



**ASIA AND PACIFIC
DEPARTMENT**

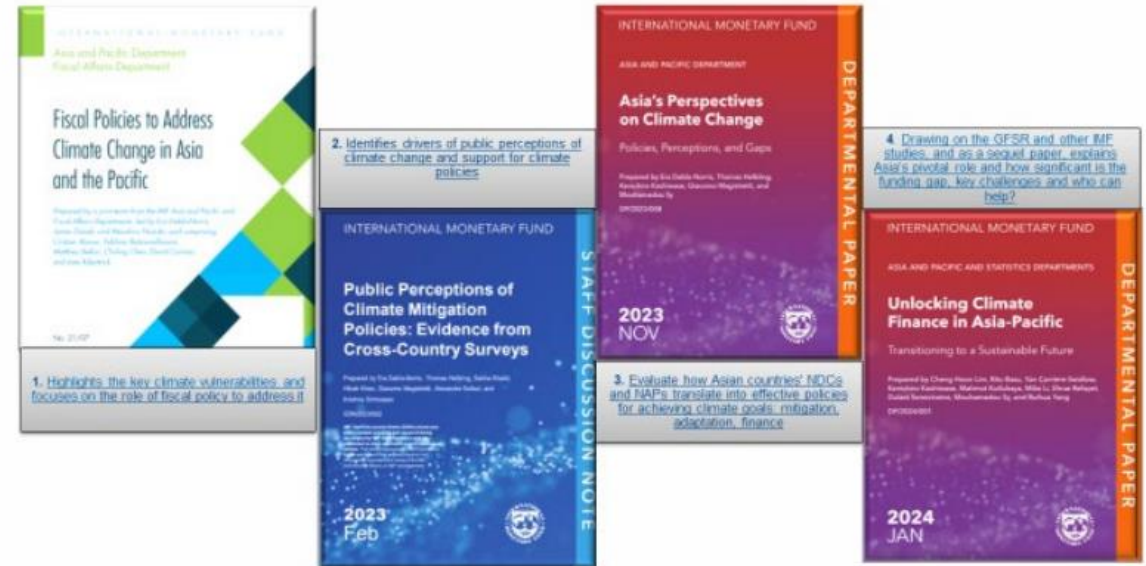
Enhancing Adaptation and Resilience to Climate Change

FEBRUARY 13, 2025

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Outline

- Overview
- Four Common Challenges
- Adaption, Fiscal Frameworks and Policy
- Adaption and Climate Finance



Economic Principles for Integrating Adaptation to Climate Change into Fiscal Policy

