Global Landscape of Climate Finance 2025:

EMDE Spotlight

October 2025

CLIMATE POLICY INITIATIVE

AUTHORS

Baysa Naran, Varun Shankar, Matthew Price, James Dixon, Sasha Abraham, Jose Diaz, and Mairead Barron. This work was conducted under the guidance of Dr. Barbara Buchner.

CONTRIBUTORS

The underlying data was processed by CPI's data scientists, including Jake Connolly, Eddie Dilworth, Tinglu Zhang and Daniel Abutu.

The report also benefited from the expert contributions from CPI colleagues including Pedro Fernandes, Costanza Strinati, Charles Baudry, Caroline Alberti, Alexandre Kirchher, Harsha Vishnumolakala, Jessie Press-Williams, William Wallock, Sean Stout, Medhira Hanidevi, and Om Sawant.

The report was copy-edited by Kirsty Taylor and Jana Stupperich. Data visualization design and layout was led by Angela Woodall-Pavuk, Pauline Baudry, Elana Fortin and Alice Moi.

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ABOUT CLIMATE POLICY INITIATIVE

CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has offices in Brazil, India, Indonesia, South Africa, the United Kingdom, and the United States.

CONTACT

Baysa Naran
baysa.naran@cpiglobal.org

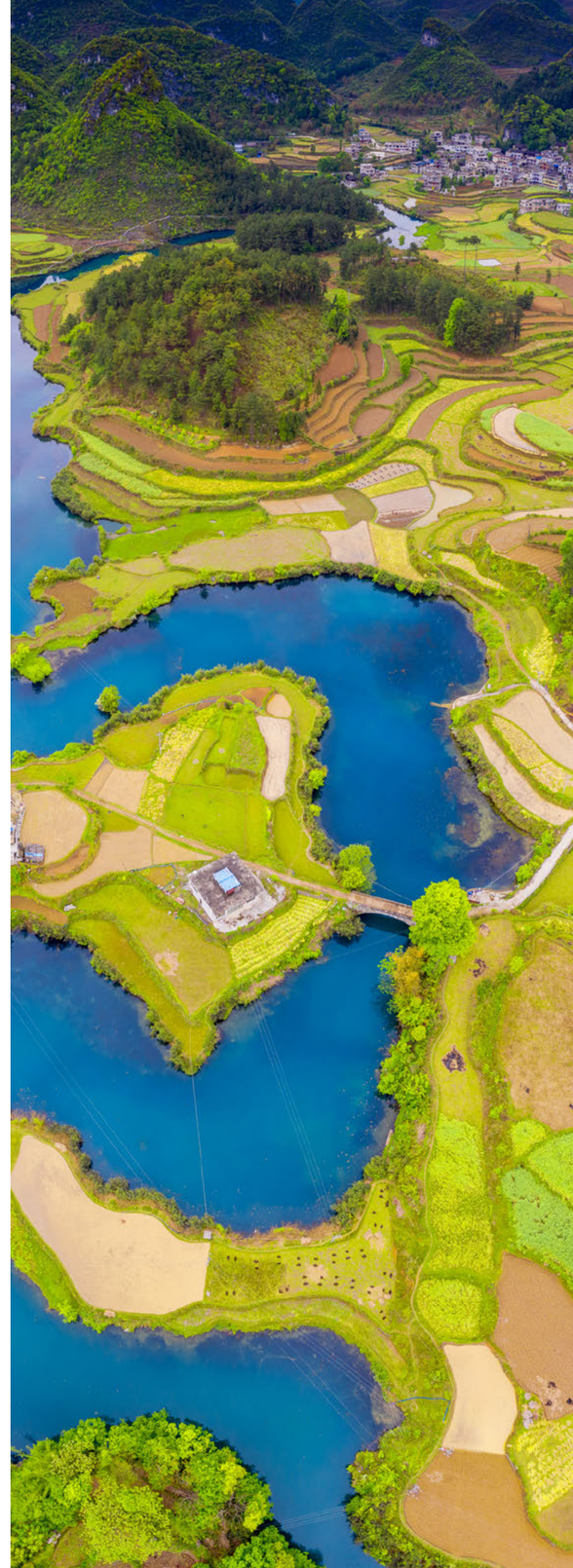
MEDIA CONTACT

Jana Stupperich
jana.stupperich@cpiglobal.org

SUPPORTED BY:

Department for Energy Security & Net Zero

Norwegian Ministry of Climate and Environment



SECTOR

Finance

REGION

Emerging Markets and Developing Economies

KEYWORDS

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Climate Finance Needs and Roadmaps

Finance

Renewable Energy

RELATED CPI WORKS

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Tracking and Mobilizing Private Sector Climate Adaptation Finance (2024)

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The climate finance gap cannot be efficiently bridged without a clear picture of how money moves: who provides it, where it goes, and what it supports.

For over a decade, CPI's Global Landscape of Climate Finance (GLCF) has provided the most comprehensive tracking of domestic and international climate flows from public and private sources worldwide[1]. This data and analysis on the scale, sources, instruments, and uses of climate finance equips governments and investors to seize opportunities in the climate transition.

This report, focused on emerging markets and developing economies (EMDEs), builds upon the broader Global Landscape of Climate Finance 2025 research presented earlier this year.

Where are we now?

Global climate finance neared USD 2 trillion in 2023, more than doubling in the past three years. Private investment in climate surpassed USD 1 trillion for the first time.

Momentum for climate investment is building worldwide, yet the investment gap remains large—at least USD 6 trillion is required by 2030, with the gap starkest in developing economies.

As well as delving deeper into climate finance trends in EMDEs, this report explores the domestic policies and international climate finance levers that can drive significantly more climate finance to these vital regions.

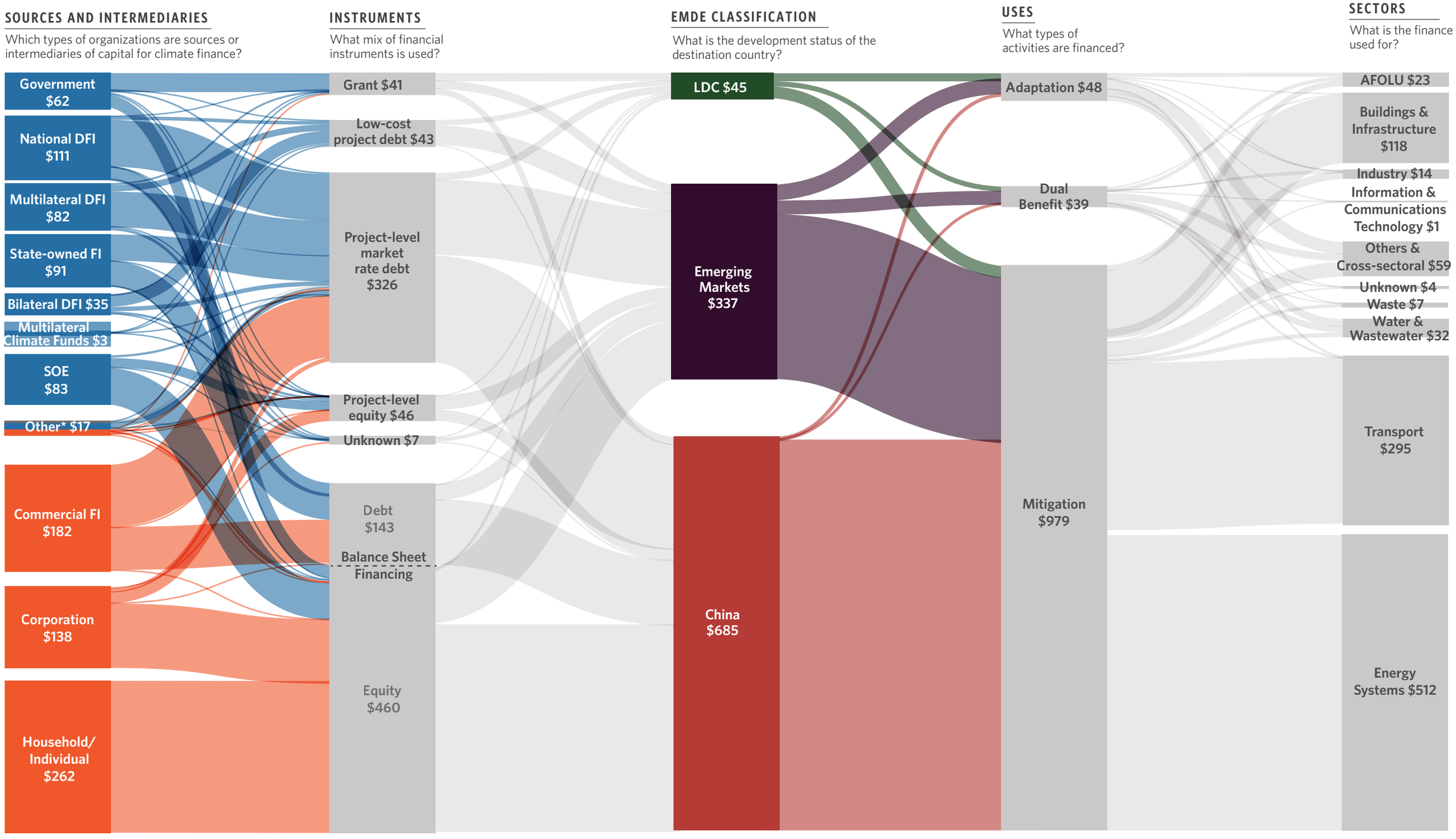
1 CPI tracks primary investment in physical assets and activities with direct and indirect mitigation and adaptation outcomes. More details on our methodology are available here.

LANDSCAPE OF CLIMATE FINANCE IN EMDEs IN 2023

Values are in USD billion

CLIMATE POLICY INITIATIVE

1.1 TRILLION USD IN 2023



"Other" public sources include export credit agencies and unknown public funds
"Other" private sources include institutional investors, third sector organizations, funds, and unknown

"AFOLU" stands for agriculture, forestry, other land use, and fisheries.

Executive Summary

Finance for emerging markets and developing economies (EMDEs) is key to combating the global climate crisis and accelerating an economic transformation. These 157 countries represent almost 90% of the global population and over 40% of the global economy.[2] They are undergoing rapid urbanization, industrial growth, and rising energy needs, while experiencing greater physical climate impacts. They are also increasingly stepping up their leadership in shaping the agenda for global climate action.

EMDEs require almost USD 4 trillion in annual climate finance between now and 2030 to meet climate goals. The success of their climate transitions will determine the course of global emissions for decades to come. At the same time, EMDEs are most vulnerable to the negative impacts of climate change (EIB 2025). While their financing needs are large, addressing the climate crisis provides unprecedented opportunities for investment and development.

Across All EMDEs, climate finance surpassed USD 1 trillion in 2023, of which 80% was mobilized domestically. These flows were primarily driven by China, accounting for 64% (USD 685 billion) in 2023. While growing from a lower base, other high- and middle-income EMDEs in Central Asia and Eastern Europe, the Middle East, and Latin America have also made promising progress, driven by strong domestic private financing led by corporates, commercial financial institutions and households.

EMDEs are leveraging the low-carbon transition as an opportunity to stimulate durable economic development. This drives economic diversification, job creation, energy access and independence, and better health outcomes, while also building overall fiscal resilience. Adaptation and resilience are becoming integral parts of national development strategies. Strong domestic planning and policies, along with well-targeted international finance, can help countries tap into this sustainable development potential.

International climate finance represented less than 20% of total flows in All EMDEs, reaching USD 209 billion in 2023—public institutions provided the largest source, accounting for 76% of all international flows in 2023. These public flows have nearly doubled since 2018 driven by donor governments and multilateral/bilateral DFIs. But recent developments suggest that they may slow or even decline as major donors cut official development assistance (ODA) and political priorities shift. International private finance is increasingly important, with flows to All EMDEs reaching approximately USD 49 billion in 2023, mainly from commercial financial institutions and corporates, up from USD 20 billion in 2018. At the same time, cross-border climate finance among EMDEs (South-South climate finance) is increasing, rising from USD 16 billion in 2018 to USD 26 billion in 2023, highlighting new opportunities to mobilize investment.

Box ES1: Economic country subgroupings in this report

This report follows the IMF World Economic Outlook classification (2025) for the world's 157 emerging markets and developing economies (EMDEs). This grouping is referred to throughout the report as "All EMDEs." We also disaggregate the following subgroupings from All EMDEs to explore specific trends:

- **Emerging Markets.** We analyze the 111 EMDEs excluding China and the 45 least developed countries (LDCs) as a separate subgroup, referred to throughout the report as "Emerging Markets." These countries represent over half of the global population and 23% of global GDP. They have high potential to scale climate finance.
- **LDCs.** We break out the 45 LDCs, based on the UNCTAD classification (2025). While these countries represent 1.4% of the global economy, they include 20 of the world's 25 most climate-vulnerable countries. This focus aims to give special attention to these countries' climate flows and needs, which tend to be more acute due to their fiscal, economic, social, and climate risk challenges.
- **SIDS.** Using the UN classification (2025), in Section 3, we also highlight adaptation finance data related to the 49 small island developing states and associate overseas islands territories (SIDS), which sit across both EMDEs and advanced economies. Highlighting and addressing SIDS' adaptation flows is crucial, given their unique vulnerabilities to climate change.
- **China.** China is discussed separately due to the relative scale of the market compared to other EMDEs, and because the trends and size of its climate flows make it a frequent outlier within the EMDE grouping.

An overview of climate and socioeconomic indicators of these subgroups is shown in Annex Table A.1.

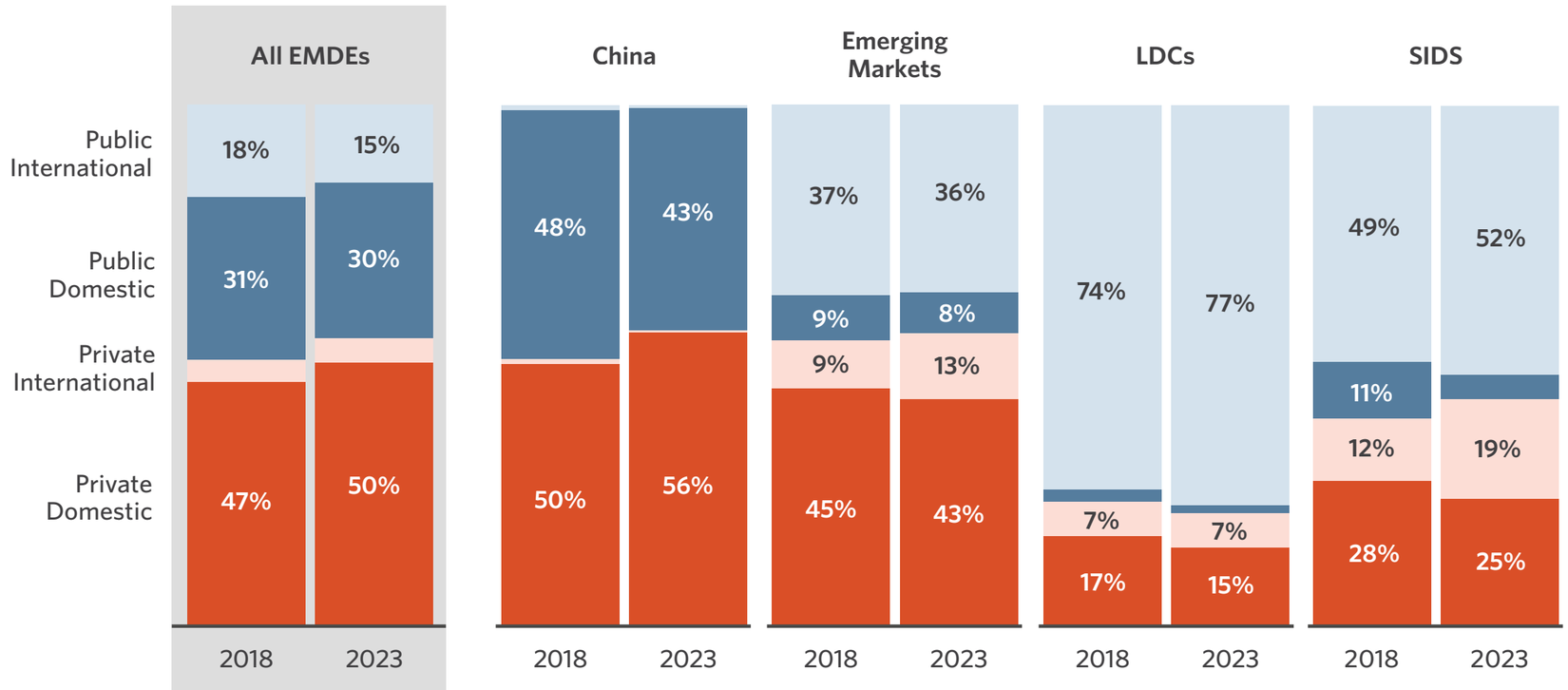
2 CPI calculation based on the IMF World Economic Outlook 2025. Excluding China, EMDEs account for 70% of the global population and about 25% of global GDP.

KEY DEVELOPMENTS IN EMDEs

Across EMDEs, mitigation finance has expanded rapidly, particularly in China and a few Emerging Markets, but remains far below needs. Adaptation finance has been growing from a low base but stagnated in the most recent years, while the needs for adaptation and resilience will only grow the longer mitigation finance is delayed. Finance with dual benefits for both mitigation and adaptation rose from USD 18 billion in 2018 to USD 39 billion in 2023, indicating a growing recognition of adaptation and mitigation co-benefits.

The dominance of non-concessional mitigation finance signals maturing markets but also highlights widening disparities in access and affordability. Domestic and private investments are increasingly important—but catalytic international finance will be central to helping these flows to scale across All EMDEs.

Figure ES1: Climate finance by source and EMDE subgroupings



MITIGATION

Mitigation finance accounted for 92% of tracked flows in 2023 (USD 979 billion) across All EMDEs, more than double the level in 2018 (USD 432 billion). Yet, this remains far below the estimated USD 3.86 trillion in mitigation investment that EMDEs need each year until 2030. Without a major scale up, economic development could lock EMDEs into high-emissions, low-resilience infrastructure.

- **In Emerging Markets** (EMDEs excluding China and LDCs), mitigation finance nearly doubled from 2018 to reach USD 285 billion in 2023. Cost competitiveness of clean and renewable energy technologies, combined with policy incentives for electric mobility and energy efficiency, is enabling primarily domestic and some international flows. Long-term frameworks such as climate-aligned national development plans and goals, paired with governance efforts such as sustainable finance taxonomies, further support these efforts. Investments are increasing, but are dominated by a handful of countries in each region. These countries have enabled private actors including corporates and commercial financial institutions to operate and scale, reduced fossil fuel subsidies, and integrated decarbonization measures into national development plans, laying the foundations for channeling more public funds for climate mitigation.
- **LDCs** saw mitigation finance increase from USD 14 billion in 2018 to USD 21 billion in 2023. These countries face unique challenges in energy transition. In 2023, Bangladesh and Angola accounted for 34% and 9% of total mitigation finance to LDCs, respectively. Bangladesh has consistently accounted for over 30% of all mitigation finance to LDCs, largely directed to the buildings and infrastructure sector, while Angola had a sharp rise in 2023, driven by investments in the energy sector. Across LDCs, international public institutions remained the primary source of mitigation finance, providing more than half of total flows in 2023, primarily through large-scale projects.
- **China** saw a 153% increase in mitigation finance between 2018 and 2023, dominating climate finance in most sectors and accounting for nearly 70% (USD 673 billion) of total mitigation flows to All EMDEs. The share of private finance increased to 60% in 2023 compared to 40% in 2018. China's rapid scale-up in climate solutions results from long-term planning, including phased policies that target domestic technological capabilities.

Across All EMDEs, non-concessional mitigation finance dominates, primarily driven by China. In Emerging Markets, around 29% of flows in 2023 were deployed through concessional loans, grants, and development finance, whilst this value was 50% in LDCs. Strategically directing increasingly limited public resources to de-risk investments and mobilize private capital remains crucial to financing mitigation at scale, particularly in LDCs.

Mitigation finance primarily flows where technology costs are falling rapidly, market structures are strong, and commercialization is being proven. Hard-to-abate sectors, such as agriculture, forestry, fisheries, and other land use (AFOLU), industry, and waste, received 3% of All EMDEs' mitigation finance in 2023 and still face significant financing gaps, despite their significant mitigation potential.

In 2023, renewable energy accounted for 66% of newly installed power generation capacity in Emerging Markets, and 80% across All EMDEs.[3] Solar energy dominated investments, reflecting falling technology costs and the abundance of solar resources in many EMDE countries. Brazil, Chile, Viet Nam, Morocco, and Uzbekistan are using policy tools, including feed-in tariffs, competitive auctions and streamlined regulations for power purchase agreements, to broaden investment opportunities and create a more predictable policy environment. Barriers such as grid constraints and continued fossil fuel subsidies must now be addressed to achieve further scale. This is particularly important in LDCs, where renewable energy sources only accounted for 36% of newly added capacity in 2023, despite their lack of access and growing needs spurred by rapid development.

Transport accounted for nearly 30% of mitigation finance flows in 2023 across All EMDEs. With a 26% CAGR from 2018 to 2023, these flows outpaced growth in renewable energy. The sector is driven by two main forces: domestic private investment in battery electric vehicles (BEVs) purchased by businesses, individuals and households and international public finance for public transportation. BEV adoption is rising rapidly, driven by subsidies, tax exemptions, and lower operating costs. With supply chains and technologies increasingly present within EMDEs, countries are prioritizing building resilience and independence. Resource-rich economies, like Indonesia, are promoting local value addition, while new entrants such as Turkey are expanding EV manufacturing. In dense urban areas, finance is shifting to affordable two- and three-wheeler BEVs with battery-swapping options. Strategic planning frameworks that identify public transport as Infrastructure Flagship Projects in development plans, such as in the Philippines, demonstrate how aligning decarbonization priorities with national development planning can mobilize large-scale investment.

Buildings and infrastructure accounted for 12% of mitigation finance to All EMDEs. Notable progress has been made in this area through alternative financing mechanisms supported by international development finance, including expanding affordable, energy-efficient housing portfolios, implementing appliance efficiency standards, establishing energy-efficiency codes for buildings, and piloting demand-side management. However, only half of new buildings (residential and non-residential) constructed in EMDEs were covered by mandatory energy-efficiency requirements in 2023 (IEA 2024a), missing an opportunity to embed sustainable infrastructure within rapid urban development.

Despite being one of the largest sources of emissions, AFOLU continues to receive just over 1% of mitigation flows in All EMDEs. While climate-smart agriculture and agrivoltaics dominate in China, forestry finance is prevalent in Latin America and sub-Saharan Africa, given these regions' vast forest cover. Results-based payments (RBPs) under the Reducing Emissions from Deforestation and Forest Degradation (REDD+) initiative are a key mechanism for channeling forestry finance. Domestic governments in Emerging Markets and LDCs could explore additional programs and carbon market mechanisms, while private actors can expand their roles, particularly through solutions such as agrivoltaics. Initiatives to diversify AFOLU beyond REDD+ are increasing, but more project-level transparency is needed to improve climate budget tagging and track results.

3 Calculated based on the share renewable energy installed capacity in All EMDEs including China from IRENA (IRENA 2025).

ADAPTATION

Adaptation finance across All EMDEs totaled USD 48 billion in 2023, increasing by 46% since 2018, but still far short of annual needs through to 2030.[4] In addition, these flows were uneven across countries, with the top 20% receiving over 70% of all EMDE adaptation finance in 2023. Tracked flows decreased in 2023 compared with previous years, driven by drops in financing from key funders, methodological changes, and wider data challenges.

- **In Emerging Markets** (EMDEs excluding China and LDCs), adaptation finance totaled USD 27 billion in 2023, more than doubling since 2018, with a recent increase in private finance. The share of adaptation finance sourced privately rose from below 2% (USD 224 million) in 2018 to surpass 7% (USD 2 billion) in 2023. This shift was driven by large increases in the UAE, Brazil, and Indonesia, which together accounted for 82% of private Emerging-Market adaptation finance in 2023.
- **In LDCs and SIDS**, adaptation finance also approximately doubled from 2018 to 2023. LDC flows increased from USD 7.4 billion in 2018 to USD 14.3 billion in 2023. Adaptation flows to SIDS rose from USD 0.7 billion to USD 1.7 billion in the same period. Grants accounted for over half of LDCs' adaptation finance in 2023, increasing as a share of total flows since 2018, while in SIDS the share of grants declined. Over the same period, market-rate financing has remained modest in both groups. While the share of grants, low-cost debt, and development finance remained high, the absolute values were still relatively small (USD 14 billion for LDCs in 2023 and USD 1.6 billion in SIDS). Given their high exposure to climate risks and constrained fiscal space, these countries must steer clear of a climate adaptation–debt trap and work to build resilient, sustainable financing portfolios (WRI, 2023).
- **In China**, adaptation finance more than doubled from 2018 to 2022, from USD 12 billion to USD 26 billion. The subsequent sharp drop to USD 6.4 billion in 2023 stems from significant reductions in tracked flows from a few large institutions, such as the China Development Bank. This decline is likely at least partly due to changes in tracking methodology and currency depreciation, given that all tracked flows are converted into USD (see analysis in Annex Box A.2).

Other and cross-sectoral activities received 46% of adaptation flows to All EMDEs in 2023, with investment of USD 22 billion. Most finance in this category went to disaster risk management, policy and national budget support, and capacity building. Indonesia, China, Bangladesh, the Philippines, and Turkey received the highest shares of these flows in 2023.

Adaptation finance for water and wastewater grew modestly from 2018 to 2023, despite recent expansion in private finance. Flows reached USD 13 billion over the period. Excluding China, EMDE flows reached USD 8 billion in 2023, growing from USD 6 billion in 2018. Adaptation financing for water and wastewater is mostly provided by public actors, who often channel finance through municipal utilities. However, several upper-middle-income EMDEs saw a sharp increase in private finance in this sector in 2023.

Adaptation finance for AFOLU in All EMDEs fell in 2023 after growth between 2019 and 2022, with implications for private finance and vulnerable regions. Annual investment rose from USD 4.7 billion to USD 7.4 billion between 2019 and 2022, before falling to USD 6.9 billion.[5] Flows to sub-Saharan Africa, the region facing the highest food systems risks, fell from USD 3.7 billion in 2022 to USD 3.1 billion in 2023, but still totaled 45% of AFOLU adaptation finance across All EMDEs in 2023. Private finance for AFOLU adaptation across All EMDEs decreased by 56% in 2023, from USD 964 million to USD 427 million. Most of this drop (73%) was due to reduced funding in sub-Saharan Africa from third-sector organizations.

Adaptation finance can be volatile and inconsistent at the sectoral and regional levels, especially in LDCs and SIDS, where lower volumes of flows are tracked. However, strong sectoral growth is displayed in several case studies. Bangladesh has received the highest level of financing for policy support and capacity building, developing institutional frameworks and international partnerships. Ethiopia has used strategic plans and roadmaps to support growth in AFOLU climate finance, and Pakistan has done similar for water and wastewater. Legal and institutional foundations for disaster risk management in Viet Nam, Kenya, and the Bahamas have supported investment there.

Despite these positive cases, barriers persist, and adaptation and resilience should be mainstreamed into all decision-making. While many EMDE governments have begun to advance adaptation policies, sustaining finance and moving toward adaptation needs levels remains a challenge. Concrete implementation policies often lag behind those for mitigation. High perception of risks, unpredictable returns from projects, limited technical and institutional capacities, fragmented governance of cross-sector solutions, and limited or inconsistent data and information on climate risks, finance flows, and solutions often limit investment.

4 An estimated annual average of USD 222 billion is required through to 2030 to finance adaptation in EMDEs excluding China. Needs estimates for All EMDEs (including China) are not currently available. Adaptation finance in EMDEs excluding China doubled from USD 21 billion in 2018 to USD 42 billion in 2023.

5 This trend is consistent when excluding China.

RECOMMENDATIONS

EMDEs have enormous opportunities for sustainable growth and development through climate investment, but only a handful of EMDEs are leading the way on climate finance. They are demonstrating possibilities to mobilize domestic resources and attract international private investment through domestic policy enablers. In many cases, international public finance provided technical and advisory support, knowledge transfer, insurance, and guarantees to de-risk private investment. Despite progress, EMDEs require more and better-quality international climate finance to support national priorities, reach underserved communities, and reduce the cost of capital. More coordinated efforts are needed to close the investment gap, a) by increasing climate finance and its overall impact, b) redirecting harmful flows, and c) increasing the number of countries making progress.

Focusing on key enablers for climate finance in EMDEs, our recommendations are centered around three solution levers:

1. **Strengthening domestic enabling environments to mobilize resources,**
2. **Improving the quality of international climate finance, and**
3. **Increasing the transparency of climate-related data.**

The following table summarizes these key enablers and the roles of different actors in scaling investment. Details are provided in this report's Recommendations section.

Table ES1: Overview of recommendations

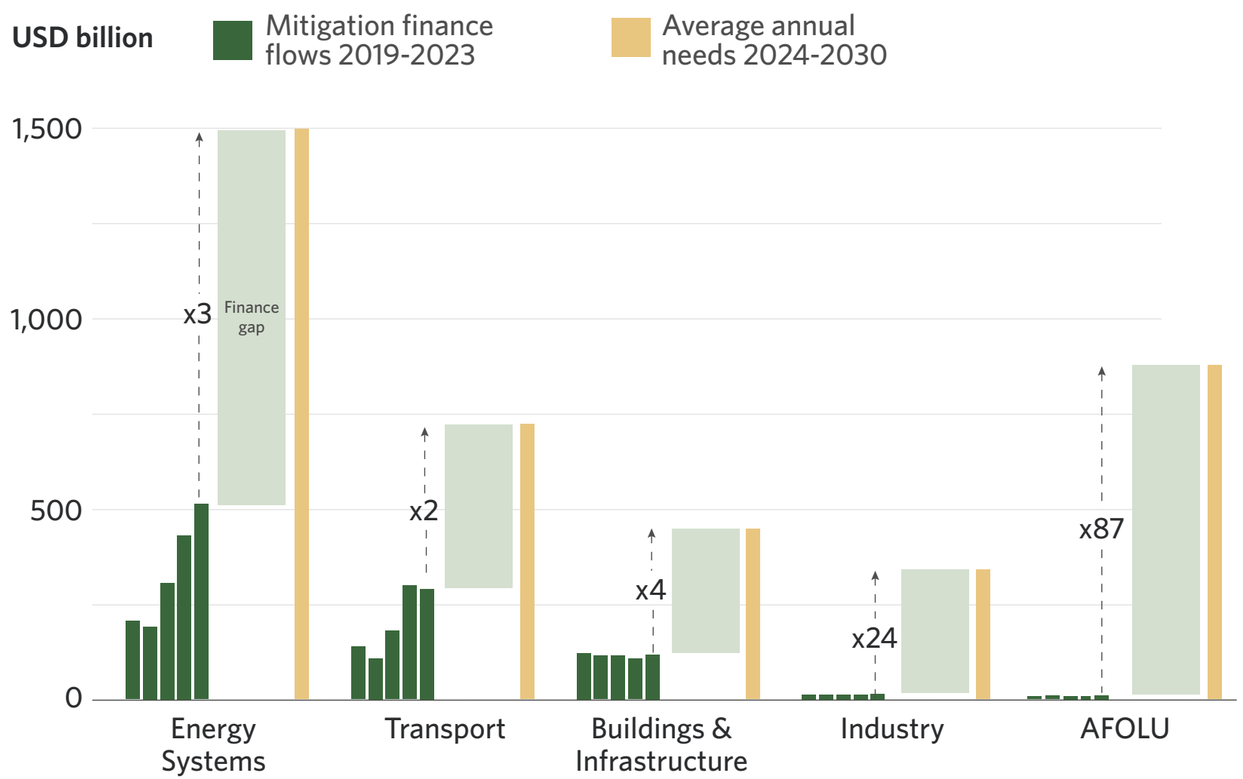
Solution levers	Recommendations	Roles of different actors		
		EMDE government	**Donors and international public climate finance providers**	**Private sector**
Strengthening the domestic enabling environments to mobilize resources	i) Implement and sequence policies and frameworks that address persistent sectoral barriers.	**Implement** (Address sector-specific barriers)	**Support** (Technical advisory and capacity-building support)	**Contribute** (Active engagement in policy dialogues on overcoming sectoral barriers and improving investment environment)
	ii) Strengthen national policy implementation and financial ecosystems for climate finance through strategic planning, climate investment roadmaps and pipelines, and institutional readiness.	**Implement** (Strategic planning and coordination between ministries on climate finance)		
	iii) Strengthen capacity and governance to encourage domestic investment and attract further international cooperation and inflows.	**Implement** (Comprehensive capacity-building programs for relevant institutions)		**Implement** (Own capacity building on identifying and evaluating climate investment opportunities)
Improving the quality of international climate finance to support national priorities and reduce the cost of capital	i) Design targeted programs tailored for EMDE groups for market creation—building demand for and supplying climate solutions in underserved sectors such as AFOLU and industry. ii) Collaborate with countries, public (e.g. MDBs, DFIs, climate funds etc.) and private actors (e.g. philanthropies, impact investors) to mobilize catalytic concessional capital and de-risking tools, and to develop regional guarantee platforms. iii) Implement flexible climate financing strategies based on lessons from past projects and metrics that capture the impact of climate finance more holistically. iv) Continue to prioritize concessional adaptation finance in highly vulnerable countries. v) Further track and strengthen South-South cooperation.	**Support** (Create pipelines of investment, facilitate cooperation between public and private sector)	**Implement** (Focus on improving the quality of climate finance)	**Implement/Contribute** (Engage in blended finance transactions, EMDE climate solutions investment products)
Increasing transparency of climate-related data	i) Enhance transparency, accessibility and affordability of global climate finance relevant data, particularly for adaptation, physical risk, domestic investments from households, public budgets, and the private sector in EMDEs.	**Implement** (Transparency and reporting of more granular data on climate investment)		
	ii) Harmonize climate-related financial regulation, taxonomies, and green financial markets standards.	**Implement** (Guidelines and regulations)	**Support** (Share international best practices)	**Contribute** (Dialogues on decision-useful data)

Contents

1. Introduction

Climate finance in EMDEs is key to combating the global climate crisis and enabling a just transition.

