitments and independent regulatory approaches is also essential. Scaling up green and climate finance involves transforming not only green and climate finance policies but also other areas of business and investment policies, especially with regards to the real economy. The policy environment exerts a strong influence over investment decisions, and if the legal and regulatory system is unclear, contradictory, or creates unintended barriers, a country is less likely to attract the necessary climate finance. One example is a country with an ambitious emission reduction target, but legal and regulatory frameworks that provide preferential treatment for fossil fuels. Policymakers thus need to balance numerous competing policy choices and regulatory arrangements in many different sectors and levels of government.

Expertise, skills, and resources are required by policymakers to access multilateral climate fund funding. The GCF project approval time, for instance, for LDCs is often long. In the time span between November 2015 and July 2021, the median time for processing an application was of 619 days or 21 months. Because submissions are made quarterly in accordance with the GCF project submission schedule, this could represent up to six or seven rounds of reviews of the funding proposal at the GCF Secretariat and/or from an Independent Technical Advisory Panel (ITAP). The shortest approval time for LDC projects was 113 days (about four months) and the longest was 1,727 days or 58 months. Adaptation projects bore the longest average time — 22 months compared to 20 months for mitigation and cross-cutting projects.[92]

"Public sector of SIDS like Samoa inherently face major human and technical capacity constraints throughout the project cycle, from project origination to implementation. The complexity of the climate finance landscape and the lack of harmonization among the requirements of multilateral climate funds and donors further exacerbate this challenge. Improved capabilities, more predictable and long-term financing can be key to the development of pipeline projects for potential investments and access to funding opportunities for SIDS." – *Peseta Noumea Simi, Chief Executive Officer, Ministry of Foreign Affairs and Trade of Samoa*

The cost of sustainable finance is affected by countries' sovereign credit ratings. Sovereign credit ratings are usually a combination of domestic economic risk, public finance risk, external economic risk, financial stability risk and environmental, and social and governance risk. We see this in Table 2.4 below, which shows that investment-grade sovereign ratings are correlated with much larger volumes of GSS+ bond issuance. Such bonds enjoy a cheaper cost of financing for green projects and can be issued in larger volumes, given the lower debt servicing costs. However, sustainable finance instruments can still be issued successfully without investment-grade ratings. As Table 2.4 also shows, countries with non-investment grade sovereign ratings have also successfully issued GSS+ bonds. The volumes are still low, but they signal that there exists appetite for such instruments.

Table 2.4: GSS+ bond issuance and sovereign/jurisdiction credit ratings.

Country / Economy	GSS+ bond issuance, 2015-2022			
	(Millions of United States dollar)			
	Sovereign/Jurisdiction	Corporate	Sovereign/Jurisdiction and corporate	Year of first issuance between 2015-2022 and type
Investment grade				
China		280,759	280,759	2015 (Green)
Japan		94,536	94,536	2015 (Green)
Republic of Korea	1,315	71,959	73,274	2016 (Green)
Hong Kong, China	9,817	15,349	25,166	2015 (Green)
Australia		22,163	22,163	2015 (Green)
India		22,144	22,144	2015 (Green)
Singapore	1,737	8,778	10,516	2017 (Green)
Philippines	4,309	6,146	10,455	2016 (Green)
Indonesia	6,468	3,892	10,361	2018 (Green)
Thailand	3,382	6,169	9,552	2018 (Sustainability)
Malaysia	2,269	2,805	5,074	2017 (Green)
New Zealand	1,828	2,234	4,062	2016 (Green)
Non-investment grade				
Uzbekistan	869		869	2021 (Sustainability)
Georgia		830	830	2020 (Green)
Türkiye		700	700	2016 (Sustainability)
Viet Nam		625	625	2021 (Green)
Armenia		64	64	2020 (Green)
Fiji	54		54	2017 (Green)
Bangladesh		17	17	2021 (Green)
Kazakhstan		0.4	0.4	2020 (Green)
Pakistan[93]			-	2021 (Green)
Non-rated				
Russian Federation		117	117	2018 (Green)
Total	32,050	539,289		
Number of issuances	45	2,212		

Source: ESCAP based on Environmental Finance Data, accessed on 4 April 2023 and Trading Economics, accessed on 26 February 2023.
Note: Corporate refers to both financial and non-financial corporations. Issuances by government agencies and municipality are not included.

Despite an increasing demand for green projects, the paucity of bankable projects in national pipelines is a serious issue. For governments, building a pipeline of projects that meet the bankability needs of the relevant investors in terms of climate finance is often a challenging process. Outreach to the relevant investors is also challenging. From a returns perspective, green projects (particularly in adaptation) may involve high upfront costs and a longer term for payouts. Pricing may be better in non-green asset classes, though that may not always be the case. However, risks in the interim period between costs being paid upfront and returns materializing later are still challenging to financiers. These include risks at the country level, sector level, borrower/project developer level, and increasingly, related to external shocks. Untested regulatory environments and green business models can also create liabilities for first movers. In this instance, the global discussion on reform within multilateral development banks can help boost financing for riskier

projects. But building climate finance or green pipelines is nonetheless a whole-of-government process due to the need to coordinate standards, sectors, and MDB and investor outreach.

D. Recommendations

Based on the thorough discussion of trends, opportunities, and challenges presented above, this section puts forward a series of recommendations for governments and policymakers. While they are not exhaustive, they nevertheless present the most critical areas for policymakers to begin as soon as possible. In addition, these recommendations (which are set out in detail here) have been aggregated into our final set of ten principles of action for the region to bridge the sustainable finance gap in Asia and the Pacific, set forward in the final chapter.

- Develop effective and coherent NDC financing strategies with interim 2030 and 2040 targets, and clear resource mobilization plans. Efforts should be spearheaded by authorities with clear mandates. This would clearly signal to investors, businesses, and project developers that governments are committed to change. While most governments have submitted NDCs, many of them do not include financial needs – ideally broken down by industry, sector, use, and area. Such needs should ideally be identified in the form of a national level NDC financing strategy which maps climate mitigation and adaptation projects or programs with expected/planned sources of government finance, international financial assistance, and private finance. Large ballpark financial figures are currently included in some NDC action plans, but without a clear methodology that depicts how such figures were arrived at, it is difficult for countries to begin mobilizing the finance necessary from the best sources. What is needed are defined investment priorities, concomitant policy and regulatory improvements related to those priorities, investor, DFI and MDB outreach plans, including to potential international donors, and a list of properly vetted projects that are matched to possible financing sources. This coherent and cohesive process itself requires government investment in building capacity, data, and systems.

- The process would similarly include an evaluation of regulatory and policy barriers to enabling private sector investment in adaptation.[94] For example, in China (the largest green bond market in the world), such a regime is implemented with a focus on inter-ministerial, central-local and international collaborations, centralized policymaking, and the alignment of green goals with performance assessments of local officials.[95] Interestingly, evidence reviewing current financing strategies suggests that "it is not clear that a strategy that includes detailed costing of adaptation actions is more effective than a high-level strategy that builds awareness and high-level political buy-in."[96]

- Consequently, any financing strategy should be broader than merely seeking resources from developed countries. Improvements to the enabling environment encourage increased private sector investment. The political economy of sustainable financing within a country should also be considered, especially regarding domestic investors and businesses. Finally, the preparation of the strategy should involve private finance from the beginning, even though this compounds multi-stakeholder coordination challenges. Such involvement is key for the lead ministry in charge of NDC planning to translate the country's needs and opportunities into a national priority list of feasible investments.

"When Armenia presented its NDCs, it was followed by a concrete implementation plan that highlighted potential sources for financing the NDCs and an annual financial plan, particularly focusing on energy sector projects." - *Erik Grigoryan, former Minister of Environment, Armenia.*

- Encourage the financial sector and the private sector to proactively plan for the net zero transition, ahead of 2030 or 2050. This will also increase local currency financing for the net zero transition. As part of the above, the whole-of-society transformation that needs to be accelerated can kick off with governments requiring the financial and private sectors to begin disclosing their transition planning strategies. Governments also need to call on the financial industry (and therefore their underlying borrowers the private sector) to set strategies and targets that progressively align financial portfolios with the NDCs. Of relevance to governments and other public sector stakeholders is to ensure that any legislation passed (particularly as it pertains to corporate transparency and disclosure) is supportive of emerging international sustainability standards. As part of this approach, governments should also encourage the use of central net zero data platforms to overcome critical data gaps, such as Singapore is doing through the forthcoming Project Greenprint.[97] Project Greenprint is a blockchain-enabled, trusted, common platform to manage and access ESG data and to meet disclosure requirements locally and internationally. It promotes data consistency and clarity in disclosures and enables comparability of data.

- Consider subsidizing the costs of measurement and disclosures in green or sustainable finance, to whatever extent possible, as part of the transition. For example, the Monetary Authority of Singapore's sustainable bond grant scheme offsets up to SGD 100,000 (approximately $73,890) of additional expenses for external reviews of eligible green, social, sustainability and sustainability-linked bonds and promotes the adoption of internationally accepted standards. This has led to an increase in green issuance in Singapore both by sovereigns and corporates. Various, relatively small, incentives like these have been used in Thailand, Indonesia, and China in different forms such as discounts on pricing, grants, tax breaks, tax credits, and other incentives. While this may not be appropriate for every economy, nevertheless their availability may be useful to launch new markets and reduce first-mover disadvantages.

- Ensure development of a pipeline of bankable projects. The pipeline of projects needs to fit the volumes, scales, and risk-return profiles that interest multilateral climate funds, multilateral development banks, development financial institutions, and private investors. Solving this is a complex issue and must include bringing relevant investors onboard for advice at early stages, despite the increased coordination costs faced by investors. Private investors could in fact benefit by not having to engage in the high transaction costs related to identifying, developing, and financing low-carbon bankable projects. Missing policy or regulation in new sectors — such as renewable energy or green technologies — further hinders the development of such projects, where again, governments can play a key role to develop them. Additionally, governments may need proper emissions-based assessments, disaster impact assessments and nature-based assessments to be able to prioritize projects. This activity also requires significant capacity building within ministries around the identification of such projects. For example, the OECD's review of green infrastructure project pipelines[98] highlights six essential factors to attract investment to projects in the pipelines. We underscore three of them for all-sector green project pipelines:

  - Ensuring authority and ownership of the green bankable project pipeline by ministries, departments, or agencies with adequate ability to co-ordinate public and private actors, signal investment needs, translate national climate commitments into prioritizing green projects, and capable of outreach to multilateral climate funds and private finance actors.

  - Ensuring that the right priorities are translated through the pipeline is critical to build project pipeline at the scale and rates far beyond current volumes. Such priorities are not only about which projects will reduce emissions the fastest but should also reflect an understanding of the commercial risks, potential returns, requirement of heavy upfront capital expenditure and contract enforcement risks.

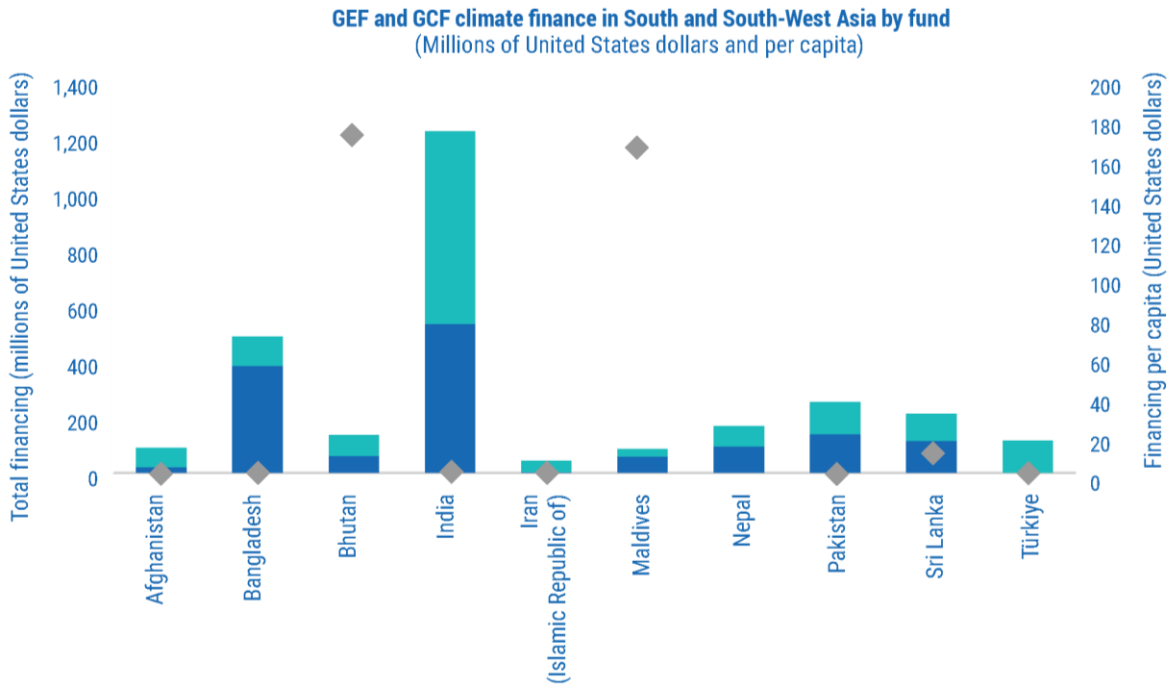
- Ensuring transparency in how project pipelines have been identified and using clear data and criteria to specify why projects have entered the pipelines. According to the Organisation for Economic Co-operation and Development (OECD),[99] improved transparency equips investors with information to justify subsequent commitments and positions in pipelines, and to develop exit strategies.

- Expand the role of national development banks, as limited public capital must be deployed in a manner that increasingly catalyzes private finance. National Development Banks are a key element of financial infrastructure in many emerging markets. The Addis Ababa Action Agenda emphasizes the fundamental role that well-functioning national and regional development banks can play in financing sustainable development. National banks play a countercyclical role, especially during crises. The Addis Agenda specifically calls on national and regional development banks to expand their contributions to areas important for sustainable development. It also urges relevant international public and private actors to support such banks in developing countries. They are particularly effective at accessing concessional financial flows (either through directed lending or private placement of bonds) from MDBs and bilateral DFIs and intermediating them into the real economy, either directly or as an apex lender. "Greening" an existing national DFI or creating a new specialist entity is a vital underpinning of continued access to concessional finance. MDBs and bilateral DFIs increasingly expect credit to be directed towards sustainable economic development, and for borrowers to demonstrate this through enhanced ESG reporting and disclosure.

- Advocate for MDBs and bilateral development financial institutions to increase local currency lending. The global macroeconomic stability concerns have again highlighted the profound problems caused by the predominance of hard currency lending by MDBs and bilateral development finance institutions (DFIs). National DFIs that previously borrowed cheaply in hard currency are now struggling to manage these dollar or euro liabilities against a loan book dominated by local currency assets. The same challenge affects the interface with MDBs and DFIs looking to finance the commercial banking sectors directly. The appetite for hard currency lending during periods of currency depreciations in the region has changed. As the global discussion underway is tilting towards, MDBs and bilateral DFIs need to explore new modalities for helping borrowers absorb these exchange rate risks.

- Invest resources to build the necessary skills, capacities, and data collection systems to bridge the sustainable finance gap. For example, given the substantial new commitments by donors[100] to multilateral climate funds, eligible governments of developing countries should invest in improving their capabilities to access the funds, particularly when the transaction costs are worth the benefits of the projects. Many countries also have considerable room to improve their access to the UNFCCC Financial Mechanism in the form of the Green Climate Fund (GCF) and the Global Environment Facility (GEF). Development of a robust pipeline of project opportunities at a national level is a critical success factor, as is the accreditation of entities (particularly financial institutions) that will curate projects and apply for funding through the UNFCCC Financial Mechanism. Figure 11 shows where countries have already successfully applied to the GEF and GCF, and where countries have been less successful or not yet been successful, representing a set of countries that would benefit from further resources to strengthen capacities.

Figure 2.11: Access to GEF and GCF climate finance in Asia and the Pacific.



Source: ESCAP based on the World Bank Data, GCF Open Data and GEF Projects Database.[101,102]

Note: The figure shows the sum of GEF and GCF total financing at country level and excludes regional programmes. Total GCF financing amount is calculated as the sum of Readiness Grants Financing and Funded Activities Financing. GEF financing corresponds to the sum of project financing approved at country level. It includes grants and other types of financing under the following instruments - CBIT Trust Fund, GEF Trust Fund, LDC Fund, Multi Trust Fund, NPIF, and the Special Climate Change Fund. Per capita financing is calculated based on 2021 population data.

- New climate finance partnerships, inspired by the JETP model, should be considered. These partnerships can bring together commitments to transform the real economy by policymakers, regulatory reform, donor capital, and private finance. For example, in the energy sector, long-term commitments to financing energy transitions rely on the presence of comprehensive national planning strategies that include energy efficiency, electrification of end uses, clean power, and clean fuels. Such integrated energy strategies are lacking in many Asia-Pacific countries, but the JETPs move decisively towards such integration. Several cross-cutting barriers also inhibit clean energy project development. These include lack of carbon pricing and inefficient fossil fuel subsidies, which can tilt the economic playing field against clean energy. Inadequate regulatory frameworks, including onerous permitting and licensing processes, can exacerbate risks in early-stage clean energy project development, for which funding is particularly constrained. Again, these barriers to climate action are anticipated to be overcome to some extent by the JETPs.

- Adopt a conducive taxation regime towards the net-zero-transition, and further align policy coherence. Perhaps the most important role that governments can play is to incentivize sustainable economic development. Ultimately, financial institutions will direct credit on the balance of risk versus reward. Governments can reduce the risks of enterprises adopting sustainable business and operating models by creating fiscal incentives that support extra financial headroom for financing. This approach can be controversial with fiscal planners that are rightly wary of undermining public finances. Implementing well-aligned tax incentives or deterrents can enable investors to achieve their threshold of investment (referred to

as the "hurdle rate" or the minimum rate of return on a project or investment required by an investor) — thus enabling more private finance.

- A combination of policy and regulatory improvement and investor participation from the inception of projects is what is needed in any sector, not just the energy transition, to overcome the current mismatch between the demand and supply of private finance for the net zero transition. For example, anecdotally, some private investors in energy transition projects worldwide find that they have been brought on too late and are expected to co-finance projects that have been pre-designed in too restrictive a fashion. In some cases, the best returns within the project have already been dedicated towards one investor (often an MDB), leaving other private investors with less attractive returns within their share of the project and reducing the volume of financing available. If private investors are brought onboard at inception together with other investors to communicate their preferences on risk, return, tenors, corporate governance, ESG standards, climate and social impact, domestic and international regulatory compliance, legal clauses, dispute resolution and other aspects of the transaction; then truly investment-ready pipelines can be built faster and better.

Conclusion

While there is no one-size-fits all policy for governments in Asia and the Pacific, all countries face the challenge of bridging the sustainable finance gap. Regional cooperation on data, cross-border challenges, and aligning investment norms through common taxonomies or common regulatory approaches can work to level the playing field between countries and reduce arbitraging opportunities. Importantly, regional cooperation allows less developed countries to learn from the lessons of other policymakers and share best practices relevant to the region's unique context.

3. WHAT CAN REGULATORS DO?

A. Introduction

A well-functioning sustainable financial system has depth, efficiency, access, and stability. A rich diversity of instruments is available to meet the demands of investors amid a fast-flowing current of exchange. As a Bank of Thailand regulator notes, "An efficient financial market is one with proper depth and breadth. That is, on the supply side there is a wide range of financial instruments, offering choices of issuers, credit risks, etc. to satisfy all classes of asset demand. On the demand side, there has to be sizable investment demand from various types of investors, with different risk-return appetites. Also, a good diversity among issuers and investors usually brings about a good mix of market views, leading to an active exchange of financial assets. A highly liquid financial market as such is able to accommodate large and varied issuance of financial instruments with minimum price effect. Here, financial instruments can be quickly exchanged at reasonable cost. [An] efficient clearing and settlement system is a key supporting factor that helps lower transaction cost."[103]

Sustainable finance requires the participation of far more regulatory bodies than just the financial regulators. To date, much of the fast-changing regulatory advances seen regionally and globally have been driven by central banks and securities and exchange commissions. While this report concentrates on the role of financial regulators, sustainable or green finance demands significant coordination and coherence with other regulators. For example, environmental protection agencies issue the permits that allow investments to go ahead. Departments of industries regulate the fiduciary duties of directors of companies,[104] especially in a context where litigation that challenges companies' contribution to climate change is increasingly common. Competition and consumer protection regulators are also involved, through implementing guardrails against the potential greenwashing of products and services. Real economy regulators, such as energy regulators with science-based targets involving emissions reductions, or national electricity boards that make offtake agreements with set prices in renewable energy, similarly play a profound role in financing the energy transition. New green technologies, such as green hydrogen, may also involve regulators for carbon trading, the greenhouse gas quota system, or to enforce other compliance requirements around the carbon-intensity of production of steel, fertilizer, and heavy transportation. While financial regulators' decisions undoubtedly influence investment in sustainable finance, and are at the heart of the regulatory debate, they are unquestionably not the "only game in town" when it comes to sustainable finance.

B. What is the role of financial regulators in sustainable finance?

There is currently significant debate about the extent and substance of the role of financial regulators. On the one hand there has been accelerating momentum to develop sustainable finance taxonomies; on the other hand, varied definitions, and degrees of implementation throughout the region creates the risk of arbitraging opportunities and disadvantaging actors with less capacity. Consistency remains a work in progress. Nevertheless, to varying degrees across the region, regulators have adopted either piecemeal or in full the following regulatory roles related to sustainable finance (both Track 1 and Track 2):

- Ensuring that financial stability, which is affected by climate change and biodiversity loss, is maintained in the system through macroprudential policies[105]
- Ensuring adequate microprudential supervision[106] for the safety and soundness of financial institutions and ensuring that capital by financial institutions is sustainably managed
- Shifting capital towards low-carbon investments

- Aligning national sustainable finance regulation with international norms and standards
- Supporting policy priorities as articulated by member States in the Paris Agreement and related commitments
- Confirming that sufficient information and capacities for the above are available throughout the financial system

In the following section, the report discusses trends and opportunities in regulatory roles, noting that this is an extremely dynamic field and by time of publication the landscape will have evolved significantly.

C. Trends and opportunities

Integrating climate-related financial risks into macroprudential stability assessments remains challenging.

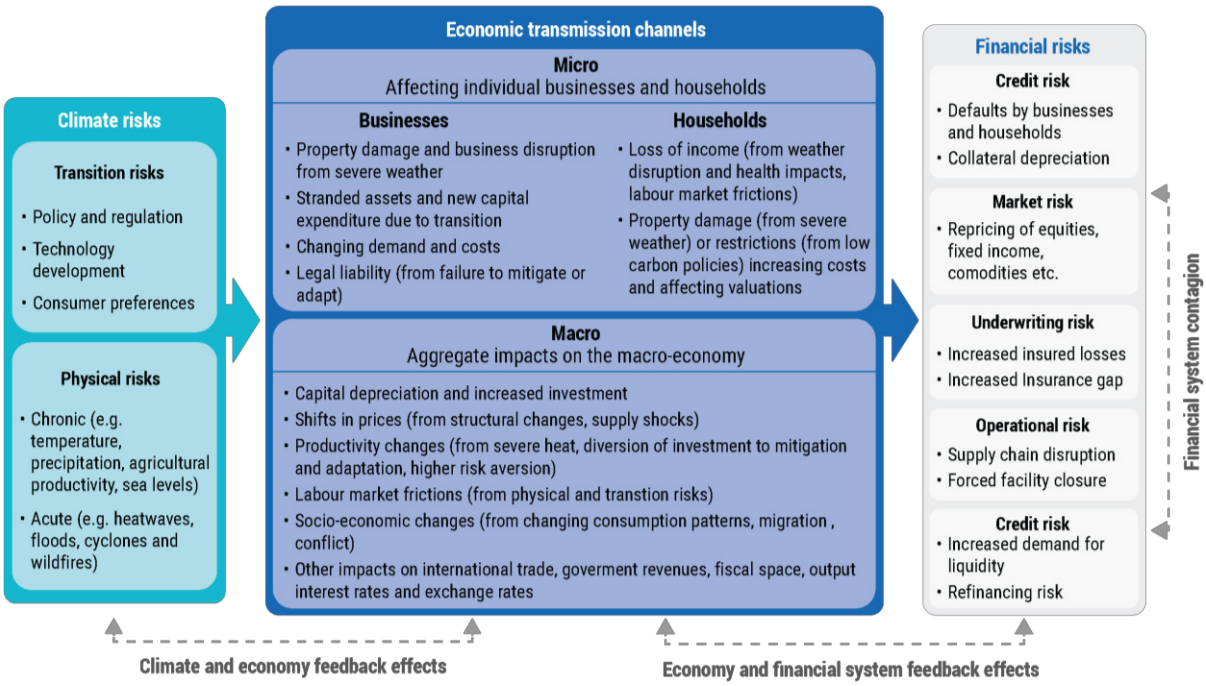
It is now widely accepted that physical risks and transition risks undermine the stability of the financial system. Physical risks refer to the risks arising from weather-related events (rising sea levels, floods, heat) which affect financial portfolios and can be jarring for financial stability. Transition risks occur when economies move towards a less polluting, greener economy. Such transitions could mean that some sectors of the economy face big shifts in asset values or higher costs of doing business.[107]

The "tragedy of the horizon" poses significant additional challenges to maintaining financial stability. Mark Carney, former governor of the Bank of England and Chairman of the Financial Stability Board, coined the term "tragedy of the horizon" to refer to the decade-long forecast used by central banks to manage monetary policy and financial stability. However, the catastrophic impacts of climate change will be felt beyond the traditional horizons of most actors, with actions undertaken today resulting in less costly adjustment.[108] As Mark Carney noted, the risks to financial stability will be minimised if the transition begins early and follows a predictable path, thereby helping the market anticipate the transition to a 2 degree world.[109]

In addition, physical and transition risks are prone to being experienced as "green swans". According to the Bank of International Settlements, a 'green swan' is a climate black swan, named after Nassim Nicholas Taleb's popular concept for events with major effects that come as a surprise and are recognised only in hindsight. The physical and transition risks of climate change are characterized by deep uncertainty and nonlinearity, so their chances of occurring are not reflected in past data. These unknown unknowns make traditional approaches to risk management largely irrelevant.[110] This is an indication of the challenges that lie ahead — not only for central banks — but for the entire financial system to assess and incorporate climate-related risks into operations.