Matthieu Bellon and Emanuele Massetti

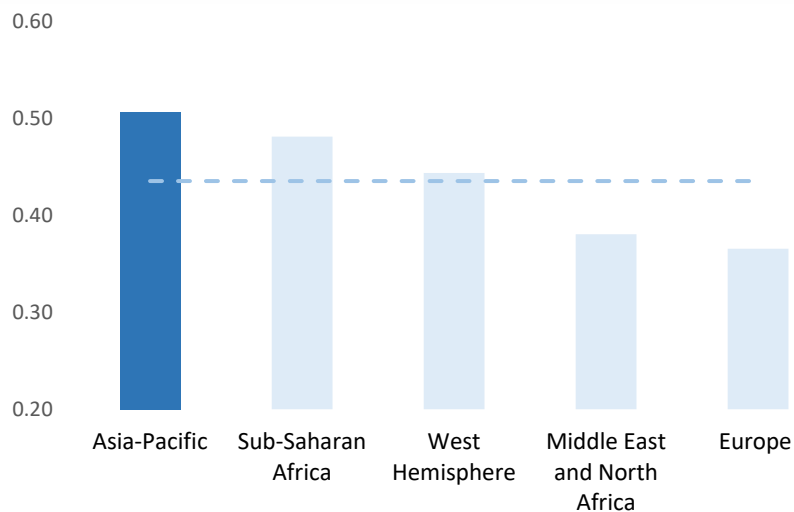
IMF STAFF CLIMATE NOTE 2022/001

Adaptation—An Overview

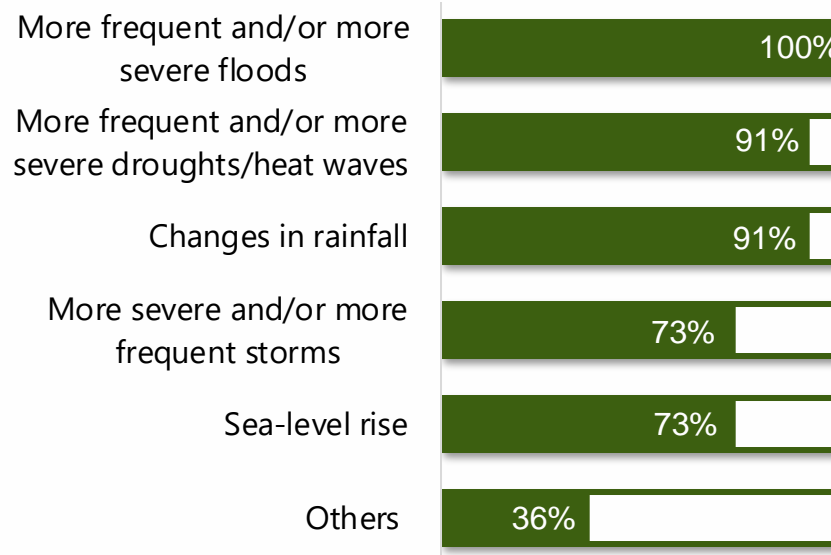
APD countries among the most vulnerable to climate change

8 out of 10 countries most exposed to climate hazards are in the region

Climate Change Exposure Index



APD: Expected main drivers of physical risks from climate change



Common risks:

- more frequent and severe storms/floods
- more frequent and severe droughts
- rising sea-level

More country-specific risks:

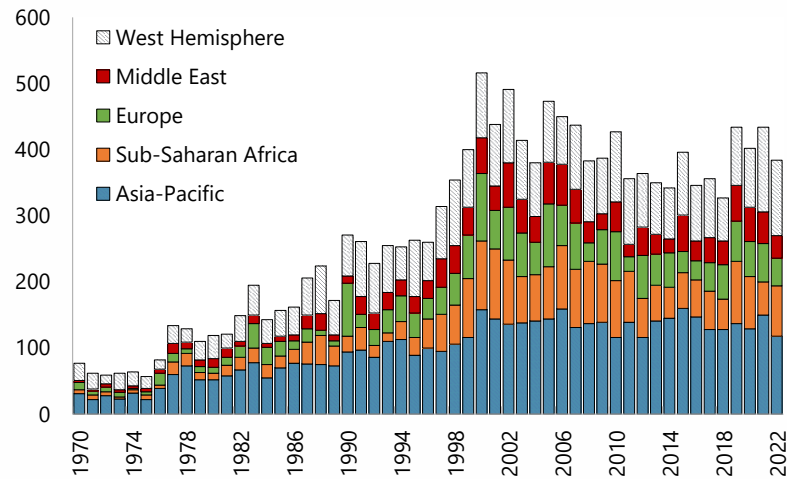
- bushfires (AUS)
- landslides (HKG, PHL, THA)
- soil erosion (PHL)
- saline erosion (THA)



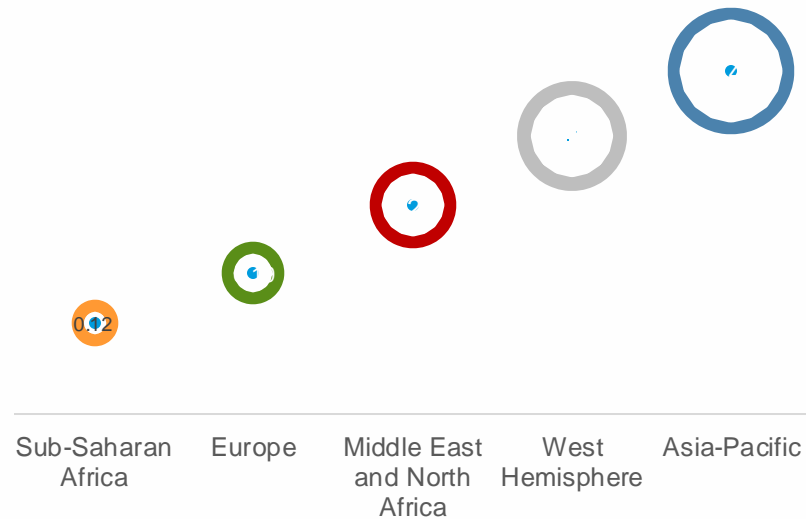
Natural disasters are both frequent and costly