Figure 1: EMDE mitigation finance flows and needs



For more than a decade, CPI has tracked climate flows across sectors, actors, geographies, and financial instruments to build the world's most comprehensive dataset on climate finance. The Global Landscape of Climate Finance (GLCF) 2025 found that climate finance exceeded USD 1.9 trillion in 2023, with continued but uneven growth.

Total climate finance across All EMDEs surpassed USD 1 trillion, with 64% (USD 659 billion) in China and the remaining USD 375 billion flowing to the rest. The greatest gaps between mitigation finance needs and flows, as well as the most acute climate vulnerabilities, are seen in EMDEs, with nearly USD 3.7 trillion in annual mitigation investment needed between 2024 and 2030 (Figure 1). The annual investment required for adaptation in EMDEs is over USD 200 billion by 2030 and more thereafter.

EMDEs account for nearly 90% of the global population and over 40% of the global economy.[6] While rapid urbanization, industrial growth, and growing energy needs are likely to drive further emissions in EMDEs, the increasing availability of viable low-carbon solutions can help their emissions peak earlier and create development pathways that embed sustainable growth. EMDEs include some of the most climate-vulnerable economies worldwide, meaning that adaptation and resilience priorities sit alongside mitigation ones as critical components of any long-term growth strategy. Therefore, the urgency to scale climate investment from all sources in EMDEs is greater than ever.

EMDEs face unique challenges as well as opportunities in financing climate action. EMDEs have high borrowing costs and high perceived investment risk, with the cost of capital at least double the amounts in advanced economies (IEA 2025a). In addition, other structural barriers such as underdeveloped financial markets, lack of institutional capacity and poor data transparency further deter investment. Looming climate-related disasters and risks are increasing the cost of inaction in EMDEs. Building on these shared challenges, EMDE countries are also increasing their global leadership on climate action, both in shaping the global climate agenda through COP presidencies and spearheading South-South cooperation.

As stakeholders seek to accelerate climate finance at scale—both domestically and internationally—it is essential to leverage the growing roster of policy tools and evolving financial and technological innovations within the international climate finance context to strengthen flows.

6 CPI calculation based on IMF World Economic Outlook 2025. If excluding China, EMDEs represent 70% of the global population and about 25% of global GDP.

This study builds on the GLCF report published in June 2025, providing a deeper analysis of trends in EMDEs.

Recognizing that finance does not operate in isolation, CPI examines finance flows within the context of domestic policies and international systems that shape climate action. CPI builds on research from climate policy databases and external literature, providing context to the most comprehensive database on climate finance. It analyzes key financial flows, policies, and other socioeconomic trends related to climate finance, providing useful background. Acknowledging that EMDEs are a diverse set of countries, this analysis explores the following EMDE subgroupings:

- **Emerging Markets**: A group of 111 EMDEs excluding China and Least Developed Countries (LDCs) that represent many upper-middle and middle-income countries going through rapid economic growth.
- **LDCs and SIDS**: Countries that are highly vulnerable to climate change due to geographic and structural constraints.
- **China:** The largest economy among the EMDEs, where the scale and trends of climate finance make the country a frequent outlier in this grouping.

The report is structured as follows:

- **Snapshot of climate finance** across different subgroups of EMDEs. A high-level overview of key climate finance numbers.
- **Examining trends across EMDEs**. This section delves deeper into mitigation and adaptation finance trends by sector and region, examining different subgroups of EMDEs. In doing so, it provides further context on domestic policies in key sectors, top sectoral barriers and international climate finance.
- **Recommendations** on key priorities to further advance climate finance in EMDEs.

Box 1: Climate Finance Scope and Data Updates

The Global Landscape of Climate Finance (GLCF) captures primary capital flows directed toward low-carbon and climate-resilient development. Our scope follows CPI's working definition of climate finance, aligned with that of the UNFCCC Standing Committee on Finance, while applying consistent inclusion and exclusion criteria across editions. The report includes:

- Investments with direct or indirect mitigation or adaptation benefits.
- Policy support and capacity-building expenditures that enable climate action.
- Total primary transactions and investment costs.

To ensure comparability across editions, avoid over-reporting flows, and focus only on new climate-related investments, the GLCF excludes:

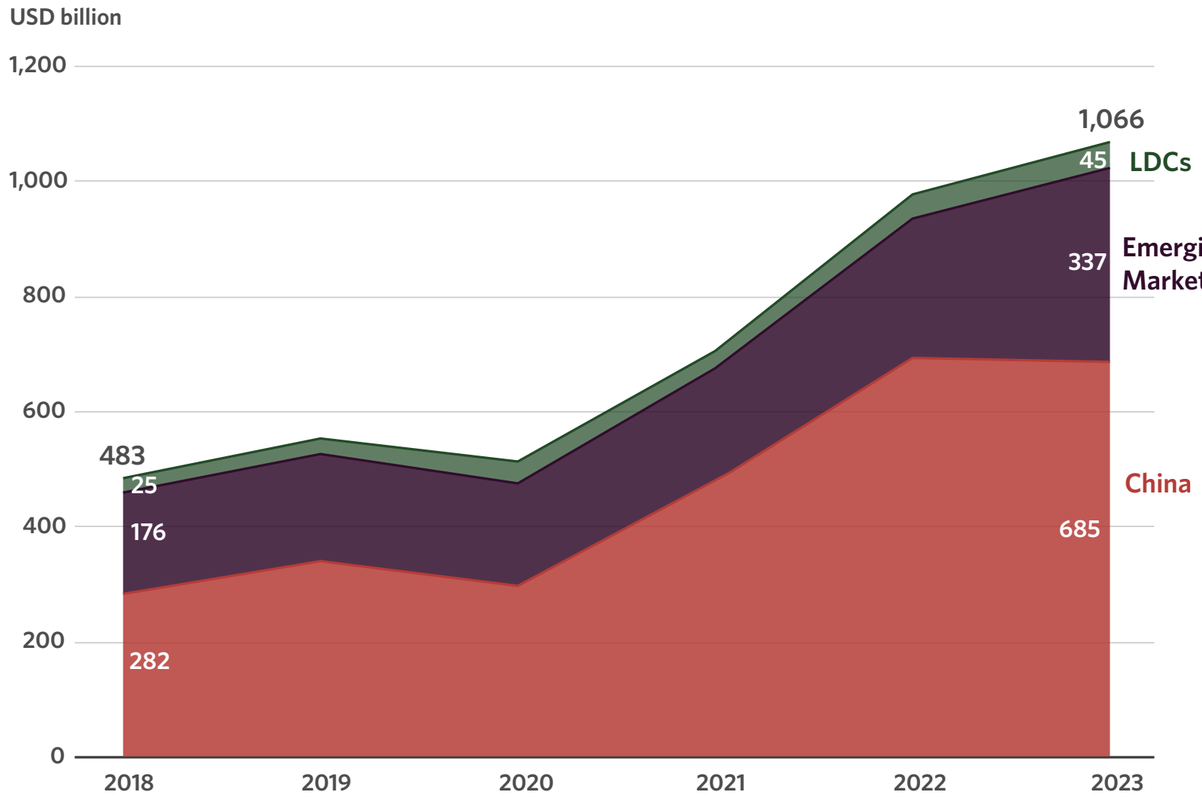
- Secondary market transactions (e.g., resale of assets, public trading), which do not represent new climate-specific investments.
- Financial risk management instruments (e.g., guarantees, insurance). While these may catalyze private finance, they are not counted in climate finance figures since no actual disbursement may occur.

CPI captures all climate finance—domestic and international, public and private—regardless of geography. For full definitions and methodological decisions, see the GLCF Methodology Document (CPI 2025a).

As noted in the GLCF 2025 published in June, CPI has updated its climate finance database since then to incorporate new IEA data on Buildings & Infrastructure and industry (IEA 2025b) and the latest edition of the OECD CRDS database, alongside fine-tuning of data processing. CPI is continuously refining its approach and expanding coverage, maintaining its position as the most comprehensive and reliable source of climate finance data.

2. Snapshot of EMDE climate finance, 2018-2023

Figure 2: Climate finance to EMDEs by subgroupings



2.1 OVERALL TRENDS

This section presents an overview of climate finance trends in EMDEs. Where necessary, EMDE subgroups are also analyzed, as per the subgroupings defined in Box ES1. Section 3 then explores these trends in the context of domestic sectoral policies, investment, and enabling-environment factors.

Across All EMDEs, tracked climate finance surpassed USD 1 trillion in 2023, increasing rapidly from USD 483 billion in 2018.

- **China** drove this growth, accounting for 64% of flows in 2023 (USD 685 billion).
- **LDCs** saw climate finance increase from USD 25 billion in 2018 to USD 45 billion in 2023. LDC flows fell in 2021, likely due to disruption caused by COVID-19, but recovered at a CAGR of 22% from 2021 to 2023.
- **Emerging Markets** (EMDEs excluding the above two groups) saw flows increase by 71% from 2021 to 2023, from USD 197 billion to USD 337 billion. This followed a relatively flat period from 2018 to 2020, during which annual investment averaged USD 180 billion.

Across All EMDEs, climate investment is becoming a vehicle for economic development, energy access and security, and resilience against climate-induced shocks.

IRENA and the ILO (2024) estimate that 16.2 million jobs were created in renewable energy worldwide by 2023, including 1.6 million in Brazil and 1 million in India. By 2024, investments in climate risk and early warning systems (CREWS) had helped protect 400 million people in LDCs and SIDS from climate-related shocks (CREWS 2025). By leveraging climate solutions as engines of economic growth, EMDEs can accelerate climate flows and strengthen alignment with sustainable development goals.

While climate finance across All EMDEs increased 2.2-fold from 2018 to 2023, there was great variation between subgroupings. Figure 3 shows that China and SIDS increased the most, while Emerging Markets and LDCs have much greater room to accelerate growth.

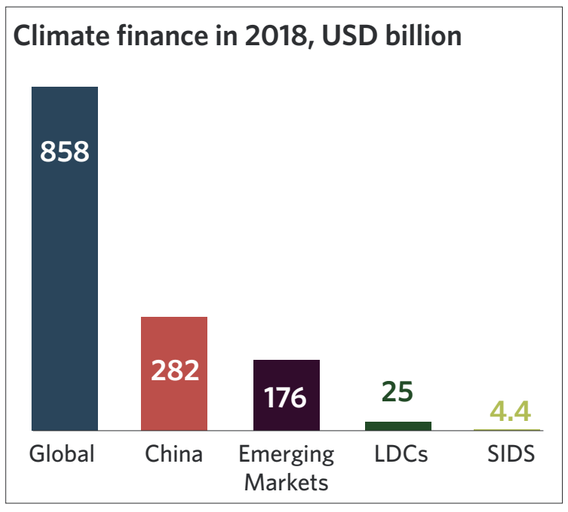
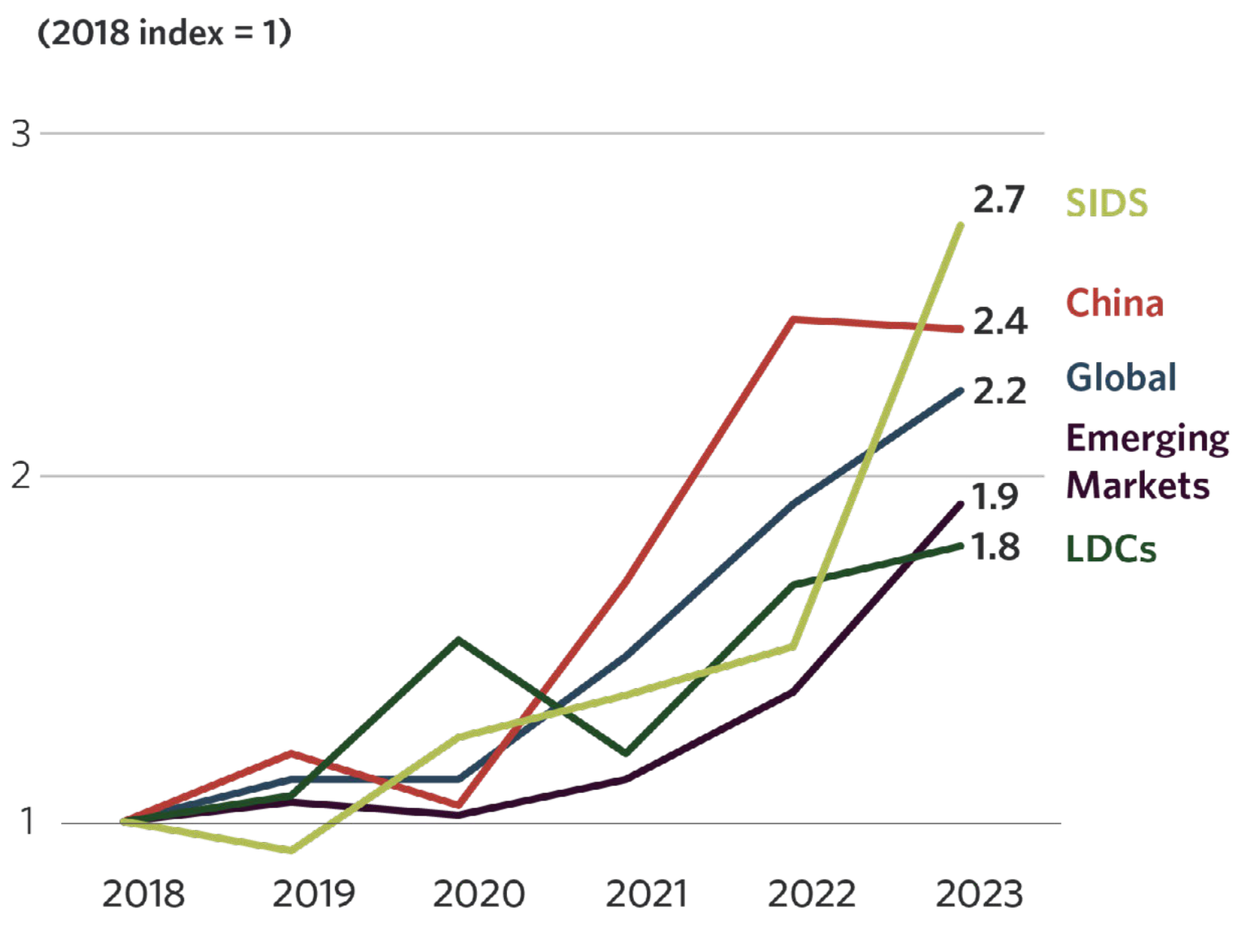


Figure 3: Climate finance growth rate in EMDE subgroupings



2.2 REGIONAL SNAPSHOT

East Asia and the Pacific accounted for almost 70% of all EMDE climate finance from 2018 to 2023. China drove the region's flows, accounting for 94%. Excluding China, the region's EMDEs posted a 10% CAGR, rising from USD 24 billion in 2018 to USD 39 billion in 2023. As the region with the lowest EMDE flows, excluding China, in 2023, this points to a major opportunity for growth.

Sub-saharan Africa saw the next-fastest growth, more than doubling from USD 24 billion in 2018 to USD 52 billion in 2023. Latin America and the Caribbean recorded the highest flows in 2023, totaling USD 86 billion, up from USD 43 billion in 2018. The Middle East and North Africa (MENA) reached USD 41 billion in 2023. All three regions had a CAGR of around 15% from 2018 to 2023.

Figure 4: Regional breakdown of climate finance to EMDEs

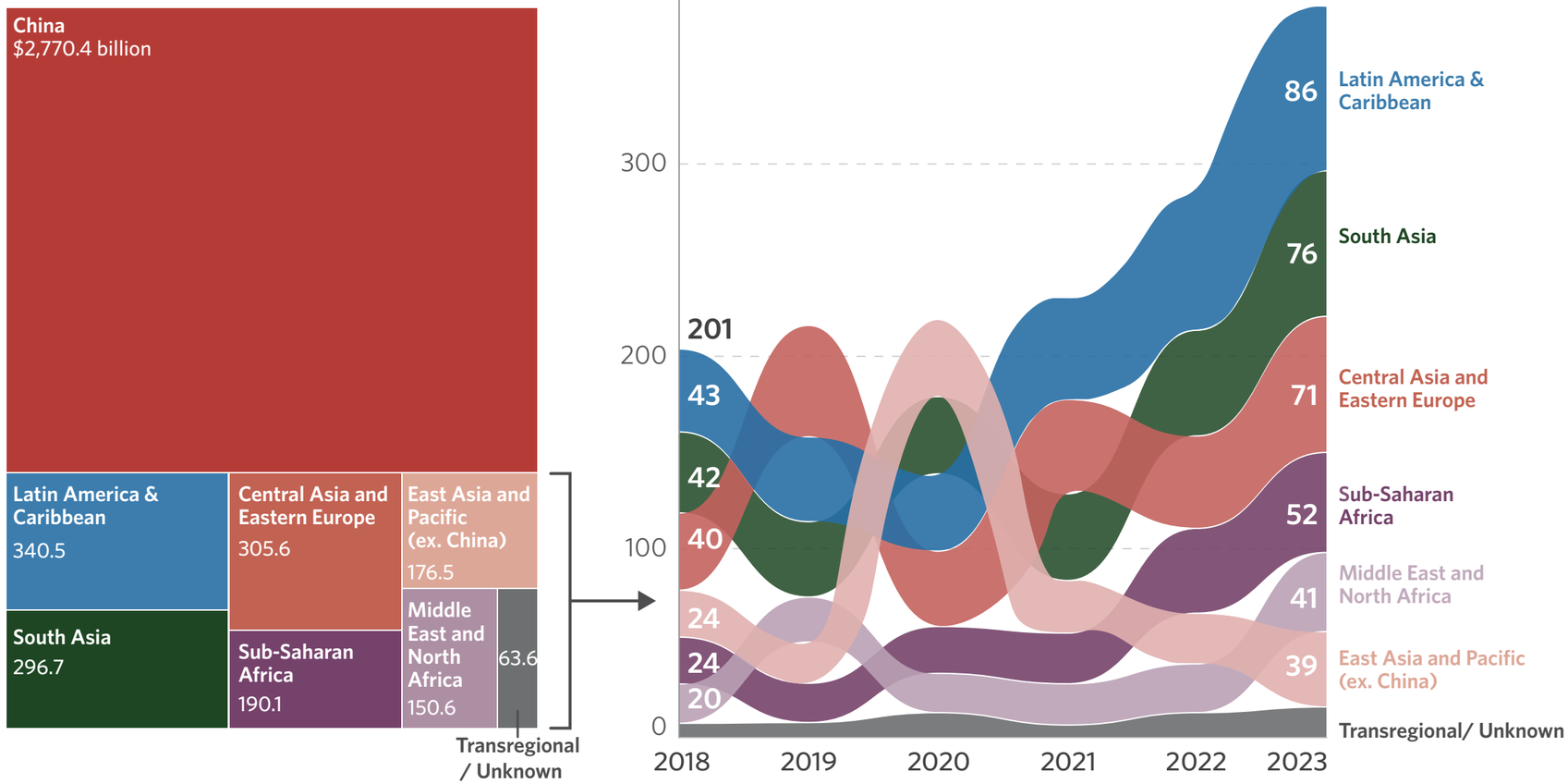
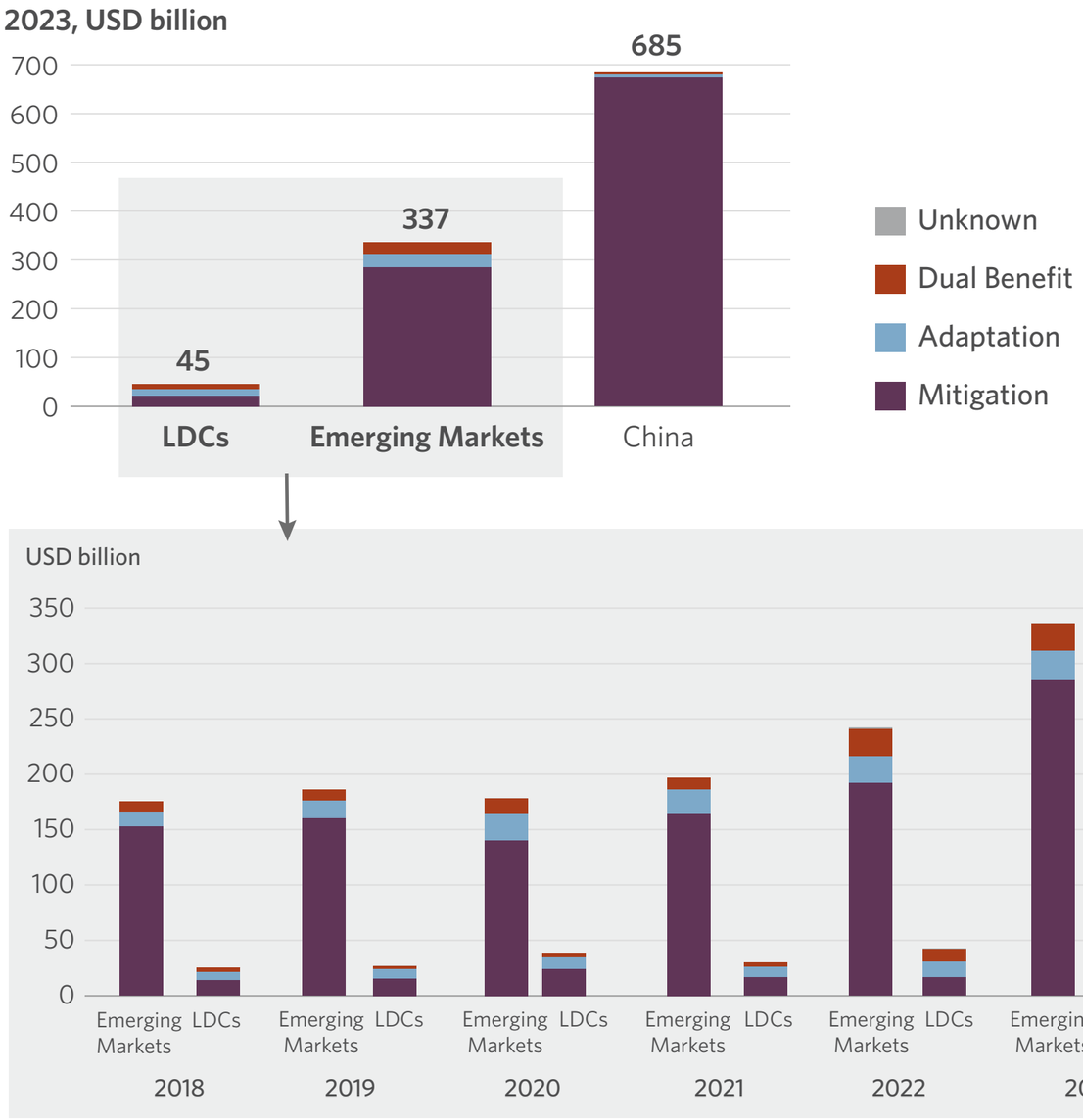


Figure 5: Climate finance to EMDEs by use



2.3 MITIGATION, ADAPTATION, AND DUAL-BENEFIT FINANCE TRENDS

Climate finance remained concentrated in mitigation solutions, accounting for 92% of All EMDE flows in 2023 (USD 979 billion).

- **China** accounted for 69% (USD 673 billion) of EMDEs' mitigation flows in 2023.
- **LDCs** saw mitigation finance increase from USD 14 billion in 2018 to USD 21 billion in 2023, accounting for 2.2% of all EMDE mitigation investment.
- **Emerging Markets** have seen a rapid rise in mitigation finance, from USD 152 billion in 2018 to USD 285 billion in 2023, accounting for 29% of all EMDE mitigation investment.

All EMDEs accounted for 72% of global adaptation finance in 2023 (USD 48 billion). However, a lack of data and methodological challenges hinder a comprehensive understanding of these flows.

- **China** saw a fall from USD 26 billion in 2022 to USD 6.4 billion in 2023. This decrease appears to at least partially result from changes in tracking methodologies in major Chinese institutions and currency depreciation, with many adaptation-related plans and policies still in progress (see analysis in Annex Box A.2).
- **LDC** adaptation investment increased from USD 7.4 billion in 2018 to USD 14 billion in 2023. LDCs accounted for 21% of global adaptation flows in 2023.
- **Emerging Markets** accounted for 41% of global adaptation flows in 2023, following an increase from USD 13 billion in 2018 to USD 27 billion.

Climate finance with dual benefits in All EMDEs more than doubled from USD 18 billion in 2021 to USD 39 billion in 2023.

- **China** reached USD 4.9 billion in 2023.
- **LDCs** averaged around USD 3.3 billion in dual benefits investment from 2018 to 2021. Flows significantly increased in 2022 and 2023, averaging USD 10 billion.
- **Emerging Markets** averaged around USD 25 billion per year over 2022 to 2023, a substantial increase from USD 11 billion annually over 2018 to 2021.

2.4 SOURCES OF EMDE CLIMATE FINANCE

In 2023, all EMDEs' climate flows came from domestic actors (USD 857 billion), led by China (USD 678 billion). Flows from domestic sources accounted for 51% of flows in Emerging Markets (USD 172 billion) and 17% of flows in LDCs (USD 7.5 billion) in 2023.

Figure 6: Share of climate finance to EMDEs by development status and source of finance, 2018 vs 2023

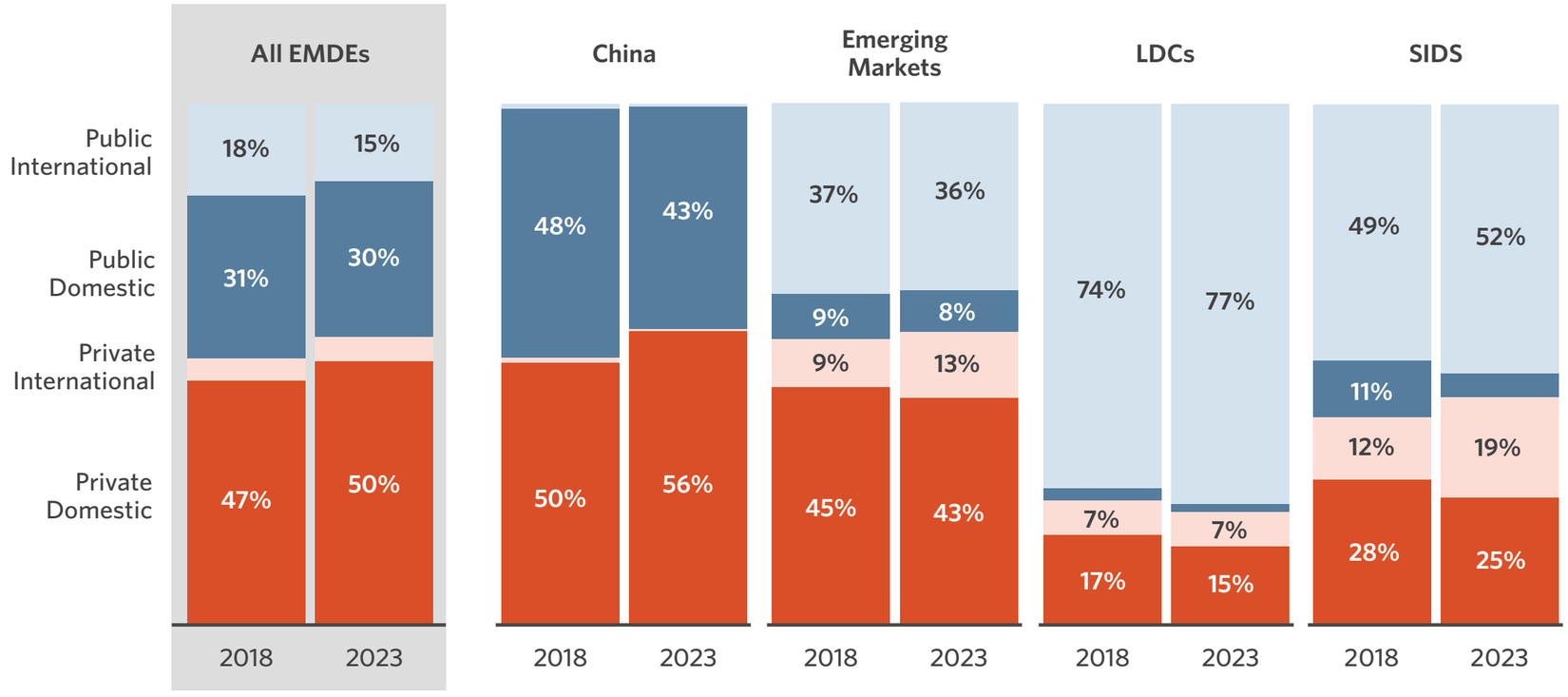
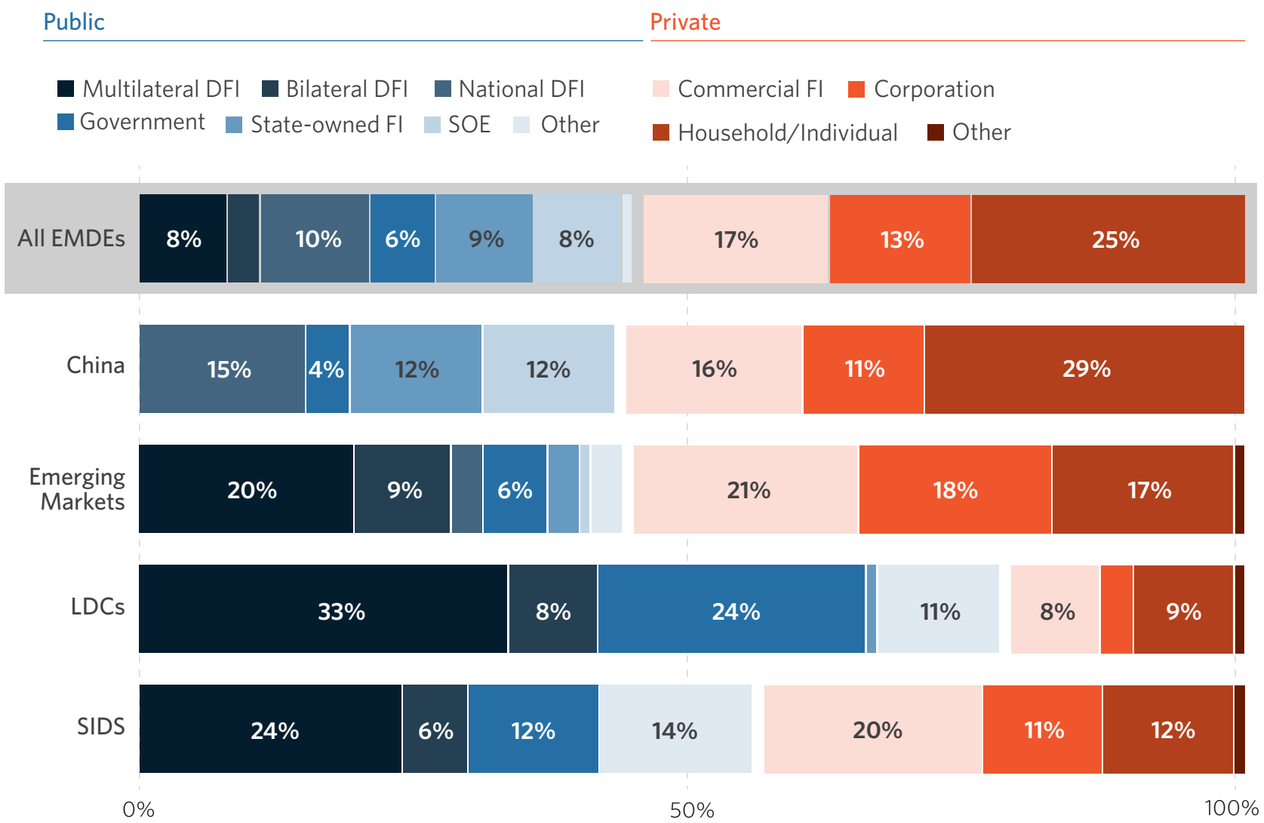


Figure 7: Share of climate finance to Emerging Markets by institution type, 2023



Across All EMDEs, 80% of climate finance was mobilized domestically in 2023.