Climate risks translate into credit, market, underwriting, operational, and liquidity risks. Figure 3.1 shows the types and complexity of physical and transition risks, the latter of which are particularly difficult to forecast. Along with transmission channels, sources of variability, and five types of threats – to credit systems, the market, underwriting, operations, and liquidity — traditional methods of financial risk management are at a loss in a climate stress context. This profoundly affects the traditional methods of managing macro and microprudential risks in the region. It is therefore equally, if not more, important that individual banks and businesses acting in the financial system mainstream the diagnosis, assessment, and planning into their portfolios and operations. This will in turn help central banks perform their supervisory duties well and to conduct stress-tests under accurate parameters.

Figure 3.1: Transmission channels from climate risks to financial risks.



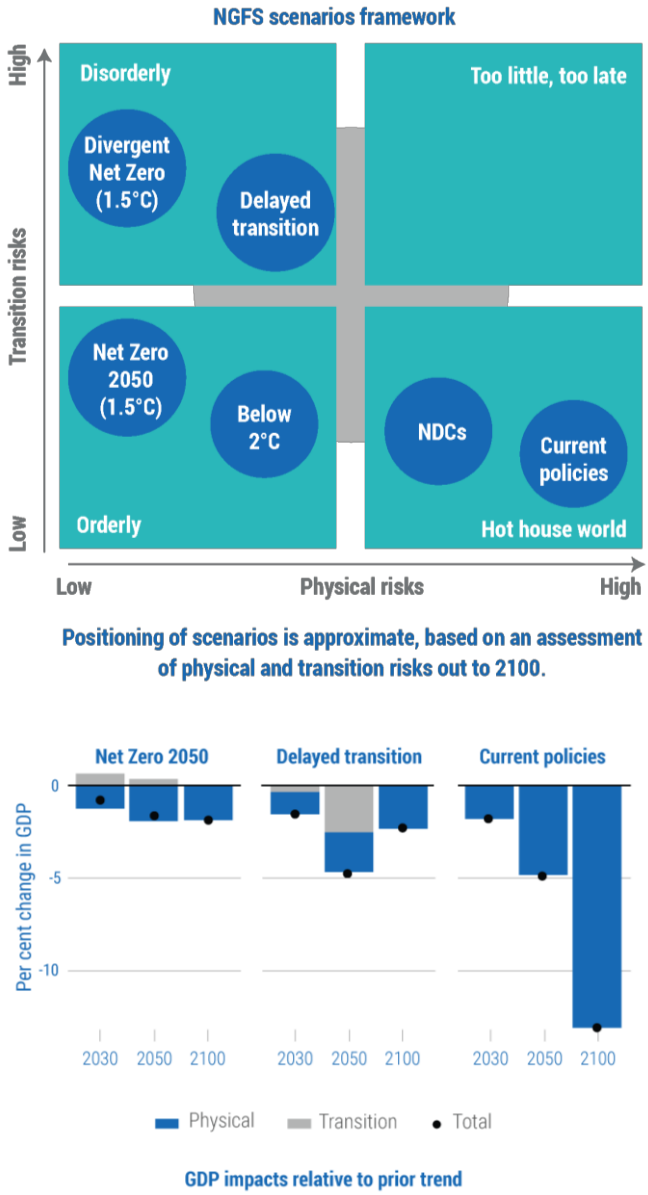
Source: NGFS (2021a).

Assessing risk channels, given their complexities, continues to be extremely challenging. According to recent research published at the Journal of Financial Regulation, difficulties in stress testing are exacerbated by their long-time horizon (generally 30 years) and radical uncertainty about possible climate pathways and their probability distribution. Their unprecedented and potentially catastrophic consequences mean that well-established risk management tools in the financial industry, such as Value-at-Risk models and stress tests, cannot readily be used. Exploratory scenario-based impact assessments must be used instead. In addition, if climate-related risks materialize, they would affect the economy and the financial system as a whole and may be amplified by the pro-cyclical behaviour of market participants; the self-reinforcing reductions in bank lending and insurance provision; the bank-sovereign nexus;[111] the feedback loops with the real economy; and network and cross-border effects.[112]

In addition, the ability to perform appropriate climate-based stress testing by regulators is contingent on the data quality and capabilities of regulators. The Network for Greening the Financial System has made significant advances to develop climate-based scenarios for regulators which, due to the challenges and costs of creating such scenarios, are beyond most individual institutions. The first iteration of NGFS scenarios was released in 2020. In Asia and the Pacific, four central banks as of November 2022 concluded a first exercise in stress-testing based on the three NGFS scenarios known as the "hothouse" scenario, the "disorderly transition" scenario, and the "orderly transition" scenario, as shown in Figure 3.2. These scenarios imply significant per cent changes in GDP from physical and transition risks as seen in Panel 2 of Figure 3.2. For example, the delayed transition scenario implies a close to 5 per cent reduction in GDP globally by 2050 due to the manifestation of both physical and transition risks.

While regulators in the region are increasingly conducting climate stress-testing, gaps in data and abilities remains a major hurdle. The four regulators who have already conducted NGFS stress testing at time of writing include: the Monetary Authority of Singapore, People's Bank of China, Japan Financial Services Agency/Bank of Japan, and Bangko Sentral ng Pilipinas. The Reserve Bank of India, Bank Indonesia, Bank of Korea, Bank Negara Malaysia, and the National Bank of Georgia are five additional central banks that are in the midst of conducting the scenario exercise or planning to do so.[113] According to the NGFS, in light of challenges posed by data gaps and methodological uncertainties, no members as of yet have envisaged calibrating prudential policies, such as capital requirements, on the basis of their exercise.[114]

Figure 3.2: Alternative scenarios and impacts of financial risks due to climate-related risks.

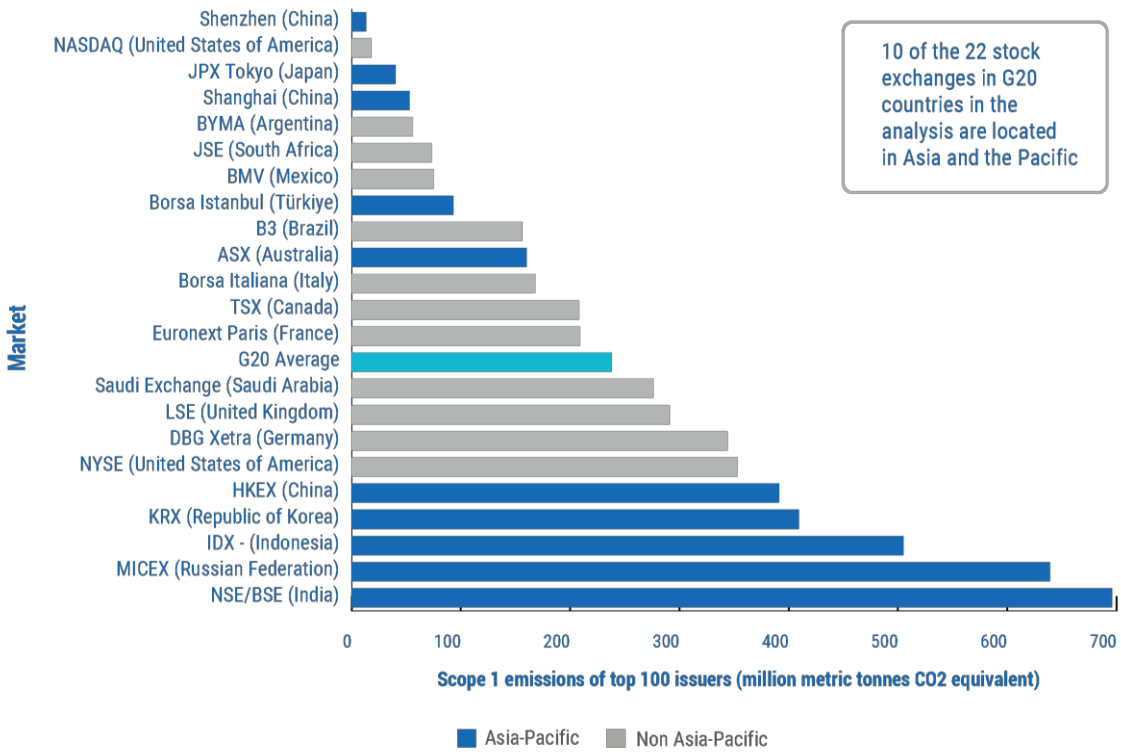


Source: NGFS (2021a)

Ensuring financial stability also hinges upon climate and nature-related disclosures and data from individual financial institutions.

Supervisory authorities report the lack of granular and sectoral counterparty-level emissions data, as well as a dearth of consistent and comparable data reporting standards for counterparties and financial institutions, as a major challenge.[115] This is echoed by the Financial Stability Board,[116] which reports that "the lack of sufficiently consistent, comparable, granular and reliable climate data reported by financial institutions is one main challenge for authorities in the development of supervisory and regulatory approaches to climate-related risks. Areas where data contribute to identifying exposures and understanding the impacts from climate-related risks include: sufficiently granular data on sectors or economic activities that are sensitive, vulnerable or exposed to physical, transition and liability risks; financial institutions' exposures to such sectors or economic activities; geographical location of financial institutions' exposures most prone to physical risk; and financial institutions' and their counterparties' reporting of carbon-related metrics, including Scope 1, 2, and 3 Greenhouse Gas (GHG) emissions."[117] Figure 3.3 below is an analysis[118] of more than 2,000 companies on 22 stock exchanges in G20 countries, and shows the top 100 Scope 1 emissions data. Such data allows capital markets regulators to work with issuers to take well-calibrated and orderly actions towards the net-zero transition.

Figure 3.3: Scope 1 emissions of the top 100 issuers by market.



Source: Miller, and others (2021).

Note: the figure shows the analysis of the scope 1 emissions of the top 100 issuers by market capitalization listed on each of the 22 exchanges in G20 countries.

As outlined by the Bank of England in 2015, and is worth being reminded of, data is required to be consistent, comparable, reliable, clear and efficient**.** This means that data should be consistent in scope and objective across the relevant industries and sectors.

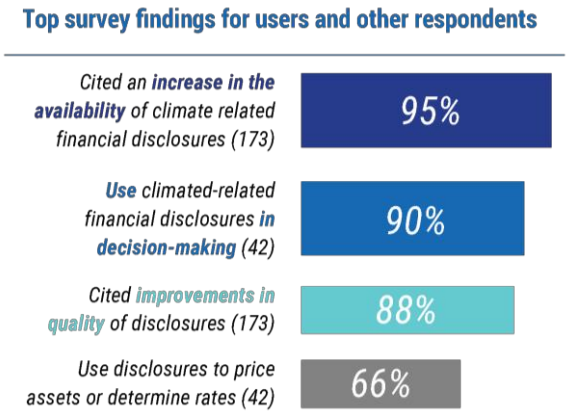
Comparable means it should allow investors to assess peers and aggregate risks. Reliable means that it should ensure that users can trust the data. Clear means that it should be presented in a way that makes complex information understandable. Efficient means that it should minimize costs and burdens while maximizing benefits. Convergence in standards across jurisdictions ensures comparability regarding the quality and scope of data.

This is not yet the case. Standards and frameworks are rapidly fluctuating and improving for the better, but it remains widely acknowledged that current sustainable finance data disclosure frameworks do not (yet) meet these objectives — impeding uptake and application. Furthermore, the availability of quality data is critical to set appropriate science-based targets and benchmarks for future pathways of corporates, financial institutions, and sectors. However, there are reasons to be optimistic about the state of data for the sake of sustainable finance. The International Sustainability Standards Board (ISSB) plans to streamline sustainability disclosures through its 2023 standard-setting work; the EU's Sustainable Financial Disclosure Regulation will apply to all EU capital investing in the region; and the upcoming United States Securities and Exchange disclosure requirements will modernize reporting structures. We hope that sustainability and green disclosures will increasingly become consistent, clear, and comparable.

In the meantime, voluntary international climate-related disclosures to support regulators with the right information is increasing by leaps and bounds. According to the Taskforce on Climate Related Financial Disclosures (TCFD),[119] in its fifth annual TCFD status report in December 2022, a survey of asset owners and managers found that more than 60 per cent of managers and 75 per cent of owners report climate-related

information to their clients and beneficiaries. Nearly 50 per cent of asset managers and 75 per cent of asset owners[120] disclosed information aligned with at least five of the 11 recommended disclosures. In addition, participation in climate-related data disclosures through financial filings or annual reports (including integrated reports) surged from less than half of companies (45 per cent) in 2017 to more than 70 per cent of companies in 2021.[121] This clear hike in disclosures is reflected below in Figure 3.4.

Figure 3.4: Implementation of the TCFD recommendations and use of climate-related disclosures.

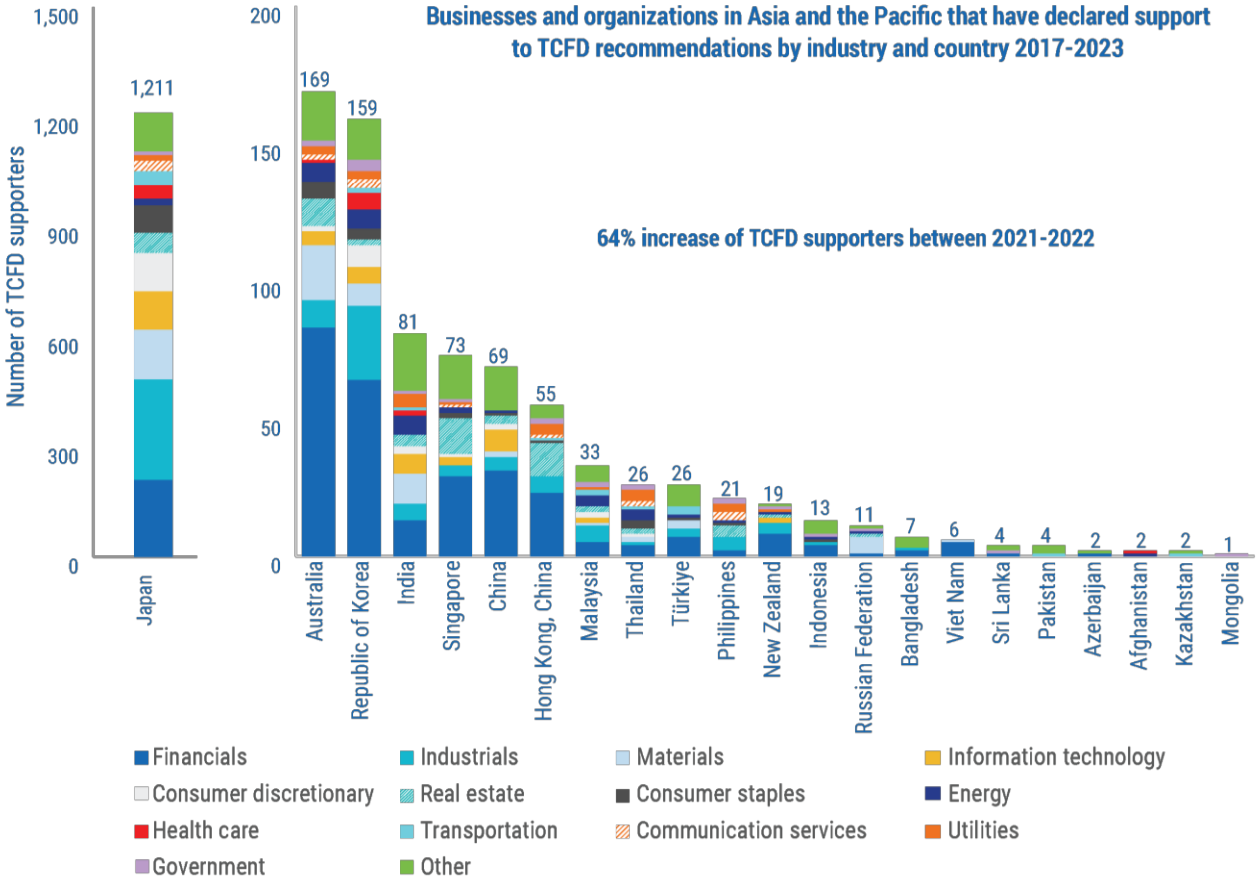


Source: FSB (2022b).

Asia and the Pacific is the second leading region for climate-related financial disclosures, after Europe.

According to TCFD, more than 4,227 organizations have become supporters of the TCFD recommendations as of February 2023, a number which has steadily risen since the recommendations were first published in 2017. Supporters include upwards of 1,500 financial institutions, responsible for $217 trillion in assets. TCFD supporters now span 99 countries and nearly all sectors of the economy, with a combined market capitalization of more than $26 trillion.[122] Asia-Pacific organizations account for 46 per cent of this number (1,956) – of which 792 organizations became supporters between 2022 and February 2023 (40 per cent of the total for the Asia-Pacific region). Figure 5 below shows the distribution of sectors and countries where companies are following TCFD disclosure requirements. Of these, all regions have significantly broadened their levels of disclosure over the past three years. While the number of companies (1,956) is still a tiny proportion of all the large companies in Asia and the Pacific,[123] growing adoption of the practice of disclosures is nonetheless a positive trend that needs to be encouraged further.

Figure 3.5: Number of organizations in Asia and the Pacific that have declared support for TCFD recommendations.



Source: TCFD[124].

Note: The list of TCFD supporters includes organizations that have publicly declared support for the TCFD and its recommendations, demonstrating that they are taking action to build a more resilient financial system through climate-related disclosure. TFCD supporters include private companies, industry associations, banks, credit rating agencies, central banks, stock exchanges, government agencies, and other types of organizations.

Finally, while climate-related disclosures are gaining momentum, nature-related disclosures have yet to become mainstream. The Taskforce on Nature-Related Disclosures has published a draft framework[125] to bring clarity and methodological guidance to assessments of nature-related dependencies, impacts, risks, and opportunities. Like climate-related disclosures, such disclosures should be in line with country commitments within the Kunming-Montreal Global Biodiversity Framework. As an indication for regulators and private finance in the region, Table 3.1 below shows the preliminary scope and possible extent of the recommended nature-related disclosures.

Table 3.1: The TNFD revised draft nature-related disclosure recommendations.

TNFD nature-related disclosure recommendations			
Governance	Strategy	Risk & impact management	Metrics & target
Disclose the organization's governance around nature-related dependencies, impacts, risks and opportunities.	Disclose the actual and potential impacts of nature-related risks and opportunities on businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages nature-related dependencies, impacts, risks, and opportunities.	Disclose the metrics and targets used to assess and manage relevant nature-related dependencies, impacts, risks, and opportunities where such information is material
Recommended disclosures			
A. Describe the board's oversight of nature-related dependencies, impacts, risks, and opportunities.	A. Describe the nature-related dependencies, impacts, risks, and opportunities the organization has identified over the short, medium, and long term.	A. Describe the organization's processes for identifying and assessing nature-related dependencies, impacts, risks, and opportunities.	A. Disclose the metrics used by the organization to assess and manage nature-related risks, and opportunities in line with its strategy and risk management process.
B. Describe the management's role in assessing and managing nature-related dependencies, impacts, risks, and opportunities.	B. Describe the impact of nature-related risks, and opportunities on the organization's businesses, strategy, and financial planning.	B. Describe the organization's processes for managing nature-related dependencies, impacts, risks, and opportunities.	B. Disclose the metrics used by the organization to assess and manage direct, upstream and, if appropriate, downstream dependencies and impacts on nature.
	C. Describe the resilience of the organization's strategy, taking into consideration different scenarios.	C. Describe how processes for identifying, assessing, and managing nature-related risks are integrated into the organization's overall risk management.	C. Describe the targets used by the organization to manage nature-related dependencies, impacts, risks, opportunities and performance against targets.
	D. Describe the organization's integrations with low integrity ecosystems, high importance ecosystems and areas of water stress.	D. Describe the organization's approach to locate the sources of inputs used to create value that may generate nature-related dependencies, impacts, risks, and opportunities.	D. Describe how targets on nature and climate are aligned and contribute to each other, and any other trade offs.
		E. Describe how stakeholders, including right-holders, are engaged by the organizations in their assessment and response to nature-related dependencies, impacts, risks, and opportunities.	

Source: TNFD (2022).

Trends in microprudential supervision of financial institutions

Regulators have developed environmental and social risk management (ESRM) guidelines for financial institutions in the region. Many central banks in Asia and the Pacific, notably in Bangladesh, Nepal, and Philippines, have taken active steps to develop and roll out ESRM guidelines for banking sectors and individual financial institutions. Unlike the voluntary nature of most roadmaps and taxonomies, ESRM guidelines — which incorporate policies into institutional banking processes and procedures — are mandatory. ESRM strategies are risk management focused, and as such they do not incorporate science-based targets or focus on emissions reductions.

In addition to standard ESRM guidelines, there are increasing calls for financial institutions to formulate and disclose net-zero transition plans to regulators. The Taskforce on Climate Related Financial Disclosures recommended the introduction of climate transition plans in 2021, which have been further reinforced by the efforts of the G20 and the Glasgow Financial Alliance for Net Zero.[126] Such transition plans, set forward by both financial institutions as well as real economy businesses, differ by jurisdiction. The latest NGFS stocktake of financial institutions' transition plans[127] relates that there are a range of approaches and priorities put forth in transition plans. While some economies have focused on emissions reduction, others have prioritized sustainable development, enhancing resilience to climate change, or developing the economy while keeping emissions low, consistent with international agreements. This, in turn, changes the context for expectations of different jurisdictions. Microprudential authorities will also assess financial institutions' safety and soundness during the transition to a low-emission economy in different ways depending on the prospects outlined in the plan.

Net zero and biodiversity transition plans are increasingly called for. The World Wildlife Fund (WWF)[128] further urges central banks, financial institutions, and actors such as insurers to adopt credible transition plans, set out clear and actionable steps to achieve science-based climate and nature targets, and enable an economy-wide transition towards sustainability. Transition plans must provide necessary clarity and guidance to financial market actors and have clear quantifiable, legally binding climate and biodiversity goals for 2025, 2030, and 2050. The plans should include all central banking, financial regulation, and supervision activities. The WWF asks stakeholders to ensure that monetary policies and financial regulatory instruments better reflect the economic cost and financial risk of "always environmentally harmful" economic activities, companies, and sectors as these assets represent the highest financial risks. Financial institutions lending to companies involved in environmentally harmful activities should face far higher capital requirements to account for the long-term risks involved.

How regulators are supporting government priorities and shifting capital to low carbon investments

Regulators play a key role in translating policy commitments into systematic actions. Every country has a set of policy commitments and legislation, and they are sometimes subject to internationally binding financial regulations or norms. All these provide the parameters for the national development of sustainable finance and can be summarized through one or a combination of the following: sustainable finance roadmaps, sustainable finance taxonomies, green bond frameworks, sustainable stock exchanges and/or other sustainable finance initiatives. These sustainable finance regulatory approaches for the most part specify how capital can be deployed towards environmental objectives and are different from the ESRM and climate or nature-related risk assessment approaches discussed above. It is important to note that although roadmaps, taxonomies, and other sustainable financing frameworks are usually not binding, they are nonetheless critical tools to guide the development of the sustainable finance ecosystem and signal the future intentions of regulators.

Financial authorities are increasingly producing sustainable finance roadmaps presenting the pathway to achieve government targets. For example, in 2014,

Indonesia's Financial Services Authority (OJK) produced a Sustainable Finance Roadmap as a comprehensive plan for promoting sustainable finance. The roadmap covered both the medium-term (2015–2019) and the longer term (2015–2024) plan for the financial services industry.[129] The aim of the roadmap was to promote sustainable development through key governmental, industry, and international institutions. Given the ongoing high demand for energy to support Indonesian development, the sustainable finance roadmap (led by the financial regulator) promotes energy conservation, as well as the funding of new and renewable energy sources. Other focus areas include agriculture, processing industries, general infrastructure, and measures to assist micro-, small- and medium-sized enterprises. Since July 2017, OJK mandates banks to develop sustainable finance action plans for sustainable financing and to issue sustainability reports, as well as to report their green financing exposures.[130]

Many countries globally are developing Sustainable Finance Roadmaps to guide this process. These roadmaps vary in depth and approach but are typically understood as something more tangible than pure strategy — without striving for the detail of an implementation plan. Most aim to describe a suite of sequenced tasks and activities, and assign stakeholder responsibilities, in a way that improves communication and cooperation between actors. Often the task of developing a roadmap is spearheaded by regulators, due to their convening power and thorough appreciation of their respective franchises – whether banking, capital markets, or insurance. The list of existing roadmaps in the region can be seen in Table 3.1 below.