Median cost expected to increase by 0.3 percent of GDP per year in the next 10 years

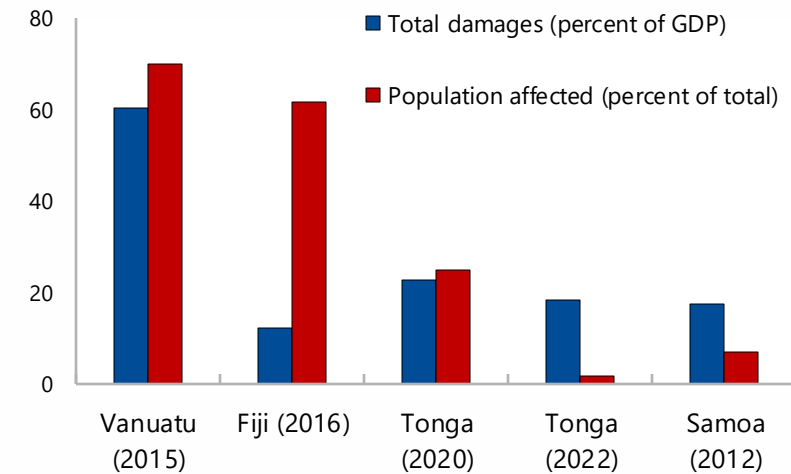
Frequency Count of Natural Disasters
(1970 -2022, by region, percent of GDP)



Costs of Damages from Natural Disasters
(average from 1980 – 2022 by region, percent of GDP)



Pacific Island Countries: Impact of Tropical Cyclones



Sources: EM-DAT/CRED; IMF WEO April (2022); and IMF Staff Calculations.

Elements of Adaption Strategies and Policies

Sectors

1. Water resources
2. Agriculture, forestry, and food security
3. Human health
4. Infrastructure
5. Terrestrial ecosystems
6. Coastal zones and marine ecosystems

Policies and Regulations

1. Early warning systems
2. Emergency response
3. Mapping hazard zones
4. Infrastructure and protection
5. Land use and zoning rules
6. Health policy
7. Insurance and (social) protection

Adaptation and Macroeconomic frameworks

1. Adaptation investment
2. Budget buffers for catastrophic events
3. Climate budget (tagging)
4. Impact of climate and climate risks on activity, fiscal, financial sector, and balance of payments



Four Common Challenges and Issues

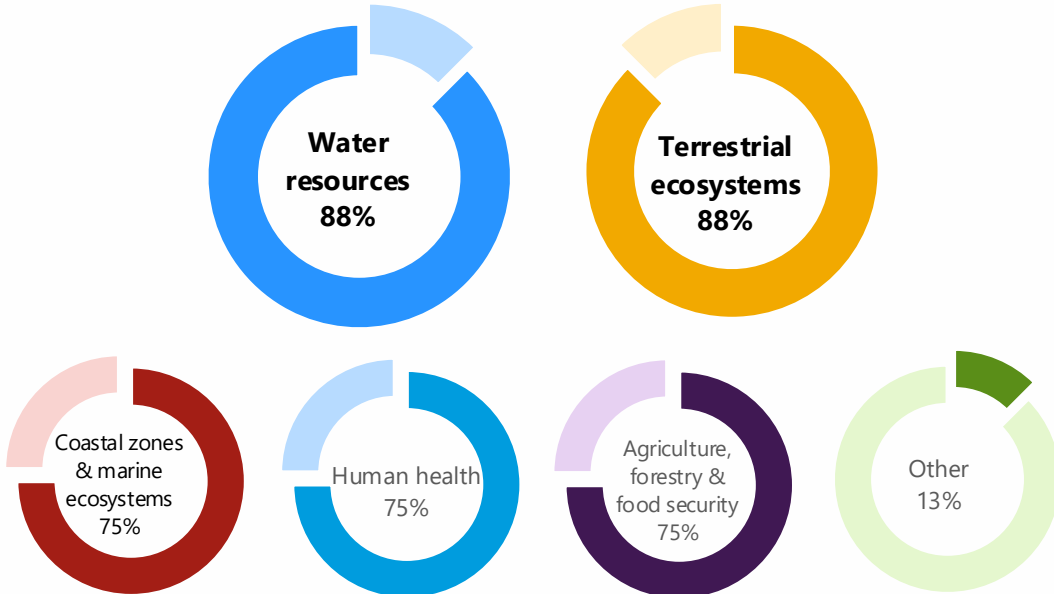
National adaptation plans (NAPs) have been widely but not universally adopted