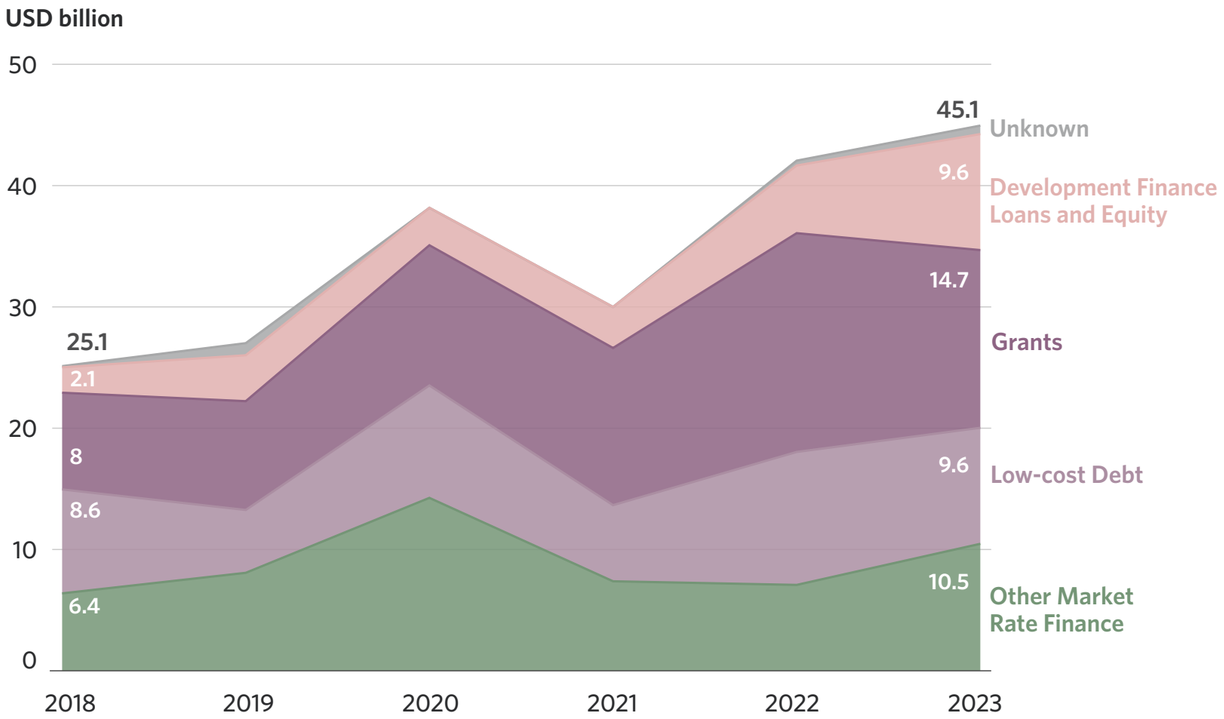
EMERGING MARKETS

Both public and private climate finance have almost doubled from 2018 to 2023 in Emerging Markets (EMDEs excluding China and LDCs). Over the period, private finance increased from USD 95 billion to USD 188 billion (reaching 56% of flows), and public finance rose from USD 79 billion to USD 147 billion (reaching 44% of flows).

Most private finance to Emerging Markets continued to come from domestic sources in 2023, despite a fall in share since 2018. Approximately 77% (USD 145 billion) of private finance was sourced domestically, down from 83% (USD 79 billion) in 2018. Commercial financial institutions, corporations, households and individuals provided almost all private finance. Limited capital market depth and underdeveloped financial infrastructure hinder international private investment from reaching its full potential (IFC and Amundi 2024).

Public flows to Emerging Markets primarily came from international sources, accounting for 82% of public flows in 2023. Multilateral development finance institutions (DFIs) provided 44% of public flows to these countries. Bilateral DFIs and governments provided 21% and 14%, respectively. A lack of standardized and regularly reported data on domestic public expenditure hinders understanding of public flows beyond international sources.

Figure 8: Climate finance to LDCs by instrument



Note: Development finance includes all equity and loans from DFIs and Multilateral Climate/Development Funds that were not tagged under OECD concessionality criteria. In practice, these instruments may be concessional.

LDCs continued to rely primarily on international public finance.

LDCs

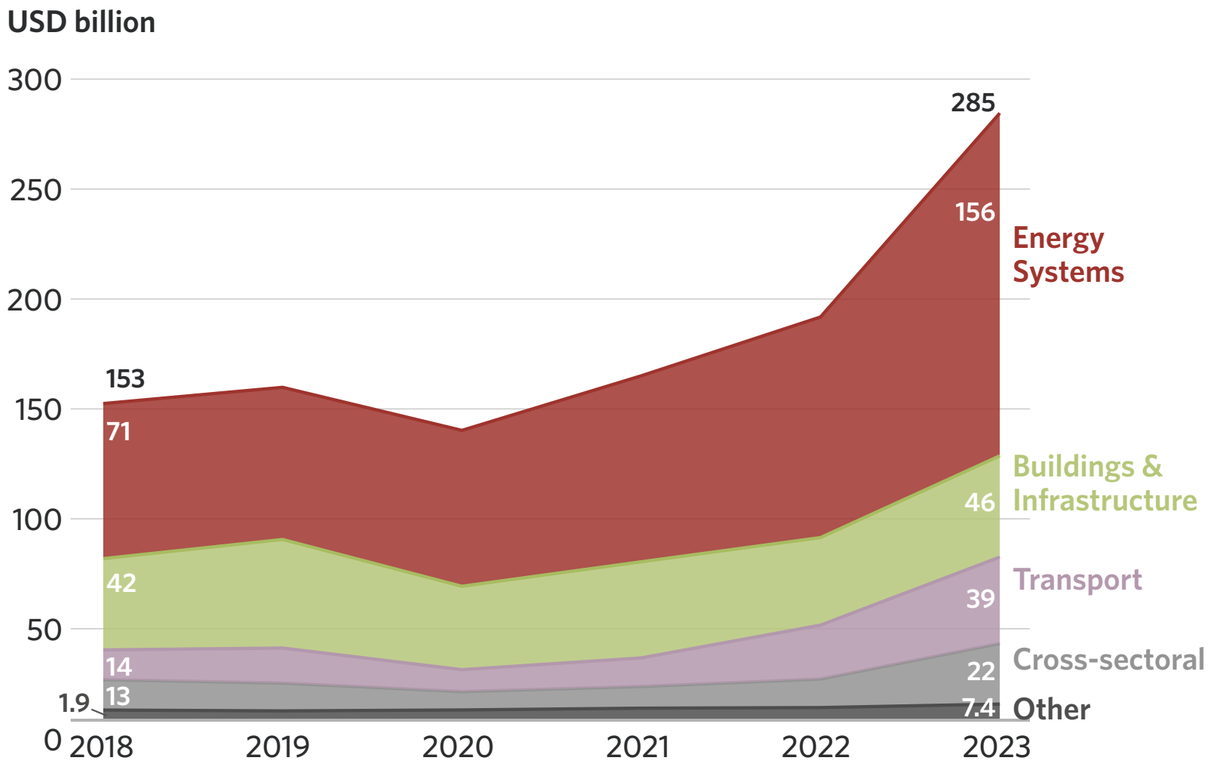
International public finance made up 77% (USD 34 billion) of flows in 2023. Multilateral DFIs provided 33% (USD 15 billion) of total flows to LDCs, with governments providing 24% in 2023 (USD 11 billion). Minimal public resources were tracked domestically (2% of tracked flows in 2023), an area where significant data gaps remain.

In LDCs, grants accounted for one-third (USD 15 billion) of flows in 2023. Low-cost debt fell in share from 34% in 2018 to 21% in 2023, although absolute amounts increased from USD 8.6 billion to USD 9.6 billion. The drop in the proportion of low-cost debt was partly driven by a rise in development finance, from 8% in 2018 (USD 2.1 billion) to 21% in 2023 (USD 9.6 billion).[7] Other market-rate finance has increased in absolute terms from USD 6.4 billion to USD 10 billion over 2018 to 2023, with the share of total decreasing from 25% to 23%.

7 In the GLCF methodology, development finance includes all non-grant and other debt and equity from DFIs and Multilateral Climate Funds. Development finance may include concessional debt or equity; however, due to differences in reporting practices among DFIs, CPI cannot always clearly distinguish the concessionality of their instruments.

3. Examining trends across EMDEs

Figure 9: Mitigation finance to Emerging Markets by sector



Note: "Other" includes Industry, AFOLU, Water and wastewater, Waste, and Information, communication, and technology (ICT), and Unknown.

For many EMDEs, rapid development without sufficient mitigation finance risks entrenching high-carbon systems.

3.1 MITIGATION

This section examines mitigation and adaptation trends in detail, focusing on domestic sectoral policies, investment, and enabling-environment factors observed, as well as international climate finance across the following EMDE subgroups:[8]

1) Emerging Markets (all EMDEs excluding China and LDCs)

2) LDCs and SIDS[9]

3) China

This section highlights the contexts for climate finance trends, with key regional case studies illustrating the finance–policy nexus, sector-specific measures, investment conditions, and persistent barriers, allowing for reflection on where further progress can be made.

Scaled investment is needed to decarbonize growth, avoid the need for costly retrofits, and ensure that new infrastructure is compatible with long-term climate goals across EMDEs. In All EMDEs, mitigation finance reached USD 980 billion, with over USD 670 billion of that in China. This is significantly below the USD 3.86 trillion needed annually through to 2030 to finance these countries' mitigation action. Required finance will increase further post-2030. Moreover, fossil fuels are structurally embedded in many EMDEs due to fiscal dependence on related revenues, the capital-intensive nature of fossil fuel phase-out, and reliance on legacy energy systems for energy access and affordability, often subsidized by governments. As of 2024, 96 countries across All EMDEs had fossil fuel subsidies in place through price caps, direct subsidies, or fuel tax reductions (World Bank Group 2025a). Other persistent sectoral barriers that preclude climate investment in EMDEs from reaching their full potential are explored in Annex Table A.3.

8 See Box ES1 for details on these subgroups.
9 Analysis for SIDS mainly focuses on adaptation finance. Because SIDS overlap with other EMDE subgroupings, they are included in LDCs and emerging market totals, with adjustments to avoid double-counting.

Over 90% of mitigation finance in EMDEs was allocated to the energy, transport, and B&I sectors, which all have clear emission-reduction potential and quantifiable revenue streams. However, other sectors with high mitigation potential, such as AFOLU, industry, and waste, have large climate investment deficits. For instance, agrifood systems saw minimal declines in emissions between 2019 and 2021, due to underinvestment (CGIAR 2024; CLIC 2025). These sectors require stronger financing mechanisms to mobilize capital at scale, as their mitigation outcomes are nuanced and harder to track.

3.1.1 EMERGING MARKETS

Mitigation finance nearly doubled in Emerging Markets (EMDEs excluding China and LDCs) from 2018 to 2023, reaching USD 285 billion. This increase was driven by investments in energy systems and transport. Despite year-on-year variation, the B&I and AFOLU sectors showed minimal growth between 2018 and 2023 (Figure 9).

Domestic finance accounted for 58% of flows in Emerging Markets in 2023, with private actors accounting for the bulk of these flows. Countries including India, Turkey, and Brazil drove this trend, providing market-rate debt and project-level equity.

By contrast, international flows were dominated by public actors, with multilateral and bilateral DFIs representing 84% of public flows, similar to previous years (Figure 10). Concessional loans were primarily provided by international public actors, while grants were roughly sourced from international and domestic public sources equally.

Figure 10: Sources of mitigation finance and instruments used, 2018 and 2023

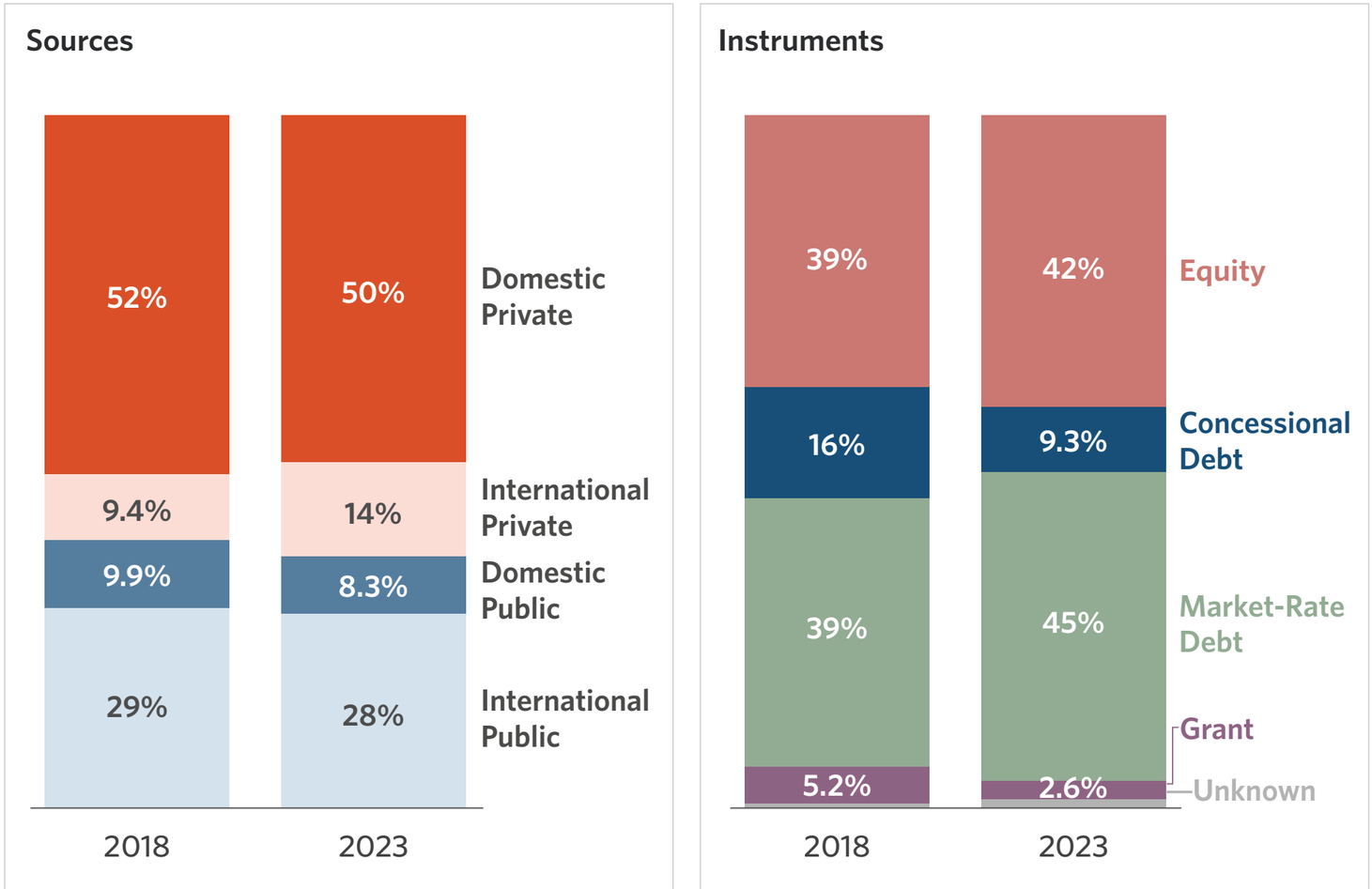
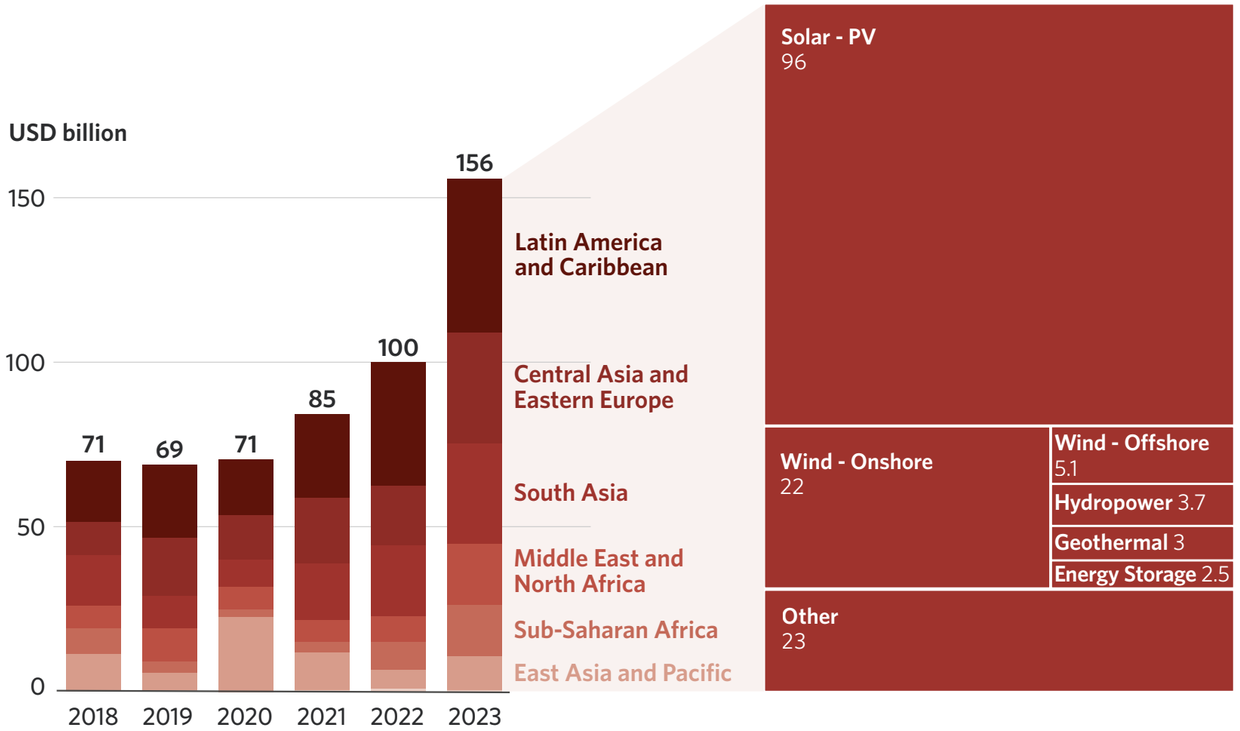


Figure 11: Mitigation finance to energy systems in Emerging Markets by region, and by solutions in 2023



Note: "Other" includes biofuel/biomass, solar CSP, waste-to-energy, off-grid, smart grid, renewable hydrogen, and marine energy. Transregional investment is excluded from this figure, accounting for USD 4 billion since 2018

ENERGY SYSTEMS

Mitigation finance for energy systems in Emerging Markets more than doubled from 2018 to reach USD 156 billion in 2023. Growth from the previous year was dominated by solar PV, enabled by high solar irradiance in EMDEs (Maka and Alabid 2022; Ukoba et al. 2024), declining technology costs for smaller systems (IRENA 2024), and the expansion of off-grid systems, especially in sub-Saharan Africa (ESMAP 2024a). In many of these "sun belt" countries, solar systems supported by affordable batteries are delivering immediate socioeconomic benefits by reducing energy costs and improving reliability (BBC 2025). However, while energy storage finance doubled between 2018 and 2023, it did not keep pace with generation growth. Onshore and offshore wind accounted for 14% and 3% of energy mitigation finance, respectively.

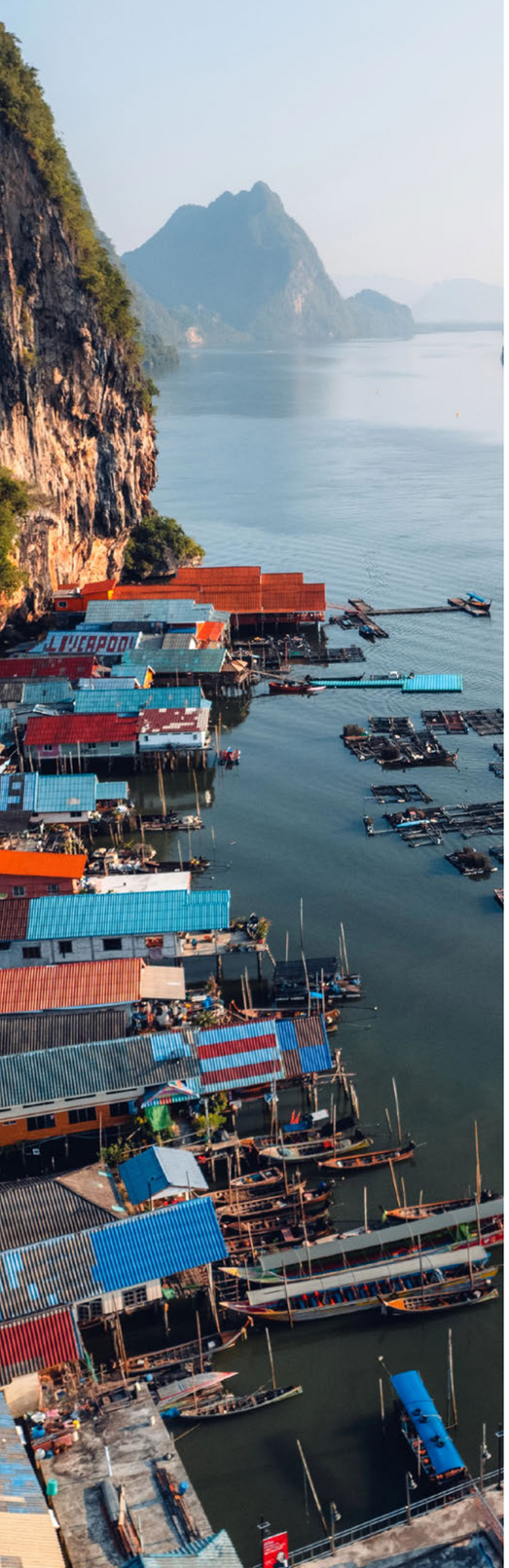
Box 2. Insights on private energy finance

Private mitigation finance in energy systems has expanded, but investment patterns remain uneven across economies. Analysis using data from CPI's Net Zero Finance Tracker (NZFT) (CPI 2025b) shows that direct clean energy project finance rose by 167% in advanced economies and China, compared to 89% in EMDEs (excluding China) between 2019 and 2024.

Financial institutions' role in clean energy investment in Emerging Markets (excluding China), has increased but still represents only 47% of total energy investment in these markets. For local financial institutions, this rises slightly to 49%, compared to 69% for institutions in developed economies. Fossil fuel financing of new projects persists despite IEA's recommendation for no new investment in order to meet a net zero pathway (IEA 2021).

Private energy project finance to EMDEs (excluding China) remains concentrated among advanced-economy institutions, underscoring dependence on external capital and the need to deepen domestic lending (CPI 2025b). Private actors mainly rely on balance-sheet financing, while public actors provide project-level market-rate debt with limited concessionality.

This calls for more conducive local environments—opening to foreign capital and enabling quicker permitting—and for transforming local financial institutions to implement robust transition plans. NZFT data shows that financial institutions in EMDEs perform worse than those in advanced economies in terms of adopting targets and actions needed for a low-carbon transition that impacts the real economy. This highlights the need for capacity building to strengthen local banks, delivered by regional and multilateral DFIs as part of broader development efforts.



In the energy sector, 69% of mitigation flows came from domestic sources in 2023, with private actors accounting for most of this share (87%). International finance had a more even public-private split. Commercial financial institutions and corporations dominate both domestic and international flows, while households and individuals account for 21% of domestic flows.

In Latin America and the Caribbean, Brazil and Chile saw 73% of regional mitigation flows for energy in 2023, a share that has risen steadily since 2018. Brazilian policies supported this growth by streamlining distributed generation, providing small-scale tariffs, and attracting international and domestic finance for large projects through federal incentives and auctions (ICAT 2024). Chile attracted investment to solar PV by establishing revenue frameworks for storage and hybrid plants (Garrigues 2024), positioning the country as a regional hub for hybrid renewables (Grenergy 2025). Argentina, Colombia, and Mexico collectively accounted for just 12% of sectoral flows in the region. Institutional weakness and policy instability in Argentina and Mexico's continued dependence on oil revenues have slowed their energy transition (Energy Transition 2024; Climate Transparency 2025).

In MENA, mitigation finance for energy systems has boomed. Saudi Arabia, Qatar, Egypt, and Morocco accounted for over 80% of the region's flows in 2023, mostly for utility-scale solar PV, supporting national goals to enhance fiscal resilience against oil price shocks.[10] Morocco leveraged sovereign-backed loans to achieve this, as outlined in Case study 2.

Case study 1: Morocco's onshore wind energy

Morocco has mobilized finance for onshore wind projects through initiatives such as the 850MW Integrated Wind Program by 2023 from domestic players (e.g., Navera Holding SA) and international investors (e.g., Enel Green Power SpA), using sovereign-backed concessional loans to improve bankability and attract private developers (Morocco World News 2021; Enerdata 2023). Key enablers were:

- **Regulatory certainty:** Morocco granted independent power producers unconditional grid access in 2009 (Ministry of Energy of Morocco 2010) and later allowed them to sell surplus electricity to the Office National De l'Electricite (ONEE) through 20-year power purchase agreements (Renewables Now 2016).
- **Sovereign guarantees and concessional finance:** Concessional loans to ONEE, backed by sovereign guarantees, reduced counterparty and credit risks for financiers, including the EIB and KfW Group, enabling low-cost lending that improved bankability. This created space for private developers to participate in public-private tenders under concession agreements, blending public and private capital on a large scale (EIB 2013; EU Neighbours 2025).

10 See Annex Table A.2 for more policy detail.

Poland, Turkey, and Uzbekistan accounted for over 70% of flows in Central Asia and Eastern Europe. In Poland, regulatory stability has supported large-scale offshore wind development, incentivizing investments at the lowest cost to consumers with long-term revenue support (Government of Poland 2020; Natural Power 2023; IEA 2024b) Uzbekistan has used public-private partnership (PPP) frameworks to mobilize private capital, with utility-scale solar PV investment in 2023 approaching the total investment recorded between 2019 and 2022. Over half of the flows originated from domestic private actors, while private international investment was led by China Energy Engineering Group Co. Ltd. and UAE-owned renewable energy company Masdar. This was facilitated by a multilateral knowledge-sharing program through the World Bank; such initiatives are critical in EMDEs, where strong project pipelines are needed to accelerate investment and reduce risk.[11]

South Asia's mitigation finance for energy systems reached USD 30 billion in 2023, with India and Pakistan accounting for over 96%. India attracted high investment in both small- and large-scale solar PV systems, driven by the National Solar Mission, competitive auctions, inter-state transmission charge waivers, renewable purchase obligations, and subsidy schemes (Government of India 2025; Ministry of New and Renewable Energy of India 2025). By contrast, 98% of Pakistan's flows were in small-scale solar PV in 2023. Uptake was facilitated by net-metering, concessional loans from the State Bank of Pakistan (State Bank of Pakistan 2025), and exemptions on import components. Market forces were reportedly influential (World Economic Forum 2024) as declining costs reduced payback periods and incentivized record uptake of rooftop solar systems in 2023 (NEPRA Pakistan 2023; IEEFA 2024).

Sub-Saharan Africa saw steady growth in energy mitigation finance from both domestic and international sources. South Africa, Kenya, and Nigeria accounted for over 80% of flows in 2023. South Africa and Nigeria saw rapid growth in small-scale solar PV and distributed systems. Kenya saw larger projects, such as the 750 MW Pertamina Suswa Geothermal Plant, financed through PPPs. South Africa attracted half of sectoral flows in the region, with solar PV investment increasing nearly ninefold between 2021 and 2023. Over 90% of domestic flows in 2023 originated from private actors, following the removal of licensing requirements for distributed generation and the introduction of tax incentives for businesses and households from March 2023 (Ministry of Finance of South Africa 2023), in line with South Africa's Just Energy Transition Program. Côte d'Ivoire, Zimbabwe, and Cameroon account for only 10% of flows. Côte d'Ivoire's power mix remains dominated by fossil plants, while Zimbabwe's electrification remains low (Africa Energy Portal 2024; UNCDF 2025). Cameroon's share of renewable electricity generation decreased in 2023 after exceeding 70% in 2022, as non-renewable sources were deployed to meet growing demand (IEA 2025c). Distributed/off-grid renewable energy is growing in these countries but is not well-reported.

In East Asia and the Pacific, the Philippines, Viet Nam, and Indonesia accounted for nearly 80% of flows in 2023. The Philippines saw growth in utility-scale solar, while Indonesia's diverse portfolio includes wind, geothermal, hydroelectric, and solar. Across the region, large domestic corporates and commercial financial institutions remain the primary source of climate investment, with corporations funding renewables largely from their own balance sheets (CPI 2025c). Mobilizing local capital is an essential component of effective and sustainable climate finance. As the global climate finance gap continues to widen, relying solely on international funding sources is no longer sufficient to meet the scale of investment required, with corporations funding renewables largely from their own balance sheets (CPI 2025c). Smaller financial institutions and subnational actors play a limited role due to short loan tenors and weak project finance capacity. Policies[12] are expanding the participation of smaller actors and reducing reliance on external finance (CCF 2025).

In Viet Nam, solar PV finance surged from USD 5.8 billion to USD 15 billion between 2018 and 2020, **making it one of the fastest-growing solar markets globally**. Investments slowed between 2021 and 2022 before a slight recovery, reflecting structural and policy constraints (Case study 2).

11 See Annex Table A.2 for more policy detail

12 Such as Indonesia's Sustainable Finance Roadmap, PhilGuarantee in the Philippines, and the region-wide ASEAN taxonomy

Case study 2: The effects of Viet Nam's solar FiTs

Viet Nam's rapid solar build-out was catalyzed by two rounds of feed-in tariff (FiT) programs with Viet Nam Electricity Corporation (EVN). The first, a 20-year FiT for grid-connected solar projects, triggered an investment surge in 2019. The second, technology-specific FiTs (e.g., for rooftop solar), ran until December 2020. Combined with streamlined permitting, quick connection approvals, and rising retail electricity tariffs, these FiTs created a favorable investment environment.