The type and purpose of each country's sustainable finance roadmap is different. For example, the Bangko Sentral ng Pilipinas (BSP)' Sustainable Finance Roadmap[131] was prepared to a) outline the goals to support the current initiatives and policies to create a supportive environment for the widespread adoption of sustainable finance in the Philippines, b) determine priority areas and acknowledge the basis for improvements relating to sustainable finance, c) provide strategic direction and recommendations to accelerate sustainable finance and d) provide investment and policy signals to support the transition to a sustainable economy. Through this Roadmap, the BSP communicates its expectations that banks should disclose their sustainability strategy objectives, risk appetite, and risk management system in annual reports. In Singapore, the recent Finance for Net Zero Action plan announced by the Monetary Authority of Singapore covers four strategic outcomes around 1) data, definitions and disclosures, 2) a climate resilient financial sector (including climate-scenario analysis), 3) credible transition plans (supporting the adoption of science-based transition plans by FIs) and 4) green and transition solutions and markets (including an expansion of grant schemes totalling SGD15 million, or more than $11 million, over the next five years till 2028) to include transition bonds as well as incentives to encourage the early adoption of entity-level sustainability disclosures.[132]

Table 3.2: Implemented national sustainable finance roadmaps.

Country	Sustainable finance roadmap	Date of issuance
Azerbaijan	Sustainable Finance Roadmap 2023-2026	2023
China	China's Guidelines for Establishing the Green Financial System	2016
Georgia	Roadmap for Sustainable Finance in Georgia	2019
Indonesia	Sustainable Finance Roadmap Phase II (2021 - 2025)	2014 (Phase I), 2021 (Phase II)
Mongolia	National Sustainable Finance Roadmap	2018 (1st version), 2022 (2nd version)
Philippines	The Philippine Sustainable Finance Roadmap	2021
Singapore	Finance for Net Zero Action Plan	2023
Thailand	Sustainable Finance Initiatives for Thailand	2021
Sri Lanka	Roadmap for Sustainable Finance in Sri Lanka	2019

Source: ESCAP based on IFC and SBFN (2023).

Note: Australia and New Zealand have non-government-led sustainable finance roadmaps.

Box 3.1: Cambodia and ASEAN sustainable finance roadmaps.

ESCAP is supporting the National Bank of Cambodia in its development of a Sustainable Finance roadmap to advance Cambodia's green and social finance agenda. The roadmap aims to enable Cambodia to deliver on its climate and sustainable development goals, enhance Cambodia's financial sector's competitiveness and resilience, coordinate activities between different stakeholders, and analyze possible synergies and tradeoffs in the current financial ecosystem.

In addition, in coordination with partners the Global Green Growth Institute (GGGI) and the ASEAN Secretariat, ESCAP is supporting the development of the ASEAN Green Map, a regional approach focused on green and climate-related financing aligned with the ASEAN Secretariat's vision to mobilize finance for the SDGs in the region. The roadmap will draw together stakeholder views, international best practices, and lessons learned. It will identify the challenges policymakers and market participants face and provide clear measures to help overcome existing barriers and assist with concrete steps to enhance green finance, particularly in ASEAN's LDC member states. Furthermore, it will discuss the available opportunities to mobilize finance to support the environmental transformation needed in ASEAN to meet the SDGs by 2030.

Box 3.2: Thailand sustainable finance initiatives.

Recognizing the crucial role sustainable economic growth plays in bringing about better living standards and inclusive economic development for all, in 2015 Thailand adopted the United Nations' 2030 Agenda for Sustainable Development (consisting of the 17 Sustainable Development Goals), and, in 2016, committed to the Paris Agreement to advance its Greenhouse Gas Emissions reduction by 20 to 25 per cent from the business-as-usual level by 2030.

The Three Regulators Steering Committee (Bank of Thailand, the Securities and Exchange Commission, the Office of the Insurance Commission, and the Ministry of Finance) is a non-statutory body that provides a regular platform for the three key financial regulators to discuss policy issues. Recognizing the importance of the finance sector to sustainable development, the Three Regulators Steering Committee formed the Sustainable Finance Working Group.

On 18 August 2021, the Working Group on Sustainable Finance jointly published Sustainable Finance Initiatives for Thailand (known as the Initiatives), with one of their key work plans being the focus on setting the direction and framework to drive sustainable finance across the financial sector.

Source: WG-SF, GBRW Consulting and IFC (2021).

Green and sustainable finance taxonomies in the region further help direct investment towards national green priorities. According to ICMA, a green taxonomy is a classification system to identify activities or investments that will move a country towards meeting specific targets related to priority environmental objectives. The taxonomy aims to help financial actors determine which investments can be labelled as green or sustainable for their jurisdictions. According to the World Bank,[133] taxonomies assist regulators to green the financial system by a) supporting regulatory interventions on the taxonomy to encourage banks to lend to eligible green companies, b) facilitating new climate or sustainability-related reporting and disclosure guidelines for financial market actors or enhancing existing ones, c) measuring financial flows toward sustainable development priorities at the asset, portfolio, institutional, and national levels and d) avoiding reputational risk by preventing "green-washing".

Green bond frameworks can be part of taxonomies or exist separately. In the case of green bond frameworks, ICMA's Green Bond Principles (GBP) can be considered a global standard for issuers. The ASEAN Green Bond standards are, for example, closely aligned with the Green Bond Principles. Developing a green bond framework is a crucial step to prepare for the release of a green bond by all issuers, including sovereign and corporate. The framework reveals to investors the critical elements of any thematic bond issuance. The core components of the framework include: the rationale and strategy; use of proceeds, including eligible project categories and exclusions; evaluation and selection processes; processes for management of proceeds; reporting; external reviews; and amendments to the framework. The framework helps to ensure that bonds adhere to international best practices and incorporate high-level oversight to ensure transparency and accountability. While in general green bond frameworks should match national green taxonomies, they can be developed by both sovereign and corporate issuers without a national taxonomy.

Sustainable finance taxonomies allow regulators to guide markets based on national priorities. They provide information to investors to understand whether an economic activity is sustainable (usually and mostly meaning environmentally sustainable) and to navigate the transition to a clear environmental objective. Some taxonomies have an overarching objective around climate change mitigation, others on low-emissions development strategies. In the Russian Federation, for example, the green finance taxonomy covers both green and transition activities. It is compatible with recognized international taxonomies and reflects criteria for sustainable projects. For transition projects, it includes projects in hard-to-abate industries substantially contributing to the Russian Federation's net zero target. Across Asia and the Pacific, many countries have adopted their own individual taxonomies of sustainable finance. Activities, assets and/or project categories, such as what the finance is used for, are ranked by contribution to environmental objectives. For example, activities could be labelled green, amber, or red, based on contribution to the environmental objectives of the taxonomy.

Box 3.3: ESCAP's work on green bond frameworks

ESCAP is currently supporting three member countries (Sri Lanka, Cambodia, and Bhutan), to develop green and sustainability bond frameworks and build institutional capacity on thematic bond issuance. In Sri Lanka, collaboration with the Ministry of Finance and Sri Lanka's Sustainable Development Council facilitated the development of a sovereign green bond framework that was subsequently approved by Cabinet in May 2023. ESCAP and GGGI will provide continued support for a second-party opinion of Sri Lanka's Green Bond Framework. In addition, ESCAP is collaborating with Cambodia's Ministry of Economy and Finance and GGGI to contribute to the Sovereign Thematic Bond Issuance section of Cambodia's Comprehensive Policy Framework on the Development of Government Securities 2023 – 2028 and a subsequent Sustainable Finance Framework for future thematic bond issuance. In Bhutan, ESCAP and the Ministry of Finance of Bhutan conducted a workshop with key stakeholders at the end of 2022 to create shared understanding of the best practices and principles of sovereign thematic bond issuance, which will guide the future development of Bhutan's Sustainable Finance Framework, which ESCAP is supporting.

Figure 3.7: Green and sustainable finance taxonomy development in Asia and the Pacific.

Source: ESCAP

Emerging transition finance taxonomies are charting the path for financing activities that reduce emissions and move brown activities towards green activities. Sustainable finance taxonomies so far have mainly been green taxonomies that do not, for example, permit the financing of coal or fossil fuels. However, there is now increased global recognition that it is essential to finance transition in hard-to-abate sectors, such as the phase out of coal or the transition of brown to green activities as in the transportation sector. The recently released second version of the ASEAN Taxonomy includes not only green activities but charts a path for phasing out brown assets.[134] It is a further example of how taxonomies iterate and evolve as living classification systems and expand to incorporate transition objectives as well. According to Sustainable Fitch, the localized approach of the ASEAN taxonomy to incorporate the coal phase out as a supported activity (a world first in taxonomies) is expected to promote more regional ESG-labelled debt issuances and back the funding needs for a scalable energy transition.[135] The Indonesian presidency of the G20 in 2022 led to the formation of a framework on transition finance[136] which guides financial institutions and real economy firms to identify and understand what constitutes a transition activity or investment opportunity and reduce the identification barriers, costs, and transition-washing risk.

In addition to roadmaps, taxonomies, and green bond frameworks, some central banks also utilize directed lending policies towards green objectives. According to a survey of central banks in the region by the Asian Development Bank Institute,[137] 22 per cent (or four) of 18 central bank respondents stated that their institution currently has a strategic investment mandate or approach to scale up private investment in low-carbon sectors. The research cites that to boost green finance in Bangladesh, banks were instructed to provide financial assistance to green projects, with a minimum of 5 per cent of their total loan disbursement or investment. In addition, banks and financial institutions were mandated to set up a climate risk fund. As much as 10 per cent of banks' and financial institutions' corporate social responsibility budget must be allocated to the climate risk fund. Funding can be undertaken either via the provision of grants or through financing at lower interest rates. Starting from December 2016,

banks and financial institutions were instructed to establish sustainable finance units.[138] Similarly, in Viet Nam, in accordance with the National Green Growth Strategy and the National Action Plan on Green Growth between 2014 and 2020, the State Bank of Vietnam (SBV) has been assigned to lead institutional improvement and capacity building in the banking sector for green growth.[139] In 2015, the SBV issued Directive No. 3 to promote green credit growth and incorporate ESRM into lending operations. Decision No. 1552 is an action plan for the banking sector to contribute to the National Green Growth Strategy to 2020.[140]

Regulators are putting forth green incentives for issuers and borrowers. The Monetary Authority of Singapore (MAS) launched the Green and Sustainability-Linked Loan Grant Scheme (GSLS), to support corporates in obtaining green and sustainable financing by defraying up to SGD100,000 ($75,000) of the expenses of engaging independent service providers to validate the green and sustainability credentials of the loan. (This has now been expanded to cover the period from 2023 to 2028 under MAS' Finance for Net Zero Action Plan). The Hong Kong Monetary Authority (HKMA) launched the Green and Sustainable Finance Grant Scheme (GSF) in its 2021-22 budget to provide subsidies for eligible bond issuers and loan borrowers to cover their expenses on bond issuance up to HKD2.5 million ($320,000) and external review services up to HKD800,000 ($100,000). To support net-zero goals, the Bank of Japan (BOJ) introduced a new fund-provisioning measure in 2021 providing funds for investments or loans made by financial institutions that contribute to addressing climate change at a zero-interest rate.

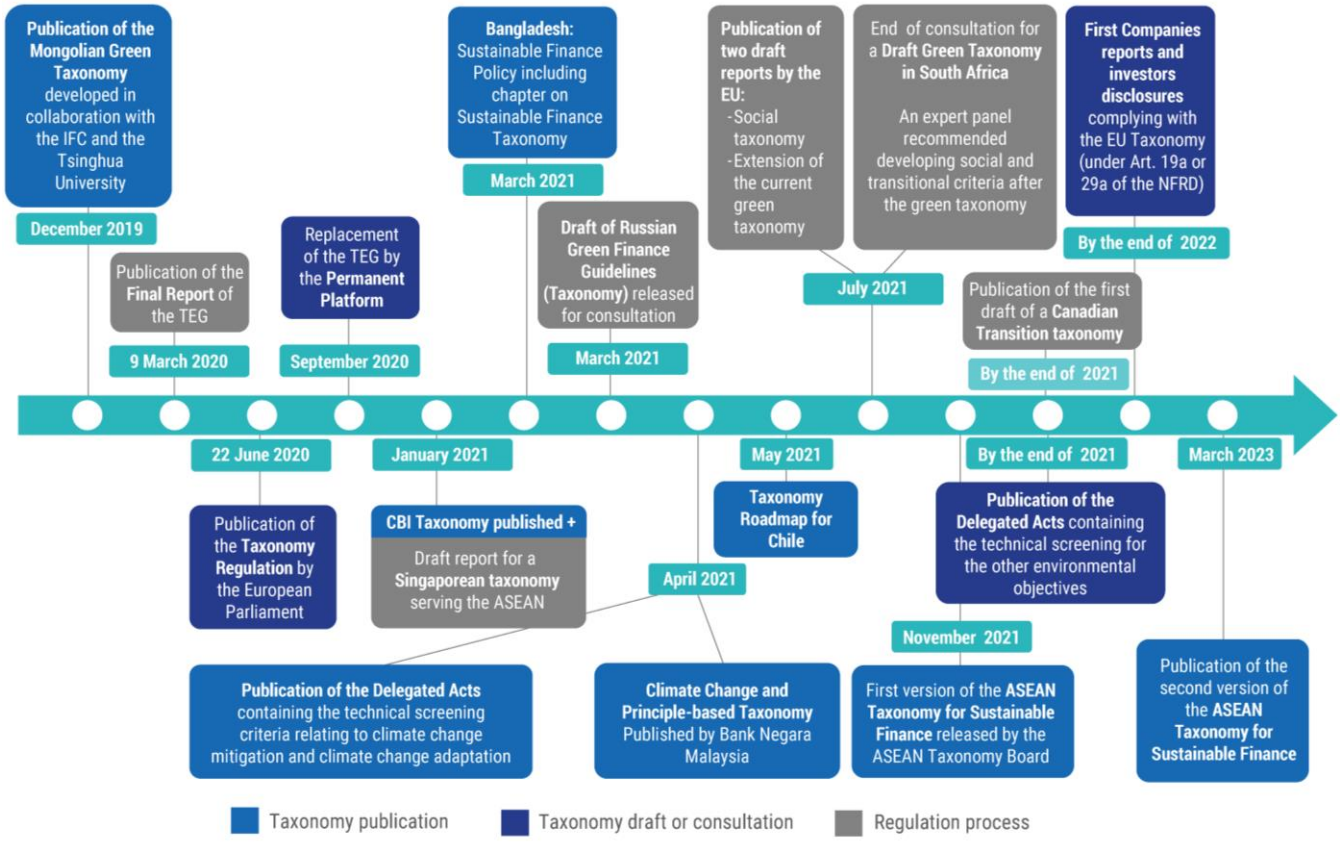
Box 3.4: Cambodian Sustainable Bond Accelerator.

While bond issuers in developing markets generally face considerable barriers to issuance, issuers of thematic bonds (green, social, and sustainability bonds) are further constrained due to the limited awareness and capacities on the side of issuers as well as high issuance costs. In March 2023, ESCAP, the Global Green Growth Institute, and the Securities and Exchange Regulator of Cambodia (SERC), in collaboration with the Credit Guarantee and Investment Facility (CGIF) and GuarantCo, launched the Cambodia Sustainable Bond Accelerator to provide technical assistance and support to prospective private sector issuers.

Three private-sector bond issuers have been selected and will be provided with support, including developing bond frameworks, meeting best practices, facilitating post-issuance reporting, and providing co-financing options to decrease bond issuance costs and investment support. As H.E. Sou Socheat, Director General of the Securities and Exchange Regulator of Cambodia (SERC), noted, "This is a crucial step towards growing Cambodia's capital market and achieving our goal of encouraging the use of green, sustainability, and sustainability-linked bonds to aid private sector growth and sustainable development in Cambodia." Through this support, ESCAP and its partners will be supporting the early stages of green and sustainable bond issuance in Cambodia.

There is growing momentum and consensus to mainstream green regulation in the region. The International Sustainability Standards Board global baseline disclosure standards, released in June 2023, will take a further step towards taxonomy unification and allow for comparability and interoperability between taxonomies across the region. Between the EU's Sustainable Financial Disclosure Regulation, which will apply to all EU capital investing in the region, the upcoming United States Securities and Exchange disclosure requirements, and the strengthening Environmental and Social Risk Management frameworks, there is now a remarkably fast-growing consensus regarding the need for green regulation in the region. The pressure on policymakers, regulators, and private finance to mainstream sustainable/green principles into regular investing, credit decisions, operations, risk management, and reporting is mounting. We believe this means sustainable finance taxonomies will only iterate to become even more clearer and convergent, especially on environmentally-focused and science-based definitions. This is important to reduce high transaction costs, arbitraging opportunities and to create an efficient and level playing field. In addition, convergence towards common frameworks is essential to reduce global emissions. Otherwise, one investor divesting from brown activities may be replaced by another investor who does not need to follow similar guidance in their region, thus not reducing overall global emissions.

Figure 3.8: Timeline of taxonomy development.



Source: ESCAP adapted from Gondjian and Merle (2021).

D. Challenges

This section discusses some of the key challenges that regulators face, as revealed in the discussion of the trends and opportunities that they face.

Clear, consistent, comparable, reliable, and efficient data is lacking. One of the key elements required for a thriving sustainable finance regulatory framework is data. From the perspective of scaling sustainable finance, the reporting frameworks for most financial institutions in the Asia-Pacific region do not capture flows of sustainable finance. Most reporting to regulators is rooted in prudential monitoring and focused on specific sector, product, or risk exposures. There is little transparency on the ultimate purposes of funding and how it may either directly or indirectly affect sustainable development goals. From the viewpoint of making finance sustainable, few regulators in the Asia-Pacific region have the complex mix of data required from financial institutions, government, supranational agencies, and scientific bodies to effectively model climate risks. Nor do many have the complex models required to measure and monitor climate risk within their portfolios, or the expertise to build or adapt existing models for use. While the forthcoming disclosure requirements will apply to companies that fall within those jurisdictions, for the multitude of FIs and corporates in Asia and the Pacific to which global disclosure requirements may not apply, data will continue to be a challenge.

The costs of collecting, cleaning, verifying, and publishing data continue to be disproportionately high for smaller firms and financial institutions. Analyzing and collating data from both financial institutions and real economy clients can be expensive, especially where substantial changes in business and operating models are called for. Regulators are already reporting concerns from financial institutions and their industry associations about the potential cost of implementing measures to support sustainable finance. They argue that many customers, particularly SME bank borrowers, are ill-placed to provide the required data, and the additional compliance costs will result in reduced access to finance. There is already a perception amongst bank subsidiaries with parents in more highly regulated jurisdictions that the reporting obligations of the parent may cause them to be uncompetitive. Establishing a "level playing field" both within a jurisdiction (and regionally) is important to avoid the dangers of regulatory arbitrage. While new technologies and artificial intelligence will naturally reduce the costs of analysis and monitoring, nevertheless data collection is an activity that needs to be embedded at all levels of an organization and requires investment.

Better alignment of taxonomies across countries is needed to level the playing field. As reported by Refinitiv,[141] a global provider of green finance data, there are multiple ongoing conversations about taxonomies around the world. The implications for financial market participants are significant because most organizations are global in nature and operate across boundaries. Having to comply with multiple "definitions" can be costly, risky, and may not deliver the transparency and reduced risk of greenwashing objectives underpinning the regulatory developments. Investors also report[142] that for companies operating across multiple Asian jurisdictions, this multiplicity presents a difficult and expensive compliance and reporting challenge, particularly when businesses are already straining under the weight of increasing anti-financial-crime compliance burdens (as well as a shortage of expertise to manage these burdens).

Coordination and coherence between policymakers, standard-setters and regulators continues to be essential. In this chapter we have focused mainly on financial sector regulators, but there are a wide range of other intermediary actors such as industry associations (both financial sector and real economy); international and national standard setting bodies; government agencies; academic and training institutions; and scientific and research agencies, amongst others, that are relevant to sustainable finance products. Tight coordination between these players is essential for the effective and timely rendition of government sustainable finance ambitions into the business and operating models of financial institutions.

"We need to convince all our stakeholders about their engagement and move beyond individual roles and individual mandates, because at the end of the day this is going to help all of us to accomplish all of our mandates if we concentrate properly" T M J Y P Fernando, Deputy Governor, Central Bank of Sri Lanka.

Only a few regulators have committed to mandatory green regulation, preferring to rely on voluntary approaches. For example, banks in Hong Kong, China, are expected to start making disclosures in line with guidelines from the international Task Force on Climate-related Financial Disclosures from mid-2023 and this will become mandatory in 2025. In December 2021, the Singapore Exchange (SGX) mandated climate and board diversity disclosures.

While climate stress testing is underway, regulators are not currently incorporating nature-related concerns into their frameworks. The World Wildlife Fund's 2022 Sustainable Regulation Annual Report evaluates progress on sustainable financial regulations and central bank activities in 44 jurisdictions representing over 88 per cent of the global GDP and has put forward an ambitious series of recommendations on nature-based macroprudential supervision. Recommendation 3[143] states that central banks should consider climate and nature as a single twin crisis and ensure their monetary policy implementation does not contribute to either climate change or nature loss. The WWF further proposes that central banks and supervisors should further develop a risk-based classification framework for sectors and assets exposed to biodiversity loss, which may enhance the data required for stress-testing and scenario analyses and reallocate capital flows from biodiversity-negative to -positive projects.[144] Lastly, supervisors should mandate financial institutions to report their management of nature-related risk and opportunity based on the Taskforce on Nature-related Financial Disclosures (TNFD) framework.[145] According to the WWF's Sustainable Regulations and Central Bank Activities (SUSREG) Tracker, only about 20 per cent of the jurisdictions have nature-related issues listed among a list of general considerations, the remaining 80 per cent lacking any supervisory consideration. Only one Asia-Pacific jurisdiction has clearly requested banks to consider deforestation issues in decision-making.[146]

Capacity constraints will continue to disadvantage lesser developed economies. Regulators and policymakers together will need to conduct proper environmental impact assessments, map their biodiversity and carbon sink assets, estimate and protect against climate-related losses in their portfolios, institute locally-appropriate safeguards in the financial system, shift their economy to low emissions pathways carefully, and ensure that a just transition is maintained. Therefore, without the appropriate skills and capacity at the level of financial regulators, the danger is that inappropriate, long-term investments are made which lock in countries to unsustainable and economically disadvantageous pathways. Furthermore, differences in standards between LDCs, SIDS, and other countries in the region could mean that there are less sustainable financial flows to those who most need it, as the stricter ESG policies of major financial institutions toss these economies into the "too hard" basket. This applies not only to commercial financiers, but also to MDBs and bilateral DFIs who tend to make bigger deals in bigger economies.

Integrity matters. According to the United Nations Environment Programme's Finance Initiative (UNEP-FI), in the absence of a universally accepted definition of what is green and sustainable, it is important that effective frameworks, taxonomy standards, and regulations set the foundation for global best practices and an equal playing field. In this regard, Asia-Pacific regulators can play a role in encouraging the growth of a robust ecosystem for third party verification/ assurance and impact assessment. Strengthening the green credentials of businesses and projects can further assuage greenwashing concerns.

E. Recommendations

This section outlines recommendations for the region's regulators, in line with the trends, opportunities and challenges discussed. In addition, these recommendations (which are set out in detail here) have been aggregated into our final set of ten principles of action for the region to bridge the sustainable finance gap in Asia and the Pacific, set forward in the final chapter.

Effort should be undertaken to facilitate interoperability between taxonomies. As discussed, the growth of individual taxonomies implies that autonomy is maintained at the country level and that locally appropriate pathways are embedded in such taxonomies. However, the downsides of varied taxonomies across the region are significant. Compliance costs are higher, risks are multiplied, arbitraging opportunities may be created and an efficient and level playing field is not created. One large institutional investor in the region has outlined three areas to steer Asia-Pacific taxonomies[147] to convergence: a) adopt a principles-based approach to provide flexibility when tailoring taxonomies in different regions and economies; b) align taxonomies with widely-adopted global or international standards, such as the Common Ground Taxonomy (CGT) between the European Union and China; and c) actively collaborate amongst regulators, policymakers, and stakeholders to develop transparent, relevant, comparable, and interoperable standards and guidance.

Roadmaps, taxonomies, and sustainable finance frameworks put forth by regulators should be aligned with policymakers' commitments, especially the NDCs. One example is Thailand. In December 2022, the Bank of Thailand and Thailand's Securities and Exchange Commission issued a consultation on their pilot sustainable finance taxonomy, which includes objectives largely drawn from the EU taxonomy and a traffic light system to categorize activities. This followed the November 2022 announcement of Thailand's second updated nationally determined contribution, which showed a more ambitious target to reduce its greenhouse gas emissions by 30-40 per cent from the projected business-as-usual level by 2030. The Thai government also announced a revised version of its Long-Term Low Greenhouse Gas Emissions Development Strategy, which proposed accelerated efforts to combat greenhouse emissions.

Regulators should ensure fair and predictable enforcement of current green finance requirements, for example around ESRM management. A complaint often heard in emerging markets is that while the ESRM guidance by the central bank exists on paper, enforcement is not always fairly implemented, allowing financial institutions who are not actively penalized or deterred to charge more competitive pricing. Ensuring that fair enforcement is a key priority, and that there are no exceptions (and thus ensuring adequate staff and supervision to ensure comprehensive fair enforcement) is therefore essential to create a level playing field.