- Many countries in the region have NAPs.
- NAPs help to improve and update NDCs.
- Many NAPs have been mainstreamed into national plannings.
- Good sectoral coverage and (intended) policies and regulations.

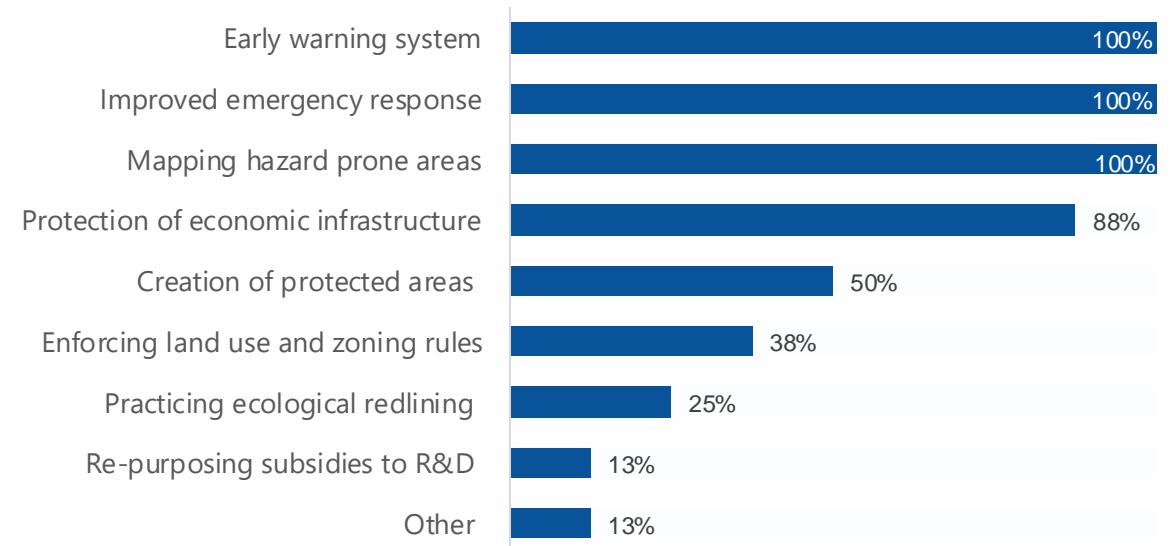
Countries without NAPs:

- lack of (or limited) capacity and expertise
- lack of financing for adaptation

NAPs incorporating the following sectors

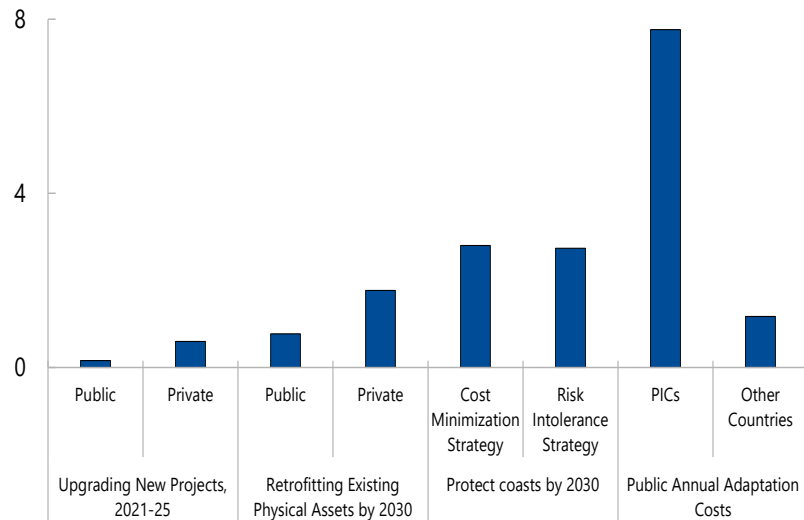


NAPs incorporating the following policies and regulations

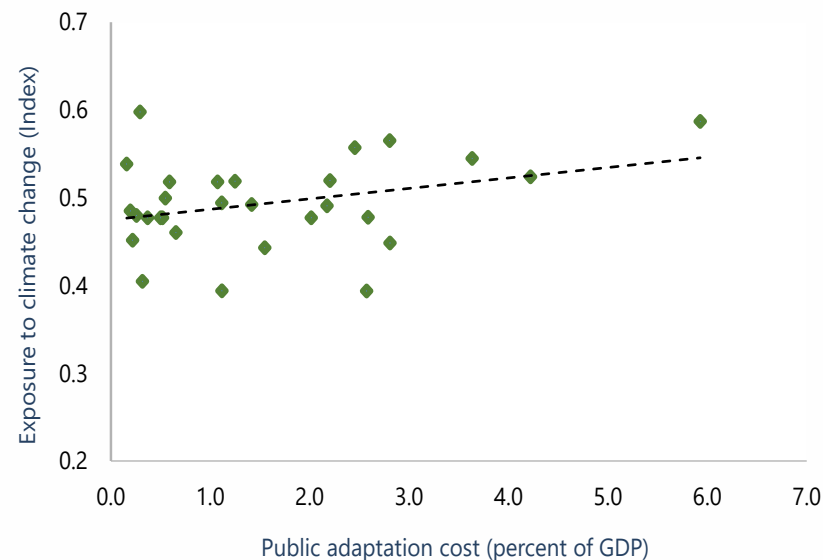


Assessment of investment needs is critical for preparation

APD: Additional Adaptation Costs (Percent of GDP, Average)



Public adaptation cost and exposure to climate change in APD countries

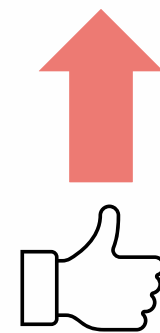


Despite more frequent and severe disasters:

- investment needs have not been formulated (e.g., in AUS, JPN, LAO, MAC, and THA)

Bangladesh often cited as good example:

- among the most comprehensive NAPs
- investment needs of \$8.5 per year (1.9 percent of GDP)
- current public spending of \$1.2 billion per year (0.3 percent of GDP)
- large financing gap of 1.6 percent of GDP
- private sector's contribution expected at 5.1 percent



Disconnect between NAPs and budget frameworks

- **Lack of mainstreaming of NAPs into national budget and fiscal framework.**
- **About a third of responding economies have comprehensive climate budgeting framework.**
- **Strong institutional setups in countries with mainstreaming:**
 - Inclusion into the budget of buffers specifically for costs of catastrophic events (BNG, IDN, LAO, PHL, THA)
 - Identification of climate-resilient investment projects for line ministries (BNG, KHM, IDN, MAC, PHL, KOR, THA)
 - Dedicated unit that evaluates impacts of climate change on the fiscal framework (KHM, MAC, KOR)
 - More disaster-prone countries (BNG, IDN, PHL, THA) have climate budget tagging (CBT).