While FiTs catalyzed rapid investment, they also exposed vulnerabilities. Transmission congestion and curtailment reduced project returns, while the abrupt FiT expiry in 2020 weakened investor confidence. Delays in finalizing the updated power development plan (PDP8) (Government of Viet Nam 2023) added further uncertainty. In 2025, the PDP8 was amended, mandating that solar power development should include storage batteries and significantly expanding investments in the electricity grid and energy storage (IKI 2025).

Frameworks that enhance regulatory certainty can help attract long-term private capital, as seen in India's renewable auctions, Morocco's sovereign-backed PPAs, and Viet Nam's FiTs. Beyond offering attractive PPP tenders, international public actors can strengthen support through technical assistance (TA) to streamline processes, such as under Uzbekistan's Scaling Solar Program. Expanding investment into hybrid solar and storage, and storage-only solutions, alongside innovative models for deploying distributed systems in remote and underserved regions, can open new opportunities for private actors. However, barriers include grid constraints and fossil fuel subsidies that limit mitigation potential (see Annex Table A.3 for more details).

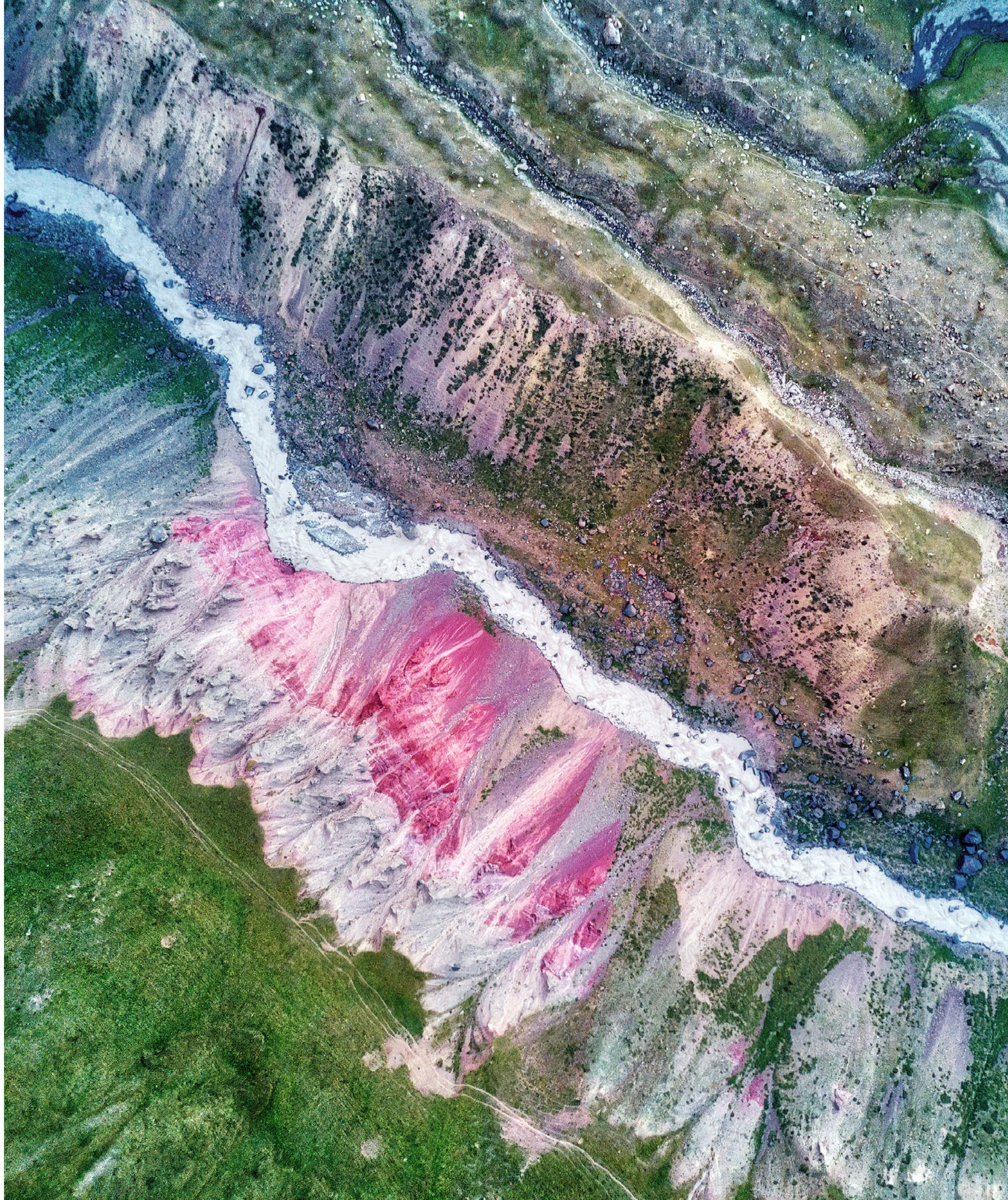
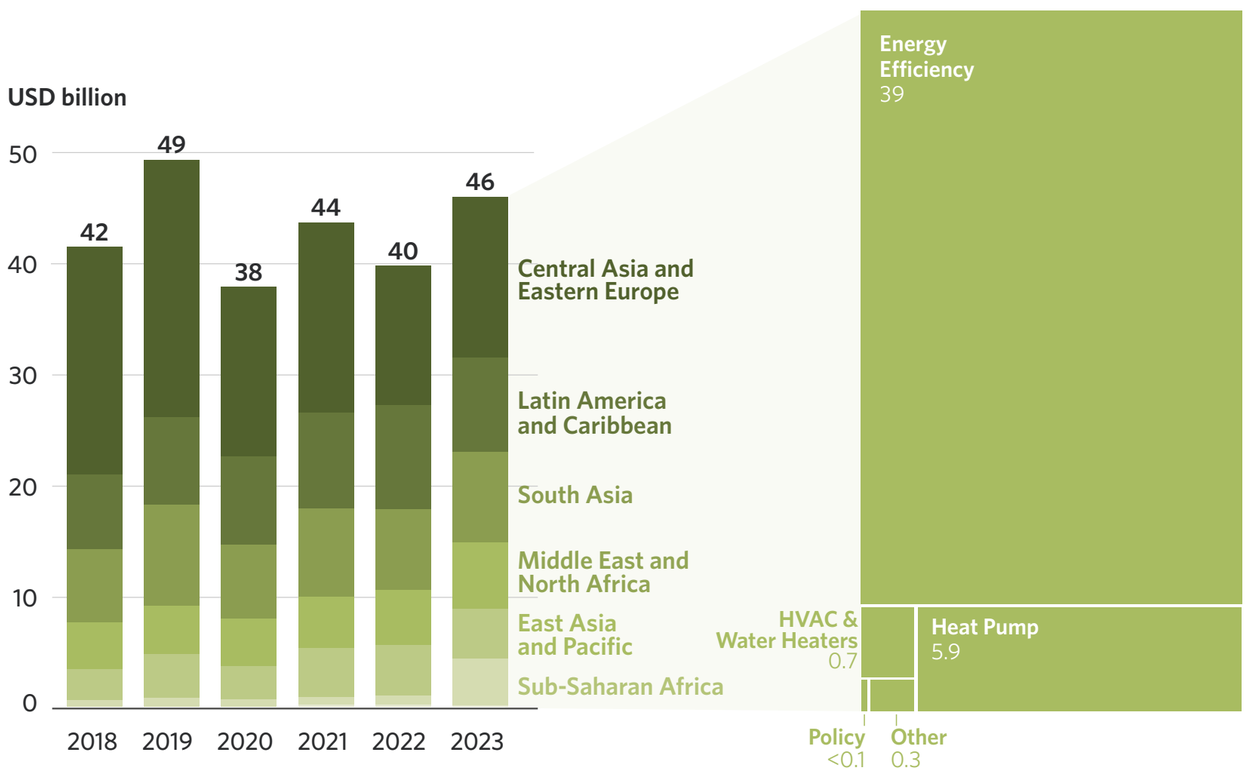


Figure 12: Buildings and infrastructure mitigation finance to Emerging Markets by region, and by solutions in 2023



Note: "Other" includes applicance and lighting, policy, and unspecified.

BUILDINGS AND INFRASTRUCTURE

The buildings and infrastructure (B&I) sector was the second-largest recipient of mitigation finance in Emerging Markets, accounting for 16% of flows in 2023. Most flows were directed toward energy efficiency, both through retrofitting and new construction, reflecting a strong investment case driven by affordability and long-term savings (Figure 12). Public subsidies remain important, but sustained growth requires private finance beyond one-off grants (IEA 2025b). Despite rapid growth in new construction, only half of EMDE residential and non-residential buildings were covered by mandatory energy-efficiency requirements in 2023, underscoring the need for enforceable standards with clear monitoring and verification (IEA 2024c).

Three countries in Central Asia and Eastern Europe—Poland, Georgia, and Turkey—accounted for two-thirds of B&I mitigation flows in 2023. In Poland, energy-efficiency measures in buildings tripled from 2022 to 2023. Alignment with EU regulations and national strategy created a strong enabling environment, mandating deep renovations and targeting energy-poor households (OECD 2025a). This policy environment catalyzed international finance from public and private actors. The EIB and EBRD provided public finance through facilities and technical support programs[13] (EIB 2019; EIB 2024). Poland's domestic finance came from private actors (93%), including commercial banks such as mBank and BNP Paribas Polska.

Case study 3: Financing options for building decarbonization in Central Asian cities

Cities in Central Asia need support to prioritize, prepare, and finance building decarbonization. Financing options exist, but remain largely unfamiliar and out of reach for most cities in the region. The Cities Climate Finance Leadership Alliance (CCFLA) Central Asia Local Hub works to close this gap by fostering multi-stakeholder collaboration to build project pipelines. In Uzbekistan, a partnership between GCoM, FELICITY II (GIZ), the City Climate Finance Gap Fund, and the World Bank is preparing the country's first pilot on deep refurbishment of public buildings, intended as a blueprint for large-scale programs.

To scale up, cities need TA and visibility to mobilize support, while financial institutions require strong political commitment, alignment with national governments, and finance-ready projects. For more on the CCFLA Local Hub, see CCFLA's Central Asia Hub report (CCFLA 2024).

13 See Annex Table A.2 for information on the facilities and programs

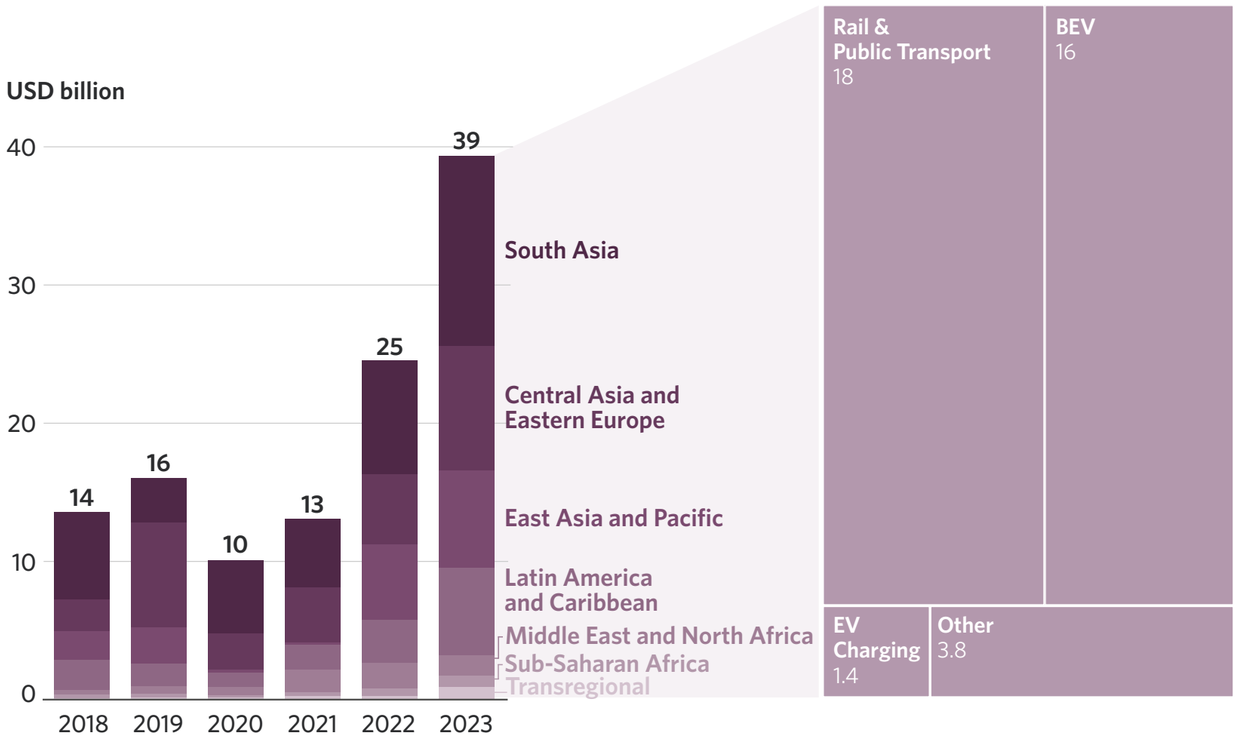
In South Asia, India accounted for 90% of B&I mitigation finance in 2023, following a 3.5-fold increase in investment since 2022. Energy efficiency attracted 82% of the country's B&I finance. Private domestic actors are central in mobilizing capital, primarily through project-level debt and equity, with major contributors including the State Bank of India, the National Housing Bank, and HDFC Ltd (CPI 2024a). Policy frameworks[14] in India have supported by setting minimum standards for energy-efficient residential design (Government of India 2018). Innovative financing instruments have expanded green housing markets. For example, in 2025, the International Finance Corporation (IFC) committed USD 150 million as an anchor investor in HDFC Capital's H-DREAM Fund, which has a target of USD 1 billion to expand access to affordable and mid-income housing aligned with the EDGE green building certification framework (IFC 2025). The fund has a blended-finance approach consistent with the Green Affordable Housing Finance concept to lower borrowing costs and incentivize certified green construction (Climate Finance Lab 2022).

In the MENA region, Kuwait, Morocco, Saudi Arabia, and the United Arab Emirates (UAE) accounted for over 95% of B&I flows in 2023. While Saudi Arabia saw a decrease between 2022 and 2023, and investment in Morocco remained relatively flat, flows to the UAE and Kuwait nearly tripled in 2023. Kuwait's rise occurred alongside new appliance efficiency standards and pilot projects integrating demand-side management, complementing the country's long-standing energy-efficiency codes and program (KSIR 2014; UNECE 2014; KAPSARC 2024). UAE flows focused on energy efficiency, led by domestic private actors. UAE efforts to strengthen its green building agenda include joining the Zero Carbon Buildings for All initiative in 2019, launching a commitment[15], and updating codes which makes certified energy-efficient buildings attractive to tenants and institutional investors, generating premium rents and valuations (Dupay R 2023). The UAE's 2023 Nationally Determined Contribution (NDC) target to cut building emissions to 56% below 2019 levels by 2030 underscores this policy direction.

Enforcing and expanding building energy codes can accelerate retrofits and energy-efficient construction when paired with targeted subsidies and concessional finance. Strengthening local government capacity and TA, such as through the CCFLA Central Asia regional hub (see Case study 3), can help cities develop finance-ready renovation pipelines. Green mortgages and retrofit loans can be scaled by using blended finance to lower borrowing costs and reward certified energy-efficiency improvements, thereby mobilizing further private investment. However, barriers persist, including limited verified performance data and limited access to long-term capital for renovations in emerging urban markets (see Annex A.3).

14 See Annex Table A.2 for more information on the frameworks
15 See Annex Table A.2 for more information on the commitment

Figure 13: Transport mitigation finance to Emerging Markets, by region, and by solutions in 2023



Note: "Other" includes aviation, waterway, policy, and unspecified.

TRANSPORT

The transport sector was the third-largest recipient of mitigation finance in Emerging Markets, attracting nearly USD 40 billion in 2023. Private road transport grew rapidly, driven by BEV sales across two-, three-, and four-wheelers, with BEV charging attracting smaller but growing investment. Rail and public transport grew more slowly, supported mainly by DFIs and domestic government actors funding urban transit and rail infrastructure. South Asia accounted for the largest share (see Figure 13) due to BEV uptake and public transport expansion, including rail. Sub-Saharan Africa and MENA collectively attracted only USD 2.3 billion, well below the USD 35–47 billion annual transport infrastructure investment needed in Africa (NEPAD 2025).

Among Emerging Markets, financing is split equally between domestic and international sources. Domestic finance is led by private actors (81%), mainly commercial financial institutions and households/individuals, reflecting vehicle loans and BEV purchases. Public domestic finance comes through government grants and subsidies that incentivize BEV uptake. International flows are dominated by public actors, particularly bilateral and multilateral DFIs, who channeled around 84% of international funds to rail, public transport infrastructure, and fleet decarbonization. Public finance relies on concessional and project-level market-rate loans, while private actors mainly use market-rate debt and balance-sheet equity, especially for BEVs.

South Asia's transport finance is most concentrated in India. Within India, nearly half of the flows went to BEVs, though only 2% targeted charging infrastructure. Growth has been strongest in the two- and three-wheeler BEV segments, supported by subsidies.[16]

The growth of transport finance in Central Asia and Eastern Europe reflects a broader trend of leveraging fiscal incentives to drive BEV adoption. Countries across Europe have introduced tax benefits and VAT exemptions, sending strong signals for both consumers and manufacturers. Turkey's transport sector accounted for nearly a third of the country's total climate finance in 2023. These rapidly growing flows were mostly for BEVs, driven entirely by domestic private actors and supported by parallel efforts to develop locally manufactured EVs (see Case study 4).

16 See Annex table A.2 for scheme information

Case study 4: Opportunities and challenges for BEV uptake in Turkey

Turkey's Special Consumption Tax (ÖTV) has applied a lower rate to BEVs since 2016, with further adjustments in 2018 and subsequent reforms maintaining relatively lower rates than those for combustion vehicles. These measures, alongside government support for domestic manufacturing, have encouraged supply-side initiatives, such as the development of Turkey's locally manufactured EV—TOGG—aimed at mainstreaming affordable electric mobility (Reuters 2019; Duvar 2024; IEA 2025d).

In East Asia and the Pacific, the Philippines, Thailand, Indonesia, and Viet Nam accounted for over 99% of transport mitigation finance in 2023. In the Philippines, transport accounted for 38% of total climate finance, primarily for rail and public transport (see Case study 5). Thailand's flows were almost entirely for BEVs, supported by reduced duties and excise taxes under its BEV 3.0 policy (EY 2024). In Indonesia, finance spanned BEV deployment and large-scale public transport, with policy support for domestic EV production, including a 40% VAT reduction for EVs with 40% local content (Reuters 2023; IISD 2025). These measures, along with nickel reserves, attracted upstream and midstream supply chain investment (JLL 2024). By contrast, Viet Nam's deployment-focused policies include excise tax cuts, registration fee waivers, and incentives for component producers (Government of Viet Nam 2020a). Additionally, broader smart sustainable city frameworks have signaled long-term intent (ICCT 2022).

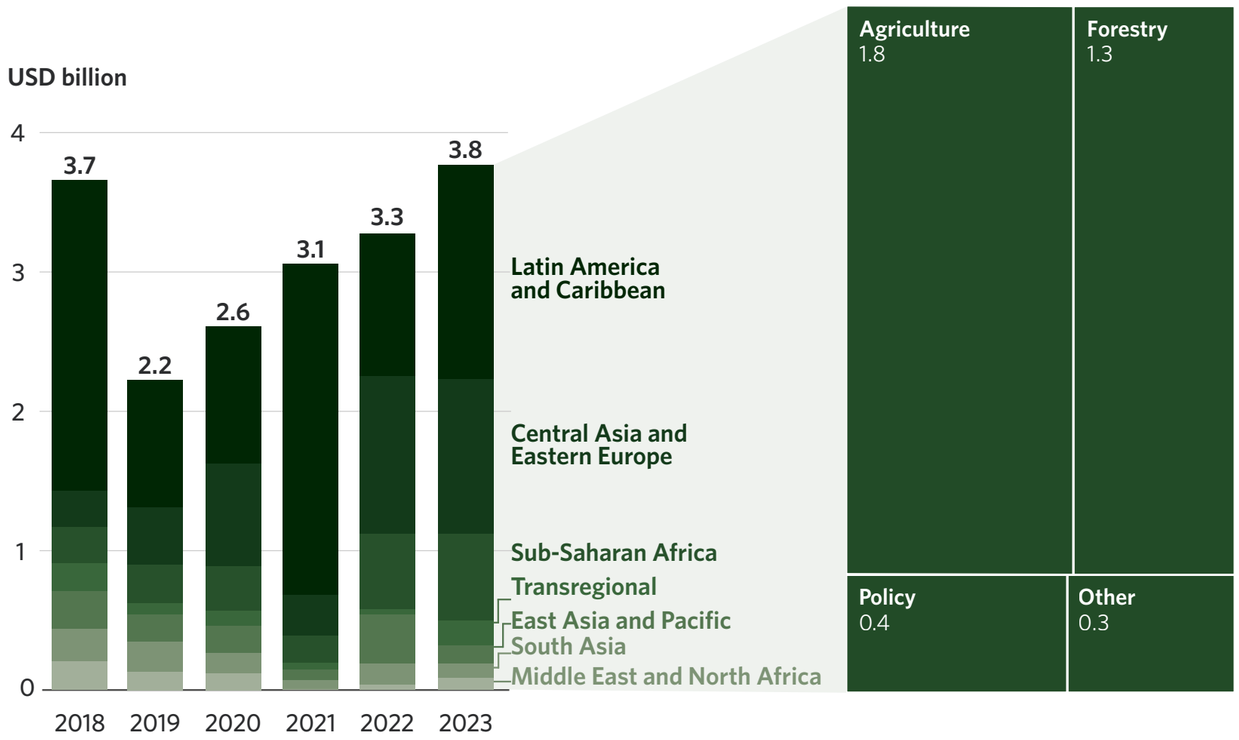
Case study 5: Attracting international public finance through sectoral roadmaps in the Philippines

Strategic planning frameworks have provided a foundation for large-scale rail and public transport investments. The Philippines Development Plan (PDP) 2017–2022 (Government of the Philippines 2021) established long-term transport priorities, including mass urban rail, decongestion of key corridors, and sustainable mobility in Metro Manila. These priorities were reflected in the country's "Build, Build, Build" (BBB) program (Department of Budget and Management of the Philippines 2018), which identified major rail projects, such as the Metro Manila Subway, as Infrastructure Flagship Projects (Department of Transportation of the Philippines 2024).

This facilitated stronger institutional coordination, political support, and access to ODA. Under this framework, the Japan International Cooperation Agency (JICA) and the Philippines government signed a USD 935 million concessional loan in 2018 to fund the subway's first tranche, followed by a USD 2.2 billion second tranche in 2022 (Department of Finance of the Philippines 2018).

Fiscal incentives and industrial frameworks to foster upstream vertical integration of domestic EV ecosystems, such as India's FAME subsidies, Turkey's EV tax exemptions, and Indonesia's local-content rules, can anchor long-term investment. Aligning transport electrification with energy decarbonization can enhance systemic efficiency and emission reductions. Expanding concessional and blended finance for charging corridors and urban transit can address infrastructure gaps, while investment in local supply chains and new financing models can reduce upfront costs. However, barriers include affordability gaps and slow infrastructure deployment (see Annex A.3 for details).

Figure 14: AFOLU mitigation finance to Emerging Markets by region, and by solutions in 2023



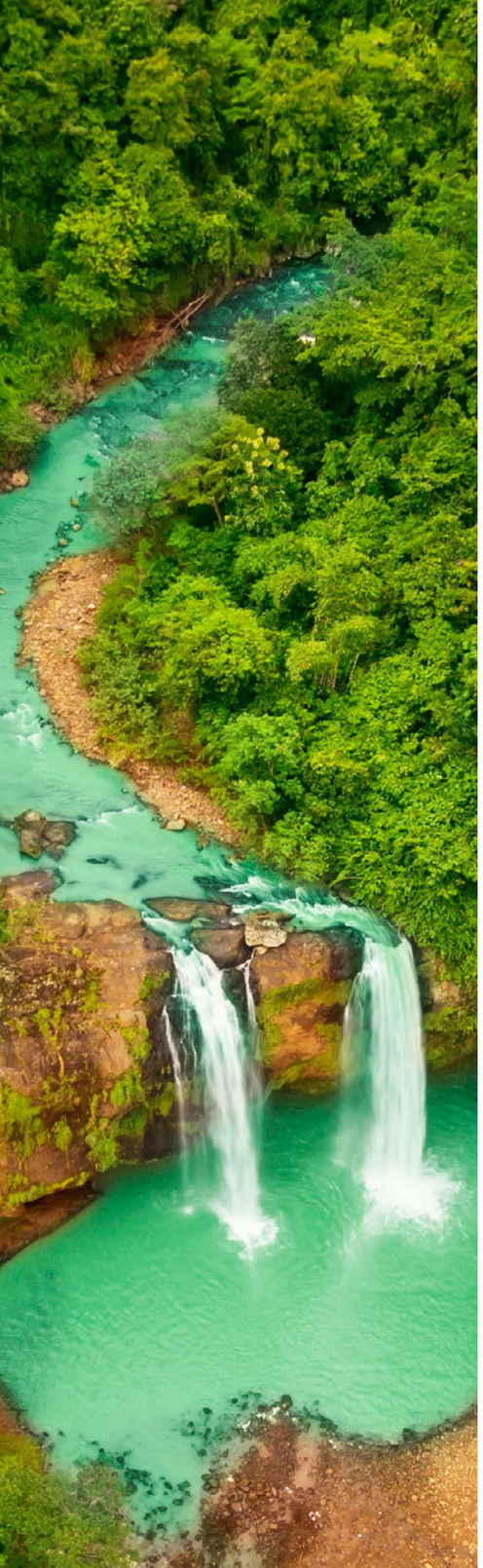
Note: "Other" includes fisheries and unspecified.

AFOLU

AFOLU receives just over 1% of mitigation flows in Emerging Markets in 2023. Agriculture received the largest share of AFOLU flows, accounting for 48% of the total to this subgrouping. Forestry is the second-largest sub-sector, reaching USD 1.3 billion in 2023 after nearly tripling from the previous year. Latin America and the Carribean received the largest share of finance for AFOLU, and also for the forestry subsector within it (Figure 14).

Results-based payments (RBPs) are a key AFOLU mitigation mechanism, where donors disburse funds only after verified emission reductions. The Reducing Emissions from Deforestation and Forest Degradation (REDD+) initiative has channeled over USD 4 billion in RBPs since 2008 through funds such as the Amazon Fund, the Central African Forest Initiative, and the Forest Carbon Partnership Facility Carbon Fund (FCPF–CF). While most REDD+ finance is paid ex post, some mechanisms, such as emission-reduction purchase agreements, allow ex-ante disbursements, thereby improving liquidity and predictability. Norway, Germany, and the UK are major REDD+ contributors.

However, studies find limited socioeconomic and biodiversity outcomes due to strict conditionality, weak benefit-sharing, and tenure constraints (Morita and Matsumoto 2023; Dugasseh and Andersen 2024; Wunder et al. 2024). REDD+ funds are the largest and most consistently reported AFOLU mitigation flows, but conservation and protected area initiatives with mitigation potential are not captured in the data, highlighting a need for improved transparency.



In Latin America and the Caribbean, Brazil accounts for 64% of AFOLU mitigation finance, followed by Uruguay, Peru, and Ecuador (together receiving around 25%). Chile has seen a sharp decline since 2019, the last year it received an RBP, though it is working to implement the next tranche through the World Bank's Forest Carbon Partnership Facility (FCPF) (GCF 2019; World Bank Group 2025b)2015 and 2016. During these years, Chile has reduced a total volume of 18.4 million tonnes of carbon dioxide equivalent ($MtCO_2eq$. Forestry finance in the region is driven by national and bilateral DFIs (59%), who primarily fund via concessional loans (74%). The Amazon Fund, managed by BNDES, is the largest national REDD+ mechanism, channeling international funds, including RBPs, into forest protection and sustainable use projects. Between 2009 and 2018, Norway's International Climate and Forest Initiative (NICFI) was a major donor, but disbursements slowed after 2019 as policy rollbacks reduced donor confidence. Following renewed government commitments and the restoration of environmental agencies in 2023, international funding rebounded, underscoring the effect of governance on forestry finance.

In Central Asia and Eastern Europe, Turkey had the largest share of AFOLU mitigation finance in 2023, following the launch of a USD 400 million project to strengthen wildfire resilience (World Bank Group 2024a). There are also smaller private flows, such as the Ulker sustainability loan. This region's flows fluctuate from year to year due to their overall small size of flows; Poland, Uzbekistan, and Ukraine previously dominated due to a few large projects.

In sub-Saharan Africa, South Africa, Kenya, and Ghana accounted for over 80% of flows in 2023, with forestry finance gaining momentum. These countries have introduced green finance taxonomies to channel growing investment into clearly defined AFOLU activities and have supported the launch of the African Forestry Impact Platform (AFIP). Kenya and Ghana have also engaged with the Lowering Emissions by Accelerating Forest Finance (LEAF) Coalition; in 2023, Ghana received over USD 4 billion in its first emissions-reduction payment from the FCPF Carbon Fund under the LEAF Coalition (UN-REDD 2024). Ghana was also the first African nation to submit to the ART-TREES framework,[17] with technical support from UN-REDD.

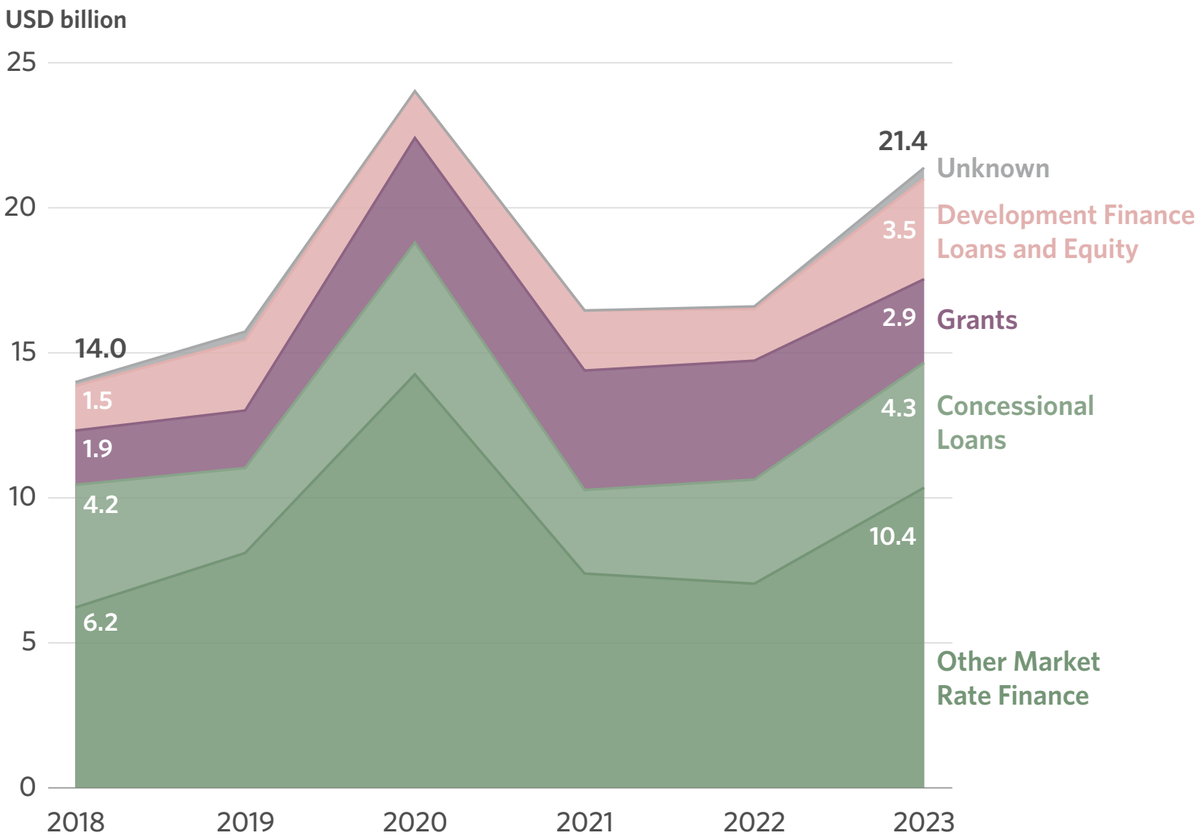
While the East Asia and Pacific region had relatively low overall AFOLU mitigation finance, Indonesia stood out as a major recipient. The country received large REDD+ RBPs in 2020 and 2023, following a Memorandum of Understanding with Norway to support Indonesia's efforts to reduce emissions from forestry. Indonesia's commitment is further strengthened by the launch of the Operational Plan of Indonesia's FOLU Net Sink 2030 directed to reach an emission level of minus 140 Mt CO2e by 2030 (Ministry of Environment and Forestry of Indonesia 2023).