Strengthening monitoring, reporting, and verification capacity in markets. One of the most vexing challenges faced by many emerging markets is the absence of ESG Monitoring, Reporting, and Verification (MRV) capacity and other ESG data vendors or ratings agencies. Organic development is inhibited without a critical mass of corporate customers or project sponsors, and the demand from the latter is curtailed by the lack of a competitive and competent local market. Furthermore, financial sector industry associations and training bodies should also take care to ensure that both the theory and practice of sustainable finance is embedded in academic curricula and professional qualifications for financial services professionals.

More supervisors from the region should join peer-learning based international alliances. International peer-learning is of great importance when embarking on the uncharted journey of scaling up sustainable finance. Financial regulators are increasingly sharing knowledge, developing common approaches, and attempting to understand the landscape both within and outside their own country through membership in key peer-based international organizations. These include the Network for Central Banks and Supervisors for Greening the Financial System, which consists of 121 regulatory authorities and 19 observers; the Sustainable Banking and Finance Network housed at the International Financial Corporation, consisting of financial sector regulators, central banks, ministries of finance, ministries of environment and industry associations; and the Alliance for Financial Inclusion. The regulatory and policy enabling environment surrounding climate finance is evolving by leaps and bounds in developed countries, and this rising tide will inexorably arrive at less developed countries. The advantage that less developed countries have in this regard is that they can leapfrog the learning journey by learning from developed countries, and take advantage of existing training, new regulatory technology, and political economy lessons learned on how to cascade regulations that avoid vested interests.

Mandatory verification and audit could accelerate compliance in the region. This remains a topic of debate, and only a few jurisdictions in the region for example China, Hong Kong, China, and Singapore (to name a few) have moved towards mandatory regulations in green finance. Nevertheless, given the urgency of meeting the 1.5°C goal, and in terms of pushing the real economy faster towards the net zero transition, mandatory requirement of, and/or verification of climate-related disclosures can be a powerful stick while also unleashing green investment and green jobs as a significant growth opportunity. This was also echoed by banking leaders as part of UNEP-FI's Leadership Council meeting. While Council members welcomed the ISSB's draft sustainability standards, although voluntary, they said sustainability reporting should be treated like financial accounting and allow for auditing. They also recognized that a harmonized approach should recognize country and sector differences and allow time to set and comply with national sustainability disclosure rules.[148]

For LDCs and SIDS, regulators should continue to prioritize standard financial sector development. While it was beyond the scope of this report to discuss the importance of deepening and expanding traditional financial sectors, it is important to appreciate that sustainable finance is still just finance, and most of the barriers that impede access to finance that currently prevail, will equally apply to sustainable finance flows. Regulators in LDCs and SIDs should continue to pay attention to mainstreaming financial sector development including the following standard themes:

- Deepening formal savings and investments: Increasing domestic savings and the role of investment to capitalize the formal financial sector remains vital.
- Improving financial inclusion: Boosting access to finance for adaptation to climate change and local mitigation efforts such as off-grid renewables etc.
- Developing access to finance for sustainable enterprise: Overcoming gaps in financing for small and medium enterprises (SMEs) (particularly larger ones seeking to expand fixed assets and transform value chains) remains a major challenge in many Asia-Pacific markets.
- Growing capital markets: Countries accumulating long-term pools of domestic capital should improve market and legal infrastructure to match savings and investments with longer-term financing for financial institutions and corporates.

F. Conclusion

This is a time of great change and forward momentum for financial regulators in Asia and the Pacific. Like policymakers, regional cooperation is of the utmost importance to ensure interoperability between regulatory frameworks, convergence towards widely accepted norms around investment aligned with climate goals and equalizing the playing field. To establish a level playing field, however, special attention must be paid to the least developed countries and small island developing states. These countries should not be disadvantaged by the imposition of standards and norms that disproportionately redirect capital elsewhere. This is not an easy task, but regional cooperation can do much to reduce fragmentation and present a unified approach.

4. WHAT CAN PRIVATE FINANCE DO?

A. Introduction

The role of private finance to meet global climate goals and the sustainable development goals has never been more important than right now. This comes at a time when expansionary fiscal support by governments are constrained by difficult macroeconomic conditions. Furthermore the staggering size of the amounts to be financed in order to meet these goals means that private finance must be crowded in at substantial scale and pace. While the actions of policymakers and regulators are critical in creating enabling conditions for private finance to invest at greater scale and pace, the call for private finance actors to expand their activities and deepen pre-investment activities is increasing.

The universe of private finance in Asia and the Pacific is vast and growing, with each actor bearing distinct incentives and challenges. The universe includes banks who lend to businesses and entrepreneurs in the real economy; capital market issuers of equity and debt securities, usually businesses and financial institutions; asset owners such as pension funds, sovereign wealth funds, foundations, endowments, trusts, and family offices; and asset managers, such as mutual fund managers, investment advisors, and stockbrokers. For the purposes of this report, we also include development financial institutions, such as multilateral development banks like the Asian Development Bank and the World Bank Group's International Finance Corporation; bilateral development financial institutions, such as the Dutch Entrepreneurial Development Bank (FMO), the United States Development Finance Corporation (DFC), British International Investment (BII), the Norwegian Investment Fund (Norfund), and the Swiss Investment Fund for Emerging Markets (SIFEM); as well as some national development banks (NDBs).

Private finance has historically operated under a traditional fiduciary mandate to provide risk-managed growth and returns (as well as other specific mandates) in good faith to stakeholders. It does this through financing specific projects or entities in various sectors of the economy, such as industry, services, energy, agriculture, transportation etc. In recent years, other mandates such as specific environmental, climate and social impact objectives (Track 1) or environment, social and governance (ESG) risk management mandates (Track 2) have been added, over and beyond what may be regulatorily required in the investor's jurisdiction. These include environmental, climate and social impact mandates related to the use of proceeds or objectives (Track 1) or environment, social and governance (ESG) risk management mandates (Track 2).

Today, the nature of fiduciary duty is changing around the world. Historically private finance has operated under managing appropriate risk-return ratios as part of their oversight and duty of care related fiduciary duties and climate risk was seen as a non-fiduciary issue. Directors and trustees around the world are now re-evaluating their roles to include climate risk as a standard financial risk, especially as such risks now have become increasingly foreseeable and thus can be legitimately considered to be part of their oversight and duty of care responsibilities. In a correlated trend, climate litigation has also risen globally.[149]

The financial risk-return profile is naturally driven by the regulatory framework in place, which is rapidly evolving. Often, two regulatory frameworks related to sustainable finance are in play simultaneously. The country where the underlying projects, activities, and sectors are located has its own mandatory or voluntary sustainable finance (ESG and/or climate) standards; the second sustainable framework is in the country where the asset owner or manager is based. It is important to note that the risk-return profile is also heavily influenced by the perceptions of risk related to the destination country, manifested in that country's exchange rate as well as its sovereign credit rating.

Many asset owners, especially pension funds and insurance funds, are prohibited by their mandate from investing in non-investment-grade projects or entities, due to their responsibility to provide a "safe pair of hands" for clients. Deposit-regulated financial institutions, MDBs, DFIs, and other banks are required to comply with regulation on risk-weighted capital adequacy ratios, meaning they must reserve a certain amount of capital to protect against their risk-weighted lending. Reserving capital also means that they are unable to lend out that reserved capital and obtain interest revenue, affecting the profit of the institution. Put simply, lending to riskier activities means less profit not only due to the inherent risk of activities going into default, but also because of the need to set aside more reserves; and the implication that this 'idle capital' will produce less interest revenue.[150] In addition, many asset owners and managers have pension funds or mutual funds that are dollar, euro, yen, or yuan denominated. When they invest in other countries, they take on the exchange rate risk, which substantially influences the risk-return profile of investments, even though it does not change the underlying real risk-return profiles of the activities themselves.

This means that riskier projects, entities, and countries (such as the Least Developed Countries) cannot qualify under traditional norms as a destination for many funds. It also means that these riskier projects, entities, and activities located in such countries — which if funded, might make substantial contributions to emissions reductions or to the SDGs — unfortunately entail extremely high capital costs for financing. Therefore, only projects or entities that can cover the capital costs and/or investors who either do not have to comply with capital reserve requirements or have high risk tolerance can invest in such projects.

In practice, this means that for private finance to flow naturally to such "riskier" projects, they must generate very high returns. For example, projects in new green technologies, novel nature-based finance, or renewable energy in LDCs, who face such parameters may have to generate much more profit than less-risky projects (located for example in countries with higher credit ratings, or in established sectors where risks can be clearly mitigated), just to cover the higher capital costs of financing. This naturally drastically reduces the pool of investment-ready project (under traditional norms of investment-readiness).

For such projects where the potential to achieve environmental impact is high, and the underlying project is sound, concessional and risk-sharing finance as well as local currency financing is essential. Concessional finance is below market-rate finance and takes on many forms, ranging from loans and grants to technical assistance or guarantees. The degree of concessionality is also highly heterogeneous. Financing from MDBs, DFIs, NDBs, overseas development assistance (ODA) and other grant or concessional capital can be used to "de-risk" these projects, drive up their "grade" and safety, and attract more and cheaper commercial financing that can be layered on top of the capital stack.[151] It also exemplifies why local-currency financing into such projects is of critical importance if the scale and pace of private finance is to be accelerated because local-currency financing can fund projects that do not have to reach a higher rate of return simply to cover exchange rate risk.

This places a focus on how enough 'bankable' projects, activities and entities can be built, to investor-specifications, in a regulatorily compliant manner, to meet climate goals, at speed. Different investors in the capital stack have different requirements. Therefore, it is fundamental that a pipeline of projects, activities, and entities with adequate risk-return-mandate profiles are generated at scale and pace to enable Asia and the Pacific to its meet climate and SDG goals. The scale of this challenge should not be underestimated, nor the requirements of project preparatory work (and costs) required to substantively build viable project pipelines. This also requires a new way of building projects – especially in sectors and areas, such as in renewables or in new decarbonization technologies, where regulation has not yet emerged and, therefore, costs are particularly prohibitive, and where new industries and decarbonisation technologies risk upsetting long-entrenched balances of power and interests that may exist. This new way necessitates deeper participation by investors in the pre-investment stage of pipeline building.

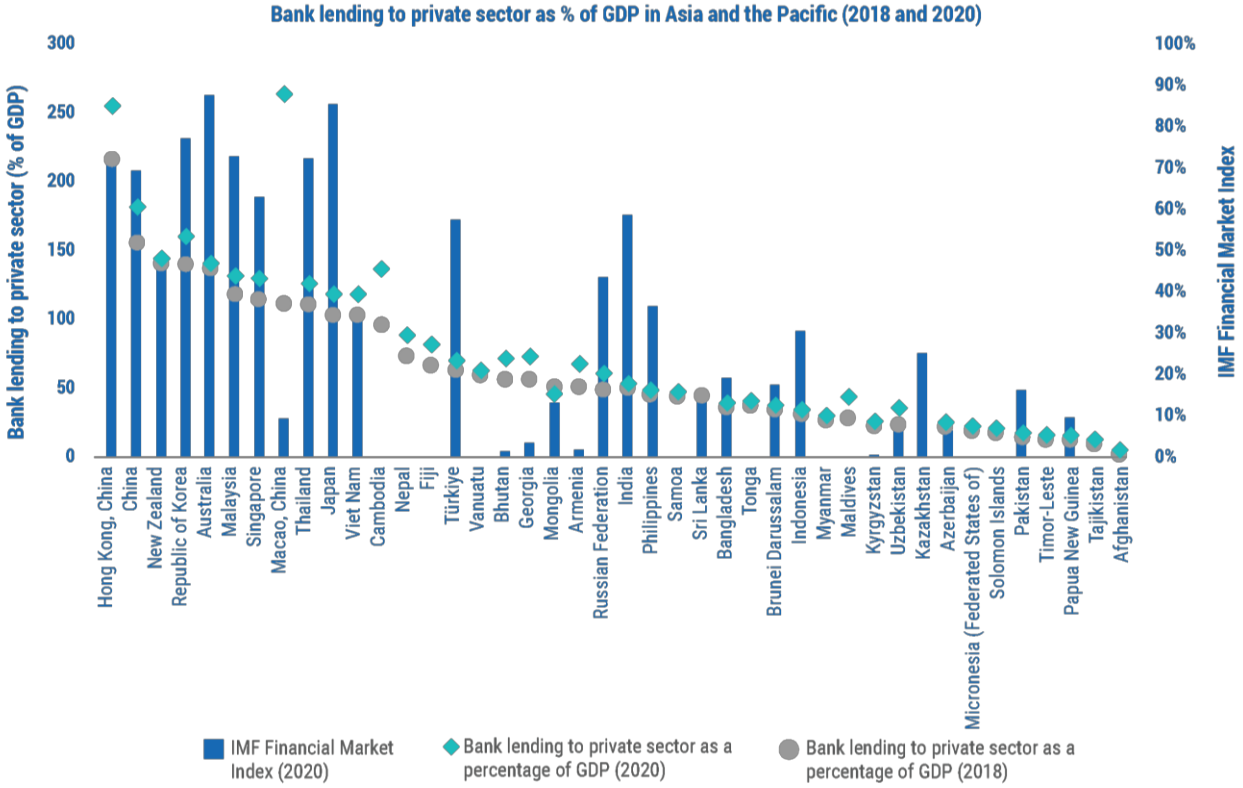
It is time for shareholders, boards, and personnel to enact accelerated change. While many private finance institutions are already working to accelerate change, now it is time for shareholders, boards, and personnel to accelerate their response to the challenge. Considerable wealth has been created over the last two decades in financial markets, along with rising inequalities and huge adverse climate impacts. It is now time for substantial change. Hitherto, in pricing projects, activities and entities and in realizing returns, private finance has long enjoyed not being required to incorporate the environmental (or social) externalities of these costs, whilst also enjoying low costs of capital due to low inflation. Many shareholders and boards are indeed rising to this challenge with voluntary stewardship codes and net-zero commitments. Yet given the mounting consequences of inaction, more needs to be done at urgent scale and pace to turn such commitments into reality.

This chapter focuses on how to unlock more finance for climate action. While the extent of change required in all asset classes and instruments, owners and managers, jurisdictions and geographies across Asia and the Pacific is beyond the scope of this report, we discuss a few key issues which are critical to unlocking further private finance to meet climate goals. These include: the building of bankable projects in renewable energy and new decarbonization technologies, such as green hydrogen, both of which have a direct link to reducing emissions and meeting the 1.5-2°C goal; the role of green instruments such as green bonds, debt for climate/nature swaps and green loans in financing; the role of MDBs in unlocking further financing, and the role of local currency financing in bringing down risks, lowering transaction costs and in financing such development.

B. Trends and opportunities

The Asia-Pacific region is predominantly a loan market, which continues to be at the frontier of the transition to net zero in the region. While some capital markets in the Asia-Pacific region are extremely deep and liquid, trading cutting-edge structured financial products, the predominant financial instrument used for investment purposes in Asia and the Pacific is still the standard loan product from banks to corporates. There is also a correlation between the size of bank lending to private sector, and the level of financial development in the country, as seen in Figure 1 below. While figures on total bank lending in the region are varied, one estimate[152] of the top 50 largest banks in Asia alone places their total asset size as of April 2023 at more than $56.5 trillion. Naturally this includes all financial products, but it is still a clear indication of the depth of funds that can potentially be mobilized towards climate action.

Figure 4.1: Bank lending to private sector as % of GDP.



Source: ESCAP based on World Bank, World Development Indicators and IMF, Financial Market Development Index Database.[153]

Note: Values on bank lending to private sector are from 2018 and 2020, while IMF Financial Market Index values are from 2020. Countries lacking available data on Financial Market Index were excluded from the analysis.

Banks are slowly moving from a Track 2 approach, where all lending was sustainably managed, to also increasingly direct lending towards green, sustainable and sustainability-linked uses and outcomes.

Sustainable loans, based on sustainable loan principles, are generally structured in the same way as standard loans, except that the loan proceeds are tracked and allocated to eligible sustainability objectives. Sustainable loans also require transparency about how the sustainable projects are selected and how the funds are allocated. There are consumer or smallholder agricultural products that are easier to package as part of a sustainable loan portfolio like:

- Consumer loans for clean cooking, household solar, energy efficient home improvement, low emissions vehicles, etc.
- Buyer credit or supplier pre-financing for value chains, particularly for sustainable agricultural value chain inputs, such as:
  - Environmentally friendly fertilizer, herbicides, or pesticides
  - Climate and disease resistant crop varieties and more productive livestock husbandry
  - Irrigation equipment
  - Farm enterprise solar or biogas installations

Increasing use of sustainability-linked loans allow for more flexibility, if structured and verified well.

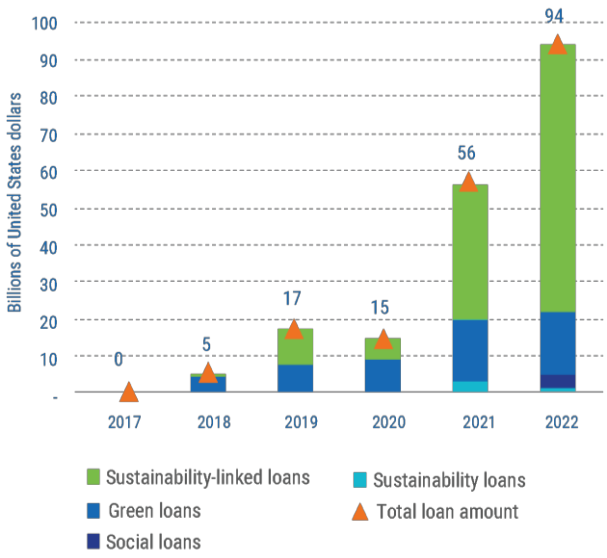
Sustainability-linked loans involve setting "sustainability performance targets" for borrowers (e.g. internal targets such as reducing greenhouse gas emissions; improving energy efficiency; reducing pollution; increasing biodiversity; reforestation; conducting external assessments or achieving a sustainability certification or rating). If targets are met, the borrower is rewarded with reduced loan interest rates, or penalized with higher interest rates if key performance indicators (KPIs) are not met. Unlike green loans, the proceeds of sustainability-linked loans (SLLs) do not need to be allocated exclusively to green projects; rather, they incentivize borrowers to improve their overall

sustainability profile or targets. These can be technically more difficult to design and structure, but are also more amenable for jurisdictions, sectors, or customers in the early stages of the adoption of sustainability standards.

SLLs may be more suitable for SMEs as well. SLLs open the sustainable loan market to companies in a wider variety of sectors and to smaller companies which are unable to overcome entry barriers to green loans or issuing a green bond. SMEs are a likely candidate for SLLs since they may be unable to commit the entire proceeds of a loan to specific green projects. They are also much more amenable to a full suite of flexible credit products because the incentive can be placed around the "relationship" rather than a strict "use of proceeds" which tends to require a fixed term capital investment loan.

Within loan markets, green, sustainable, and sustainability-linked lending is on the rise but is still small. As seen in Figure 4.2 below, sustainability-linked lending is particularly growing, reflecting its increasing versatility to finance entities rather than projects or activities; therefore, allowing more "unrestricted" funding. Sustainability-linked lending can also ensure a direct tie to sustainability outcomes and objectives, depending on the KPIs used. In Asia and the Pacific, banks are still at the frontline in the transition to net zero, and clearer and more effective regulation can drive banks to embark or accelerate the transition to net zero in the region.

Figure 4.2: GSS+ loans in Asia and the Pacific, 2017–2022 (billions of United States dollars).

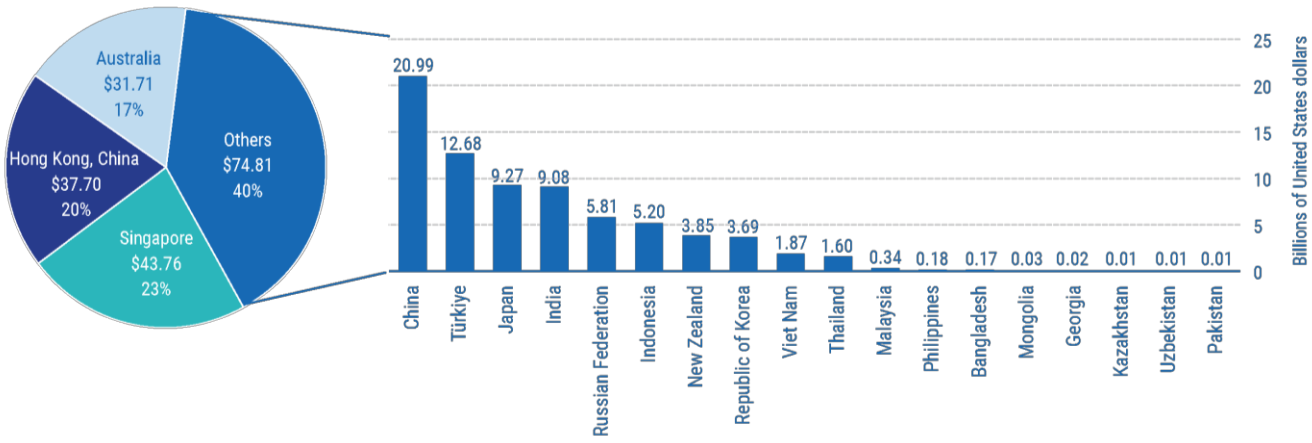


Source: ESCAP based on Environmental Finance data[154]

Note: 1) The data labels show total sustainable loan value.

2) Based on voluntary disclosure, green and sustainability-linked loan data are recorded if they are aligned with the Green Loan Principles and the Sustainable-linked Loan Principles provided by the Loan Markets Association.[155]

Figure 4.3: GSS+ loans in Asia and the Pacific by country, 2017–2022 (billions of United States dollars).



Source: ESCAP based on Environmental Finance data.[156]

Note: Based on voluntary disclosure, green and sustainability-linked loan data are recorded if they are aligned with the Green Loan Principles and the Sustainable-linked Loan Principles provided by the Loan Markets Association.[157]

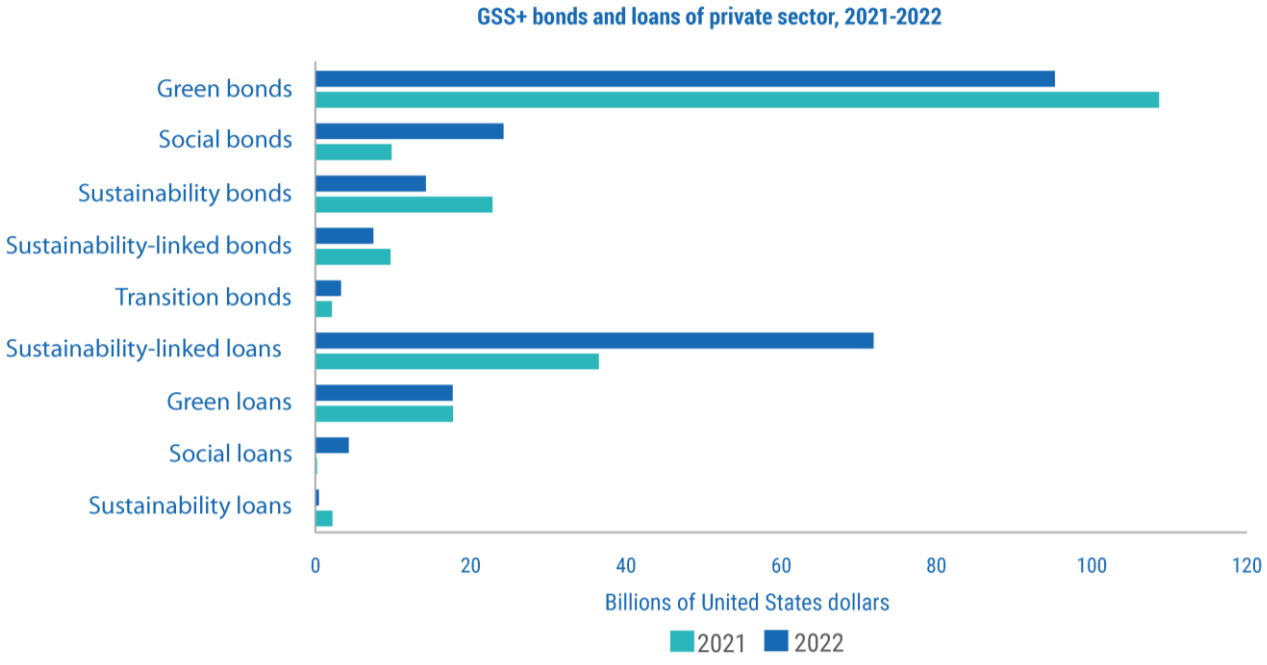
In terms of corporate GSS+ bond issuances and lending, the top-two categories in 2022 were green bonds ($95 billion) and SLLs ($72 billion). Corporate bond issuances increased in 2022 compared to 2021 for social and transition bonds, but decreased for green, sustainability, and sustainability-linked bonds, as shown in Figure 4.4 below. In terms of corporate borrowing of GSS+ loans, sustainability-linked loans and social loans made remarkable progress during that period.

On the other hand, lending to fossil fuels and coal in the region is still on the rise. As can be seen from recent research from the IMF,[158] in Figure 4.5 below, the debt levels (including corporate bonds and corporate loans) of companies in the coal value chain, as well as in oil and gas, in Asia and the Pacific continue to surge, and are larger compared to other geographies in the globe.