Indonesia: Mainstreaming climate into budget framework

Proactively tackling climate adaptation:

- among top 10 of countries that are most exposed to natural hazards
- NAP has been mainstreamed into national planning
- climate budget: 0.5 percent of GDP per year out of which 34 percent for adaptation

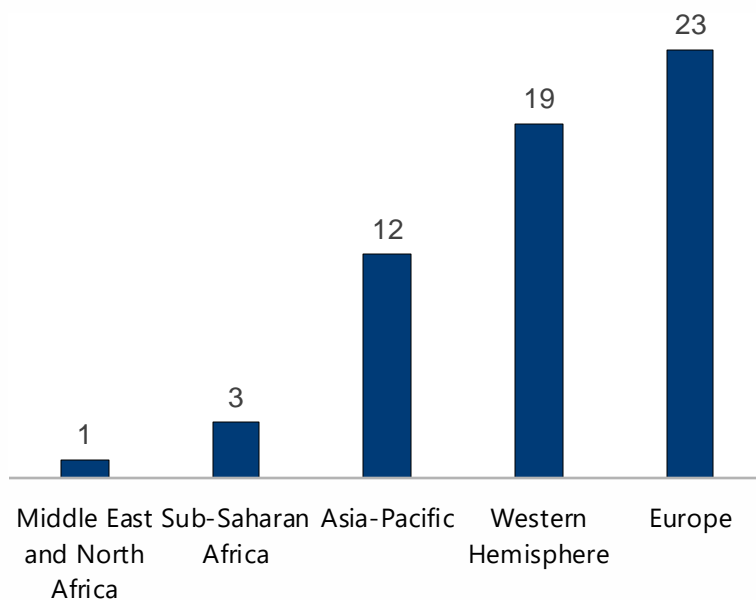
Institutional setups for climate budgeting:

- CBT for mitigation since 2016 and adaptation since 2018
- climate-related expenditures monitored and published
- fiscal risk statement (FRS) covers natural disasters

Limited insurance coverage and social protection

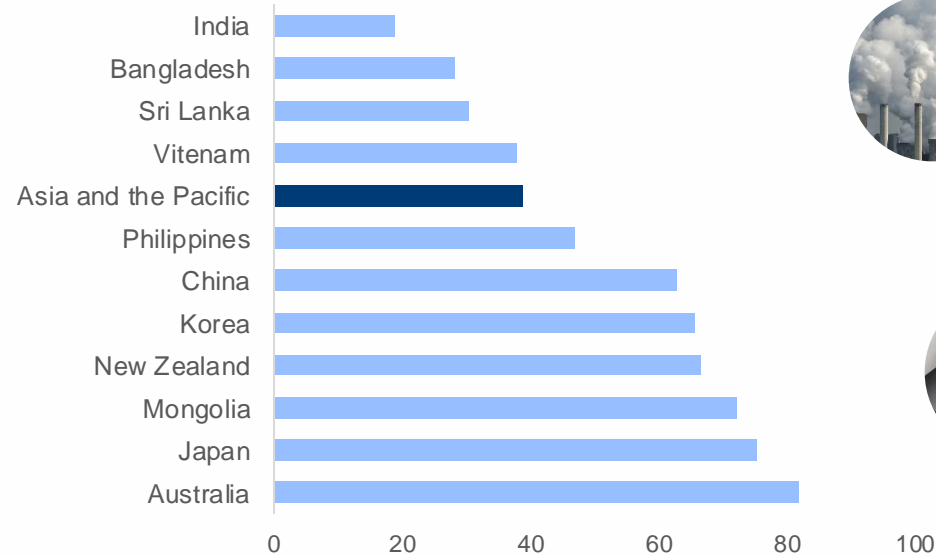
Non-Life Insurance Penetration

(Relative to total costs of climate related damages)



APD: Social Protection Penetration

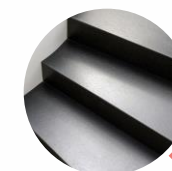
(Population covered by at least one social protection benefit, percent)



Post disaster social resilience:
adaptive social safety net
(BNG, MAC, LAO, CHN, HKG, KOR)



Concern in LICs:
- lack of financing to extend support to the vulnerable



Gap in many countries:
- lack of fiscal space
- weak cash delivery infrastructure
- limited capacity for spatial risk assessment

Adaptation, Fiscal Frameworks and Policies

Adaptation and Fiscal policy

- Fiscal space might be needed to bridge funding gaps in climate investments.
- Upgrade Medium-term Fiscal Frameworks (MTFFs) to include the transition to a green economy and adaptation costs. [Institutional coordination].
- Incorporating the effects of climate change and natural disasters in medium-term projections (for example, impact on growth and government revenue and expenditure).
 - The MTFF should also include climate-related risks.
- Costing different policies and measures and their consistency with achieving climate objectives and fiscal targets or strategy is essential (for example, effects of climate-related subsidies).
- Reflecting the effects of climate change and associated policies in designing rules.
- Adopting other green PFM practices throughout the budget and investment process.