More initiatives are emerging to diversify AFOLU mitigation finance beyond REDD+. Initiatives such as the AFIP, Turkey's Climate Resilient Forests project, and Ghana's tree crop diversification project are only a few of the examples**.** As carbon markets and new initiatives such as the Tropical Forest Finance Facility (TFFF) expand, their flows must also be systematically captured and greater project-level transparency is needed to improve tagging and track results. While mechanisms like Jurisdictional REDD+ and the TFFF mainly focus on preventing deforestation and conserving existing forests, the Reversing Deforestation Mechanism (RDM), explored by CPI /PUC-Rio, seeks to close the funding gap for large-scale restoration by introducing a results-based model that accounts for avoided emissions and those captured through restoration (CPI 2025d).

A comprehensive carbon accounting framework that directly links financial rewards to measured climate outcomes can strengthen transparency and integrity in forest finance (CPI 2025d). Private participation can expand through initiatives that de-risk and mobilize commercial finance. For instance, the Finnish Fund for Industrial Cooperation's forestry fund leverages state capital to mobilize private investments in sustainable businesses in Emerging Markets, including forestry ventures in Africa that attract institutional and corporate investors (Finnfund 2023). Similarly, Unipol Gruppo's eucalyptus farming engages local landowners and institutional financiers in Uruguay, illustrating how commercial forestry models can broaden private sector participation (UPM 2024). Agrivoltaics remain underexplored in EMDEs despite agriculture's economic importance, with scaling hindered by small project sizes, misaligned incentives, and weak governance and land tenure systems (Annex A.3).

17 Architecture for REDD+ Transaction (ART) TREES—The REDD+ Environmental Excellence Standard—is ART's standard for the quantification, monitoring, reporting and verification of emission reductions and removals.

Figure 15: Mitigation finance to LDCs, by instrument type



Note: Development finance includes all equity and loans from DFIs and Multilateral Climate/Development Funds that were not tagged under OECD concessionality criteria. In practice, these instruments may be concessional.

3.1.2 LDCs

Mitigation finance to LDCs grew from USD 14 billion in 2018 to USD 21 billion in 2023. Most of these flows were for energy systems (40%), B&I (26%), industry (7%), and AFOLU (6%). LDCs' energy transition challenges include low electrification and access, as well as unreliable power supply. Financing the transition is challenging due to limited fiscal space, currency risks, and a perceived lack of project bankability (CPI 2025e)but closing their climate investment gap will require deliberate and coordinated action. This involves leveraging capital that is catalytic, concessional, and context-specific—making sure that the most vulnerable are not left behind. Among the 800 million people lacking electricity access globally, more than 476 million live in LDCs, and over 80% of those without access are in fragile, conflict-prone states (IGC 2021; ESMAP 2024b). Investing in the energy transition is a key tool to break the fragility cycle and can provide significant development opportunities.

International sources provided 66% of LDC mitigation finance, mostly from public actors (81%) such as DFIs. Domestic finance accounted for 34%, largely from private actors (92%), with household/individual expenditure exceeding half of these private sector flows in 2023.

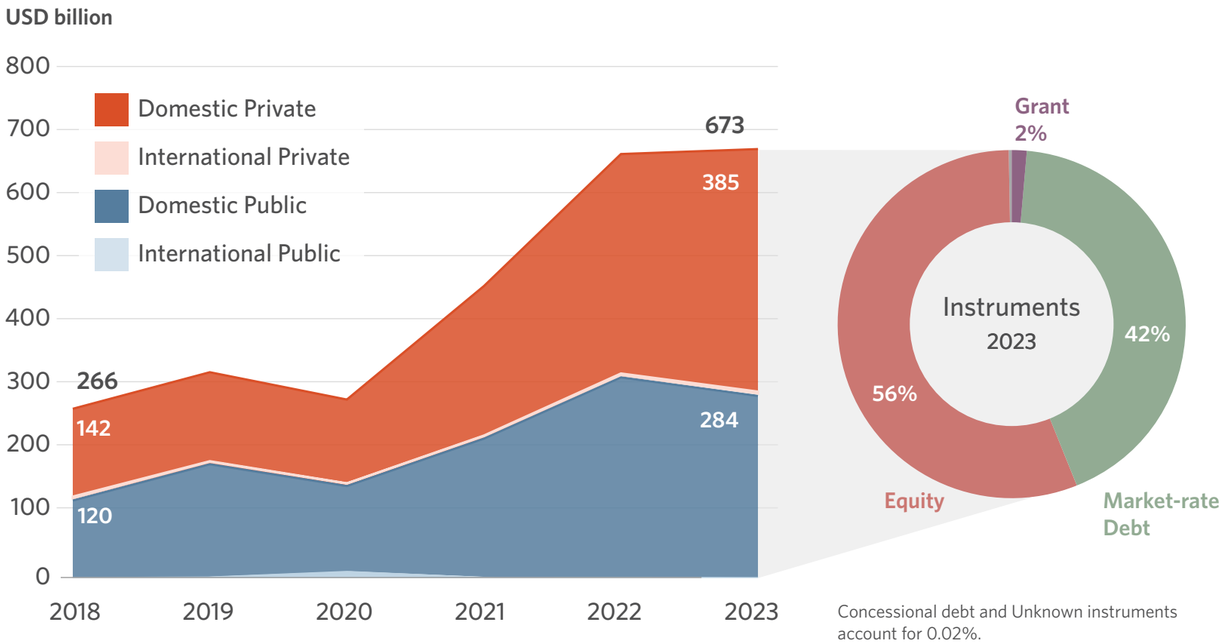
A range of instruments was used for mitigation finance in LDCs. In 2023, market-rate finance (debt and equity) accounted for 48% of flows, while concessional loans, grants, and development finance accounted for 50%—a higher share than in Emerging Markets. As global pools of concessional finance continue to shrink, LDCs could strategically leverage these scarce resources to align development priorities with decarbonization goals. Concessional funds can be used to expand access to electricity and clean water, and to support urban, industrial, and manufacturing growth with decarbonization measures embedded from the outset rather than requiring retrofitting later. Strengthening the pipeline of bankable projects will be essential to attract complementary private investment and sustain transition finance over the long term.

LDC mitigation flows are uneven across sub-Saharan Africa. Angola had the highest share (20%), followed by Tanzania (11%), both primarily for energy. The Democratic Republic of Congo had the third-highest flows (9%), primarily for the AFOLU and water sectors. Angola's Caculo Cabaça Hydroelectric Power Plant illustrates how bilateral partnerships and export credit mechanisms can mobilize international finance. In 2016, Chinese investors financed about 85% of the plant's civil works under an "EPC+Finance" model (Africa Energy Portal 2021; AidData 2025). In 2023, Commerzbank and UniCredit led a second tranche backed by German export credit agency, AKA Bank.

In South Asia, LDC mitigation finance is dominated by Bangladesh (94%). Between 2018 and 2023, Bangladesh accounted for an average of 67% of transport flows among South Asian LDCs, mainly for rail and public transport. A focus has been Dhaka's mass rapid transit (MRT) system, financed largely through public international sources. There are early indications that this MRT has eased congestion and raised vehicle speeds (Yamada and Jian 2025). Instead of using survey-based travel time data, we measure the speed of vehicles using super-frequent real-time travel data derived from Google Maps. The results from the quasi-experimental analyses show a substantially large impact of increasing vehicle speed along the treatment corridor that hosts the MRT Line 6 viaduct. Vehicle speeds responded immediately to the gradual expansions of the MRT's operational hours and stations. However, our analysis also suggests that this additional traffic capacity may be gradually saturated by the induced travel demand along the corridor served by the MRT, providing an empirical case supporting the fundamental law of road congestion.

AFOLU accounted for 6% of LDCs' mitigation finance in 2023, a higher share than the 1% across All EMDEs, reflecting a growing focus on land use and forest-related solutions. For example, Ethiopia transitioned from REDD+ phase I to phase II, focusing on building investment portfolios to achieve verified emissions reductions. The Central African Forest Initiative supports phase II reforms in African countries to address drivers of deforestation and strengthen national investment frameworks.

Figure 16: Sources of mitigation finance in China, and instruments in 2023



Concessional debt and Unknown instruments account for 0.02%.

3.1.3 CHINA

China's mitigation finance rose by 153% from 2018 to 2023, accounting for 40% of EMDE climate investment globally. Mitigation flows had a 20% CAGR over the period, reaching 98% of China's climate finance in 2023.

In 2023, China accounted for 68% of EMDE energy systems' climate finance. Solar PV and wind comprised 90% of these flows. The IEA notes that China commissioned as much solar PV in 2023 as the entire world did in 2022, even with a phase-out of national subsidies (IEA 2024b). Agrivoltaics (integrating solar panels into farmland) accounted for around 14% of China's solar PV flows, supported by the 14th Five-Year National Agricultural Green Development Plan (FAO 2021; CLIC 2025). Energy storage and hydropower each accounted for about 4% of the country's energy flows, up significantly from 2018.

Transport finance grew more than threefold between 2018 and 2023. This was led by BEV adoption supported by expanding model availability, falling costs, and government subsidies. Finance for B&I remained stable at around USD 65 billion annually over the period.

China's climate finance was 99% domestic, with equity playing a growing role. Equity finance increased in share from 37% to 52% from 2018 to 2023, reflecting market maturity. Private finance was higher than public from 2021-2023, rising from USD 144 billion to USD 387 billion over 2018 to 2023 (see Figure 16).

China's rapid scale-up stems from phased policies, domestic capacity building, and early subsidies before phasing out support as costs fall (Bai et al. 2024). The shift to a market-driven renewables model is now a policy priority (Government of China 2025). Continued policy action is needed as growth brings new challenges: approved coal construction reached a 10-year high in 2024 (CREA and GEM 2025). Targeted measures can curb coal use while expanding renewable capacity and grid stability.

3.2 ADAPTATION

For many EMDEs, climate impacts are already a reality, with even greater costs of inaction looming. In low- and middle-income countries, climate-related health costs could reach USD 20.8 trillion, or 1.3% of GDP, by 2050, with sub-Saharan Africa and South Asia projected to face the greatest burdens (World Bank Group 2024b). Broader social impacts of worsening inequality, forced migration, and increased conflict remain difficult to quantify, suggesting that current estimates of financing needs significantly understate the true cost of inaction (Johnson et al. 2021; CPI 2024c).

Adaptation investment must scale substantially to meet the levels required to adapt to climate change.

Adaptation flows reached USD 48 billion in 2023 for All EMDEs, well below estimated needs.[18] However, significant gaps persist in the tracked finance data, particularly regarding domestic public expenditures and household spending on adaptation solutions. CPI analysis is based on what is currently trackable, and we continue to make methodological improvements (CPI 2025a).

This section first tracks adaptation finance in the two largest distinct sectors: water and wastewater, and agriculture, forestry, other land use, and fisheries (AFOLU). These distinct sectors are only surpassed in size by the umbrella category of other and cross-sectoral financing, which captured 45% of adaptation flows to All EMDEs in 2023 (USD 21 billion). This sector is large because adaptation finance often cuts across traditional sector boundaries. For example, resilient infrastructure can link to the transport sector through resilient roads, water and wastewater through flood-resistant waterways, and buildings through climate-resilient building codes and standards. Such financing may be captured as other and cross-sectoral depending on the scope of the project.

It is critical to also explore adaptation flows to certain cross-cutting solutions, which appear both within distinct sectors such as water and wastewater or AFOLU, and in the other and cross-sectoral category. Two are covered in detail: disaster risk management, and policy and national budget support and capacity building.

Table 1: Rationale for adaptation sectors of focus

	Share of adaptation flows to All EMDEs[19]	Importance of the sector for adaptation
Sector		
Water and wastewater	28%	~3.6 billion people face water shortages each year due to a combination of climatic and non-climatic drivers, with this figure expected to exceed 5 billion by 2050 (IPCC 2023; WMO 2024).
Agriculture, forestry, other land use, and fisheries (AFOLU)	14%	Almost half of the world's population lives in households linked to agriculture-related systems, directly employing over 1 billion people (FAO 2023). Productivity in AFOLU depends on the weather, making the sector particularly vulnerable to climate impacts.
Cross-cutting solutions		
Disaster risk management (DRM)	14%	It is estimated that investing USD 1 in disaster preparedness can save USD 13 in economic costs, damages and clean-ups (US Chamber of Commerce 2024), with underinvestment today raising this cost to USD 33 (US Chamber of Commerce 2025).
Policy and national budget support and capacity building	21%	Targeted capacity-building and enabling-environment support can help coordinate and expand both domestic and international adaptation finance.

These sectors and solutions are explored within each EMDE subgroup, highlighting cases of adaptation finance scale-ups, detailing domestic policies, and presenting case studies. The distinction between Emerging Markets, LDCs and SIDS is made due to variation in their vulnerability to climate change impacts and adaptation flows across groupings (see Annex A.1). In addition, Annex Table A.5 outlines how the policies covered aim to address adaptation finance barriers.

18 An estimated annual average of USD 222 billion is required through to 2030 to finance adaptation in EMDEs excluding China. Estimates for All EMDEs are not currently available.

19 Due to the cross-cutting nature of solutions, shares between sectors and solutions are not mutually exclusive.

Box 3: The nexus between adaptation and mitigation finance

Adaptation and mitigation actions are intrinsically linked, as is the finance to support them. Put simply, the progress made in mitigation directly affects how much adaptation action is needed. On the other hand, adaptation solutions ensure that the assets, services, and workforces needed to drive the low-carbon transition are well-adapted to the climate risks they face. For example, hazards such as extreme heat, flooding, and storms pose significant threats to new electrified systems, and climate-related disruptions to supply chains can distort trade in the materials and components needed to manufacture low-carbon products.

Furthermore, elements of mitigation finance and adaptation finance can be present in the same investment, referred to as 'dual benefit' financing. This financing can take various forms; some projects, such as for climate-smart agriculture, have mitigation and adaptation intertwined in their core objectives. Others are wider programs with easily compartmentalized mitigation and adaptation components, for example, an urban development scheme that includes funding for both expansion of rooftop solar and measures to improve resilience to extreme heat. In addition, some mitigation projects include adaptation and resilience efforts to prevent climate risks from disrupting the functioning of the funded mitigation activities.

Dual benefit financing in All EMDEs reached USD 39 billion in 2023. This went mainly to other and cross-sectoral projects (USD 13 billion, or 33%), water and wastewater (USD 11 billion, or 29%), and AFOLU (USD 6 billion, or 16%). While dual benefit flows are still relatively low for transport and energy (16% combined), these sectors have a clear need to address both mitigation and adaptation and ensure that essential low-carbon infrastructure is resilient to climate impacts.

Developing climate-resilient infrastructure (CRI) is key to limiting impacts and damages. Yet, tracking is constrained by inconsistent and non-standardized reporting and by a lack of transparency in data. Analysis of tracked CRI finance, barriers to tracking, and details on policy examples are shown in Annex Box A.1.

3.2.1 EMERGING MARKETS

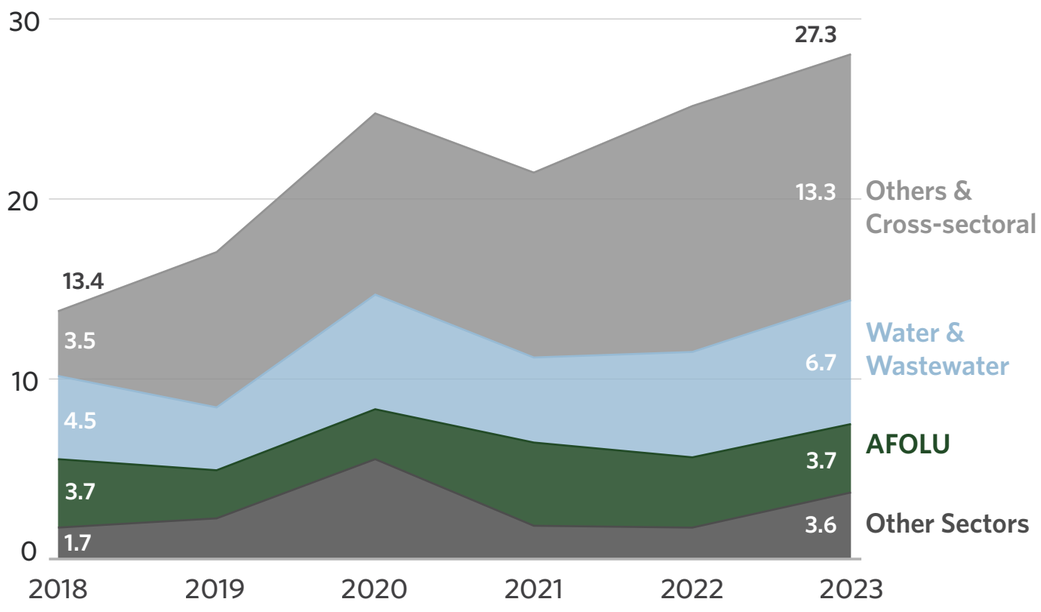
Adaptation finance to Emerging Markets (EMDEs excluding China and LDCs) more than doubled from 2018 to 2023, reaching USD 27 billion.

Most of these flows were across three categories: other and cross-sectoral, water and wastewater, and AFOLU.

Adaptation finance to Emerging Markets has historically come from public sources. Privately funded adaptation investments have increased in recent years, from less than 2% in 2018 to 7.4% in 2023. This shift was driven by large increases in the UAE, Brazil, and Indonesia, which together accounted for 82% of private Emerging Market adaptation finance in 2023.

The share of financing from 'other market-rate' finance, which excludes low-cost project debt, grants, and development finance loans and equity, has risen from 3% (USD 407 million) in 2018 to 15% (USD 4.0 billion) in 2023. Emerging Markets in Latin America and the Caribbean received the most adaptation finance of all regions from 2018 to 2023. East Asia and the Pacific recorded the highest growth, and South Asia was the only region to decline (by 36%).

Figure 17: Adaptation finance to Emerging Markets by sector



Note: "Other sectors" include Transport, Buildings & Infrastructure, Energy Systems, ICT, Industry and Waste. AFOLU: Agriculture, Forestry, Other land uses and Fisheries.

Figure 18: Adaptation finance to Emerging Markets by region

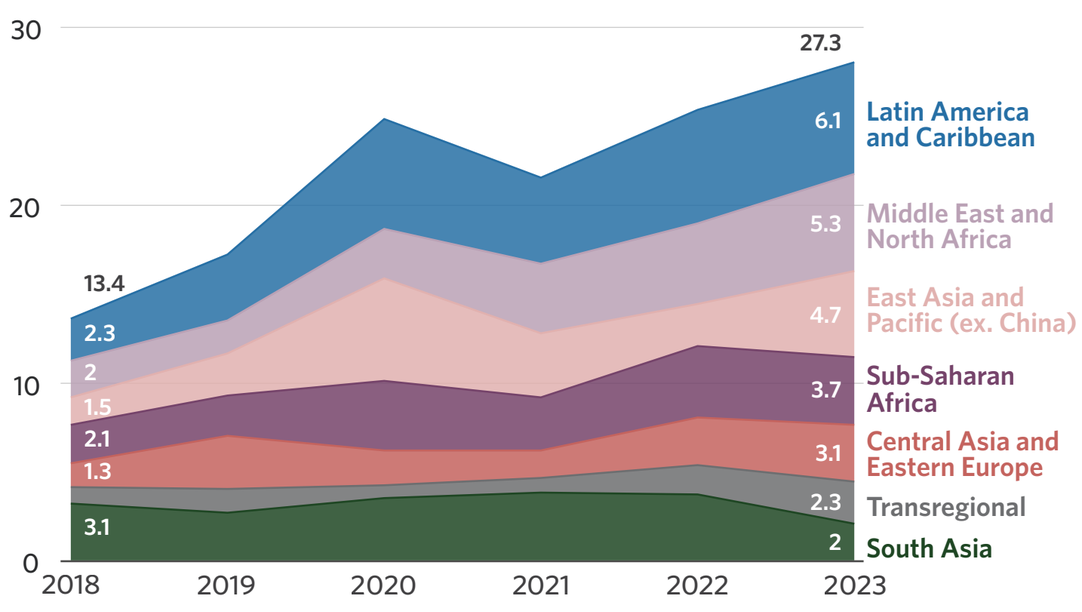
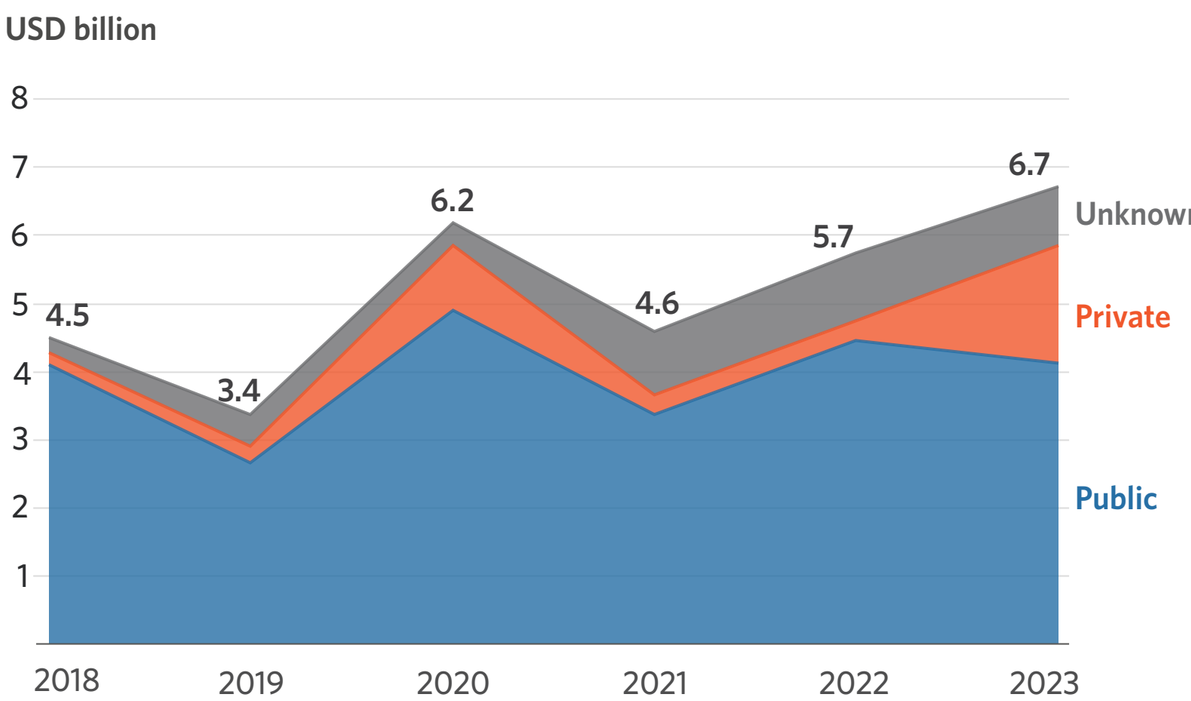


Figure 19: Adaptation finance for water and wastewater to Emerging Markets by source



WATER AND WASTEWATER

Emerging Markets' adaptation finance for water and wastewater fluctuated between 2018 and 2021, but grew steadily over the subsequent two years. The sector has historically been dependent on public finance, accounting for 76% of investment since 2018, with 91% of this flowing internationally. Water investments are often channeled via municipal utilities that are financed by governments and DFIs. Approximately 58% of all adaptation flows since 2018 came from DFIs, with 11% from governments.

The sector saw a sixfold increase in private finance in 2023. This was driven by higher-income Emerging Markets, which have greater financial capacity to de-risk water investments and attract capital. The UAE, Brazil, and Indonesia accounted for 94% of private flows to water and wastewater in Emerging Markets in 2023.

MENA had the fastest-growing investments in adaptation-related water and wastewater projects among Emerging Markets. Flows rose from USD 1.0 billion in 2018 to USD 3.4 billion in 2023. The region is highly susceptible to water stress. For example, the UAE, the regional leader for water and wastewater investment in 2023, is hyper-arid with intense heat and water scarcity, compounded by faster-than-average temperature rises (Government of UAE 2022). Investments reached USD 1.1 billion in Latin America and the Caribbean, USD 739 million in Central Asia and Eastern Europe, and USD 562 million in East Asia and the Pacific in 2023.

Case study 6: Pakistan's adaptation finance mobilization using national plans

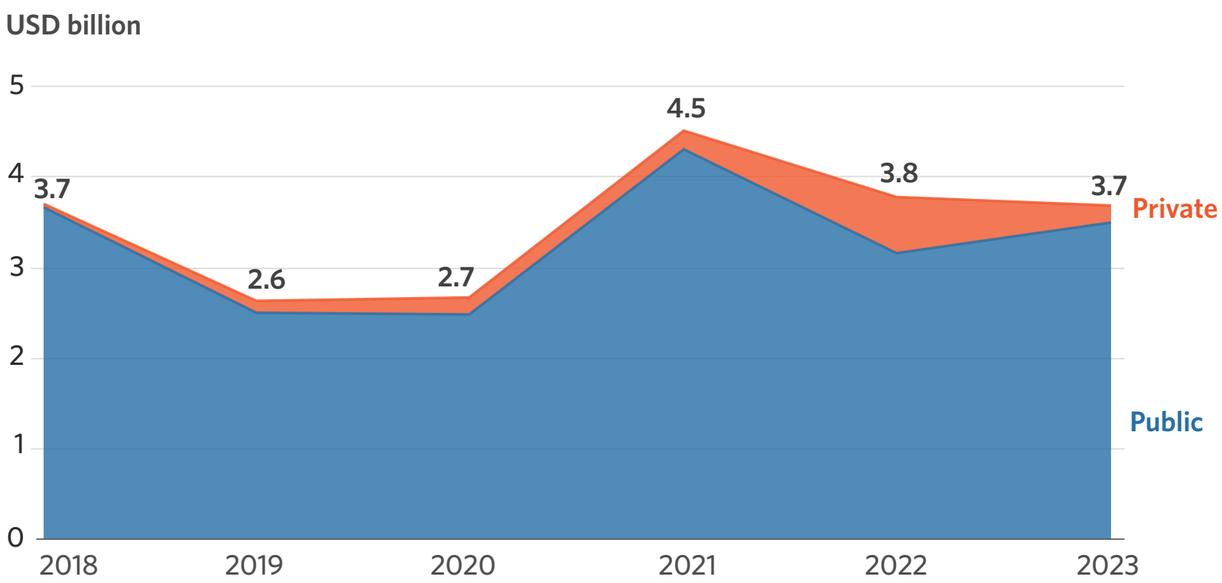
Pakistan faces severe water and wastewater challenges, as reflected in its NDC and National Adaptation Plan. Economic growth and global warming could increase the country's water demand by up to 60% (World Bank Group 2022a). Water shortages and increased demand have created pressure to reallocate scarce water resources from agriculture to other uses, including water, sanitation, and hygiene, which could reduce Pakistan's GDP by 4.6% by 2046 (World Bank Group 2022a; United Nations 2025). The water-agriculture nexus is key to Pakistan's social, economic, and adaptive trajectory, and a focus of the country's NDC, NAP, and other policies (Government of Pakistan 2021; Government of Pakistan 2023).[20]

Pakistan's policies, plans, and strategies have directly mobilized water-related finance from multilateral climate funds and DFIs. The Recharge Pakistan project, outlined in its NDC, aims to reduce flood risk and enhance water recharge for 10 million people. Following initial national finance, the GCF committed USD 66 million (GCF 2025) to the project, with an additional USD 12 million in co-financing from USAID, The Coca-Cola Foundation and WWF-Pakistan (WWF 2023). In addition, the Karachi Water and Sewerage Projects respond to priorities outlined in key policies, aimed at increasing water availability and improving Karachi's water and sewerage services. Phase II has funding from the World Bank (USD 240 million), AIIB (USD 240 million), and Sindh (USD 120 million) (AIIB 2025).

Despite these successes, Pakistan requires support in transforming broad climate objectives into deliverable projects (United Nations 2025). The German Agency for International Cooperation is supporting the country's NAP implementation through project development support (GIZ 2023; GIZ 2024). The National Climate Finance Strategy (2024) provides a roadmap to systematically access and secure climate finance, including from the private sector, by increasing transparency and accountability (Government of Pakistan 2024; ISSI 2024).

20 See Annex Table A.4 for information on additional policies.

Figure 20: Adaptation finance for AFOLU to Emerging Markets by source

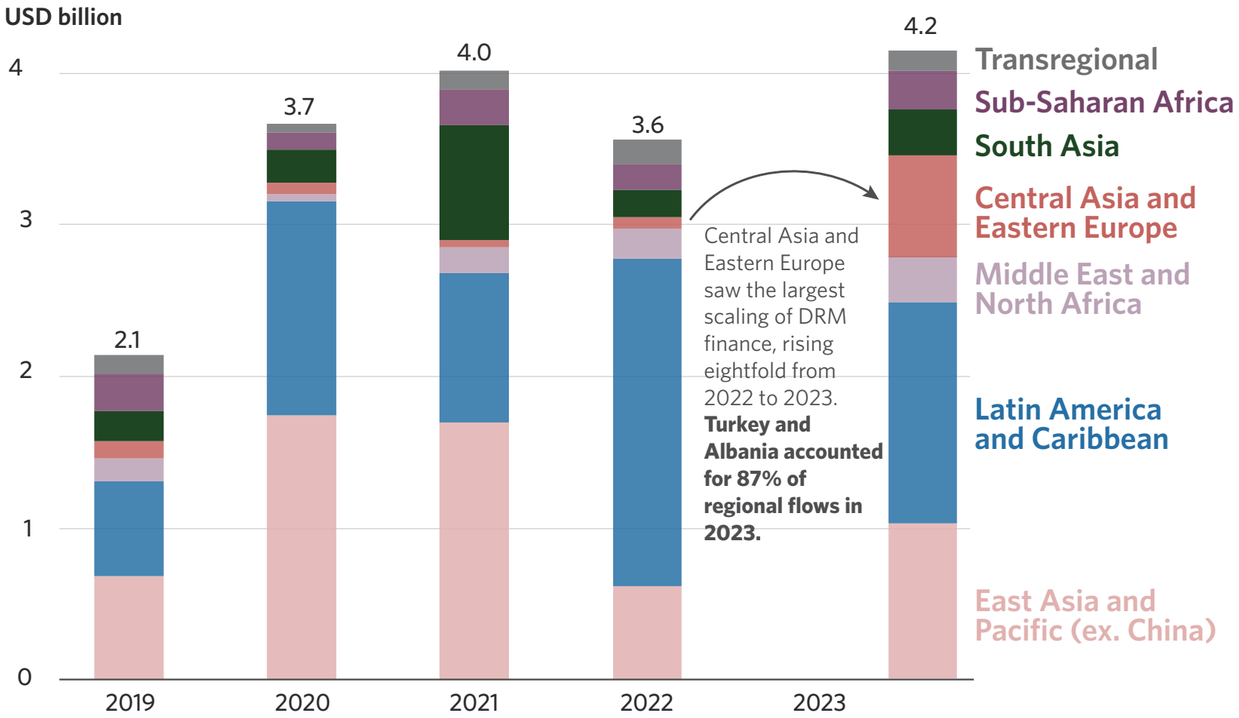


AGRICULTURE, FORESTRY, OTHER LAND USE, AND FISHERIES (AFOLU)

Adaptation finance for AFOLU in Emerging Markets decreased in 2022 and 2023. Private sector involvement remains low, constituting just 6% of finance between 2018 and 2023. While data gaps may limit the tracking of existing flows, persistent barriers also limit private participation, including high perceived risk, limited project pipelines and challenges to developing scalable, bankable business models (CLIC 2025). Private finance was worst affected by the recent drop; after reaching USD 628 million in 2022, investment fell to USD 191 million by 2023. Of this fall, USD 439 million was due to lower funding from third-sector organizations like philanthropies.