Asia and the Pacific is also home to a significant number of asset owners, with a very high volume of assets under management. Recent research shows that the world's top 100 asset owners' assets under management (AUM) totalled $25.7 trillion at the end of 2021, growing 9.4 per cent from the previous year.[159] Of these, Asia and the Pacific accounts for 36.1 per cent of total AUM, making it the largest region in the study.[160] The Government Pension Investment Fund (GPIF) of Japan remains the largest asset owner in the world, with an AUM of $1.7 trillion as of end 2021, and the China Investment Corporation was the third largest asset owner in the world (AUM of $1.2 trillion).[161] Additionally, the top 20 asset owners of this top 100 made up 55 per cent of total AUM (i.e. more than $12 trillion), representing a small group of private finance stakeholders (mainly pension funds and sovereign wealth funds) that can take forward the transition to net zero for trillions of dollars of assets.[162] Such asset owners need to convert their net zero commitments into faster action, including transition plans with targets for 2030 and 2040.

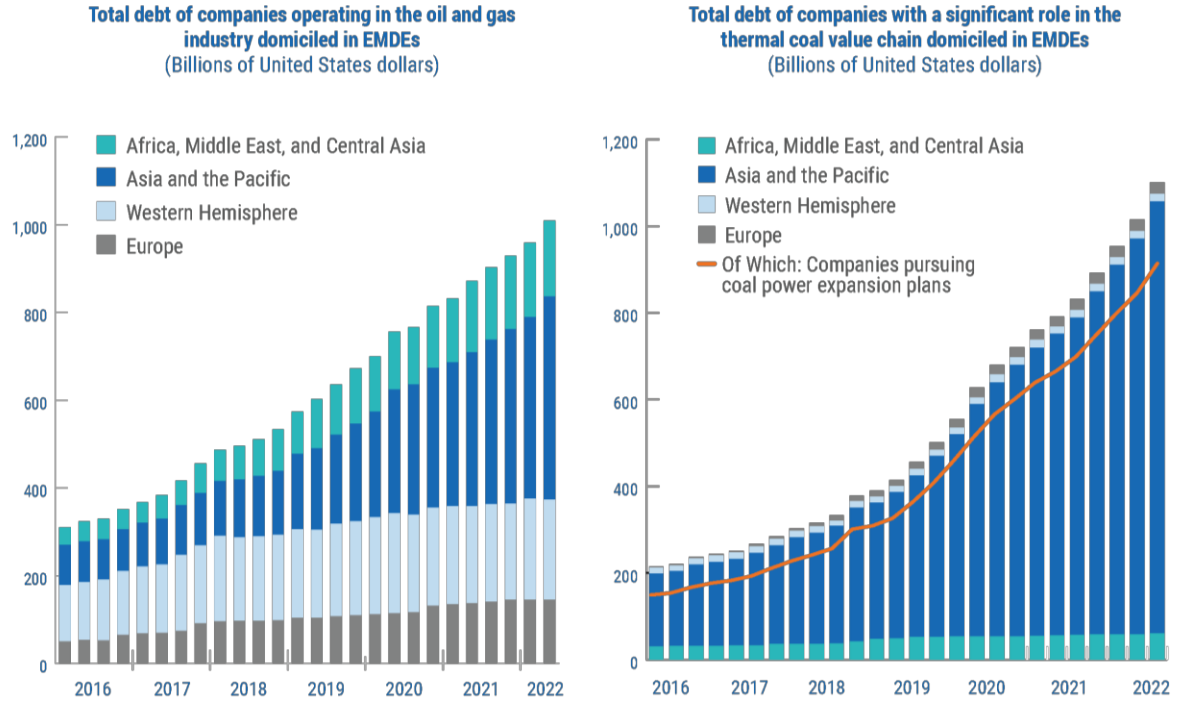
Stock exchanges in the region continue to be a significant source of capital but market capitalization has been relatively stable. Listed equity capital across the region's major stock markets continues to be a major source of private finance, with the potential to be turned towards climate action in a faster manner. Figure 4.6 below lists the market capitalization of the region's major stock exchanges by year and shows the relative values of total equity capital raised in the last four years across the region. China, Japan, and Hong Kong, China, remain the most popular destinations for capital raised, with the highest volumes of market capitalization.

Figure 4.4: GSS+ bonds and loans of corporate issuances in Asia and the Pacific, 2021–2022 (billions of United States dollars).



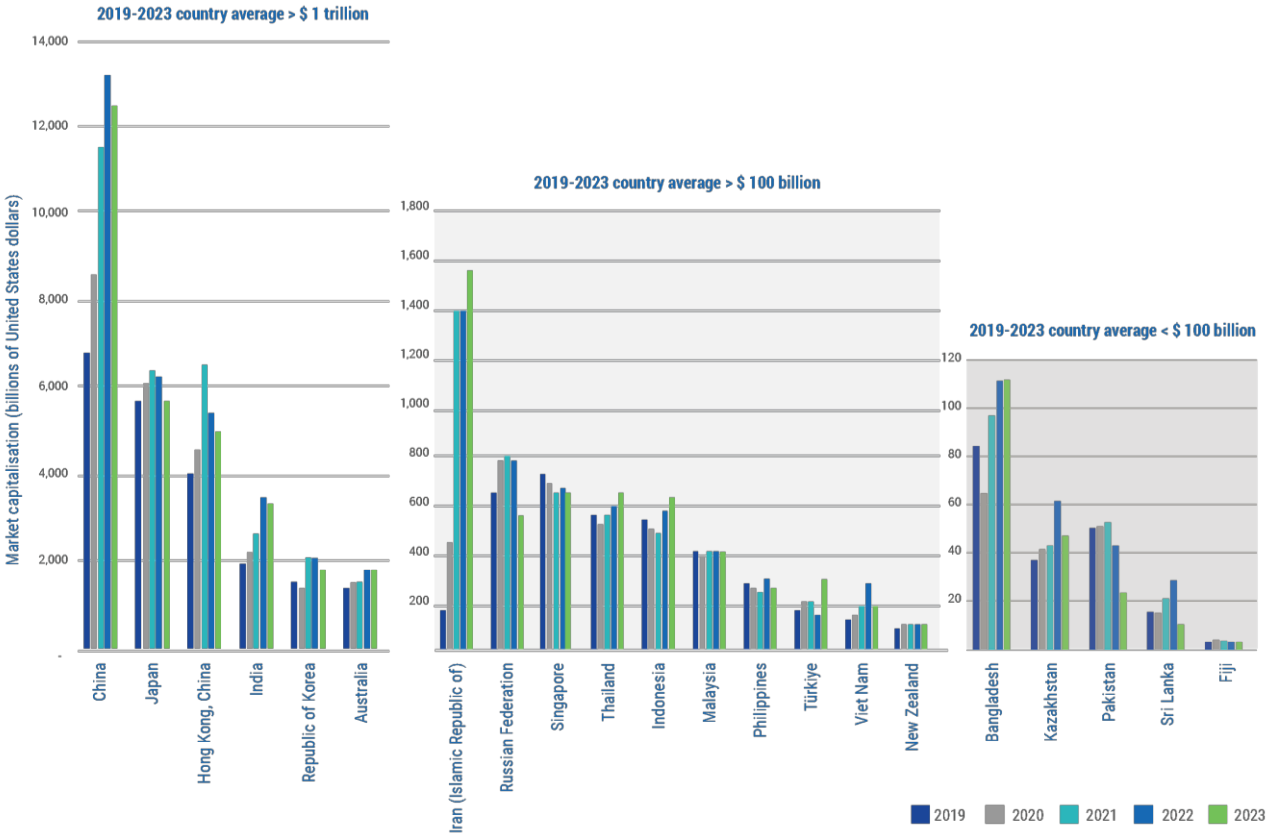
Source: ESCAP based on Environmental Finance data[163]

Figure 4.5: Debt levels of emerging market and developing economy companies operating in fossil fuel industries.



Source: IMF (2022).

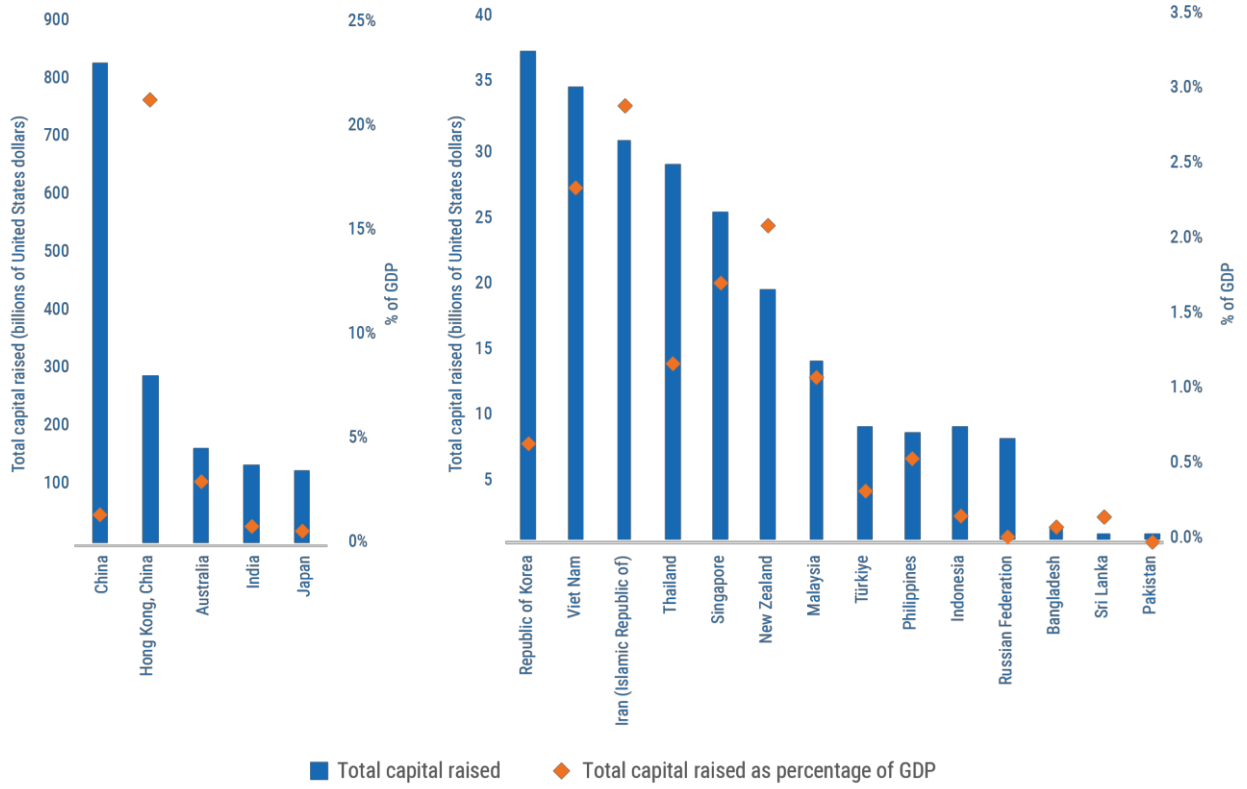
Figure 4.6: Market capitalization of Asia-Pacific stock exchanges by country, 2019-2023.



Source: World Federation of Exchanges.[164]

Note: Market Capitalization values show the monthly average as of the 1st January of each year. In case of data gaps in the World Federation of Exchanges database, data from the annual report of stock exchanges was used.

Figure 4.7: Total equity capital raised in Asia and the Pacific, 2019-2022.



Source: World Federation of Exchanges and World Bank, national accounts data.[165]

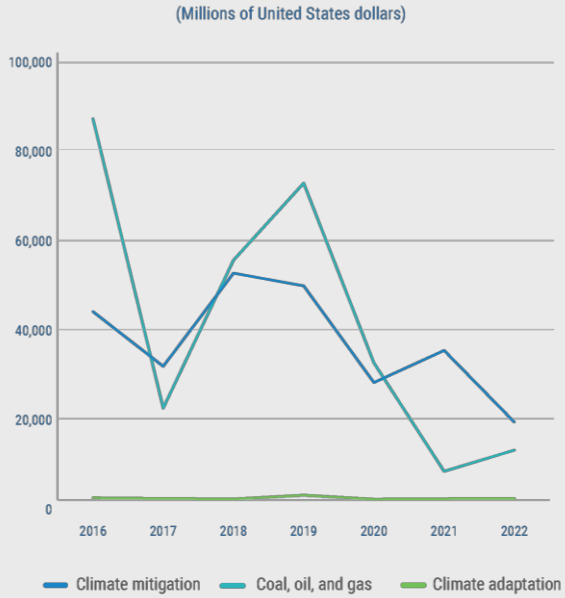
Note: Total capital raised corresponds to the sum of monthly values from 1st January 2019 to 31st December 2022. It is calculated as the sum of capital raised through Initial Public Offerings (IPOs) and capital raised by already listed companies. It includes both newly issued shares and already issued shares.

Asian banks and private finance are still considerably slow to make net zero commitments. At the time of writing, there were 131 banks globally that have made net zero commitments to align their lending and investment portfolios with net zero emissions by 2050, as part of the UN-convened Net Zero Banking Alliance (NZBA) — the industry alliance for banks under the Glasgow Financial Alliance for Net Zero. Signatory banks also commit to setting and publicly disclosing 2030 targets within 18 months of joining the NZBA. Out of the 131 banks who have made net zero commitments, 33 members were from ESCAP's Asia-Pacific region. Twenty-three banks were based in Australia, New Zealand, the Republic of Korea, and Japan. Of the remaining 10 banks, three were from Bangladesh, two from Malaysia, four from Türkiye, and one from the Russian Federation.[166]

Box 4.1: Foreign direct investment into climate mitigation and adaptation

Foreign direct investment (FDI) has an important role to play in limiting climate change and filling in climate finance gaps globally. Yet despite ample opportunities for FDI to contribute to addressing climate change in Asia and the Pacific, greenfield investment, or investment in new productive activity, FDI flows to climate mitigation and adaptation have been declining over the past several years. Meanwhile both the value and volume of climate mitigation projects are significantly larger than climate adaptation projects. For example, since 2016 there have been 1,218 climate mitigation projects worth $247 billion, compared to 83 climate adaptation projects worth $2.7 billion (Figure 8). In 2022 there was a pronounced loss of momentum in climate mitigation FDI, which was accompanied by growing investment in fossil fuels in the region.

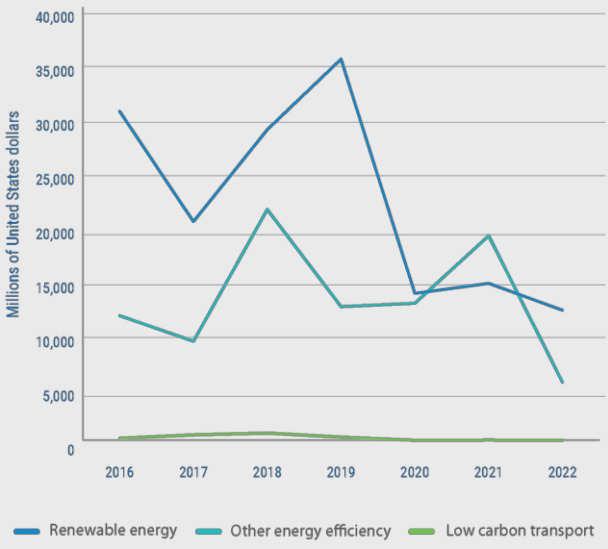
Figure 4.8: FDI inflows into climate mitigation and adaptation versus fossil fuels in Asia and the Pacific, 2016-2022 (millions of United States dollars).



Source: ESCAP calculations based on fDi Markets (2023).[167]

The lion's share of FDI in climate mitigation in Asia and the Pacific has gone into renewable energy and other energy efficiency projects (Figure 9). In terms of project numbers, since 2016 there have been 667 projects related to renewable energy, 518 in energy efficiency, and a meager 83 on low carbon transport.

Figure 4.9: FDI inflows into climate mitigation projects in Asia and the Pacific, 2016-2022 (millions of United States dollars).



Source: ESCAP calculations based on fDi Markets (2023).[168]

The value and volume of climate adaptation projects has been low in the region, and largely focused on introducing clean technologies to foreign operations. For instance, in 2021 Teijin Polyester of Japan invested $17.2 million and created 44 jobs in its Thai subsidiary to convert domestically-produced plastic bottles into recycled polyester chips to produce high-quality polyester filament. The facility is expected to produce 7,000 tonnes of recycled polyester chips annually by 2025. Some recent examples from 2022 include an investment of $27 million by Covestro (Germany) into China to set up a dedicated line of polycarbonate mechanical recycling, and another investment by Covestro (Germany) in Thailand to repurpose and convert its existing compounding plant to a recycling facility. Notably, no least developing countries or small island developing countries – arguably two sets of countries urgently in need of climate FDI – have received climate FDI since 2011.

The low and uneven distribution of FDI to developing countries in the region underscores the urgent need to bring FDI into conversations about unlocking climate finance for developing countries. FDI is an important type of private sector investment with immense potential to help developing countries fill climate finance gaps; however, it has until now been left out of the discussions at forums on climate finance.

There is an urgent need to support developing countries, especially least developing and small island developing countries, and their investment promotion agencies responsible for attracting and facilitating climate-related FDI. Most importantly, these agencies need support to identify the climate projects that would give their countries a competitive advantage to attract and target investors; generate leads; repackage and repurpose brownfield investment sites into green projects; and pitch investment opportunities to foreign investors. Investment promotion agencies should consider incorporating tailored indicators to assess, evaluate and measure the climate relevant characteristics of investments. UN ESCAP has developed sustainable FDI indicators that would enable investment promotion agencies to do precisely this.[169] On a policy advocacy level, they also need to build their capacity to articulate to relevant ministries the need for better incentives for climate FDI and to phase out fossil fuel subsidies and incentives. UN ESCAP, through its assistance and capacity building programme of FDI for sustainable development, is supporting investment promotion agencies in the region in each of these areas.[170] More information on this work can be found here: www.unescap.org/our-work/trade-investment-innovation/business-investment.

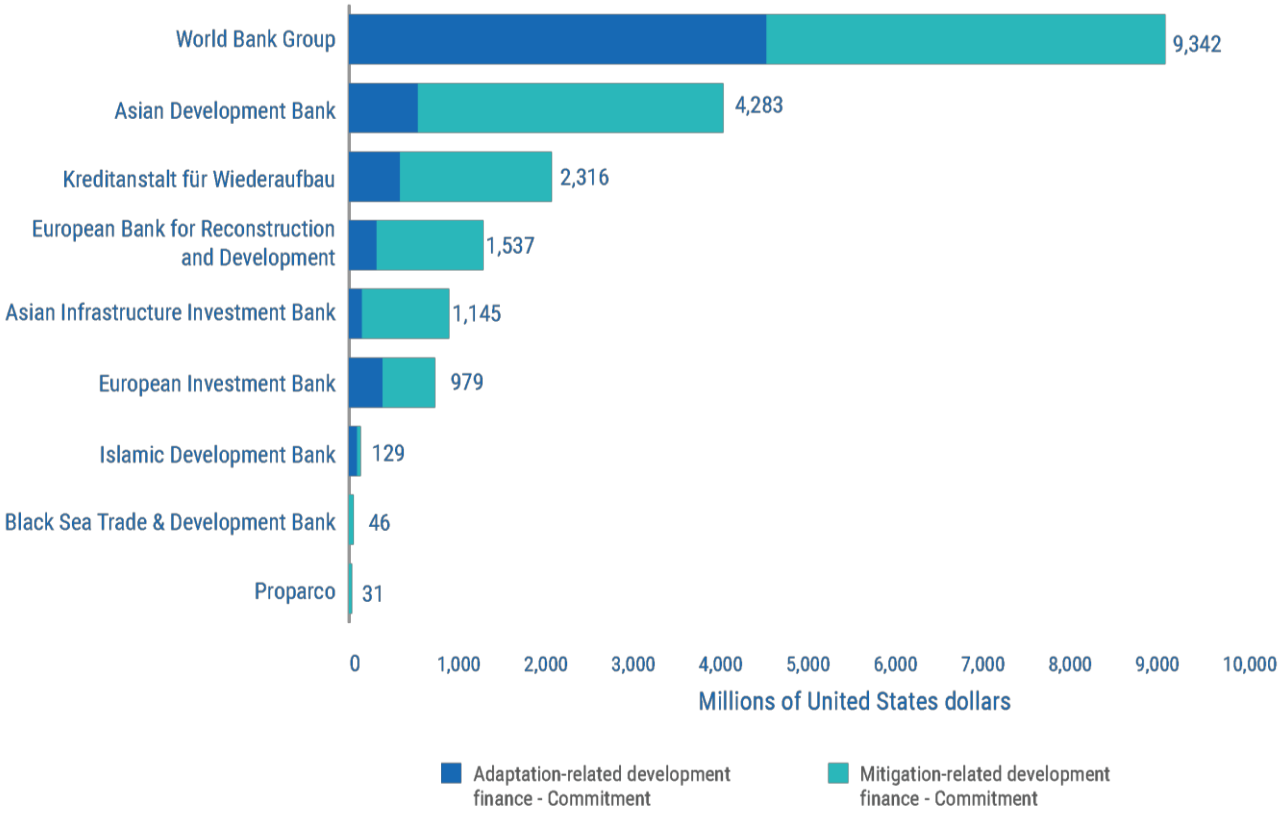
Trends in multilateral development bank (MDB) and development financial institution (DFI) lending

In addition to their role as investors, MDBs can play an even more important role in unlocking sustainable finance through encouraging and supporting policy change and mobilizing additional private finance for global and regional goals alongside their own investments. While multilateral development banks are considered public actors, in practice they operate in a fashion like other private financial institutions, following risk-return-mandate profiles instituted by their boards. However, in addition to their global, regional, and in-country role as investors, they are uniquely placed to carry out investing for global public goods, and to mobilize private finance for this purpose while assisting and supporting policy changes to enable the achievement of goals.

In 2021, MDBs delivered $82 billion in climate finance and simultaneously mobilized an additional $41 billion in private finance.[171] The additional mobilization of private finance usually is arrived at through MDBs taking an anchor investor role in a (sometimes pioneering) project that then signals to other investors that the investment is 'bankable'. This is not always because the MDB has instituted a first-loss or partial credit guarantee; sometimes it is simply a signal that an adequate amount of due diligence and vetting of the project and project sponsor's financials, governance, and ESG risks has been passed. MDBs and bilateral DFIs can also support private credit institutions by investing equity (increasing shareholder's funds) in the financial institution to allow them to expand their lending portfolio; and/or buying bonds issued by the financial institutions (usually in some sort of private placement); and/or extending credit.

Initiatives to support private FIs by MDBs and DFIs entail a cost of capital that is attractive to the FI and/or with terms and conditions that would be difficult to obtain from commercial sources. Before engaging in debt or equity investment, however, MDBs and DFIs will typically work with FI partners by providing wholesale loans typically on concessional terms. Increasingly these funding lines need to be linked to ESG standards in finance (Track 2, sustainably managed finance) by which the recipient undertakes to build a portfolio of lending that assesses ESG risks associated with that lending. Figures 4.10 and 4.11 show the development finance commitments to mitigation and adaptation in Asia and the Pacific by the top nine MDBs and DFIs in 2020. On an aggregate level within the region defined by the membership of ESCAP, in Figure 4.11 below, we see that 64 per cent of MDB funds were committed to mitigation-related finance, with the rest directed to adaptation finance. The majority was committed by the World Bank Group (including equity, grants, and loans).

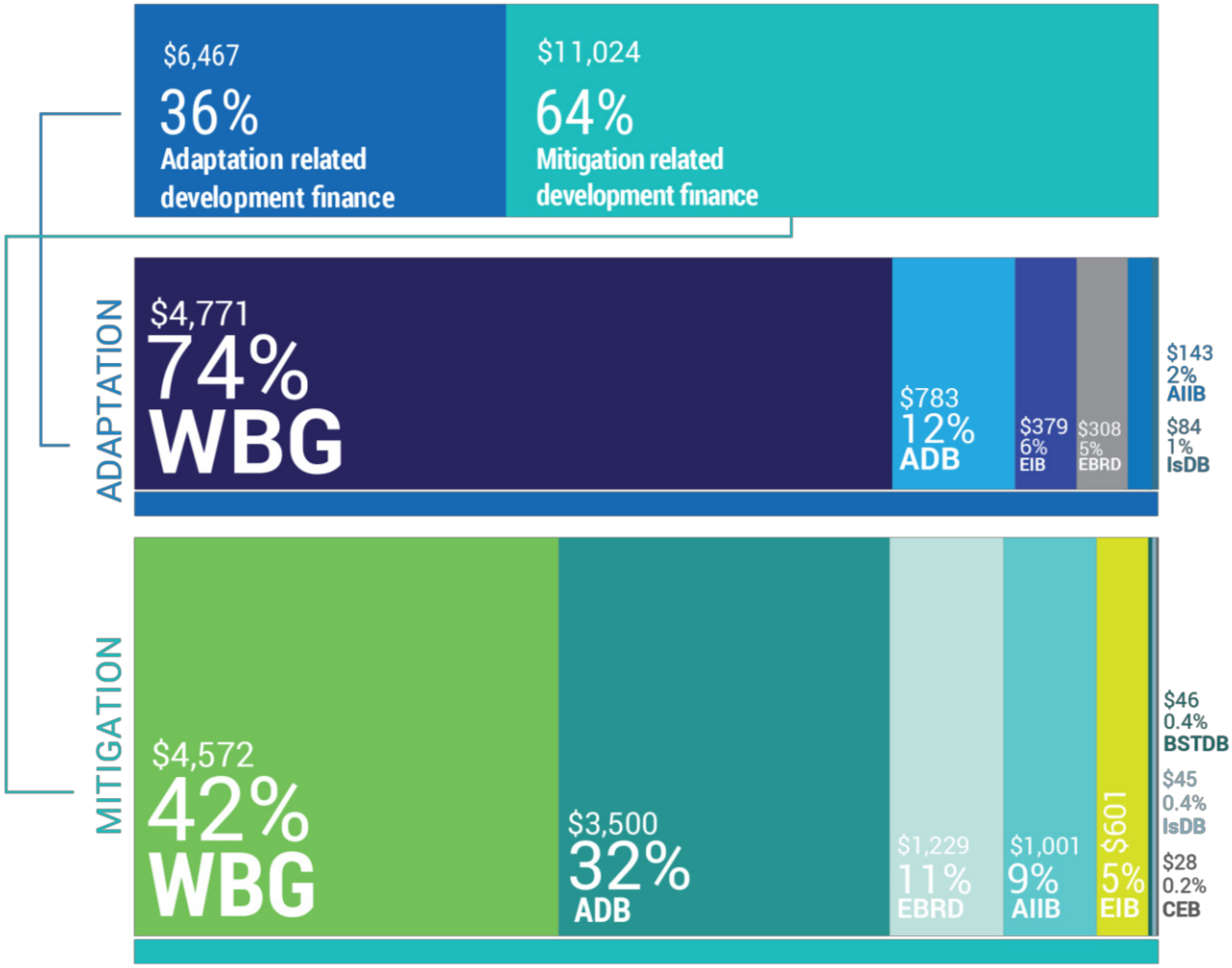
Figure 4.10: Top nine MDBs and DFIs in Asia and the Pacific by climate-related development finance.