Climate Finance

Overall climate needs are poorly funded & climate finance is concentrated in East Asia Pacific, US, Canada, Western Europe

Funds tracked for adaptation lag mitigation

Segment	2019/2020 Investment (\$bn/yr)	Progress against average scenario (%)
	Tracked	Tracked (%)
Climate Finance	653	9%
Mitigation & Dual Benefits	603	8%
Energy Systems	333	10%
<i>inc. Renewable Energy</i>	323	28%
Transport	163	6%
Buildings & Infrastructure	51	6%
Industry, Waste & Water	10	3%
AFOLU	10	3%
Adaptation	49	19%

Led by China, largely raised domestically

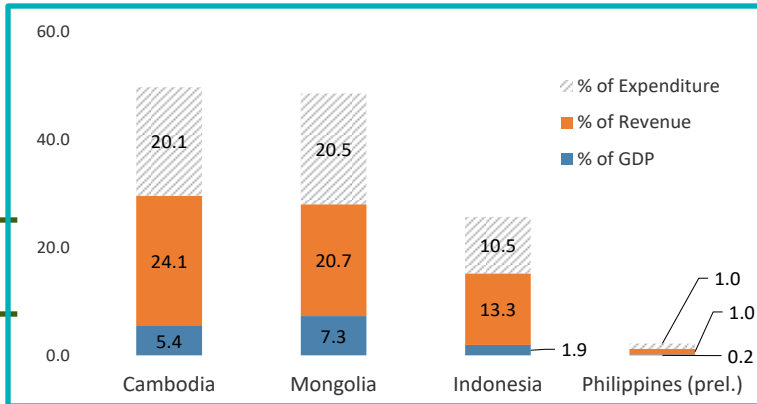


No good estimates of climate financing needs and limited fiscal resources for climate action

Estimates for financing needs far and few and not well aligned to NDC and NAP commitments

Ranges: between US\$ 1- 25 billion per year
 KOR: Carbon –no estimates but "carbon-neutral fiscal investments will fall short of amount required"

Climate Finance Estimates (in percentage, 2022)