Emerging Markets in sub-Saharan Africa, the world's most climate-vulnerable region for food systems, saw the largest absolute drop in AFOLU adaptation finance in 2023. Flows fell by USD 462 million from USD 1.1 billion in 2022. MENA saw the largest drop in relative terms, down by 56% from USD 744 million in 2022 to USD 324 million in 2023. By contrast, flows in East Asia and the Pacific Emerging Markets increased dramatically—up from USD 152 million in 2022 to USD 1.2 billion in 2023—driven by the Philippines and Indonesia.

Figure 21: Adaptation finance to Emerging Markets for DRM by region



DISASTER RISK MANAGEMENT[21]

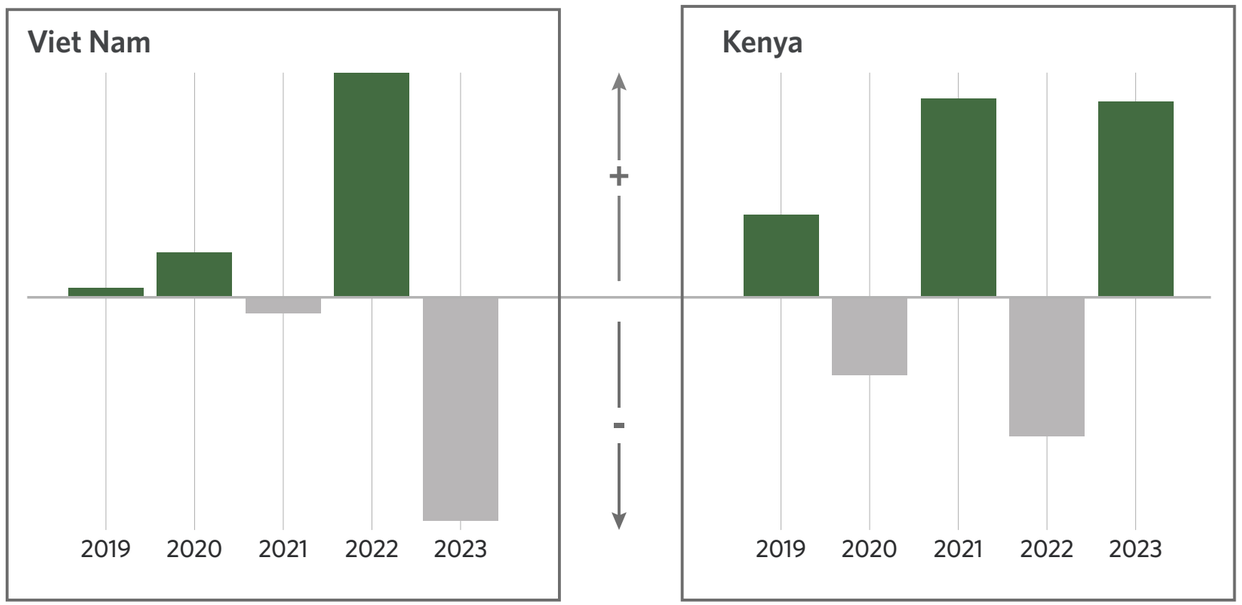
Disaster risk management (DRM) funding has doubled in Emerging Markets since 2019. Activities captured in adaptation finance data include early warning systems and forecasting, risk monitoring systems, and support for resilience management policies and program development. As climate-related disaster damage soars, DRM financing can help vulnerable communities limit harm to lives and livelihoods.

Central Asia and Eastern Europe saw the largest scaling of DRM finance, rising eightfold from 2022 to 2023. Turkey and Albania accounted for 87% of regional flows in 2023. While the devastating earthquakes in Turkey in 2023 were not climate-related, they heightened attention to risk management and preparedness solutions. By contrast, since 2020, East Asia and the Pacific has experienced a 41% drop in DRM adaptation finance.

Almost all DRM investments from 2019 to 2023 were from public international sources. The largest donors were multilateral DFIs (61%) and bilateral DFIs (27%). Though almost none is currently tracked, DRM has the potential for increased private financing, given the private sector's extensive capabilities in risk transfer and loss avoidance. Additionally, with greater climate risk awareness and risk-mitigation instruments, commercial entities may turn to DRM to protect their assets. Large data gaps on public domestic financing may result in under-tracking of DRM flows, for example, investment can be discovered from government budget expenditures to DRM when finance is tracked at the country level (CPI 2024a).

21 While our dataset covers 2018 to 2023, this sub-section shows data from 2019 onward. Methodological improvements introduced in 2019 significantly enhanced the allocation of other/cross-sectoral financial flows across sub-sectors, creating a methodological spike from 2018 to 2019 that could misrepresent real-world progress.

Figure 22: Year-on-year changes in adaptation and dual benefit finance for DRM in Kenya and Viet Nam



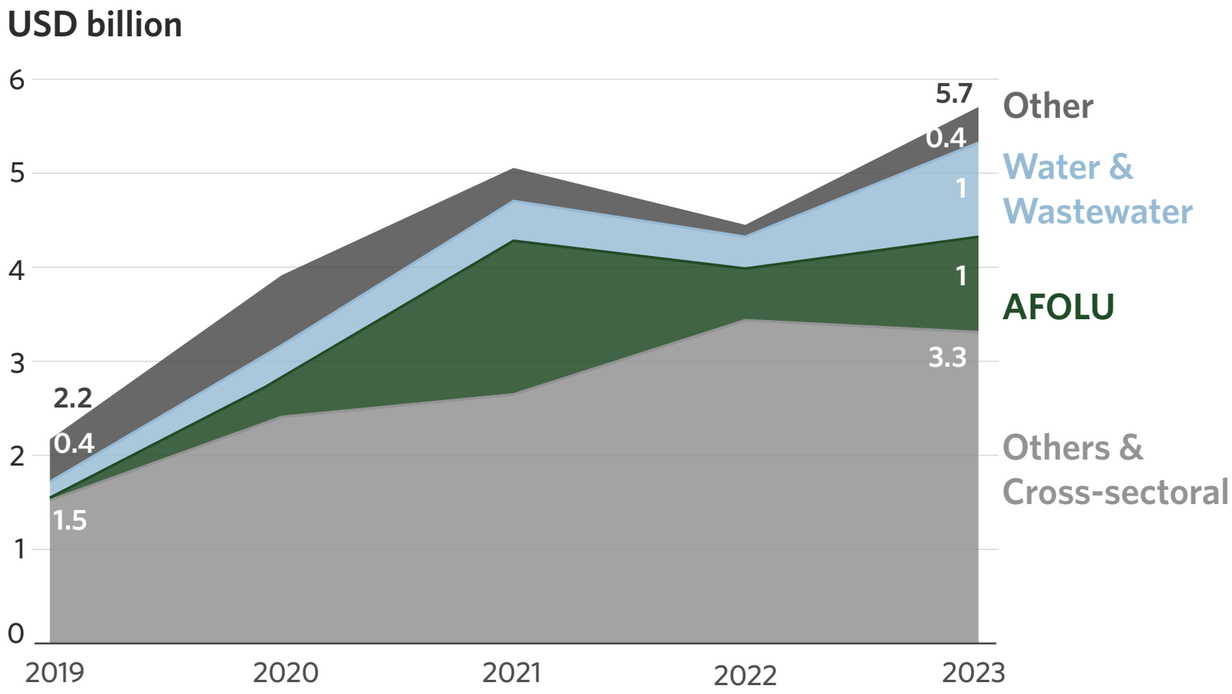
Case study 7: DRM strives for momentum in Kenya and Viet Nam

DRM investment has seen large spikes in Kenya and Viet Nam, which initiated related policy agendas more than 10 years ago. Kenya's National DRM Policy (2012) institutionalized disaster management and mainstreamed risk reduction into development initiatives (Government of Kenya 2013). In Viet Nam, the Law on Natural Disaster Prevention and Control (2013) provided a legal framework (UNEP 2013). Subsequent plans and policies expanded on this foundation.[22]

Despite indications that policy action drives project deployment, investment in DRM has varied, as shown in Figure 22. A few large projects influence the data, and policies have struggled to spur consistent financing for small-ticket projects, which are currently dominated in value by a few large investments.[23]

22 See Annex Table A.4 for information on additional policies.
23 Kenya's 2021 flows were dominated by a project implementing the National Climate Change Action Plan - Financing Locally Led Climate Action (FLLoCA), financed via International Development Association credit of USD 150 million (World Bank Group 2024c). Viet Nam's 2022 increase was driven by JICA Project for Disaster and Climate Change Countermeasures Using Earth Observation Satellite, valued at JPY 18,871 million (Ministry of Agriculture and Environment 2022).

Figure 23: Adaptation finance to Emerging Markets for policy, budget support and capacity building, by sector



Note: "Other sectors" include Transport, Buildings & Infrastructure, Energy Systems, ICT, Industry and Waste. AFOLU: Agriculture, Forestry, Other land uses and Fisheries.

POLICY, BUDGET SUPPORT, AND CAPACITY BUILDING[24]

Adaptation-focused finance for policy, budget support, and capacity building in Emerging Economies rose by 160% between 2019 and 2023. Almost all finance in this category (98%) came from public international sources in 2023. Between 2019 and 2023, 62% came from multilateral DFIs, 21% from governments, and 11% from bilateral DFIs.

From 2019 to 2023, the bulk of this category's flows had a general, cross-sectoral climate-related focus. These flows support countries with the technology, tools, and knowledge to adapt to climate change across several sectors. AFOLU was the largest recipient of sector-specific policy, budget support, and capacity building funding (17%), while water and wastewater accounted for 11% over the period.

Emerging Markets in Latin America and the Caribbean received the largest share of policy support and capacity-building flows between 2019 and 2023, accounting for 27% of flows (USD 5.6 billion). Sub-Saharan Africa saw 21% over the same period. Central Asia and Eastern Europe received just 9% (USD 1.9 billion).

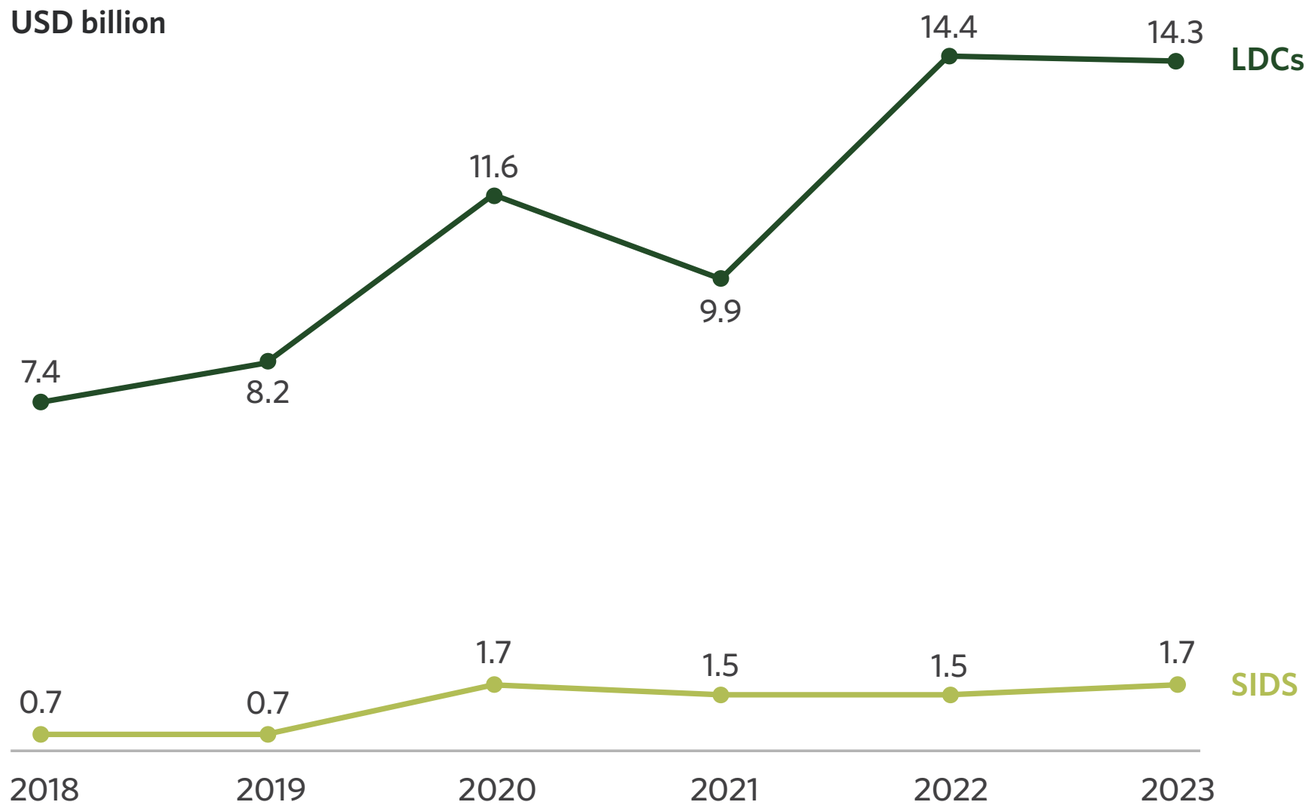
24 While our dataset covers 2018 to 2023, this sub-section shows data from 2019 onward. Methodological improvements introduced in 2019 significantly enhanced the allocation of other/cross-sectoral financial flows across sub-sectors, creating a methodological spike from 2018 to 2019 that could misrepresent real-world progress.

3.2.2 LDCS AND SIDS

Adaptation finance to LDCs and SIDS almost doubled from 2018 to 2023, albeit from a low base. International public sources account for 97% of these flows.

In many cases, fluctuations in adaptation finance to LDCs and SIDS—shown in many of the figures below—partly reflect the small overall volume of flows. Because total amounts are low, just a few large projects in a given year can cause noticeable spikes or drops. Adaptation finance to these highly vulnerable regions must scale up significantly to meet their pressing needs.

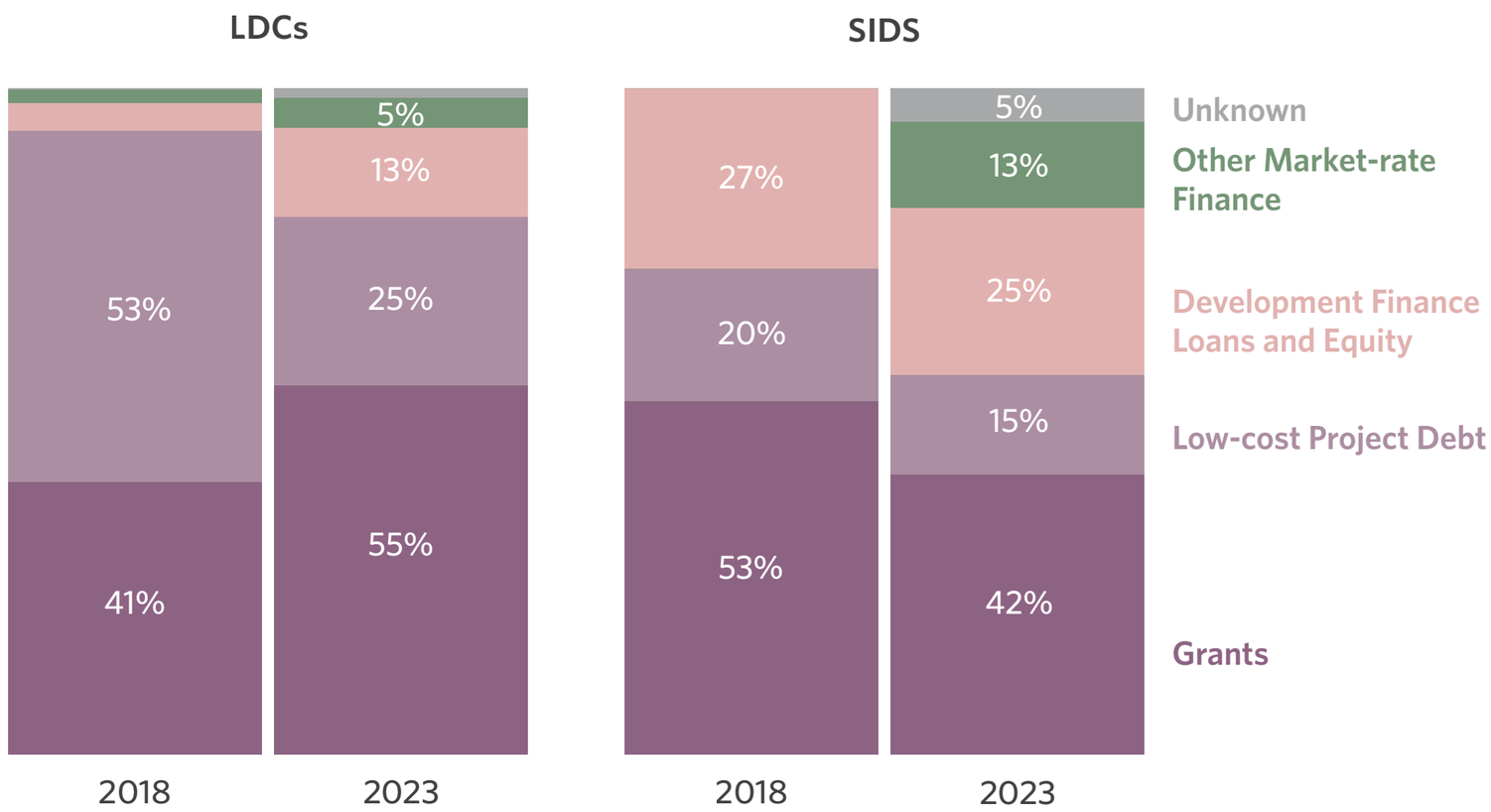
Figure 24: Adaptation finance to LDCs and SIDS



Note: SIDS are cross-cutting, with 8 countries counted in both LDCs and SIDS.

Adaptation finance to LDCs and SIDS is primarily from concessional and developmental sources. These sources accounted for 98% of adaptation flows to LDCs in 2023 and 94% for SIDS. Market-rate financing has remained modest in both groups. LDCs and SIDS include 24 of the 30 most climate-vulnerable countries in the Climate Finance Vulnerability Index, which highlights countries that are both highly exposed to climate risks and financially constrained in responding to them (NCDP, 2025).[25] While scaling up finance is essential to closing the adaptation finance gap, given their high exposure to climate risks and constrained fiscal space, these countries must steer clear of a climate adaptation–debt trap and work toward building resilient, sustainable financing portfolios (WRI, 2023).

Figure 25: Share of adaptation finance to LDCs and SIDS by instrument type



Note: Development finance includes all equity and loans from DFIs and Multilateral Climate/Development Funds that were not tagged under OECD concessionality criteria. In practice, these instruments may be concessional.

25 NCDP. Climate Finance Vulnerability Index (CliF-VI). 2025. https://clifvi.org/.

WATER AND WASTEWATER

LDCs' adaptation finance for water and wastewater was largely flat between 2018 and 2023; investment increased by just 7%. Sub-Saharan African LDCs' share grew each year since 2020. South Asia saw a decrease in flows, as did East Asia and the Pacific. LDCs' water and wastewater adaptation finance was almost entirely public in 2023.

SIDS' adaptation flows for water and wastewater have been inconsistent. Due to low flows, fluctuations from individual donors can heavily influence overall financing (Figure 27). Multilateral DFIs were the largest providers from 2018 to 2023. Multilateral climate funds provided significant support in 2018 and 2022.

Figure 26: Adaptation finance to LDCs for water and wastewater by region

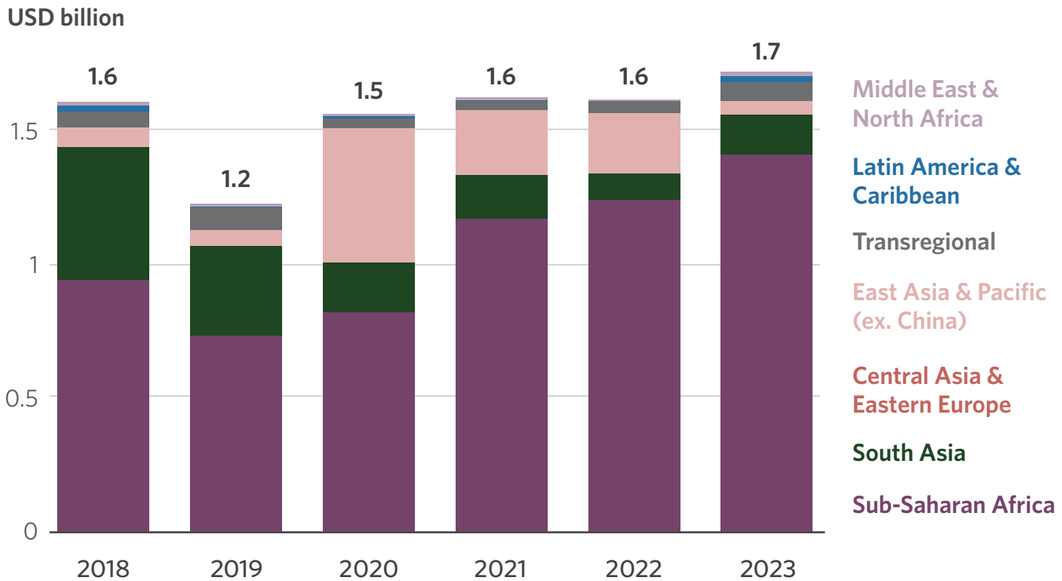
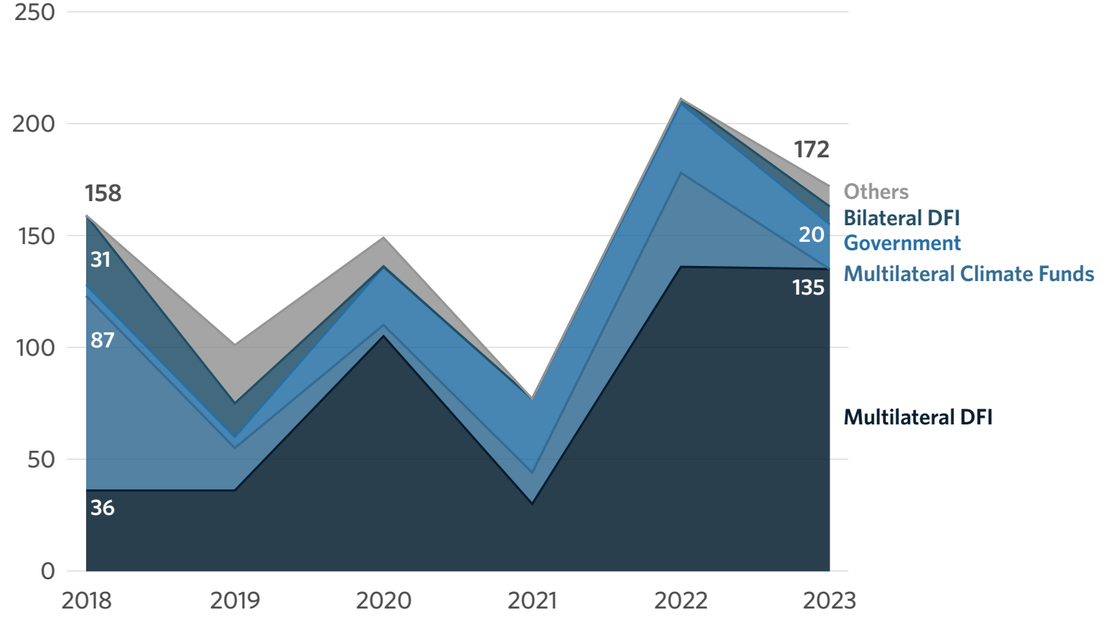


Figure 27: Adaptation finance to SIDS for water and wastewater by institution



Note: 'Others' includes Public Funds and National DFIs

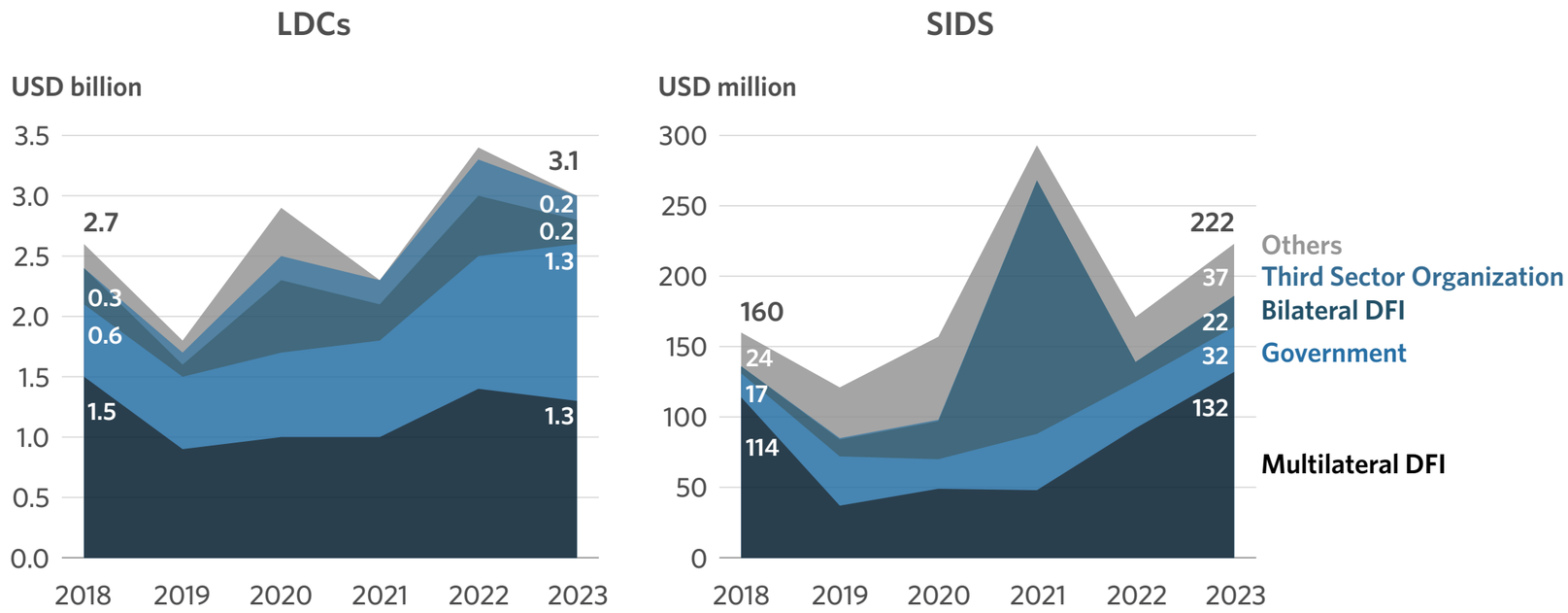
AGRICULTURE, FORESTRY, OTHER LAND USE, AND FISHERIES (AFOLU)

LDCs' adaptation finance for AFOLU dropped in 2023. This is particularly concerning given that many LDCs have both a high exposure to climate impacts and some degree of reliance on agriculture for household income. Multilateral and bilateral DFIs decreased adaptation financing to AFOLU in LDCs in 2023, by 9% and 58%, respectively, while international government contributions rose by 22%.

SIDS financing has grown since 2019, with a strong year in 2021, fueled by bilateral DFI funding. Finance has been largely public in both SIDS (more than 99%) and LDCs (93%).

Sub-Saharan Africa received 71% (USD 11.7 billion) of AFOLU adaptation finance to LDCs between 2018 and 2023. South Asia, the second highest, mobilized just USD 1.7 billion in the same period.

Figure 28: Adaptation finance to LDCs and SIDS for AFOLU by institution



Note: 'Others' includes Public Funds, Multilateral Climate Funds, Export Credit Agencies, State Owned Entities and National DFIs

Case study 8: Ethiopia's growth in AFOLU finance and the adaptation finance gap in sub-Saharan Africa

Ethiopia led sub-Saharan Africa's AFOLU adaptation finance in 2023, having more than doubled flows since 2018. Like the rest of the region, Ethiopia is heavily reliant on AFOLU and vulnerable to climate-induced shocks. Agriculture accounts for 32% of the country's GDP and employs over 80% of the population (Tesfaye 2024). Annual average losses due to climate change are expected to be 1-1.5% of GDP, rising to 5% by 2040 (World Bank Group 2024d).

Ethiopia has long prioritized adaptation and resilience in AFOLU, establishing clear strategic frameworks and facilities. The Climate-Resilient Green Economy (CRGE) Strategy (2011) (Government of Ethiopia 2011) aimed to establish climate-smart agricultural practices to boost food security and farmer income, including resilience from the outset. Ethiopia's CRGE Facility had directly mobilized USD 200 million from international partners across mitigation and adaptation by 2019 (NDC Partnership 2019). Since its inception, multiple subsequent policies have aligned with the strategy.[26]

Despite strong AFOLU adaptation finance growth, no domestic investment is tracked, and a significant gap remains. An estimated USD 6 billion per annum was needed to implement Ethiopia's 2019 NAP (Government of Ethiopia 2019a), with AFOLU a major sector for adaptation commitments in their updated NDC (Government of Ethiopia 2021). Flows remain far off this level, and despite the objectives of the CRGE to increase domestic and private flows (UN MPTF), no domestic resource mobilization for AFOLU adaptation has been tracked in Ethiopia, though this may be partly due to data gaps. Private sources provided 16% of flows between 2018 and 2023, higher than the 7% average across all LDCs, though this was almost all from third-sector organizations such as philanthropies. Many countries across the region face similar and more severe vulnerability and adaptation finance needs.[27]

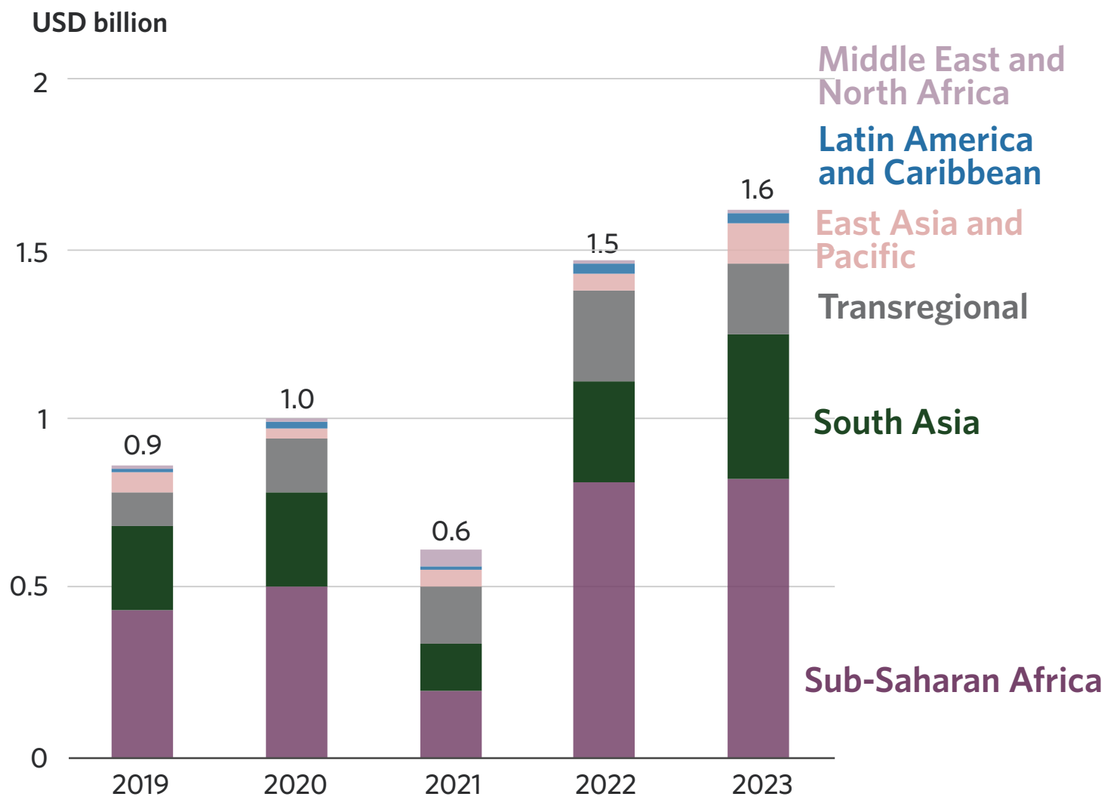
26 See Annex Table A.4 for information on additional policies.
27 Ethiopia ranks 21st for food systems vulnerability and 29th for eco-system vulnerability in the region (ND-GAIN 2025).