Source: ESCAP based on OECD, Climate Change: OECD DAC External Development Climate Finance Statistics.[172]

Note: Total climate-related development finance corresponds to the sum of MDBs and DFIs grants, loans, and equity in Asia and the Pacific. Both concessional and non-concessional activities are included. Guarantees are excluded as they are categorized as non-flow operations. The figure includes total amounts committed by MDBs and DFIs and includes regional investments.[173]

Figure 4.11: MDBs climate-related development finance in Asia and the Pacific by adaptation and mitigation, 2020 (millions of United States dollars)



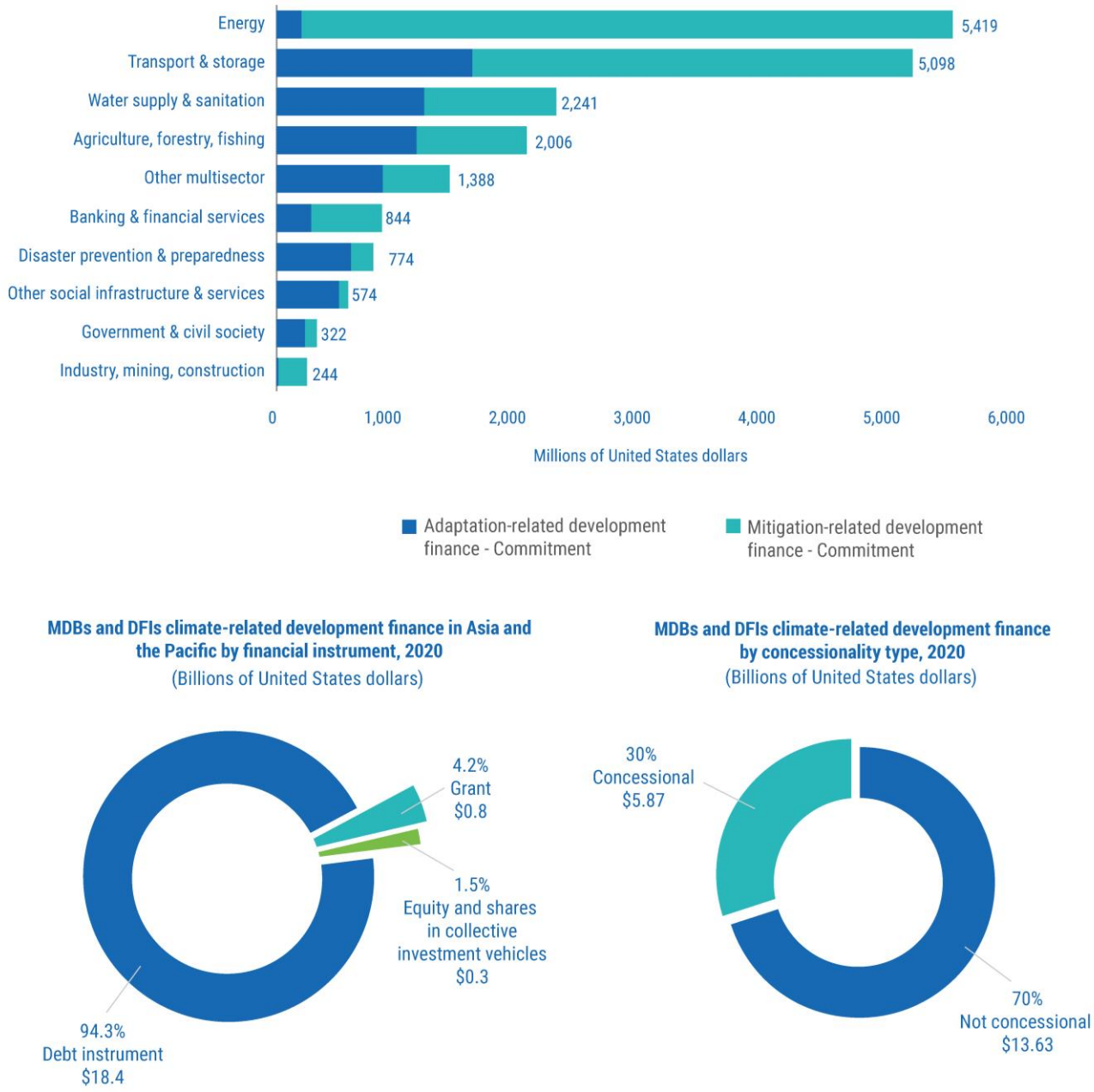
Source: ESCAP based on OECD, Climate Change: OECD DAC External Development Climate Finance Statistics.[174]

Note: The figure shows the share of Adaptation and Mitigation related finance in MDB lending to Asia and the Pacific. Both concessional and non-concessional activities are included. Guarantees are excluded as they are categorized as non-flow operations. Values show the total amount of committed climate-related development finance and correspond to the sum of debt, grants, and equity.[175] *The analysis examined 8 MDBs in the region – World Bank Group (WBG), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), Asian Infrastructure Investment Bank (AIIB), European Investment Bank (EIB), Islamic Development Bank (IsDB), Black Sea Trade & Development Bank (BSTDB), Council of Europe Development Bank (CEB).*

Most of the investment was in debt and was not concessional. As seen in Figure 4.12 below, energy was the single biggest destination for MDB/ DFI investment funds in the region (followed by transport and storage).

Over 90 per cent of the instrument used was debt, and only 30 per cent of the financing was concessional by MDBs and DFIs.

Figure 4.12: MDBs and DFIs climate-related development finance in ESCAP members by sector, financial instrument, and concessionality type.

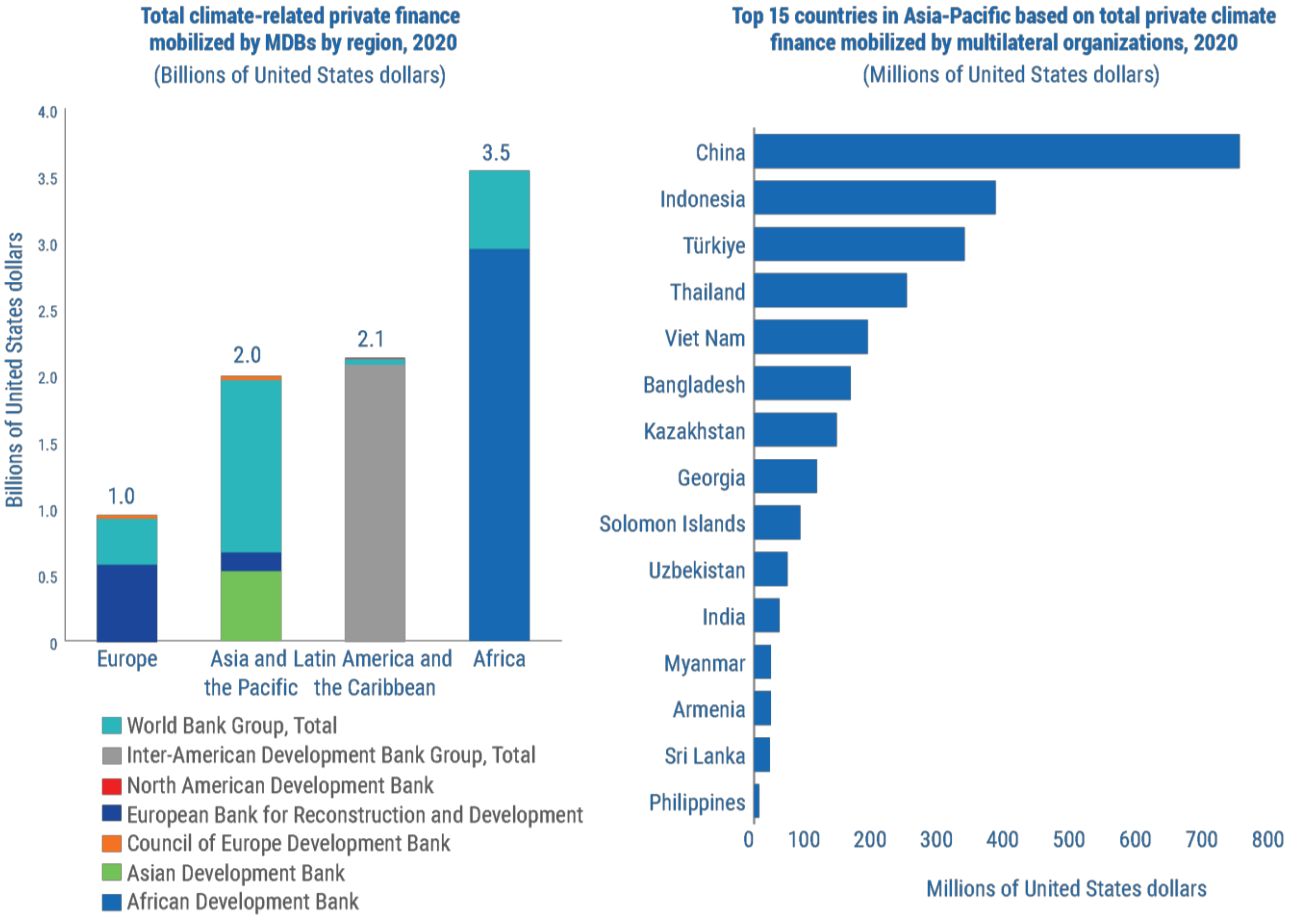


Source: ESCAP based on OECD, Climate Change: OECD DAC External Development Climate Finance Statistics.[176]

Note: The figure includes total committed amounts by MDBs and DFIs and covers regional investments.

MDB and DFI finance does leverage private finance, but has the potential to leverage even more private finance. According to Figure 4.13 below and the methodology used by OECD, $2 billion in private finance was mobilized by MDBs in Asia and the Pacific in 2020. Estimates of how much private capital is leveraged by MDBs vary widely. For example, the G20's Independent Review of Multilateral Development Banks' Capital Adequacy Frameworks cites that in 2020 the MDBs covered by their review directly mobilised only 14 cents for every dollar of own-account investments, mostly through their private sector arms.[177] This is still too small. In 2023, the Independent Expert Group commissioned by the Indian G20 Presidency issued a report saying that MDBs only mobilise 0.6 dollars in private capital for each dollar they lend on their own account and that they should aim to at least double this target.[178] The Independent Expert Group further states that they 'envisage a doubling of concessional and non-debt creating finance in the system as a whole, with priority given to support for low-income countries. Additional concessional finance should also support vulnerable countries and incentivize projects with global public good benefits. We further envisage a tripling of non-concessional official finance by 2030, compared to 2019 pre-pandemic base year levels.[179]

Figure 4.13: Total amount of mobilized private finance by MDBs across regions, 2020.



Source: OECD Statistics, Mobilisation.[180]

Note: The term "mobilized climate finance" measures the amounts activated in the private sector by MDBs. It covers five instruments (guarantees, syndicated loans, shares in collective investment vehicles, credit lines, and direct investments in companies) and is collected based on instrument-specific methodologies, which measure the amounts mobilized from the private sector by official development finance interventions. Total amount of private climate-related finance is calculated based on the OECD methodology in line with Rio Markers. This differs from the methodology adopted by the Joint MDB report, which relies on the data and methodology of the MDB Taskforce on Private Investment Mobilization for tracking the private share of climate co-finance. The methodology of the Joint MDB report relies on a broader coverage of data disclosed on mobilized private climate finance; it covers more instruments and includes social infrastructure (hospitals, schools, etc.), which are excluded from the OECD dataset.

The call on MDBs to increase the concessionality of their financing and expand risk-taking has intensified but actual reform is still slowly emerging**.** While MDBs recognized the need to increase concessional finance and scale up private sector mobilization, among other priorities at COP27, the methods remain a source of much debate. The reforms under discussion at the World Bank Group — with forthcoming announcements following completed reviews and discussions at the Spring and Autumn 2023 meetings — may mark a historic moment and change in the MDB landscape. Such momentous change has not been seen since the Bretton-Woods negotiations in 1944, which led to the formation of the IMF and the World Bank Group (WBG). In this context, the development committee has asked the WBG Management to identify gaps in WBG's current institutional and operational framework and deliver a work program by the end of the year, for consideration by the Executive Board (which oversees the routine day to day matters at the WBG).[181]

According to the Development Committee, "This work program should be aimed at strengthening the WBG's role and capacity to continue to be responsive to the evolving needs of all client countries. This should include designing pertinent financial reforms to responsibly make the most efficient use of the WBG's balance sheets and generate new resources and contribute to strengthening coordination and collaboration across the broader international financial architecture, as well as incentivizing country demand, and addressing any operational obstacles to the WBG's effective response."[182]

The Board of Governors additionally requested WBG Management to explore the recommendations of the Independent Review of MDB Capital Adequacy Frameworks (CAF),[183] commissioned by the G20, to make the most efficient use of the Group's balance sheets to increase lending capacity, while preserving long-term financial sustainability, robust credit ratings (i.e. AAA ratings), and preferred creditor status. The appeal for historic transformation has far-reaching implications for how MDBs operate on the ground; how operations, policy reforms and lending operations will be sourced, built, made bankable, and financed; and how private finance will be herded in.

The reforms under discussion at the World Bank Group will have implications for other MDBs. The World Bank Group, which is the largest provider of climate finance, has been asked by its shareholders in the Development Committee, known as the Boards of Governors of the Bank and the International Monetary Fund, to "among other things, support the following:

i) the development of countries' long-term strategies for investing in climate action;
ii) the preparation, screening, and structuring of reforms and projects for bankable, climate-resilient investments that mobilize private capital and foster a business environment aligned with low carbon and resilient development;
iii) increased concessional and blended finance for adaptation and mitigation; and
iv) bold investment in high-quality, sustainable infrastructure that enables a just energy transition."[184]

ADB's newly announced Innovative Finance Facility for Climate in Asia and the Pacific (IF-CAP) could further expand climate finance in the region. ADB's stated intention to be the climate bank for Asia and the Pacific was further cemented in 2023 with IF-CAP's announcement to provide grants and guarantees for parts of ADB's sovereign loan portfolio. The ADB's proposed model of "$1 in, $5 out", the initial ambition of $3 billion in guarantees could create up to $15 billion in new loans for much-needed climate projects across Asia and the Pacific. According to ADB, a leveraged guarantee mechanism for climate finance has never before been adopted by a multilateral development bank.[185]

It is worth highlighting that MDBs occupy a unique position in the global financial architecture. Their capital adequacy frameworks are not subject to prudential supervision and governance (unlike commercial banks governed by the Basel Framework), but by the distinct makeup of each MDB's board. MDBs also have Preferred Creditor Treatment (PCT), meaning that "sovereign borrowers will continue to repay MDBs even if they go into default or delay payment to other creditors. In addition, MDBs typically do not reschedule, restructure or write off sovereign loans."[186] Most uniquely to MDBs, and the subject of much debate, is the matter of how to

treat MDB's unique callable capital. The assessment of capital adequacy frameworks for individual MDBs considers each one's exclusive callable capital. Ultimately, "shareholders define MDB objectives, supply share capital and define the limits of risk that they are willing to tolerate".[187] For example, the Independent Expert Group of the 2023 G20 has said 'in order to respond to today's challenges, MDBs need to reframe their mission, raise their level of ambition and financing, and change the way they work internally, with each other and with other public and private development partners'.[188] Importantly, they 'recommend that the G20 link the sustainable lending levels of the MDB system in 2030 to the financial support needed by developing countries to invest to achieve these goals. This would establish, for the first time, a clear link between mandates and financing for the MDBs as a system. We further recommend that the G20 review the adequacy of such lending levels every three years in line with the recommendations of the report of the G20 panel on capital adequacy frameworks.[189] It is therefore up to shareholders to redefine how MDBs will play their part in the global financial architecture.

C. Challenges

This section of the report addresses the challenges confronting Asia and the Pacific to amplify privately sourced finance for climate action and sustainable development.

Asian banks are considerably slow in in making net zero commitments and need to urgently commit to credible net zero transition pathways. The state of net zero commitments by Asian banks is a code red situation. Asian banks are still considerably slow to pledge net zero commitments by 2050. When they make 2050 commitments, it is necessary that they also outline credible transition pathways by setting 2030 targets (as is required for example by the industry-led, UN convened, Net Zero Banking alliance which forms the industry partnership for banks party to the Glasgow Financial Alliance to Net Zero). Without setting the appropriate 2030 targets, 2050 targets will not be met.[190] More than 90 per cent of the 500 largest banks in Asia (with a combined $71.8 trillion in total assets, $37.4 trillion in net loans, $49.7 trillion in customer deposits, and $425 billion in net profit in 2021)[191] have not yet made credible net zero commitments by 2050 with intermediate targets by 2030. Under such circumstances, change is unlikely to happen fast enough. It is possible for financing towards net zero to happen in the absence of a net zero commitment; but as discussed earlier, the picture emerging from Asia and the Pacific is that coal financing is on the rise, emissions are on the rise, and net-zero action is insufficiently financed.

This also means a significant lack of local currency financing for the net zero transition. The lack of net zero commitments from Asia-Pacific also translates into a lack of local currency financing for the net zero transition. This is further corroborated anecdotally by international banks and investors, who bemoan the significant dearth of local banks investing in the energy transition, the managed phase out of coal, and in new green technologies in the region. The lack of mandatory regulation to shift banks towards concrete commitments, despite national commitments to the Paris Agreement, may be an additional reason why Asian banks are slow. Importantly, local banks bring investment in local currency, removing the need for the hurdle rate for investments to compensate for the exchange rate risk. Without the credible participation of Asian banks in the transition to net zero, adequate finance cannot be mobilized to meet the 1.5°C goal. To the extent that finance can drive action and incentives for the real economy to transition, the lack of progress by Asian banks also acts as a brake on the transition of the real economy.

Asia's growing energy demand requires significant private finance, but challenges abound in financing the just energy transition. Coal power generation is the largest source of carbon dioxide emissions globally. According to the Glasgow Financial Alliance for Net Zero, if existing coal power assets continue to operate as planned, they alone will generate enough emissions to exhaust two-thirds of the remaining carbon budget associated with limiting warming to 1.5°C. The International Energy Agency predicts that more than 70 per cent of growth in global electricity demand will come from Southeast Asia, India, and China over the next three years.[192] In addition, the average age of coal fired

power plants in these regions is about 15 years, compared to average ages in Europe and America of more than 30 years.[193] This means it will be more expensive to phase out coal, and it is estimated that there are about 5,000 coal fired power plants operating in Asia and the Pacific.[194] Financing is thus required to acquire coal assets for early phaseout. While most net-zero committed banks have a no-coal financing policy (or at least a no-new-coal financing policy), what is essential for the managed phase out of coal in an orderly and just manner is to invest in the phaseout of coal. This will mean investing in new coal in the short term, and seeing emissions rise in the financing portfolio in the short term. ADB's energy transition mechanism, as well as the Just Energy Transition Partnerships, also further support the early retirement of coal in the region. At a side event to the ECOSOC Forum on Financing for Development organized by ESCAP in 2023, it was further noted that the cost of early retirement of coal-based power plants varies across plants and depends on when they will be retired. The case of a specific power plant in Asia-Pacific was mentioned which would cost $625 million to retire in 2025, $314 million to retire in 2030, and $127 million to retire in 2035 as an example of varying and sizeable decommissioning costs. Various options to finance this decommissioning were discussed including policy changes and innovative financing mechanisms, including carbon credits and accelerating investments in renewables as well as options to transition of the plants into renewables, such as wind or solar or hydrogen. Such an approach, if it could maintain the revenues of the power plant and its levels of employment, would also minimize social disruption.

The costs of investing in renewable energy have significantly declined and global investment in renewable energy has soared in 2022 to a record high of $495 billion globally. However, this still represents less than one-third of the average investment needed each year between 2023 and 2030, according to the 1.5°C scenario predicted by the International Renewable Energy Agency (IRENA). Investments are also not on track to achieve the goals set by the 2030 Agenda for Sustainable Development.[195] Renewable power investment has risen rapidly in Asia-Pacific countries to more than $335 billion in 2022, and accounts for around 55 per cent of the global total. Still, except for China and India, the region comprises less than 20 per cent of global investment.

Private finance is the major source of funding for financing clean energy investment and long-term debt is the preferred instrument, but bankability issues persist. Between 2013 and 2020, private sources accounted for 75 per cent of global renewable energy investment, though some technologies with long lead times, such as hydropower and geothermal, relied more on capital from state-owned enterprises and public financial institutions. Financing has shifted towards balance sheet structures, at more than 60 per cent in 2020, though project finance transactions remain prevalent. While utility-scale renewable power investments are often highly leveraged, debt has played a greater role in onshore wind than solar photovoltaics (PV). Bankability issues often arise from insufficient pricing and remuneration frameworks; lack of standardization around common contingency, risk mitigation, dispute resolution and other contractual clauses; and perceived cash flow risks. Availability of grid infrastructure and land as well as equity shortfalls for early-stage project development remain persistent barriers in many markets.

Large-scale private financing is also required for new green technologies such as green hydrogen to be deployed in hard-to-abate sectors.[196] Green hydrogen is produced by electrolysis, which is essentially the process of splitting water molecules into hydrogen and oxygen, by passing electricity through water. If the electricity for electrolysis is generated through renewable energy sources, the production process does not result in a carbon by-product, and it is therefore an ideal (clean) form of hydrogen production from an emissions reduction perspective.[197] The continuing drop in the cost of green hydrogen technologies and the volatility of fossil fuel prices therefore makes green hydrogen an attractive solution for energy security and storage capacity,[198] but large upfront financing requirements, and challenges in the enabling policy and regulatory frameworks still need to be overcome.

Globally, governments have committed more than $37 billion in public funding to hydrogen development, while the private sector has announced investments of around $300 billion. Nearly 40 per cent of the global demand for hydrogen is generated from the Asia-Pacific region and,

within Asia and the Pacific most of the demand comes from China, which accounts for 26 per cent of global demand. Global competition to win business for the green hydrogen sector is increasing in an environment of high interest rates. The massive subsidies offered to green hydrogen under the US Inflation Reduction Act and the EU's contracts for difference scheme via its new Hydrogen Bank seek to attract domestic green hydrogen investment. However, it is unlikely that emerging markets and developing economies have either the cash to match these subsidies nor the credit ratings to borrow competitively.

For both new renewable energy project investments and new green technologies, particularly in more challenging markets in Asia and the Pacific, building bankable pipelines is fraught with challenges. While there are substantially large pools of debt and equity available regionwide in local currencies, there is a discrepancy between available capital, ready projects, and the execution of transactions. The absence of standardized transaction templates to easily replicate requirements, risk contingency clauses, and dispute resolution mechanisms, remains a challenge. In addition, poor connectivity between investors and projects leads to poor visibility about what bankability means to different investors. Therefore, it is likely that misunderstandings about how to structure projects and engage with multiple investors arise. High transaction costs for adding guarantees, first-loss-tranches, and the blend of concessional capital with commercial capital also prohibit the rapid scale and replicability of projects. Projects thus tend to be executed on a deal-by-deal basis, with most deals taking anywhere between one and two years to execute.

Private finance, whether local investors in local currency or international investors in hard currency, need to spend more effort in assessing and pricing risk appropriately. Too often perceptions drive risk pricing in countries where benchmarks on risk-return-mandates do not exist. Investors without boots-on-the-ground and the ability to conduct sustained due diligence prefer not to engage with new countries where they have never done a transaction before. This exacerbates the problem of capital not flowing to where it is most needed (and where in fact returns could be made). Large, capital expenditure heavy projects with upfront payments and returns spread over a long tail require long-term financing solutions, preferably in local currency. But if Asia-Pacific investors do not engage with trying to understand how to finance new sectors and projects without existing benchmarks and locally tailored lending methodologies, there will continue to be a significant bottleneck in financing.