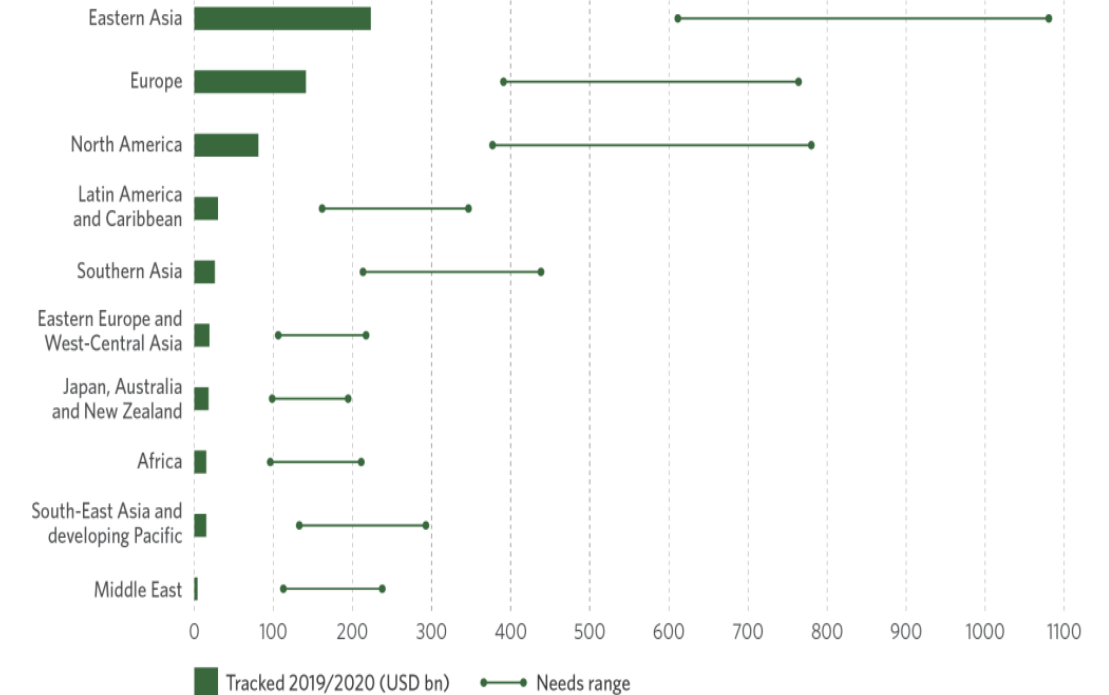


Lack of good estimates reflects in part:

Inability to assess and measure climate exposure
 Limited capacity to raise adequate revenues/ finance
 Efforts at closing the fiscal resource gap: MNG, PHL, VTN – are considering Carbon tax/ETS (ETS: ADB (2021)); PHL- phase out fossil fuel subsidy

Annual investment needs through 2030 to decarbonize economies

Figure A1: Global Landscape of Climate Finance 2019/2020



Regional needs figures adapted from: Kreibiehl, Silvie; König, Michael; Moon, Jongwoo (2022): Data for Figure TS.25 - Technical Summary of the Working Group III Contribution to the IPCC Sixth Assessment Report. MetadataWorks, 04 April 2022. DOI: 10.48490/dw6j-ef56

Takeaways

Takeaways

Adaptation

- ▶ Strong institutional frameworks for adaptation.
- ▶ Comprehensive and well-mainstreamed NAPs.
- ▶ But gaps with respect to costing investment needs, climate budgeting, and insurance and social coverage.

Climate Finance

- ▶ Fiscal space to bridge funding gap in climate investments and better institutional coordination needed.
- ▶ Capacity development to mitigate information gap and assess and measure climate risk.
- ▶ Call for action, including through peer learning, to strengthen and standardize taxonomy, disclosure, statistics, and regulations by central bank and regulators.

Thank you!

Background

Introduction: Survey Objectives

- Assess how each country's climate action plans under the NDCs and NAPs have translated into supporting policies to achieve climate goals (mitigation, adaptation, and sustainable finance).
- Identify constraints in designing and implementing policies.
- Gain better understanding of common themes across countries, including:
 - ▶ progress in meeting commitments
 - ▶ policy mix
 - ▶ implementation challenges
- Contribute to Fund climate surveillance by providing Asia's perspectives.

Economies Surveyed: 50 percent response rate

<input checked="" type="checkbox"/> indicates "responded"	Mitigation	Adaptation	Climate Finance
Advanced Economies (AEs)			
Australia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hong Kong SAR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Japan	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Korea	No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New Zealand	No	No	No
Singapore	No	No	No
Macao, SAR	N.A.	<input checked="" type="checkbox"/>	N.A.
Emerging Economies (EMs)			
China	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
India	<i>Waiting to hear back from the authorities</i>		
Indonesia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Malaysia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Philippines	No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Thailand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vietnam	No	No	<input checked="" type="checkbox"/>
Major Low Income Countries (LICs)			
Bangladesh	No	<input checked="" type="checkbox"/>	No
Cambodia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lao PDR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No
Maldives	No	No	No
Mongolia	No	No	<input checked="" type="checkbox"/>
Pacific Island Countries (PICs): 8 countries	N.A.	No	N.A.
Countries responded	9	13	12
Survey sent	18	26	18

Note:

- Survey structure: 36 multiple choice questions online (FAD provided comments; ITD provided technical support).
- Survey interface developed in conjunction with ITD
- Request sent to 26 economies, including PICs (the adaptation pillar only).
- Eight economies (AUS, HKG, JPN, CHN, IDN, MYS, THA, KHM) filled out all three sections.
- Others (KOR, PHL, BNG, LAO, MNG, MAC, VNM) submitted 1-2 sections of the survey.
- Six economies (AUS, JPN, MLY, THA, KHM, LAO) submitted emissions data.
- Macao SAR: the adaptation pillar only and responded (but PICs did not respond).