DISASTER RISK MANAGEMENT[28]

DRM investment in LDCs rose in 2022 and 2023, with the largest growth in South Asia (up 46%) and East Asia and the Pacific (up 122%).

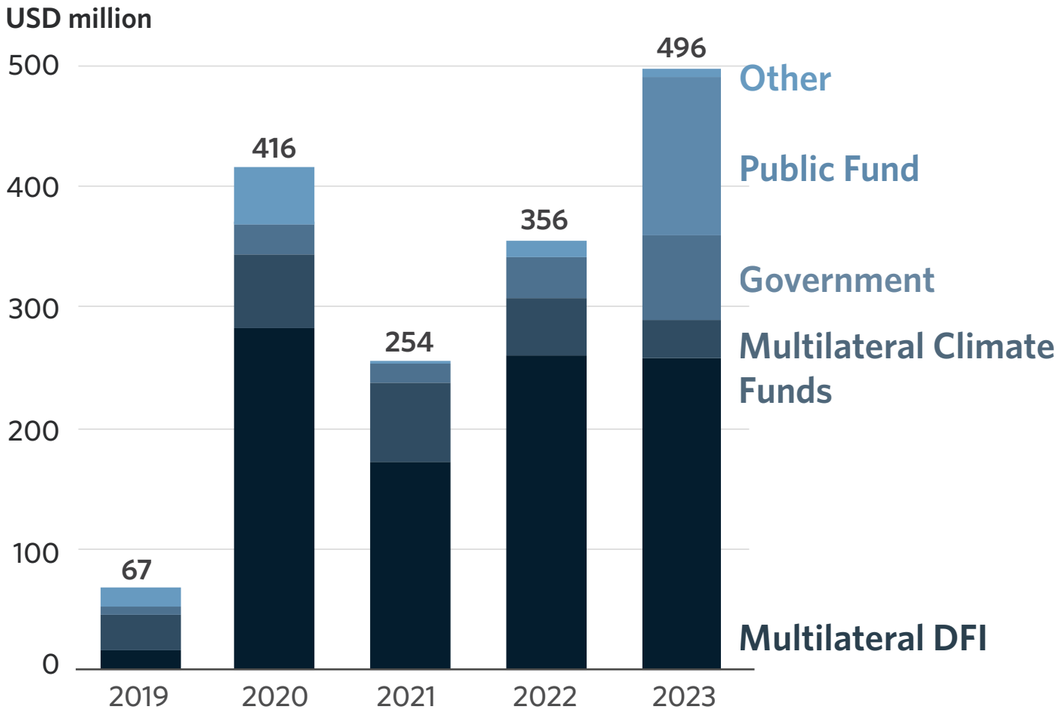
However, DRM investment remains insufficient relative to the potential cost of damages. The USD 5.7 billion in DRM investment across all LDCs between 2018 and 2023 is overshadowed by the extent of potential impacts and cost of disaster response. Early warning systems can generate high savings—investing up to USD 800 million in developing countries could reduce climate-related disaster losses by up to USD 16 billion per year (Global Centre on Adaptation 2019).

Figure 29: Adaptation finance to LDCs for DRM by region



28 While our dataset covers 2018 to 2023, this sub-section shows data from 2019 onward. Methodological improvements introduced in 2019 significantly enhanced the allocation of other/cross-sectoral financial flows across sub-sectors, creating a methodological spike from 2018 to 2019 that could misrepresent real-world progress.

Figure 30: Adaptation finance to SIDS for DRM by institution



"Note: 'Others' includes Bilateral DFIs, Third Sector Organisation, and National DFIs

DRM financing in SIDS rose from 2021 to 2023. The increase was largely driven by funding from multilateral DFIs and governments, alongside a spike in finance from public funds in 2023. All tracked DRM finance was international. Data issues, particularly for public domestic finance, mean that some tracking gaps may remain.

Case study 9: Targeted DRM policy scaled adaptation finance in the Bahamas

Adaptation finance for DRM dramatically increased in the Bahamas in 2023. The nation is extremely vulnerable to disasters and climate change, with four hurricanes between 2015 and 2019 estimated to have each reduced GDP by between 0.1% and 1% (Government of The Bahamas 2022a).

The Bahamas implemented institutional frameworks and budget tagging for DRM in 2022 and saw increased financing in subsequent years.[29] The largest project in 2023, funded by the IDB, provided a USD 160 million policy-based loan to improve DRM governance (IDB 2023a). The project aims to support the Disaster Risk Management Act, with its passing seen as significantly improving governance to facilitate DRM (IDB 2023b).

Catastrophe-linked instruments are increasingly used by EMDEs and SIDS as disaster risk financing tools. Though CPI does not track financial risk management instruments such as contingent loans and insurance (CPI 2025a), components of tracked DRM development loans increasingly include catastrophe-deferred drawdown options, which provide liquidity immediately in the event of a natural disaster.[30] Catastrophe bonds are also being utilized, for example, in Jamaica (World Bank Group 2021b).

29 See Annex Table A.4 for information on additional policies.
30 For example, (World Bank Group 2021a; World Bank Group 2022b; World Bank Group 2023a).

POLICY, BUDGET SUPPORT, AND CAPACITY BUILDING[31]

In both LDCs and SIDS, adaptation-focused finance for policy and national budget support and capacity building rose fivefold between 2019 and 2023. LDCs in sub-Saharan Africa experienced a year-on-year decrease in 2023 due to lower flows from multilateral DFIs and governments, though flows rose in all other regions. Most funding for policy support and capacity building in SIDS had a general, cross-sectoral climate focus.

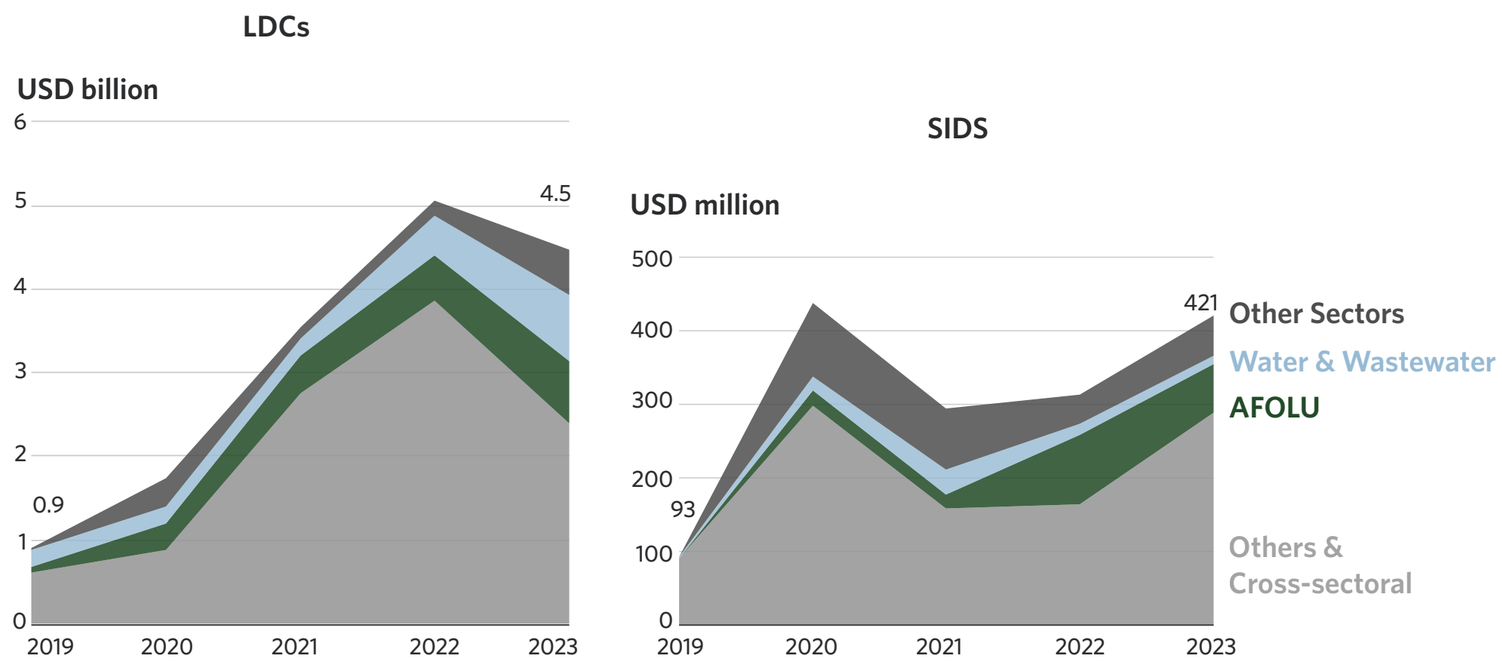
Case study 10: Strengthening policy and capacity for adaptation finance in Bangladesh

Bangladesh is one of the world's most climate-vulnerable countries, but it has historically required support to build up the tools, knowledge, and methodologies required for accessing adaptation finance (Government of Bangladesh 2022).

A series of programs aimed at improving policy readiness and building capacity were undertaken with support from multilateral organizations. Since 2012, Bangladesh has established an extensive adaptation policy framework,[32] with a further 15 interventions to address capacity development, research, and innovation, recently included in their NAP (Government of Bangladesh 2022).

Bangladesh has since received the most adaptation-focused finance for policy support of any EMDE since 2018. Adaptation and dual benefit flows accounted for 24% of the country's total climate finance from 2018 to 2023, well above the 10% average across All EMDEs. Bangladesh has become a leader in many areas of adaptation, however, a significant USD 8.5 billion is required each year until 2050 to meet the country's resilience needs (Government of Bangladesh 2022), and flows remain far off this level.

Figure 31: Adaptation finance to LDCs and SIDS for policy, budget support and capacity building, by sector



"Note: 'Others' includes Buildings and Infrastructure, Energy Systems, Transport, and Industry.

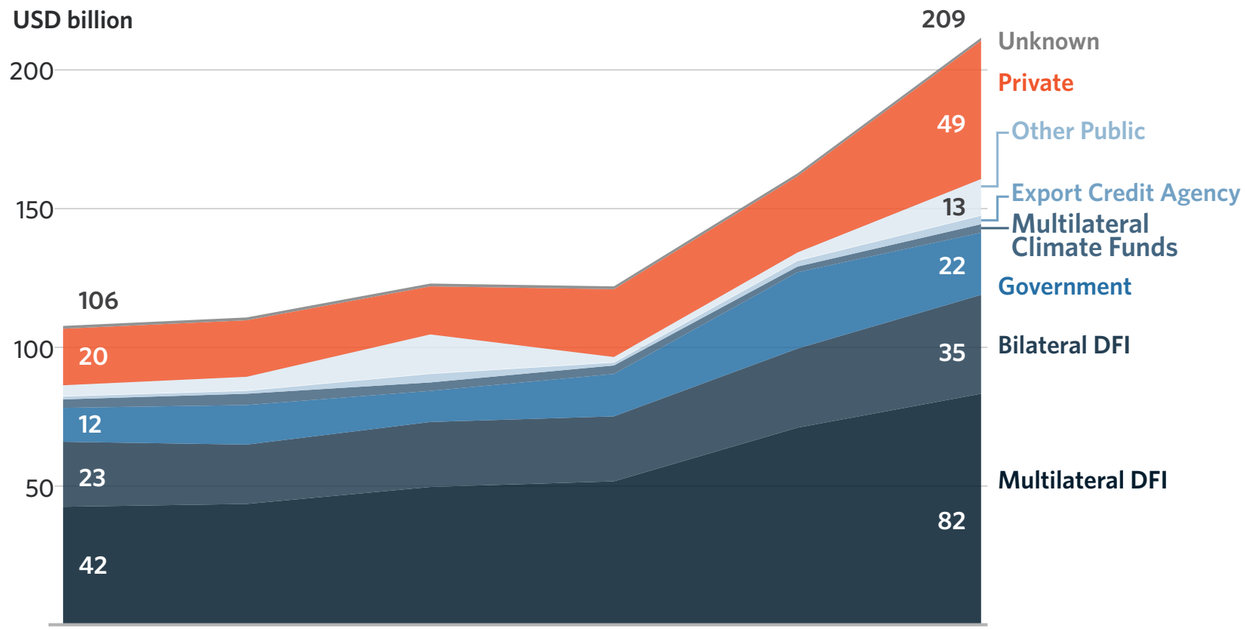
31 While our dataset covers 2018 to 2023, this sub-section shows data from 2019 onward. Methodological improvements introduced in 2019 significantly enhanced the allocation of other/cross-sectoral financial flows across sub-sectors, creating a methodological spike from 2018 to 2019 that could misrepresent real-world progress.
32 See Annex Table A.4 for information on additional policies.

3.2.3 CHINA

China's tracked adaptation finance only gives a partial picture, with 94% of flows coming from one national DFI between 2018 and 2023. Substantial reductions were seen in 2023, though methodological changes in the adaptation finance tracking for such institutions may have driven this decrease (see full China analysis in Annex Box A.2). Nonetheless, the available data indicates that adaptation finance continues to be prioritized for water and wastewater. On average, the sector captured 73% of annual adaptation finance from 2018 to 2022. In 2023 water and wastewater constituted 80% of tracked flows. DRM investment increased as a share of annual adaptation finance, up to 15% in 2023 from 5% in 2022.

Given the lack of data on China's domestic adaptation finance, it is possible that untracked financing and domestic policy action exist. For example, in response to increasingly frequent and intense extreme weather events, China's 2023 adaptation progress report emphasizes climate monitoring and early warning systems, risk assessment, the development of provincial adaptation action plans, and measures to manage water-related risks (Ministry of Ecology and Environment 2024).

Figure 32: International climate finance to All EMDEs by source



3.3 INTERNATIONAL CLIMATE FINANCE CONTEXT

International climate finance to All EMDEs exceeded USD 200 billion in 2023. Public sources provided USD 159 billion in 2023, almost double that of 2018. However, recent developments suggest that this critical financing may slow, or even decline. ODA cuts announced by major donors amid shifting political priorities are placing increased strain on international public finance. Nevertheless, catalytic and non-debt financing are urgently needed for many EMDEs, and LDCs in particular.

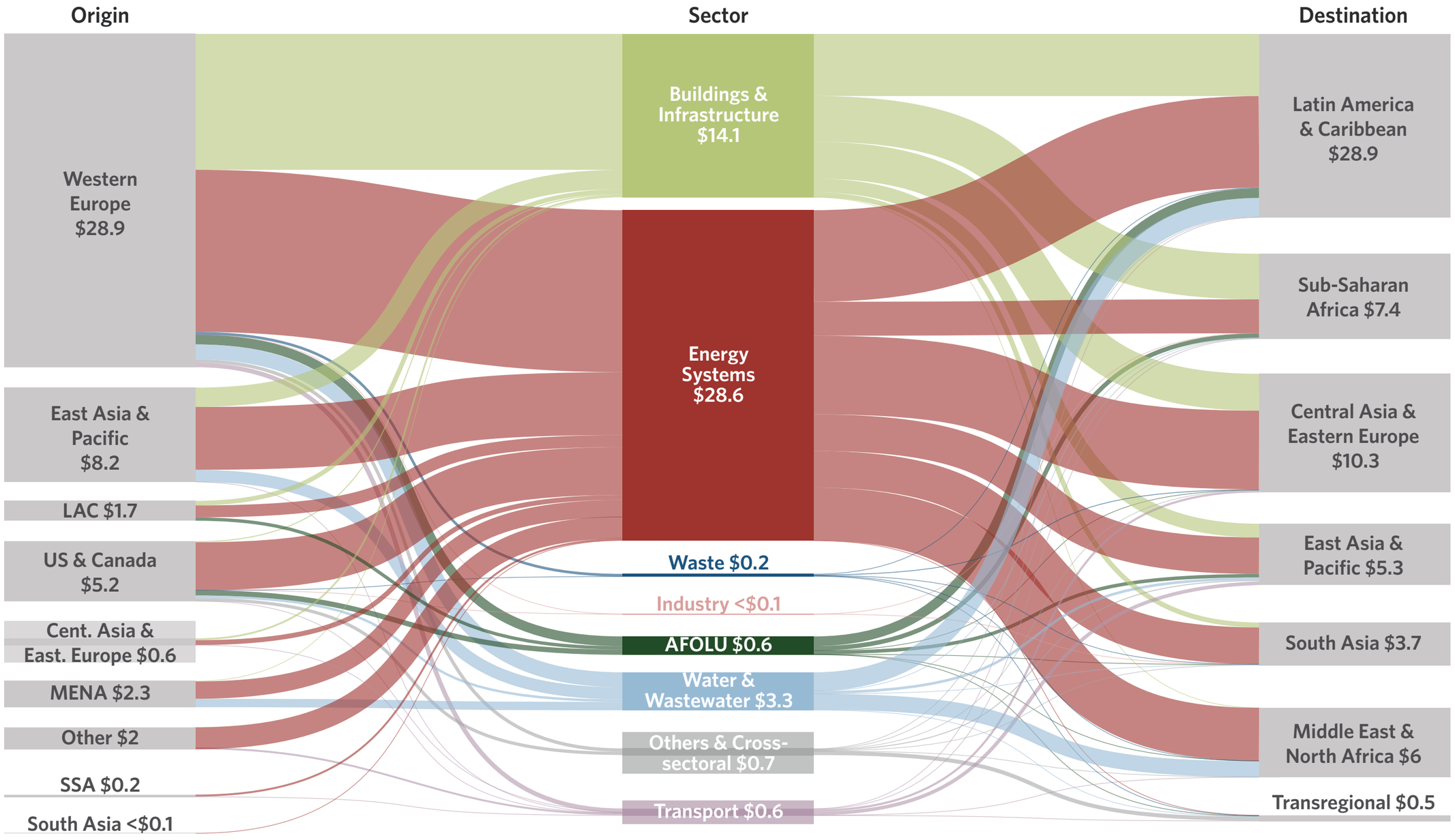
International private finance also more than doubled from USD 20 billion in 2018 to USD 49 billion in 2023. Private finance is increasingly important, but still comprises just under a quarter of international flows, and in many cases may have been leveraged by international public flows. Multilateral Development Banks (MDBs) (2024) have directly mobilized over USD 8 billion[33] in private finance in developing countries in 2023.

Most international private finance to EMDEs originated from advanced economies. Western Europe accounted for 59% of these flows to All EMDEs in 2023 (USD 29 billion). The US and Canada contributed 11% (USD 5.2 billion), and advanced economies in East Asia and the Pacific 9.8% (USD 4.8 billion). EMDE countries invested USD 7.3 billion of private climate finance in other EMDEs in 2023 (15% of international private finance to All EMDEs). These South-South private flows were led by China and the MENA region, each accounting for 4.4% of private international finance to All EMDEs in 2023.

Over half of international private finance to All EMDEs went to energy systems (USD 29 billion). Latin America and the Caribbean received the most (28%, or USD 7.9 billion), followed by Central Asia and Eastern Europe (24%, or USD 6.8 billion). Governments and international institutions are increasingly working to build trust in EMDEs through greater regulatory and policy transparency, stronger institutional frameworks, and clearer accountability mechanisms (OECD 2015; IEA 2023; OECD 2025b). As these conditions improve, commercial FIs are more willing to commit capital to renewable energy projects overseas. For example, in 2023 Standard Chartered arranged EUR 1.29 billion in financing for the Angolan Ministry of Finance to support solar-powered electrification infrastructure, including 48 hybrid photovoltaic mini-grids with energy storage. Over EUR 1.2 billion is backed by the German Export Credit Agency, with the remainder a commercial loan (Standard Chartered 2023).

33 Indirect mobilization was about USD 20 billion in the same year.

Figure 33: International private finance to All EMDEs by region of origin, sector, and region of destination

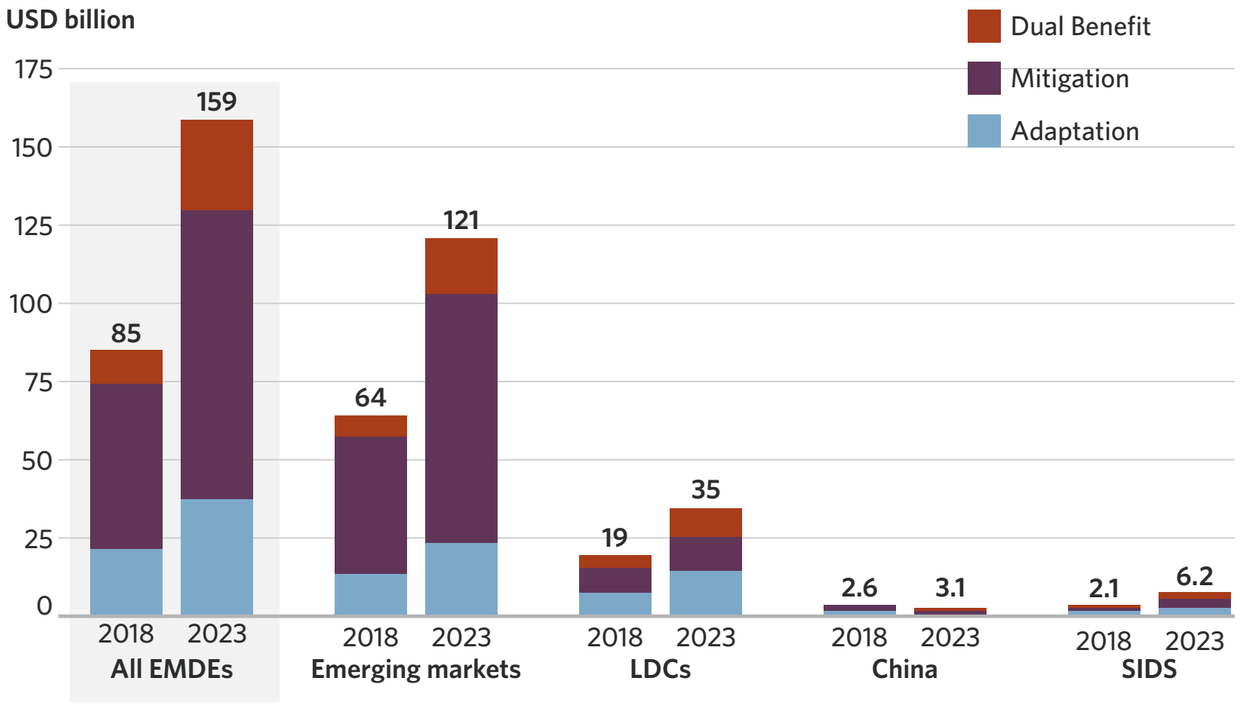


LAC: Latin America & Caribbean
MENA: Middle East & North Africa

SSA: Sub-Saharan Africa
AFOLU: Agriculture, Forestry, Other land use and Fisheries

Others & Cross-sectoral includes unknowns.

Figure 34: International public climate finance to All EMDEs by subgroup and use in 2018 and 2023



Notes: For China, the splits are as follows: In 2018, 24% adaptation, 60% mitigation, and 16% dual-benefit. In 2023, 7% adaptation, 48% mitigation, and 45% dual-benefit. For SIDS, splits are as follows: in 2018, 33% adaptation, 40% mitigation, and 28% dual-benefit; in 2023, 27% adaptation, 45% mitigation, and 28% dual-benefit.

Access to multilateral and bilateral climate finance can vary depending on contextual factors, including the level of domestic government ambition, the domestic policy and regulatory framework, and the capacity of domestic institutions.

These factors are important for the following reasons:

- Countries that can meet co-financing requirements can progress more internationally funded projects.
- Strong domestic capital markets and local institutions, paired with improved conditions for private sector financing, can widen the scope of available financing.
- Clear, investable trajectories to meet NDCs can set a long-term vision for public and private international providers, and increase confidence in countries' abilities to absorb and build on financing.

Box 4. NDCs 3.0: tooling up countries for change

The third generation of NDCs being submitted to the UNFCCC in the run-up to COP30 is expected to focus on implementation and investability. Early analysis by CPI of the first 18 NDC 3.0 submissions by non-Annex I parties illustrates both progress and gaps in this regard (CPI 2025f).

Most submitting countries had quantified their climate finance needs, with enhanced private-sector mobilization strategies and strong integration with national planning. However, more granular cost breakdowns (i.e., sector and project pipeline levels, international support versus domestic resources), specifics on private investor engagement, and more detailed implementation planning were identified in only a few of the analyzed NDCs. A full overview of progress will be achievable after more countries have submitted their third NDCs.[34]

More than 50% of global international public finance went to Emerging Markets (EMDEs excluding China and LDCs) in 2023, while LDCs received 16%. Mitigation finance was prioritized (66%) in Emerging Markets, while adaptation took the largest share (40%) in LDCs. International public finance providers, including multilateral DFIs, climate funds, and bilateral DFIs, also support crucial non-financial activities in EMDEs. These include capacity building, TA, policy engagement and pipeline development. Done well, all these activities can increase the chances of successful financing implementation and pave the way for increased flows in future.

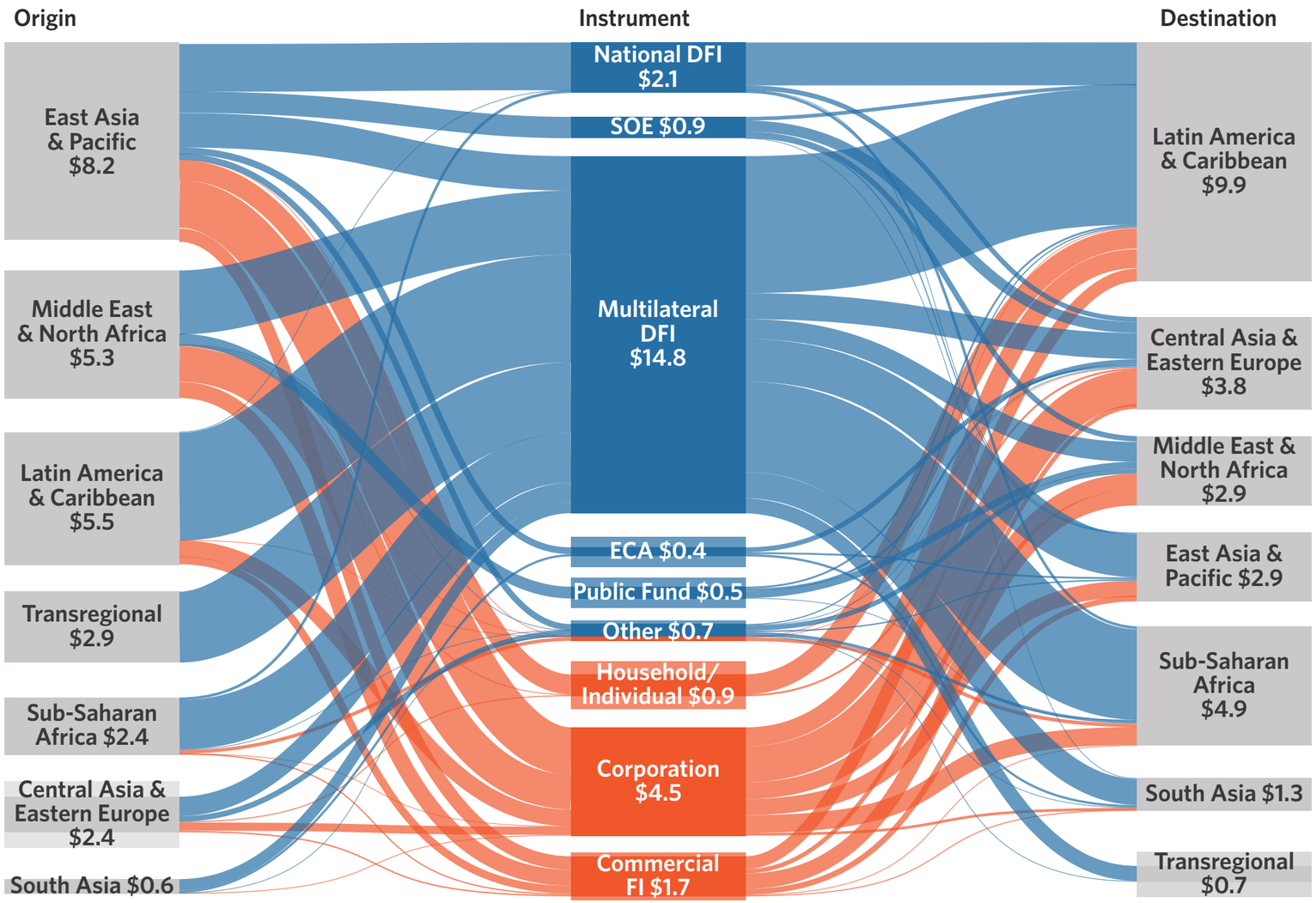
34 CPI will publish further analysis of all NDCs 3.0 once more have been submitted. Our early analysis is available here

South-South flows are an increasingly important source of international climate finance for EMDEs.

EMERGING SOUTH-SOUTH CLIMATE FINANCE

Climate flows between EMDE-based institutions have risen from USD 16 billion in 2018 to USD 26 billion in 2023.[35] This marks an increase in climate finance, including from countries such as China, to other EMDEs, as well as the expansion of green financing from regional development banks such as CAF and BOAD servicing EMDEs.

Figure 35: Tracked South-South climate flows, USD billions



"Other" instruments include Institutional investors, Funds, State-owned FIs, Governments and Bilateral DFIs.

35 For this analysis, CPI excluded flows from MDBs with majority ownership by advanced economies, but included those with more than 51% shares held by EMDEs. This is a novel methodology, given that there is no agreed-upon approach to defining South-South flows.

South-South climate financing from development banks with majority EMDE shareholders grew from 2018 to 2023. This includes institutions such as the Islamic Development Bank and the Asian Infrastructure Investment Bank. However, the New Development Bank, which is exclusively EMDE-owned, has seen limited climate finance growth (MDBs 2024). Between 2000 and 2023, the combined loan portfolios of ten EMDE-led MDBs[36] grew twelvefold from USD 7 billion to USD 89 billion (ODI Global 2025). The 2025 BRICS Leaders' Declaration underscores strengthened South-South cooperation to mobilize climate finance by enhancing mechanisms such as the New Development Bank and the BRICS Interbank Cooperation Mechanism to expand sustainable lending, green bonds, and blended finance, thereby boosting access to affordable, locally driven funding and reducing reliance on Northern-led institutions (BRICS Information Center 2025).

Green energy investment through China's Belt and Road Initiative soared by 60% from 2022 to 2023 to reach USD 11.8 billion, though the initiative's oil and gas investments also reached record highs (Green Finance & Development Center 2025).

South-South flows are also not limited to public finance; private climate finance flows between EMDEs increased in 2023. Examples of this type of financing include the UAE-backed private climate investment fund Altérra, which has earmarked USD 5 billion out of USD 30 billion for investment in emerging economies (ESG Today 2024).