Small-ticket projects are increasingly overlooked in the urgent search for scale, but they also need to be nurtured. For a full pipeline of energy transition projects to materialize at large scale and high pace, underlying pipelines of smaller energy transition projects at smaller ticket sizes are often required. This is typical for investments in general – angel investment offers a proving ground for companies with strong ideas or concepts. As their concepts reach the early stages of becoming proven, companies can raise larger ticket Series A and B venture capital. Upon proving themselves more and growing even further, larger-ticket private equity funds invest based on the belief that they can grow these companies all the way to an initial public offering and listing on a stock exchange where retail investors can buy a share. Similar principles apply here.

Insufficient project preparation funds exist to ensure projects meet the risk-return-mandate requirements of different investors. Project preparation significantly lessens the risks inherent to projects, particularly when done in partnership with investors. Proper feasibility studies conducted in line with a model of a transaction template (which outlines what risks investors are willing to take and what contingencies they may need) will significantly lower the risks in projects. Third party verification of such studies, as well as support to investors (particularly local investors who may not have experience in such investments) through technical assistance in the sector or project also constitutes a strong part of effective project preparation. In the region, small ticket-size projects by businesses face high transaction costs to get off the ground. In some cases, they are simply not eligible for large grant facilities like the Green Climate Fund or the Global Environment Facility. Neither are they eligible for the technical assistance grants delivered by multilateral development banks which are mostly given alongside a specific prospective investment by the MDB. In some cases, even when they are eligible for these large

facilities, applications require significant skills which they lack. More inclusive and wide-reaching project preparation funds, while requiring more funds and possibly generating some failures in terms of investment, may on a net basis however generate significantly more bankable projects.

Since financing ultimately drives investment by the real economy, two-thirds of the largest listed businesses still lack a net zero pledge.[199] Only 8 per cent of companies in Asia and the Pacific have set a net zero goal by 2021, according to CDP, a climate disclosure nonprofit.[200] Of the one third of largest listed businesses that have made a net zero pledge, only a portion have committed to an independent voluntary initiative. Most privately-listed businesses and state-owned enterprises have no net zero target at all.[201] Even with 2050 net zero commitments, the challenge is that emissions need to peak (in two years' time) by 2025 globally, and emissions need to be cut by nearly half by 2030,[202] in order to limit the temperature rise to 1.5°C.[203] Therefore companies that have set a 2050 net zero goal need to still commit to credible transition pathways with 2030 goals and other interim goals.

The absence of data that would enable transaction benchmarks to be built remains a major challenge, including in biodiversity finance**.** Investor-grade data on risks, dependencies, and impact on science-based targets, is needed. This would allow pricing benchmarks, as well as other reference points for appropriate covenants, impact standards, and outcomes to be placed. For biodiversity finance, complex biodiversity measurements — such as revenue related to carbon, biodiversity net gain, and other new indicators for traditional investors — create a challenge for investment.

D. Recommendations

In this section, we outline the key recommendations for private finance emerging from the discussion on trends, opportunities, and challenges. In addition, these recommendations (which are set out in detail here) have been aggregated into our final set of ten principles of action for the region to bridge the sustainable finance gap in Asia and the Pacific, set forward in the final chapter.

Instead of being on track to reduce emissions by 45 per cent by 2030, emissions are set to increase by close to 11 per cent.[204] Instead of delaying the efforts to transition closer to 2050 or 2060, making the costs to transition even greater, private finance needs to act now to proactively plan for the transition to net zero. If private finance adopts an active role and becomes the vanguard of change, actions will cascade down to businesses, corporates, and households who use private finance for their activities, thereby spurring widespread change in the timeframe needed. The groundbreaking report by the High Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities, tasked by the United Nations Secretary General and chaired by the Honourable Catherine McKenna, put forth a series of recommendations on net zero pledges for actors including private finance. We refer to the following relevant recommendations on credible transition pathways for such actors including private finance below:[205]

- A net zero pledge must contain stepping-stone targets for every five years and set out concrete ways to reach net zero in line with the Intergovernmental Panel on Climate Change or International Energy Agency net zero greenhouse gas emissions modelled pathways that limit warming to 1.5°C with no or limited overshoot. Implementation needs to begin immediately, and not delay action to the last minute, reflecting the fact that global emissions must decline by at least 50 per cent by 2030. The plans must disclose how capital expenditure plans, research and development plans, and investments are aligned with all targets (e.g. capital expenditure-alignment with a regional or national taxonomy) and split between new and legacy or stranded assets. Net zero plans must detail the third-party verification approach and ensure audited accuracy.

- On coal for power generation, net zero targets and transition plans of all financial institutions must include an immediate end of: (i) lending, (ii) underwriting, and (iii) investments in any company planning new coal infrastructure, power plants, and mines.

- Private finance should focus on renewable energy: Financial institutions should create investment products aligned with net zero emissions by 2050 and facilitate increased investment in renewable energy.

- Private finance should also focus on financing biodiversity: Businesses should invest in the protection and restoration of ecosystems beyond the emission reductions in their own operations and supply chains to achieve global net zero. This is important considering the systemic financial risks associated with the loss of biodiversity and the exacerbated climate impacts associated with the loss of natural carbon sinks. Businesses, especially financial institutions, should anticipate the final guidance of the Taskforce on Nature-related Financial Disclosures by factoring in nature risks and dependency to all elements of their net zero transition plans.

Private finance, including MDBs and DFIs, need to engage in partnerships now, not just transactions. Solving the highly complex problem of financing climate action at scale and pace requires moving beyond short-term, transaction-oriented thinking and deploy strategic thinking about how to generate many deals within a country in the relevant sectors. This requires private finance to partner with policymakers and regulators and drive new climate finance partnerships. It also requires investors with experience in financing the net zero transition to build the capacity of regulators and investors in-country who may not have such experience. The Just Energy Transition Partnerships present one model of ambitious partnerships. The caveat is that time is of the essence and partnerships need to be built and executed urgently.

Multilateral banks and development finance institutions need to rethink their approaches to concessional lending and their abilities to take on more risk. In doing so, they will have to work closely with financial institutions and businesses to build projects that are well-structured, leverage more private financing than before (thus ensuring shared returns to all investors, not just one), mitigate risk through good preparation, design, and execution, and genuinely require concessional or grant tranches. These projects should also be aligned with countries' national and sectoral transition pathways and MDBs and DFIs are a powerful partner in conversations with countries on developing such credible transition pathways.

Project pipeline building requires significantly reformed approaches if scale is to be achieved. The classic model of investors either building their own pipelines confidentially or waiting for fully packaged bankable projects to be referred to them will no longer work in certain sectors relevant to the transition, such as often in energy transition or in new technologies. The scale of investment required, and the tight timeframe in which to achieve such a scale, is too high and requires significant pre-investment partnerships. Foreign investors and local investors need to work together in the early stages of project building, and to collaborate to blend local and hard currency as well as grants and concessional finance from multiple sources. While this report has focused on concessional finance from MDBs and DFIs, we note that there is also substantial concessional and grant finance available from foundations. The newly announced Energy Transition Accelerator by Rockefeller Foundation and the Bezos Foundation[206] aim to bring substantial philanthropic capital to incentivize new private-sector climate finance for mitigation and adaptation that augments — not substitutes for — other sources of public, private, multilateral, and philanthropic finance and companies' continued investments in deep emissions reductions within their own value chains.

Finally, to ensure that project preparation funds are optimally employed to ensure the creation of genuinely investment-ready projects, investors should advise project preparation fund implementation, even if in a light-touch manner. This will avoid the unfortunate, but common, occurrence of existing project pipelines for investment which fail to receive financing as a range of investors do not consider them investment-ready and investors have not been engaged from the inception of project development. By setting up a modality in which project developer and financial institutions regularly meet and co-create investment projects in a progressive and iterative manner, supported by grant funds that defray high-risks surrounding the project preparation, higher-quality projects can be built.

Private finance also needs to invest in building the capacity of staff and systems. For banks and investors who are yet to make a net-zero pledge and transition

their lending and investing operations, significant investment in staff capacity and systems is required to design, plan, and manage this transition urgently. Investments by private finance are thus urgently required. Private finance institutions can join peer-to-peer learning networks. There are also international principles that individual financial institutions of any jurisdiction can apply to. The best known are those developed by UNEP-FI encompassing the Principles of Responsible Banking, the Principles of Responsible Investment, and the Principles of Sustainable Insurance. These self-organized peer-to-peer learning networks are vital to share knowledge and raise standards.

Private finance should also encourage their real economy borrowers and clients to implement the net zero transition. Finance and the real economy are intertwined, and neither can afford to lag behind the other. Encouraging industry borrowers who seek finance to adopt voluntary net zero standards relevant to their sector, will help private finance. For many countries, sectoral transition pathways will be needed, and these will differ from other countries due to different starting points and different goals. Finance and the real economy businesses need to participate in those sectoral transition pathways; both in design and in implementation.

Conclusion

Private finance actors must redefine how they engage with net zero, committing to net zero targets, as well as a credible transition pathway, and driving action within the real economy to the maximum possible extent. To fulfill net zero targets and finance action, project pipeline building must also be redefined to include greater collaboration between a multitude of actors. Commercial investors and development financial institutions, such as MDBs and businesses/project developers, need to work hand-in-hand with green project developers at the pre-investment stage. Instead of operating on a per deal basis, common approaches to templating transactions can be adopted, creating a replicable model for transactions in the net-zero arena, and ensuring investments take place at scale and pace. In Asia and the Pacific, local banks and investors need to take their place at the forefront of investing in the net-zero transition.

5. TEN PRINCIPLES OF ACTION TO BRIDGE THE SUSTAINABLE FINANCE GAP IN ASIA AND THE PACIFIC

Climate change has been called "a wicked problem par excellence"[207] because it constitutes of a series of interconnected problems that cannot be solved in isolation. Financing climate action in time is thus also a wicked problem par excellence. It requires policymakers to collaborate with regulators and private finance to drive action in the real economy. It calls for urgent implementation, in a world in which we have already experienced a 1.1°C change, and in which if we continue as normal, the carbon budget to stay within 1.5°C will be depleted in less than six years, according to the IPCC. It has been said that the global battle for climate change will be won or lost in Asia and the Pacific.[208] If the Asia-Pacific region is at the core of the problem, however, it is also at the core of the solution.

In the previous chapters, we discussed at length the trends, opportunities, challenges, and recommendations for policymakers, regulators, and private finance related to how sustainable finance can bridge the gap in the region. Based on that analysis, we aggregate the recommendations across the three actors into the following ten-point principles of action, which we hope constitutes an action plan for stakeholders in the region.

Governments and regulators

1. New climate finance partnerships are developed through which governments, regulators, MDBs, and private finance commit to action around specific goals and contribute specific tasks in line with this shared goal. Just Energy Transition Partnerships, which are led and owned by countries, provide a useful model for the region, especially if execution can be accelerated.
2. Effective NDC financing strategies are developed, led by authorities with clear mandates, which signal credible transition pathways with interim targets and clear resource mobilization plans. This will provide a clear and vital signal to investors, businesses, and project developers that governments are committed to change. This signal of reliability, stability, and predictability is a core part of costs around projects.
3. Policy coherence and capacities are developed across key government ministries such as finance, energy, transport, and environment, reducing the costs of financing. Governments need to invest in both the effort for such coordination and the capacities for such coordination. This will also allow governments to better work with MDBs, DFIs, and development partners to obtain the assistance they need in the timeframe they need it in.
4. Decisive regulatory action takes place to shift capital in Asia and the Pacific towards the net zero transition. Asia and the Pacific is home to significantly large pools of capital capable of bridging the gap in sustainable finance. Regulators need to adopt a more active role in shifting capital towards climate action, recognizing that doing so will strengthen financial stability in the system, as well as create a level playing field for all. In doing so, regulators will also need to move towards consistent taxonomies and roadmaps across countries, to create a level playing field.
5. Investment in the capacities of financial personnel to assess climate risk, innovate green financial instruments, and supervise the transition path of the green economy is undertaken. International groupings such as the Network for Central Banks and Supervisors for Greening the Financial System (NGFS) or the Sustainable Banking and Finance Network (SBFN) can be effective to promote peer-learning among members.
6. Investment in much-needed sectoral and project-based financial data is undertaken. Common data platforms that share valuable

data on ESG, climate, nature, contracts, clauses standards, targets, and deals (where possible) will streamline investment, assist benchmarking, strengthen credibility and ensure replicability and scale of green transactions and deals.

Private Finance – Asia-Pacific banks, investors and issuers

7. Commitments to net zero pledges for 2050 with credible transition pathways including 2030 goals are made. The slowness of banks in Asia and the Pacific to commit to net zero and transition their lending and investing portfolios with interim 2030 science-based targets is a serious brake on driving finance towards climate action in the region.
8. Local-currency financing of energy transition projects as well as green technologies and other net-zero investments is increased. Local-currency financing is critical to accelerate the scale and pace of private finance because it can fund projects that do not have to reach a higher rate of return just to cover exchange rate risk as well as provide other benefits. Increased net-zero commitments by private finance in Asia and the Pacific (number 7 above) combined with a focus on investing in the energy transition in their local currency will leverage and bring forward the needed investment at scale.
9. Concessional financing and risk-sharing by multilateral development banks, bilateral development financial institutions, and public development banks is expanded and accelerated. This will de-risk otherwise sound projects and ultimately leverage significant private capital. A 1:5 ratio, like ADB's goal, can be one benchmark to ensure that concessional funds truly leverage private finance and go towards well-structured projects. This will also guarantee well-designed projects in which concessional finance truly catalyzes and mobilizes greater private finance. In doing so, however, it is critical to ensure the project is both high impact to support the net-zero-transition and commercially attractive.
10. Investment of time and effort with partners in green project preparation is increased in more challenging markets, whether it is in the LDCs, SIDS, or in new green technologies. Setting up a modality in which project developers and financial institutions regularly meet and co-create investment projects in a progressive and iterative manner can accelerate the preparation of effective pipelines of bankable green projects at scale. While large projects have lower transaction costs, investing in project preparation for smaller-ticket green projects will ensure a long-term pipeline of large projects. Ultimately good project preparation and dedicated resources to that end will reduce the risk of projects when implemented.

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ANNEXES

Annex A: Climate financing needs in Asia and the Pacific

Table A.1: Financing needs for mitigation and adaptation in Asia and the Pacific from nationally determined contributions (millions of United States dollars).

Party to the UNFCCC	Financing needs (millions of United States dollars)			Submission dates	
	Mitigation	Adaptation	Total	Date of the last submission	Initial/updated submission
South and South-West Asia					
Afghanistan	6,620	10,790	17,410	23/11/2016	1st update
India	834,000	206,000	1,040 000	26/08/2022	1st update
Iran (Islamic Republic of)	52,500	140,000	192,500	21/11/2015	Initial
Nepal	21,600		21,600	08/12/2020	2nd update
North and Central Asia					
Georgia		2,000	2,000	05/05/2021	1st update
Kyrgyzstan	7,240	2,830	10,070	09/10/2021	1st update
Turkmenistan		10,500	10,500	21/10/2016	1st update
South-East Asia					
Cambodia	5,800	2,000	7,800	31/12/2020	1st update
Lao People's Democratic Republic	4,700		4,700	11/05/2021	1st update
The Pacific					
Fiji			2,970	31/12/2020	1st update
Kiribati			80	21/09/2016	1st update
Niue			10	28/10/2016	1st update
Palau	10		10	22/04/2016	1st update
Solomon Islands	130	130	250	19/07/2021	1st update
Tuvalu			360	22/04/2016	1st update
Vanuatu	310	720	1,030	23/03/2021	1st update
East and North-East Asia					
Mongolia		3,400	3,400	13/10/2020	1st update
Total	**932,910**	**378,370**	**1,314,690**		
Count	**10**	**10**	**17**		
Shares of mitigation/ adaptation (%)	**71**	**29**			

Source: ESCAP based on data from IGES NDC Database.[209]

Note: Only parties to the UNFCCC that report financing needs are included in the table.[210]

Annex B: Credit ratings

Table B.1: Credit ratings of ESCAP members and rated dates.

	Sovereign/Jurisdiction credit rating	S&P		Moody's		Fitch	
		Ratings	Date	Ratings	Date	Ratings	Date
Armenia	Non-investment grade	B+	12-Oct-21	Ba3	24-Mar-22	B+	10-Feb-23
Australia	Investment grade	AAA	6-Jun-21	Aaa	20-Oct-02	AAA	13-Oct-21
Azerbaijan	Non-investment grade	BB+	22-Jan-21	Ba1	5-Aug-22	BB+	21-Oct-22
Bangladesh	Non-investment grade	BB-	5-Apr-10	Ba3	9-Dec-22	BB-	29-Aug-14
Cambodia	Non-investment grade			B2	15-Nov-22		
China	Investment grade	A+	21-Sep-17	A1	24-May-17	A+	5-Nov-07
Fiji	Investment grade	B+	22-Sep-21	B1	7-Oct-22		
Georgia	Investment grade	BB	25-Feb-22	Ba2	28-Apr-22	BB	27-Jan-23
Hong Kong, China	Non-investment grade	AA+	22-Sep-17	Aa3	20-Jan-20	AA-	20-Apr-20
India	Non-investment grade	BBB-	26-Sep-14	Baa3	5-Oct-21	BBB-	10-Jun-22
Indonesia	Investment grade	BBB	27-Sep-22	Baa2	13-Apr-18	BBB	21-Dec-17
Japan	Investment grade	A+	9-Jun-20	A1	1-Dec-14	A	25-Mar-22
Kazakhstan	Investment grade	BBB-	2-Sep-22	Baa2	11-Aug-21	BBB	29-Apr-16
Kyrgyzstan	Non-investment grade	NR	23-Sep-16	B3	17-Oct-22		
Lao People's Democratic Republic	Non-investment grade			Caa3	14-Jun-22		
Macao, China	Non-investment grade			Aa3	24-May-17	AA	15-Apr-21
Malaysia	Investment grade	A-	27-Jun-22	A3	11-Jan-16	BBB+	2-Dec-20
Maldives	Non-investment grade			Caa1	17-Aug-21	B-	13-Oct-22
Mongolia	Non-investment grade	B	9-Nov-18	B3	16-Mar-21	B	9-Jul-18
New Zealand	Investment grade	AA+	21-Feb-21	Aaa	20-Oct-02	AA+	9-Sep-22
Pakistan	Non-investment grade	CCC+	22-Dec-22	Caa1	6-Oct-22	CCC-	14-Feb-23
Papua New Guinea	Non-investment grade	B-	24-May-22	B2	10-Nov-22		
Philippines	Investment grade	BBB+	30-Apr-19	Baa2	11-Dec-14	BBB	12-Jul-21
Russian Federation	Investment grade	NR	8-Apr-22	NR	31-Mar-22	NR	25-Mar-22
Singapore	NR	AAA	6-Mar-95	Aaa	14-Jun-02	AAA	14-May-03
Solomon Islands	Investment grade			Caa1	8-Oct-21		
Republic of Korea	Non-investment grade	AA	8-Aug-16	Aa2	18-Dec-15	AA-	6-Sep-12
Sri Lanka	Non-investment grade	SD	25-Apr-22	Ca	18-Apr-22	RD	19-May-22
Tajikistan	Non-investment grade	B-	28-Aug-17	B3	17-Oct-22		
Thailand	Investment grade	BBB+	13-Apr-20	Baa1	21-Apr-20	BBB+	17-Mar-20
Türkiye	Non-investment grade	B	30-Sep-22	B3	12-Aug-22	B	8-Jul-22
Turkmenistan	Non-investment grade					B+	10-Feb-23
Uzbekistan	Non-investment grade	BB-	4-Jun-21	Ba3	20-Jan-23	BB-	21-Dec-28
Viet Nam	Non-investment grade	BB+	26-May-22	Ba2	6-Sep-22	BB	1-Apr-21

Source: ESCAP based on Trading Economics.[211]

Table B.2: Investment VS non-investment grade.

S&P	Moody's	Fitch	Description
AAA	Aaa	AAA	Prime
AA+	Aa1	AA+	High grade
AA	Aa2	AA	
AA-	Aa3	AA-	
A+	A1	A+	Upper medium grade
A	A2	A	
A-	A3	A-	
BBB+	Baa1	BBB+	Lower medium grade
BBB	Baa2	BBB	
BBB-	Baa3	BBB-	
BB+	Ba1	BB+	Non-investment grade
BB	Ba2	BB	Speculative
BB-	Ba3	BB-	
B+	B1	B+	Highly speculative
B	B2	B	
B-	B3	B-	
CCC+	Caa1	CCC	Substantial risks
CCC	Caa2		Extremely speculative
CCC-	Caa3		In default with little prospect for recovery
CC	Ca		
C	C		
D	/	DDD	In default
	/	DD	
		D	

Source: ESCAP based on Trading Economics.[212]

Annex C: Access to UNFCCC Financing

Table C.1: ESCAP members and associate members that have not accessed UNFCCC climate finance mechanisms.

UNFCCC	GCF	GEF	Adaptation Fund
American Samoa	American Samoa	American Samoa	Afghanistan
Australia	Australia	Australia	American Samoa
Hong Kong, China	Brunei Darussalam	Hong Kong, China	Australia
Macao, China	Hong Kong, China	Macao, China	Azerbaijan
French Polynesia	Macao, China	French Polynesia	Brunei Darussalam
Guam	French Polynesia	Guam	China
Japan	Guam	Japan	Hong Kong, China
New Caledonia	Japan	New Caledonia	Macao, China
New Zealand	New Caledonia	New Zealand	Democratic People's Republic of Korea
Northern Mariana Islands	New Zealand	Northern Mariana Islands	French Polynesia
	Northern Mariana Islands		Guam
	Republic of Korea		Iran (Islamic Republic of)
	Russian Federation		Japan
	Singapore		Kazakhstan
	Türkiye		Kiribati
			Marshall Islands
			Nauru
			New Caledonia
			New Zealand
			Niue
			Northern Mariana Islands
			Palau
			Philippines
			Republic of Korea
			Russian Federation
			Singapore
			Thailand
			Timor-Leste
			Tonga
			Türkiye
			Tuvalu
			Vanuatu

Source: ESCAP based on GCF Open Data and GEF Projects Database.[213]

Annex D: Carbon pricing initiatives in Asia and the Pacific

Table D.1: Status and progress of carbon pricing initiatives at national and sub-national level in Asia and the Pacific.

Jurisdiction covered (Country, region, city)	Type of jurisdiction covered	Country of subnational jurisdiction	Name of initiative
ETS implemented/scheduled			
Australia	National	-	Australia Carbon Credits Act (Carbon Farming Initiative)
China	National	-	China national ETS (for power sector)
Kazakhstan	National	-	Kazakhstan ETS
Republic of Korea	National	-	Korea ETS
Beijing	Subnational	China	Beijing pilot ETS
Chongqing	Subnational	China	Chongqing pilot ETS
Fujian	Subnational	China	Fujian pilot ETS
Guangdong (except Shenzhen)	Subnational	China	Guangdong pilot ETS
Hubei	Subnational	China	Hubei pilot ETS
Saitama	Subnational	Japan	Saitama ETS
Sakhalin	Subnational	Russian Federation	Sakhalin ETS
Shanghai	Subnational	China	Shanghai pilot ETS
Shenzhen	Subnational	China	Shenzhen pilot ETS
Tianjin	Subnational	China	Tianjin pilot ETS
Tokyo	Subnational	Japan	Tokyo CaT
ETS under consideration / in development			
Malaysia	National	-	Malaysia ETS
Pakistan	National	-	Pakistan ETS
Russian Federation	National	-	Draft Bill on State regulation of emission and absorption of GHG
Thailand	National	-	Thailand ETS
Türkiye	National	-	Türkiye ETS
Viet Nam	National	-	Viet Nam ETS
Shenyang	Subnational	China	Shenyang ETS
Carbon tax implemented/scheduled			
Singapore	National	-	Singapore carbon tax
ETS implemented/scheduled & Carbon tax under consideration			
New Zealand	National	-	New Zealand ETS & New Zealand carbon tax
ETS under consideration & Carbon tax implemented/scheduled			
Indonesia	National	-	Indonesia ETS for the power sector & Indonesia carbon tax
Japan	National	-	Japan ETS & Carbon Tax for Climate Change Mitigation

Source: World Bank Carbon Pricing Dashboard[214] and UNCTAD Sustainable finance regulations platform.[215]

Annex E: List of stakeholders

Table E.1: Singapore FinTech Festival expert roundtable discussants

Name	Organization	Title
Aziz Durrani	ASEAN+3 Macroeconomic Research Office (AMRO)	Capacity Development Expert
Darian McBain	Outsourced Chief Sustainability Officer Asia	Chief Executive Officer (CEO)
Kristina Anguelova	WWF - Sustainable Finance Institute Asia	Head of Asia Sustainable Finance
Nasir Zubairi	Luxembourg House of Financial Technology (LHoFT)	CEO
Nicholas Gandolfo	Sustainalytics Corporate Solutions, Singapore, Sustainalytics	Vice President
Steve Cochrane	Moody's Analytics	Chief APAC Economist
Miranda Carr	MSCI	Global Head of Applied ESG & Climate Research
Chea Serey	National Bank of Cambodia	Director General
Satoru Yamadera	Asian Development Bank	Advisor
Kelvin Tan	HSBC	Managing Director, Head of Sustainable Finance & Investments, ASEAN
Abhishek Kaul	IBM	Associate Partner, Sustainability & Analytics
Lise Pretorius	Matter	Head of Sustainability
Maria Perdomo	UNCDF	Regional Coordinator, Asia and the Pacific
Eugene Wong	Sustainable Finance Institute Asia	CEO
Paul Dickinson	CDP - Disclosure Insight Action	Founder Chair
Jaclyn Dove	Standard Chartered Bank	Head of Sustainable Finance Strategic Initiatives

Table E.2: Stakeholders consulted for the key informant interviews.

Name	Organization	Title
	Bank of America	
Aziz Durrani	ASEAN+3 Macroeconomic Research Office (AMRO)	Capacity Development Expert
Erik Grigoryan	Environment Group	Founder and CEO
Eugene Wong	Sustainable Finance Institute Asia	CEO
Ines Marques	Green Hydrogen Organization	Director of the Green Hydrogen Development Plan
Kelvin Lester K. Lee	Securities and Exchange Commission, Philippines	Commissioner
Michael Salvatico	S&P Global Sustainable1	Head of Asia, Pacific, Middle East & Africa ESG Solutions
Miranda Carr	MSCI	Global Head of Applied ESG & Climate Research
Piyawan Khemthongpradit	Bank of Thailand	Assistant Director, Financial Institutions Strategy Department
Thammachart Thammaprateep	Bank of Thailand	Senior Analyst, Financial Institutions Strategy Department

Table E.3: List of speakers at ESCAP Expert Group Meeting on Public Debt and Sustainable Financing in Asia and the Pacific.

Name	Organization	Title
Aigul Kussaliyeva	AIFC Green Finance Centre	Director of Sustainable Development of AIFC Authority
Allinnettes Adigue	Global Reporting Initiative	Head GRI ASEAN Regional Hub
Liz Curmi	Citi Global Insights	Head of Energy transition and Climate finance
Lyn Javier	Central Bank of the Philippines	Assistant Governor, Policy and Specialized Supervision Sub-Sector
Kosintr Puongsophol	Asian Development Bank	Financial Sector Specialist
Nikita Bajracharya	Dolma Advisors	Senior Investment Manager
Ricco Zhang	International Capital Market Association	Senior Director, Asia Pacific
Robert Willem van Zwieten	Route17	Founding Partner
TMJYP Fernando	Central Bank of Sri Lanka	Senior Deputy Governor
Youraden Seng	National Bank of Cambodia	Director, Banking Supervision Department II
Yuki Yasui	Asia-Pacific Network of the Glasgow Financial Alliance for Net Zero	Director

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[1] World Bank Treasury (2023).
[2] OECD (2021a).

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[3] UNFCCC (2022d).
[4] Ibid.
[5] Ibid.
[6] UNFCCC (2022b).
[7] IPCC (2022a).
[8] ADB (2023b).
[9] ESCAP (2015).
[10] ESCAP (2023)
[11] ESCAP (2021).
[12] ESCAP (2015).
[13] ADB (2023b).
[14] ADB (2023b).
[15] ESCAP, UNEP and UNICEF (2022).
[16] IPCC (2023)
[17] Ibid.
[18] Ibid.
[19] CBD (2022).
[20] United Nations (2022).
[21] Torkington (2023).
[22] Available at https://dataexplorer.unescap.org. Accessed on 3 April 2023.
[23] Available at https://dataexplorer.unescap.org. Accessed on 3 April 2023.
[24] UNCTAD (2014); OECD and UNDP (2012).
[25] IISD (2022).
[26] ESCAP (2019).
[27] Ibid.
[28] Vitor (2023).
[29] IPCC (2021).
[30] Black, and others (2022).
[31] ESCAP, UNEP, and UNICEF (2022).
[32] Songwe, Stern, and Bhattacharya (2022).
[33] UNFCCC (2022a).
[34] Larsen, Brandon, and Carter (2022).
[35] Johnson, and others (2021).
[36] Ibid.
[37] The term investment and financing are often used interchangeably, but they are not exactly the same. Investment means allocating money to activities or financial assets that will generate a future profit, while financing means raising money to fund an investment.
[38] ICMA (2020b).
[39] The SBFN represents 63 institutions from 43 countries, accounting for over $42 trillion, or 86 per cent, of the banking assets across emerging markets.
[40] GFSG (2016).
[41] UNFCCC (n.d.a).
[42] There is no one uniform definition of greenwashing. The European Securities and Markets Authority (ESMA) have sought industry views on legally defining greenwashing to be enshrined in law. A commonly referred to analysis is regarding the seven sins of greenwashing by TerraChoice (2010), The Cambridge dictionary defines greenwashing as the practice of making people believe that your company is doing more to protect the environment than it really is.
[43] MSCI (n.d.).
[44] Ibid.
[45] PRI (2018).
[46] UNFCCC (n.d.d).
[47] UNFCCC (n.d.a).
[48] UNFCCC (n.d.b).
[49] UNFCCC (n.d.c).
[50] UNFCCC (2022c).
[51] SDG Goal No. 7 is to ensure access to affordable, reliable, sustainable, and modern energy for all. It has five targets to be achieved by 2030, three of which are outcome targets (universal access to modern energy, increase global percentage of renewable energy, double the improvement in energy efficiency) and two of which are means of implementation targets (to promote access to research, technology, and investments in clean energy and to expand and upgrade energy services for developing countries).
[52] Indicator 7.1. 2 is the proportion of population with primary reliance on clean fuels and technology, while indicator 7.2.1 measures renewable energy share in the total final energy consumption and indicator 7.a.1 measures international financial flows to developing countries in support of clean energy research and development and renewable energy production (including in hybrid systems).
[53] An exception is the SDG bonds, which are instruments that clearly link the use of proceeds to the United Nations Sustainable Development Goals (SDGs) through a multiplicity of methods.
[54] United Nations (2019).

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[55] World Bank (2015).
[56] See for instance, Zingales (2015).
[57] The correlation is calculated through the Pearson correlation coefficients to show the significance of the correlation between GDP per capita and the IMF Financial Development index components.
[58] Krieger-Boden, Nunnenkamp and Görg (2016).
[59] OECD and UNCDF (2020).
[60] ESCAP, UNEP, and Greenwerk (2020).
[61] UNFCCC (2016).
[62] UNFCCC (2021).
[63] ICMA (2020a)
[64] London Stock Exchange (n.d.).
[65] World Bank (2023).
[66] CBI (2023).
[67] CBI (2023).
[68] Cheng, Ehlers , and Packer (2022).
[69] Varez (2023).
[70] Ahluwalia, and others (2022).
[71] Cheng, Ehlers , and Packer (2022).
[72] Ibid.
[73] Mexico (2022, EUR 1.25 billion second issuance, following the world's first issuance of an SDG bond in 2020 by Mexico of EUR 735 million), Uzbekistan (2021, $235 million SDG bond) and Benin (2021, EUR 500 million issuance) have issued SDG bonds, supported by the United Nations Development Programme. SDG bond proceeds feed into the federal budget and are channelled into projects that support the Sustainable Development Goals. Eligibility criteria and monitoring standards are established by the United Nations Development Programme.
[74] Munthe (2023).
[75] Available at https://carbonpricingdashboard.worldbank.org/ , accessed on 1 March 2023
[76] Available at https://gsfo.org/sustainable-finance-regulations-platform, accessed on 29 March 2023.
[77] Carbon pricing initiatives have been classified as ETSs and carbon taxes according to how they operate technically; local terminology may vary. Jurisdictions that only mention carbon pricing in their NDCs are not included.
[78] Systems operating like a baseline-and-offsets program, such as Australia Safeguard Mechanism, fall outside the scope of the Carbon Pricing Dashboard.
[79] World Bank (2023).
[80] The High-Level Commission on Carbon Prices concluded in 2017 that carbon prices needed to be at the level of $40/metric tons of carbon dioxide (tCO_2) to $80/$tCO_2$ in 2020 and reach $50/tCO2 to $100/$tCO_2$ by 2030 to be on track to keep temperatures below 2°C—the upper end of the limit agreed upon in the Paris Agreement (2017 USD). Adjusting for inflation allows a more direct comparison with current carbon prices—prices would need to reach $61 to $122 by 2030 (in 2023 USD).
[81] World Bank Treasury (2023).
[82] Ibid.
[83] Isgut and Taloiburi (2022).
[84] Chamon and others (2022).
[85] Ibid.
[86] ESCAP (2022).
[87] OECD (2021a).
[88] Available at www.oecd.org/dac/financing-sustainable-development/development-finance-topics/climate-change.htm, accessed on 2 April 2023
[89] OECD (2021b; 2022).
[90] Mezzanine financing is a layer of financing that fills the gap between senior debt and equity in a company. It can be structured either as preferred stock or as unsecured debt, and it provides investors with an option to convert to equity interest. Mezzanine financing is usually used to fund growth prospects, such as acquisitions and expansion of the business. (Corporate Finance Institute, 2023)
[91] Available at www.oecd.org/dac/financing-sustainable-development/development-finance-topics/climate-change.htm, accessed in July 2023.
[92] Climate Analytics (2021).
[93] Issued by a government agency.
[94] Tall and others (2021).
[95] Lin and Hong (2021).
[96] Murphy (2022).
[97] MAS (2021).
[98] OECD (2018).
[99] Ibid.
[100] GCF (2023).

[101] Available at https://data.worldbank.org/indicator/SP.POP.TOTL, accessed on 29 March 2023.
[102] Available at www.thegef.org/projects-operations/database, accessed on 3 March 2023.

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[103] BOT (n.d.).

[104] For example, according to the Commonwealth Climate and Law Initiative (CCLI) and Climate Governance Initiative (CGI) (2021), "Climate-related disclosure standards have significant consequences for boards. Directors have obligations to approve or attest to the accuracy and completeness of disclosures made in financial filings. Directors on audit committees will likewise have additional responsibilities to engage in testing and overseeing the robustness of the climate scenario assumptions underpinning key aspects of the audit process."

[105] Macroprudential policies are financial policies that aim to ensure the stability of the financial system as a whole in order to prevent substantial disruptions in credit and other vital financial services necessary for stable economic growth. The stability of the financial system is at greater risk when financial vulnerabilities are high, such as when institutions and investors have high leverage and are overly reliant on uninsured short-term funding, and interconnections are complex and opaque. High vulnerabilities increase the likelihood that a firm's failure or other negative shock will cause distress at other financial institutions because of direct exposures and through fire sales, contagion, or other negative externalities arising from the initial shock. Macroprudential policies aim to reduce the financial system's sensitivity to shocks by limiting the buildup of financial vulnerabilities (Yilla and Liang, 2020).

[106] Microprudential supervision refers to the supervisory role performed by central banks to monitor financial institutions to ensure the stability and soundness of practices by individual banks.

[107] BOE (2019).

[108] Carney (2015).

[109] Ibid.

[110] Green swans, or "climate black swans", present many features of typical black swans. Climate-related risks typically fit fat-tailed distributions: both physical and transition risks are characterized by deep uncertainty and nonlinearity, their chances of occurrence are not reflected in past data, and the possibility of extreme values cannot be ruled out. In this context, traditional approaches to risk management consisting of extrapolating historical data and on assumptions of normal distributions are largely irrelevant to assess future climate related risks (Bolton, and others, 2020).

[111] The bank-sovereign nexus refers to the fact that many banks hold domestic sovereign debt, especially in emerging economies, which can amplify macroprudential risk. IMF research shows that an increase in sovereign credit risk can adversely affect banks' balance sheets and credit supply especially in countries with less well-capitalized banking systems. Sovereign distress can also impact banks indirectly through the nonfinancial corporate sector by constraining their funding and reducing their capital expenditure. Notably, the effects on banks and corporates are strongly nonlinear in the size of the sovereign distress (Deghi, and others, 2022).

[112] Demekas and Grippa (2022).

[113] FSB and NGFS (2022).

[114] NGFS (2021b).

[115] NGFS (2021a).

[116] FSB (2022a).

[117] The Greenhouse Gas Protocol Corporate Standard classifies a company's GHG emissions into three scopes. Scope 1 emissions are direct emissions from owned or controlled sources. These are usually the easiest to measure. Scope 2 emissions refer to the indirect emissions from the generation of purchased energy. Scope 3 emissions refer to all indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. The latter is usually the hardest to measure and can account for more than 70 per cent of the carbon footprint (Greenhouse Gas Protocol, 2019).

[118] Miller and others (2021).

[119] The TCFD is part of the Financial Stability Board (FSB) in the Bank of International Settlements (BIS).

[120] Asset owners refer to organizations that represent the holders of long-term retirement savings, insurance, and other assets such as pension funds, endowments, family offices. Asset managers refer to those that plan, acquire, deploy, and dispose of clients' assets.

[121] FSB (2022b).

[122] FSB (2022b).

[123] According to one estimate by Statista (2021), there were estimated to be 206,296 large companies operating in Asia with a further 79,992 in Europe, 39,792 in North America, 15,606 in Latin America, 6,002 in Africa, and 3,834 in Australia. (Estimated number of large companies (250+ employees) worldwide from 2000 to 2021.

[124] TCFD, available at www.fsb-tcfd.org/supporters, accessed on 8 February 2023.

[125] TNFD (2022).

[126] GFANZ defines a net-zero transition plan as follows: A net-zero transition plan is a set of goals, actions, and accountability mechanisms to align an organization's business activities with a pathway to net-zero GHG emissions that delivers real-economy emissions reduction in line with achieving global net zero. For GFANZ members, a transition plan should be consistent with achieving net zero by 2050, at the latest, in line with commitments and global efforts to limit warming to 1.5°C, above pre-industrial levels, with low or no overshoot. Financial institutions' net-zero commitments should cover at least the Scope 1 and Scope 2 emissions associated with clients or portfolio companies. They should also cover Scope 3 emissions associated with clients or portfolio companies in sectors that are significant climate change contributors or where company Scope 3 emissions are material and can be incorporated based on data availability (GFANZ, 2022).

[127] NGFS (2023).

[128] WWF (2022).

[129] Durrani, Volz, and Rosmin (2020).

[130] Ibid.

[131] BSP (2022).

[132] MAS (2023).

[133] Hussain, Tlaiye, and Rolando Marcelo (2020).

[134] ASEAN (2023).

[135] Sustainable Fitch (2023).

[136] G20 Sustainable Finance Working Group (2022).

[137] Durrani, Volz, and Rosmin (2020).

[138] Ibid.

[139] Ibid.

[140] Ibid.

[141] Philipova (2022).

[142] Regulation Asia (2022).

[143] WWF (2022).

[144] Ibid.

[145] Ibid.

[146] Ibid.

[147] Jason Norman Lee, Managing Director for Legal & Regulatory at Temasek International in Singapore, quoted in Regulation Asia (2022).

[148] UNEP FI (2022).

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[149] In May 2021, the Court of the Hague delivered a landmark decision, ordering Shell to reduce its global CO_2 emissions by 45 per cent by 2030 (Milieudefensie v Shell plc). Similar claims were filed in Germany in 2021 against the car manufacturers BMW, Mercedes Benz, and Volkswagen. In the US, ExxonMobil, its chairman, CEO, and other directors have been subject to several securities and financial regulation claims, relating to alleged failures to disclose climate risks properly (Ramirez v ExxonMobil) (Page and Butland, 2022). In February 2023, activist group ClientEarth sought to bring a derivative action against Shell's directors for their alleged failure to effectively address the risks of climate change. The case was ground-breaking as the first-ever climate litigation attempting derivative action to establish personal liability for a company's directors who allegedly failed to address the threat of climate change. While the High Court dismissed this case in May 2023, it nevertheless accepted that ClientEarth had established a prima facie case. "Shell faces material and foreseeable risks as a result of climate change which have or could have a material effect on it." According to legal firm Dentons (2023), 'this finding will not be lost on others seeking to bring ESG claims."

[150] Most banking regulators follow the recommendations of the Basel Committee on Banking Supervision, which defines capital adequacy ratios using risk-weighted assets in the denominator. With riskier assets having a larger weight, they require larger increases in capital reserves compared to less risky assets.

[151] The capital stack of a project or entity refers to the mix of various forms of capital in the capital structure, that is ordered by who has the rights and in what order the capital owner gets paid in terms of both profits and income as well as in event of default. Common capital forms include senior debt (usually the first to get paid out such as collateral-backed loans, commercial bank loans), junior debt (a form of second-tier subordinated debt such as mezzanine debt) and common equity. Concessional funding can thus be blended with private commercial finance and used at different levels of the capital stack.

[152] Yamaguchi and Taqi (2023).

[153] Accessed on 8 February 2023.

[154] Accessed on 4 April 2023.

[155] For more information, see https://efdata.org/pages/methodology.

[156] Accessed on 4 April 2023

[157] For more information, see https://efdata.org/pages/methodology.

[158] IMF (2022).

[159] Thinking Ahead Institute (2022).

[160] Ibid.

[161] Ibid.

[162] Ibid.

[163] Accessed on 4 April 2023.

[164] Accessed on 6 April 2023

[165] Available at https://statistics.world-exchanges.org/ and https://data.worldbank.org/indicator/NY.GDP.MKTP.CD, accessed on 6 April 2023

[166] UNEP FI (n.d.).

[167] See www.fdimarkets.com

[168] Ibid.

[169] See https://e-learning.unescap.org/thematicarea/detail?id=43

[170] More information on this work can be found here: www.unescap.org/our-work/trade-investment-innovation/business-investment.

[171] EIB (2022).

[172] Available at https://oe.cd/development-climate, accessed on 17 February 2023.

[173] This analysis examined 13 active MDBs and DFIs in the region – World Bank Group (WBG), Asian Development Bank (ADB), Kreditanstalt für Wiederaufbau (KfW), European Bank for Reconstruction and Development (EBRD), Asian Infrastructure Investment Bank (AIIB), European Investment Bank (EIB), Islamic Development Bank (IsDB), Black Sea Trade & Development Bank, Proparco, Council of Europe Development Bank (CEB), Export-Import Bank of Korea, FinnFund, Austrian Development Bank. For more information on the methodology, please consult: www.oecd.org/dac/financing-sustainable-development/development-finance-data/METHODOLOGICAL_NOTE.pdf. We note that Development Finance Corporation (USA), British International Investment (BII), Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V. (FMO, the Netherlands) and others are not included

here and would increase the figures if included.

[174] Available at https://oe.cd/development-climate, accessed on 17 February 2023.

[175] More information on the methodology is available at: www.oecd.org/dac/financing-sustainable-development/development-finance-data/METHODOLOGICAL_NOTE.pdf.

[176] Available at https://oe.cd/development-climate, accessed on 17 February 2023.

[177] Boosting (2022).

[178] G20 Independent Expert Group (2023).

[179] Ibid.

[180] Available at https://stats.oecd.org/Index.aspx?DataSetCode=DV_DCD_MOBILISATION, accessed on 28 February 2022.

[181] In June 2023 at the President Macron's Summit for A New Global Financing Pact, the World Bank announced a 'toolkit' on financing for disaster-affected countries, including a pause on debt repayments.

[182] Arbeleche (2022).

[183] Boosting (2022).

[184] Arbeleche (2022).

[185] ADB (2023a).

[186] Boosting (2022).

[187] Ibid.

[188] G20 Independent Expert Group (2023).

[189] Ibid.

[190] As Ravi Menon, Managing Director of the Monetary Authority of Singapore said, "2020 to 2030 is the critical decade for climate action. Net zero commitments for 2050 are fine and good but a credible trajectory towards that goal will be substantially determined by 2030. While a growing number of countries and companies have set net-zero targets, very few have credible plans to meet them. The problem is that countries and companies alike are pledging to hit targets in almost three decades' time without committing to action for which they can be held accountable in the short term. To achieve net-zero by 2050, the necessary policies and the associated investments must be made between now and 2030," (Menon, 2022).

[191] The Asian Banker (2021).

[192] IEA (2023).

[193] IEA (2021).

[194] GFANZ (2023).

[195] IRENA and CPI (2023).

[196] Hard to Abate (HTA) sectors are sectors in which it is difficult to move away from fossil fuel energy uses and in which it is hard to directly electrify using renewable power. These include major industries that rely on fossil fuels for high-temperature energy or for chemical feedstocks and include steel, cement, iron, chemicals and building materials which together are responsible for approximately 30 per cent of the world's annual CO_2 emissions. Another HTA sector is heavy duty transportation, such as trucking and shipping, which is harder to electrify than passenger transport because it would require enormous batteries that add to vehicle weight and take a long time to charge. (Nault, 2022).

[197] Andretich and others (2022).

[198] Green Hydrogen Organisation (2022).

[199] United Nations (2022).

[200] CDP Disclosure Insight Action (2022).

[201] United Nation (2022).

[202] IPCC (2022a).

[203] The IPCC report (IPCC, 2022a) additionally states "tracked financial flows fall short of the levels needed to achieve mitigation goals across all sectors and regions. The challenge of closing gaps is largest in developing countries as a whole. Scaling up mitigation financial flows can be supported by clear policy choices and signals from governments and the international community (high confidence). Accelerated international financial cooperation is a critical enabler of low-GHG and just transitions and can address inequities in access to finance and the costs of, and vulnerability to, the impacts of climate change (high confidence). {15.2, 15.3, 15.4,15.5, 15.6}"

[204] United Nations (n.d.).

[205] United Nations (2022).

[206] The Rockefeller Foundation (2023).

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[207] Termeer, Dewulf and Breeman (2012).
[208] ADB (n.d.).

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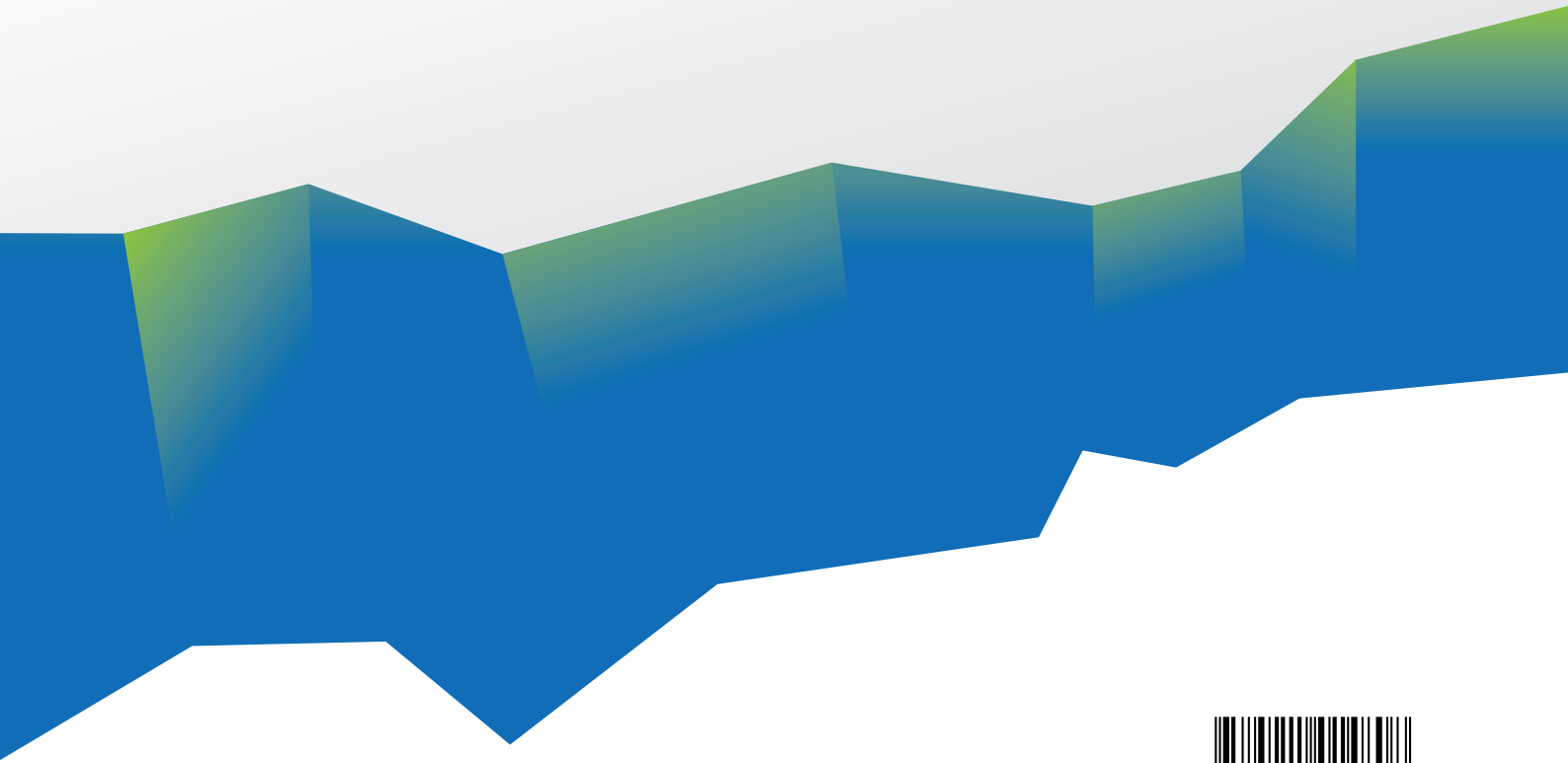
[209] Available at www.iges.or.jp/en/pub/iges-indc-ndc-database/en, accessed in October 2022.
[210] For some countries the sum of mitigation and adaptation financing needs does not add to the total as total financing needs are based on different studies and methodology. In some cases, only the country total financing needs is available.
[211] Accessed on 26 February 2023.
[212] Ibid.
[213] Available at www.thegef.org/projects-operations/database, accessed on 3 March 2023.
[214] Available at https://carbonpricingdashboard.worldbank.org/, accessed on 1 March 2023.
[215] Available at https://gsfo.org/sustainable-finance-regulations-platform, accessed on 29 March 2023.



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