South-South flows are an increasingly important source of international climate finance for EMDEs. Whether channeled through bilateral financing, MDBs, regional development banks, or private international investment, South-South cooperation can benefit both recipient and funder by enabling technology and knowledge transfer, trade, and the development of a shared global climate agenda (Development Aid 2025). The Havana Declaration by the Group of 77 and China highlights this shared commitment to leveraging science, technology, and innovation for sustainable development (UN Office for South-South Cooperation 2023).

36 Afreximbank, Black Sea Trade and Development Bank (BSTDB), Central American Bank for Economic Integration (CABEI), Development Bank of Latin America (CAF), East African Development Bank (EADB), ECOWAS Bank for Investment and Development (EBID), FONPLATA, Eurasian Development Bank (EDB), Trade and Development Bank (TDB) and West African Development Bank (BOAD)

4. Recommendations

EMDEs have enormous opportunities for sustainable growth and development through climate investment.

A handful of countries are leading the way, demonstrating the potential to mobilize domestic resources and attract international private climate investment. In many cases, international public finance has facilitated this action through technical and advisory support, knowledge transfer, and insurance and guarantees to de-risk private investment. However, international private investors remain wary of engaging in EMDEs due to high perceived macroeconomic, regulatory, and political risks. Sectoral barriers also hinder domestic resource mobilization. To close the investment gap, more efforts are needed to a) further increase climate finance, and its impact, b) redirect climate-negative flows, and c) increase the number of countries making progress.

Focusing on key enablers for climate finance in EMDEs, our recommendations are shaped around three pillars of action:

1. Strengthening domestic enabling environments,
2. Enhancing international climate finance, and
3. Increasing the transparency, accessibility and affordability of climate-related data.

4.1 STRENGTHENING DOMESTIC ENABLING ENVIRONMENTS

Many EMDE governments are already leveraging policies, regulations, innovative financing instruments, and international cooperation to mobilize resources from domestic and international sources. These efforts are crucial to advancing their national strategies for economic development and climate change, positioning countries as credible, investment-ready partners and enhancing their access to finance from diverse sources.

Recommended actions for EMDE governments:

i. **Implement and sequence policies and frameworks that address persistent sectoral barriers: EMDEs need concrete, complementary, and differentiated strategies for both mitigation and adaptation to drive action.** Many are leveraging mitigation policies to not only reduce emissions but also to advance broader goals of economic diversification, local supply chain development, improved air quality, and access to affordable energy. Adaptation policies are then crucial to support socioeconomic stability by mitigating climate risks and damages, protecting ecosystems and by embedding resilience into projects, they ensure growth deriving from mitigation investments can be realized.

   a. Careful design and sequencing of policies that preempt fiscal risks and infrastructure dependencies (e.g., power grids, charging networks) can support effective well-planned implementation of mitigation policies.

   b. Dedicated sectoral policy implementation strategies for both mitigation and adaptation are needed to address specific barriers such as dependence on fossil fuel revenues, climate-damaging subsidies, lack of reliable data and inconsistent enforcement of standards.

   c. Adaptation and resilience are increasingly embedded in domestic laws, institutions, and national development strategies, cutting across sectors to strengthen critical infrastructure, enhance disaster risk preparedness, and preserve natural ecosystems. Global Goal on Adaptation indicators can provide a useful framework to implement and measure progress at the national level.

ii. **Strengthen national policy implementation and financial ecosystems for climate finance through strategic planning, climate investment roadmaps and pipelines, and institutional readiness:** Integrating climate goals into development plans, creating sector-specific climate investment roadmaps[37], building cases for investment and pipelines of bankable projects have unlocked climate flows in many EMDEs. Such clarity on investment cases is particularly crucial for adaptation, where there can be difficulty in establishing predictable returns. Roadmaps can play a critical role in identifying sources of investment capital and prioritizing targeted interventions that increase their flow. Countries such as the Philippines, Ethiopia, and Pakistan have coordinated strategic planning, creating actionable roadmaps to attract finance.

iii. **Strengthen capacity and governance to encourage domestic investment and attract further international cooperation and investment:** Enhancing institutional capacity is key to managing funds, coordinating across sectors, and accessing finance. Credible institutions and effective financial oversight position countries to access international funds and attract private investment. Stable and inclusive governance mechanisms at the national level can drive climate finance (see Case Study 10 on Bangladesh). Yet, many governments lack the specialized units and personnel to develop bankable proposals, meet complex donor requirements, and coordinate across key ministries (finance/treasury, planning, energy etc.).

37 For example, CPI developed Climate Finance Roadmaps methodology that can inform which financial actors and what types of finance can best close the investment gap in different sectors and geographies.

4.2 IMPROVING THE QUALITY OF INTERNATIONAL CLIMATE FINANCE

EMDEs require more and better-quality international climate finance to support national priorities, reach underserved communities, and reduce the cost of capital. With increasing strain on public budgets, it is vital to improve the effectiveness of scarce resources by directing concessional capital to where it is most needed and can have the greatest catalytic effect. This means designing high-quality climate finance strategies for project, market- and systems-level impact and implementing metrics that capture the impact of climate finance more holistically,[38] while supporting national climate and development priorities and building cooperation among developing countries.

Recommended actions for international climate finance providers:

i. **Design targeted programs for market creation**—building demand for, and supplying, climate solutions in sectors such as AFOLU and industry, as well as for underserved solutions in energy, transport, and buildings that require stronger financing mechanisms to mobilize capital at scale. This can be achieved by supporting financial and policy innovation in solutions with high potential and low investment, all while considering inclusiveness.

ii. **Collaborate with countries, private actors, and impact investors to mobilize catalytic concessional capital and de-risking tools, and to develop regional guarantee platforms.** Our data shows increasing deployment of catalytic finance instruments (e.g., grants, low-cost debt and guarantees) by international climate finance providers, alongside TA and capacity building.

iii. **Implement flexible climate financing strategies based on lessons learned from past projects.** Not all tested approaches work in every situation (e.g., strict conditionality leading to limited socioeconomic and biodiversity outcomes on REDD+ projects). Furthermore, international climate finance providers should also share, review, and assess unsuccessful cases to swiftly and flexibly adjust climate investment strategies.

iv. **Continue to prioritize concessional adaptation finance in highly vulnerable countries,** e.g., funding disaster risk management for LDCs, which has high returns in avoided costs.

v. **Further track and strengthen South-South cooperation**, which will not only increase finance for EMDEs, but also bolster technology transfer, knowledge sharing, and regional economic cooperation for climate action.

38 CPI's framework on climate finance quality describes market-level impact as creating, developing or stabilizing markets for climate solutions, and system-level impact as inducing structural shifts toward low-emission, climate-resilient and equitable growth.

4.3 INCREASING THE TRANSPARENCY OF CLIMATE FINANCE DATA

Informed decision-making requires more comprehensive climate finance data. Domestic public expenditure, adaptation finance, and reliable investment risk information are key areas for improvement. This information can significantly improve risk assessments and help to identify co-financing opportunities.

Recommended actions for public and private investors, regulators:

i. **Enhance transparency, accessibility, and affordability of global climate finance relevant data, particularly for adaptation, physical risk, domestic investments from households, public budgets, and the private sector in EMDEs.** Better data on climate flows and portfolio alignment is crucial for guiding capital allocation, monitoring progress of the New Quantified Collective Goal, and aligning finance with the Paris Agreement. Currently, there is limited data on the progress of adaptation finance from both public and private actors, especially on how private institutions target climate investment to EMDEs (CPI 2025b) on physical risk as well as on the actual performance of climate investment returns, creating information asymmetries that hinder investment opportunities in EMDEs. More granular data enables investors, policymakers, and development institutions to identify funding gaps, assess risks, explore quality aspects, and target resources where they can have the greatest impact (e.g. as seen in Case Study 9 DRM in the Bahamas). Detailed insights on who is investing, how much, and in which sectors or geographies can inform strategic planning and attract private capital.

ii. **Harmonize climate-related financial regulation, access to finance, sustainable finance taxonomies, climate budget tagging and green financial markets standards.** Such actions can reduce fragmentation, lower transaction costs, increase access to finance, and enhance investor confidence. Developing taxonomies and standards for adaptation and resilience finance can enhance the availability of climate finance data. Unified standards can help to streamline due diligence processes, making climate projects more attractive to institutional investors. Aligning sustainable finance and green bond frameworks across EMDEs can increase international private investment and enable credible financial instruments that channel capital toward low-carbon, climate-resilient infrastructure.

5. Annex

5.1 OVERVIEW OF EMDES AND SUBGROUPINGS

As outlined in Box ES1, this report disaggregates data by different EMDE subgroupings. The table below provides an overview of their climate finance and key indicators.

Table A.1. Overview of select climate and socioeconomic indicators of country groups as of 2023

Grouping	Climate Finance, USD billions					Socioeconomic indicators		Vulnerability**
	Total investment	Private (% of total)***	Public (% of total)***	Domestic	International	% of global GDP	% of global population	No. countries in top-25 most vulnerable (ND-GAIN)
All EMDEs	1,066	587 (55%)	478 (45%)	857 (80%)	209 (20%)	42%	86%	25
Emerging Markets	337	188 (56%)	147 (44%)	172 (51%)	165 (49%)	23%	54%	5
LDCs	45	10 (22%)	35 (78%)	7 (16%)	38 (84%)	1.4%	14%	20
SIDS*	12	5 (42%)	7 (58%)	3 (27%)	8 (73%)	0.4%	0.8%	9
China	685	389 (57%)	296 (43%)	678 (99%)	6 (1%)	17%	17%	0

** SIDS are cross-cutting across EMDEs and Advanced Countries. 5 SIDS in the top 25 most vulnerable countries are EMDEs, 4 are LDCs.*

*** Vulnerability is measured based on the vulnerability component of the ND-GAIN index (as opposed to the full ND-GAIN index which considers various socioeconomic indicators).*

**** Shares exclude flows which could not be categorized across Public or Private institutions.*

5.2 MITIGATION

This table provides further information on policies mentioned across the report, across the report. This is not an exhaustive list of policies, but provides highlights and some examples of additional measures.

Table A.2: Examples of policy and progress on climate mitigation profiled in this report

	Energy	B&I	Transport	AFOLU	Additional policy information
Bangladesh			✓		A major focus has been on developing Dhaka's mass rapid transit (MRT) systems, financed largely through public international sources, including JICA, the Export-Import Bank of Korea, and Agence Française de Développement (AfD). Early evidence from JICA suggests that Dhaka's MRT Line 6 has eased congestion and raised average vehicle speeds, though induced demand may gradually offset these gains (Yamada and Jian 2025).
Brazil	✓				Federal programs include the Incentive Program for Alternative Sources of Electric Energy (Proinfa) and New Energy Auctions (LEN) (ICAT 2024). CNPE Resolution 15/2020, set streamlined rules for micro- and small-scale distributed generation. 2022 Net Metering Law and the Legal Framework for Distributed Generation (SCEE), which guarantees tariff benefits for systems under 5 MW until 2045.
Chile	✓				Law No. 21,505 introduced changes in the recognition and compensation of energy storage systems and hybrid plants with storage capacity (Garrigues 2024).
Ethiopia				✓	Results-based payments under REDD+ often flow into national mechanisms such as Ethiopia's Climate Resilient Green Economy (CRGE) Facility to finance public programs and projects.
India	✓				Further enabling measures such as 100% foreign direct investment under the automatic approval route, waivers of inter-state transmission charges, renewable purchase obligations, and subsidy schemes, including Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUMSUM) and the Solar Parks Program (Government of India 2025).
		✓			Energy Conservation Building Code 2018 (ECO Niwas Samhita) (Government of India 2018).
			✓		Supported by policies such as the Faster Adoption and Manufacturing of (Hybrid &) Electric (FAME) I and II schemes under the Ministry of Heavy Industries (Ministry of Heavy Industries of India).
Indonesia			✓		Presidential Regulation No. 55/2019 (Government of Indonesia 2019) and Minister of Finance Order No. 38/2023 (IEA 2025e) introduced fiscal incentives, including VAT reductions from 11% to 1% for EVs meeting a 40% local-content requirement (Reuters 2023; IISD 2025).
Kuwait			✓		Supported by policies such as the Faster Adoption and Manufacturing of (Hybrid &) Electric (FAME) I and II schemes under the Ministry of Heavy Industries (Ministry of Heavy Industries of India).
Morocco	✓				Morocco's Renewable Energy Target 2030 (IEA 2019) aims to have 52% of installed capacity from renewables by 2030, including 20% from wind. Law No. 13-09 (2009) (Ministry of Energy of Morocco 2010) granted independent power producers (IPPs) unconditional access to the national grid, enabling renewable electricity to be integrated without restrictions. This framework was further strengthened by Law No. 58-15 (2016) (Renewables Now 2016), which allowed IPPs to sell surplus electricity to ONEE under 20-year PPAs.
Pakistan	✓				Concessional loans were provided under the State Bank of Pakistan's Financing Scheme for Renewable Energy (State Bank of Pakistan 2025).
Poland	✓				The Renewable Energy Sources Act (amended 2018) introduced Contract for Difference-based auctions, a mechanism to incentivize investments in renewable energy projects at the least cost to the consumer, for projects over 500 kW (IEA 2024d), while the 2021 Offshore Wind Act extended support to 25 years with Consumer Prices Index revenues (Climate Change Laws 2020; Natural Power 2023). One example large offshore project is the 1140MW Polski Koncern Naftowy Orlen Baltic Sea project (Northland Power 2023).
		✓			Alignment with the amended EU Directive (2018) and the 2022 Long-Term Building Renovation Strategy created a strong enabling environment, mandating deep renovations and targeting energy-poor households (OECD 2025a). Technical support programs—European Local Energy Assistance (ELENA) (EIB 2020; EIB 2023; EIB 2024)while the European Investment Fund (EIF B&I facilities from EIB—the Energy Efficiency Finance Facility for Residential Buildings (EIB 2019).

	Energy	B&I	Transport	AFOLU	Additional policy information
Qatar	✓				Large projects such as the 875 MW Samsung Qatar PV plant are advancing energy resource diversification objectives under the Second National Development Strategy 2018–2022 (Gov. Communications Office of Qatar 2024).
Saudi Arabia		✓			National Renewable Energy Programme (NREP) (Saudi Arabia Government 2024)) , which targets 59 GW of renewable capacity by 2030, including 40 GW of solar and 16 GW of wind.
South Africa	✓				Policy reforms removed licensing requirements for distributed generation projects up to 100 MW and introduced tax incentives for up to 125% of the cost of renewable generation projects against their tax bill in the year of installation, while households are eligible for a rebate covering 25% of installation costs (Ministry of Finance of South Africa 2023).
UAE		✓			The Net Zero Carbon Buildings Commitment (NZCBC) through the Emirates Green Building Council. The country's 2023 NDC target to cut building emissions 56% below 2019 levels by 2030 further reinforces this policy direction.
Uzbekistan	✓				The Scaling Solar program (World Bank Group 2023b), run by the government and the World Bank, offered competitive PPP tenders and streamlined the procurement and development of large solar projects by combining advisory support, standardized documentation, pre-arranged financing, insurance, and guarantees to de-risk private investment.
Viet Nam	✓				Decision 11/2017/QD-TTg (Government of Viet Nam 2017) introduced a 20-year feed-in tariff (FiT) at USD 0.0935/kWh for grid-connected projects, triggering a surge of investment prior to the 2019 connection deadline. A second scheme, Decision 13/2020/QD-TTg (Government of Viet Nam 2020b) introduced slightly lower, technology-specific FiTs, driving growth in rooftop solar PV. Combined with fast permitting, quick connection approvals, and rising retail electricity tariffs, these FiTs created a highly favorable environment for both corporate and residential investment.
			✓		Policies are more deployment-focused such as cutting excise taxes to 1–3% through 2027 (Ministry of Finance 2022), registration fees waived under (Government of Viet Nam 2022a), and incentives offered to component producers (Government of Viet Nam 2020a). Furthermore, broader frameworks such as Decision No. 950/QD-TTg on smart sustainable cities signal long-term intent (ICCT 2022).

Table A.3: Top persistent barriers and challenges for All EMDEs in mitigation solutions

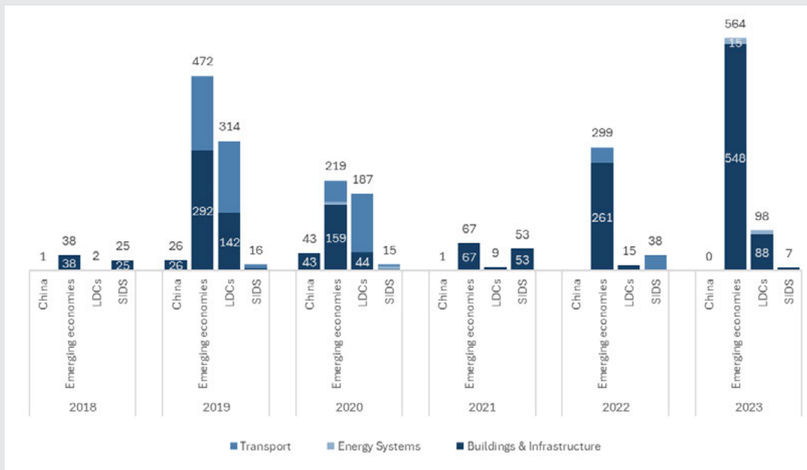
Barrier	Details	Examples of solutions
Infrastructure deficits and grid constraints	• Renewable deployment has outpaced transmission, distribution, and storage investment, leading to congestion and curtailment (e.g., Viet Nam's solar slowdown after 2020). • In transport, BEV uptake is constrained by inadequate charging corridors and mass-transit capacity. • In buildings, rapid urbanization risks locking in inefficient stock if energy codes and retrofits pipelines lag.	• *Energy*: Concessional loans for grid and storage, such as Morocco's Integrated Wind Program, can de-risk projects. • *Transport*: Blended and concessional finance for charging corridors and MRT systems (e.g., Philippines' JICA-financed transport depots). • *Buildings*: Integrate efficiency into urban housing and retrofit programs (e.g., NZCBC-certified developments in the UAE).
Policy, regulatory, and fiscal uncertainty	• Abrupt policy shifts and fragmented regulations create stop–start cycles and increase risk for developers. • Fossil fuel subsidies keep tariffs artificially low, undercutting renewable competitiveness and delaying fiscal reallocation. • Volatile EV tax incentives and currency depreciation (e.g. Turkey) increase affordability and investor risks. • Weak or partial building codes reduce confidence in efficiency returns and slow market uptake.	• *Energy*: Transparent competitive tenders and PPPs with pre-arranged financing (e.g., Uzbekistan's Scaling Solar Program). • *Transport*: Stable multi-year EV incentives backed by concessional finance and domestic content requirements (e.g., Indonesia's VAT-linked scheme). • *Buildings*: Expand mandatory energy codes and harmonize standards (e.g. India's ECO Niwas Samhita). • *AFOLU*: Redirect subsidies to climate-smart practices and strengthen regulatory coherence. Redirect subsidies toward distributed generation incentives (South Africa's household rebate and corporate tax incentives).
Financing gaps and small project scale	• Electrification and clean energy access remain underfinanced, with over 600 million people in sub-Saharan Africa still lacking electricity. • Many mini-grids, household systems, and AFOLU projects have small ticket sizes, creating high transaction costs. • Green mortgages, retrofit loans, and concessional facilities remain niche, limiting household and SME participation.	• *Energy*: Blended finance for mini-grids and off-grid renewables (e.g. Pakistan's State Bank renewable finance scheme). • *Buildings*: Scale green mortgage and retrofit loan products; integrate energy performance into credit risk assessments. • *AFOLU*: Aggregate smallholder projects through blended facilities (e.g., Ethiopia's CRGE Facility).
Governance and institutional capacity gaps	• Weak MRV systems and contested land tenure undermine transparency and investor confidence. • Political shifts and fragmented mandates disrupt climate finance flows and policy continuity. • Limited administrative capacity constrains the enforcement of energy codes and subsidy reform. • Rapid urbanization in EMDEs further strains planning and regulatory systems.	• *AFOLU*: Institutionalize multi-stakeholder governance and strengthen MRV (e.g., Amazon Fund); advance land tenure reforms. • *Buildings*: Establish monitoring and verification systems to ensure compliance and performance tracking. • *Transport*: Embed just transition frameworks in urban mobility planning. • *Energy*: Strengthen regulatory institutions and tariff regimes to stabilize market conditions.

5.3 ADAPTATION

Box A.1: Climate-resilient infrastructure tracking

While data shows that climate-resilient infrastructure (CRI) investment in All EMDEs has increased significantly since 2021, major issues with tracking this category of finance remain. Data on CRI investment is limited for several reasons: difficulty in disaggregating the resilience-building component of investments from other components; a lack of consistent, transparent data disclosures; and varying familiarity with resilience taxonomies, which means some investors may not identify CRI investments as such and therefore not disclose them. Of the finance tracked, all is adaptation-focused, with 74% of the CRI finance between 2018 and 2023 flowing to buildings and infrastructure. Virtually all CRI investment since 2018 has gone to Emerging Markets (70%) and LDCs (27%), with 92% of flows funded by multilateral DFIs over the same period.

Figure A.1: Climate finance to climate-resilient infrastructure by development status and sector, USD millions



Resilient infrastructure financing is a minority of global infrastructure development. Previous findings, though covering 2019-2020 data and subject to the same tracking limitations, conclude that for every USD 1 spent on climate-resilient infrastructure, USD 87 was spent on infrastructure projects that do not integrate climate-resilience principles (CPI 2022). Relatively low-cost governance actions, such as making risk analysis more accessible and implementing building codes and land-use planning improvements, can incentivize resilient investments (UNDRR 2025).

Viet Nam and Bangladesh demonstrate the creation of infrastructure-relevant development plans that consider climate adaptation. The Mekong Delta Region Master Plan for 2021-2030, with a vision to 2050, sets out development plans, highlighting water monitoring and management, flood protection, coastal zones, embankments, and irrigation systems. The plan has adaptation as a central focus, cutting across agriculture, coastal zones, and water sectors (Government of Viet Nam 2022b). The Bangladesh Delta Plan 2100 is a long and medium-horizon adaptation strategy with flood safety and climate-resilient infrastructure as central elements. Bangladesh's plan through to 2100 includes sustainable land use and spatial planning, hazard zoning, and the development of critical infrastructure. A subsequent Investment Plan (World Bank Group 2017) details 80 prioritized physical and institutional investments the government can make to implement the plan. The Bangladesh Delta Fund was also proposed, aiming to pool national, donor, and potentially private funds for investment (Bangladesh Planning Commission 2021).

This table provides further information on policies mentioned across the report, along with some examples of additional measures.

Table A.4: Supplementary policy information for case studies

	Water and wastewater	AFOLU	DRM	Policy support & capacity building	Additional example policies
Bangladesh				✓	In 2012, with support from the UN and other development institutions, Bangladesh conducted a Climate Public Expenditure and Institutional Review (CPEIR), recommending a Climate Fiscal Framework (CFF) that was established in 2014 with support from the UNDP (Government of Bangladesh 2014) and updated in 2020 (Government of Bangladesh 2020). The government then pursued public climate finance tracking—a CFF objective—with a methodology published in 2018 (Government of Bangladesh 2018). The CFF concept was adopted at the local level. One example is the Local Government Initiative on Climate Finance (LoGIC), which empowers local governments and communities to design and implement adaptation projects through training in project planning, financial management, and audits (UNDP). The success of the project led to an additional two years of funding through to 2025 (AP-PLAT 2025). The Economic Relations Division also established the International Climate Finance Cell (ICFC), a division responsible for accessing, utilizing, and managing bilateral, regional, and multilateral climate finance (Government of Bangladesh 2023). Though past the window of tracked climate finance, Bangladesh and its multilateral and bilateral partners are also launching the Bangladesh Climate and Development Platform to leverage adaptation and mitigation investments (IMF 2023).
The Bahamas			✓		The Disaster Risk Management Act (2022) mandates the preparation of a 'Comprehensive Financial Strategy for Disaster Risk Management', embedding in law responsibilities for risk reduction and financial protection (Government of The Bahamas 2022b). The Climate Spending Report (2021-22) enacted a climate and disaster budget-tagging methodology, projecting USD 54 million of government expenditure to be DRM-focused in the fiscal year (Government of The Bahamas 2022c).
Ethiopia		✓			NDCs, NAPs, and more general growth plans, such as the Growth and Transformation Plan (GTP) II (Government of Ethiopia 2019b), aligned with the CRGE. The facility operationalized the CRGE vision, coordinated sectoral experts, and achieved its aim of mobilizing and allocating climate finance (UNDP 2019). The Facility has implemented over 26 adaptation and mitigation projects through a Fast-Track scheme (Government of Ethiopia 2024).
Kenya			✓		Kenya's policy framework for DRM spans, but is not exclusive to: National Disaster Management Policy (Government of Kenya 2017), National Climate Change Action Plan 2018-2022 (Government of Kenya 2018), National Climate Change Action Plan 2023-2027 (Government of Kenya 2023), Climate Risk Management Framework Kenya (Government of Kenya 2016), National Disaster Risk Management Strategy (2025-2030) (Government of Kenya 2025).
Pakistan	✓				The National Water Policy (2018) outlines strategic directions for sustainable water management, aiming to ensure equitable access, enhanced efficiency, and bolster resilience against climate-induced shocks (Government of Pakistan 2018). The Sindh Water Policy (2023) aims to ensure equitable and sustainable water resources for all sectors in Sindh by implementing water resource management with a robust institutional framework, emphasizing accountability, decentralization, and stakeholder participation (Government of Sindh Pakistan 2023).
Viet Nam			✓		Viet Nams's policy framework for DRM spans, but is not exclusive to: Law on Natural Disaster Prevention and Control (Government of Viet Nam 2013), Special Report on Managing the Risks of Extreme Events and Disasters (SREX) (Government of Viet Nam 2015), The Central Natural Disaster Prevention and Control Fund (Government of Viet Nam 2021a), National Strategy on Natural Disaster Prevention, Response and Mitigation to 2023, Vision to 2050 (Government of Viet Nam 2021b).

The following mapping aims to shed light on how specific case study policies aimed to overcome traditional adaptation financing barriers. This does not imply all policies were successful in isolation. Instead, it highlights examples of existing approaches.

Table A.5: Expanding the adaptation policy toolbox—barriers and combating policies

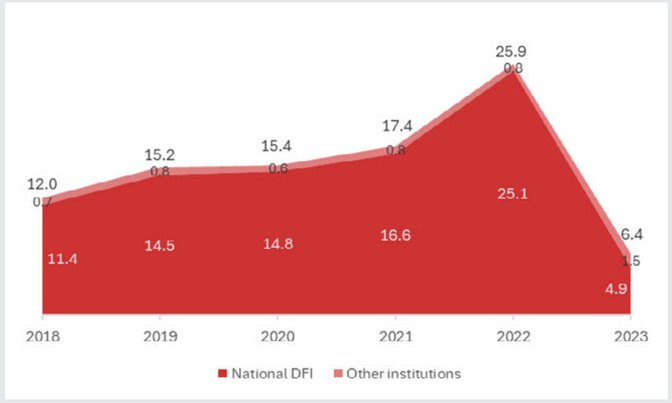
Barrier	Details of barrier	Example policy solutions[39]
High perceived risk and difficulty in establishing predictable returns	Benefits from adaptation finance are often realized over a longer time horizon and may not accrue directly to the investor, making it harder to establish commercial returns in some contexts. Perceptions of high project risk can be exacerbated by weak pipelines or capacity gaps that slow project development.	Bangladesh's Investment Plan, emerging from the Delta 2100 plan, aimed to provide a bankable pipeline of projects, detailing investment requirements and implementation timelines of 80 projects.
Small ticket size of adaptation projects	The size of some adaptation projects may put them under the minimum thresholds for direct financing from some traditional investors.	Ethiopia's CRGE Facility bundled proposals into larger investment packages.
Limited technical and institutional capacity	Some institutions may lack the technical knowledge or capacity to navigate the financing journey, requiring support in areas such as climate risk assessment, business case development and due diligence. Left unaddressed, these gaps can add unnecessary administrative costs for both providers and recipients and prevent a successful project close.	Bangladesh's Climate Fiscal Framework (CFF) institutionalized climate finance planning and promoted capacity-building partnerships.
Fragmented governance of cross-sectoral solutions	Cross-government and national-subnational coordination on adaptation is often poor, making cross-sectoral solutions with wide benefits across the economy more difficult to finance and implement.	Viet Nam's Mekong Delta Plan integrated planning and investment across multiple sectors.
Data and information on climate risks and solutions	Businesses, households and financial institutions often lack access to, or make insufficient use of information on the climate risks they face. Information gaps on the range of adaptation and resilience solutions available to address these risks, and on the suite of potential financing models to implement them, further limit action.	Kenya's Climate Risk Management Framework sets out current climate impacts and future rainfall trends for the country and provides details of required actions from different public bodies.
Challenges in establishing consistent reporting frameworks and granular data	Identifying, classifying and reporting adaptation finance can be complex, with definitions for what constitutes adaptation finance relying on contextual factors, such as location-specific climate risk. Further, some adaptation actions may not be regarded as such by investors, being badged instead as general risk mitigation, weather-proofing, or asset maintenance.	The Bahamas DRM budget tagging established a framework for reporting DRM expenditure, tailored to their context.

39 References for policies can be found above in Annex Table A.4

Box A.2: China adaptation analysis

Tracked adaptation finance to China saw a substantial decrease in 2023 after consistent growth from 2018 to 2022, driven by changes in financing from individual institutions. A USD 20 billion decrease in funding from the China Development Bank led total adaptation finance in China to fall from USD 26 billion in 2022 to USD 6.4 billion in 2023, as reported in the IDFC Green Finance Mapping 2024 report (CPI and IDFC 2024)the International Development Finance Club (IDFC. The decrease could be attributable to methodological changes in CDB's tracking of its adaptation flows, as well as to currency depreciation, which reduced the USD value of local-currency investments.

Figure A.2: Adaptation finance to China by institution type



From 2018 to 2023, around 75% of adaptation finance to China has gone to water and wastewater (USD 71 billion), and 22% (USD 20 billion) has gone to other and cross-sectoral sectors.

Over this period, 99% of tracked adaptation finance to China was in the form of market-rate debt. Flows were 96% domestically and publicly financed.

References

1. Africa Energy Portal. 2021. Caculo Cabaça hydropower plant project in Kwanza Norte Province, Angola. Afr Energy Portal. [accessed 2025 Oct 14]. Available here.
2. Africa Energy Portal. 2024. Côte d'Ivoire Wins €15M EU Deal for Green Energy Push. Afr Energy Portal. [accessed 2025 Oct 13]. Available here.
3. AidData. 2025. Project 67108. [accessed 2025 Oct 14]. Available here.
4. AIIB. 2025. Pakistan: Karachi Water and Sewerage Services Improvement Project-2 (KWSSIP-2) - Projects - AIIB. [accessed 2025 Oct 10]. Available here.
5. AP-PLAT. 2025. Inclusive Climate Finance Model Empowers Climate-vulnerable Communities in Bangladesh Adaptation Database Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT). [accessed 2025 Oct 10]. Available here.
6. Bai B, Wang Z, Chen J. 2024. Shaping the solar future: An analysis of policy evolution, prospects and implications in China's photovoltaic industry. Energy Strategy Rev. 54:101474. doi:10.1016/j.esr.2024.101474.
7. Bangladesh Planning Commission. 2021. Bangladesh Delta Plan (BDP) 2100 - Investment Planning, Financing and Implementation Strategy. [accessed 2025 Oct 10]. Available here.
8. BBC. 2025 Oct 7. Renewables overtake coal as world's biggest source of electricity. BBC News. [accessed 2025 Oct 13]. Available here.
9. BRICS Information Center. 2025. Leaders' Framework Declaration on Climate Finance. [accessed 2025 Oct 14]. Available here.
10. CCF. 2025. Domestic Capital Mobilization for Climate Finance in Southeast Asia. Available here.
11. CCFLA. 2024. CCFLA Central Asia Hub Report: Scaling up project preparation and finance for net zero carbon buildings in Kazakhstan and Uzbekistan. [accessed 2025 Oct 14]. Available here.
12. CGIAR. 2024. 2024 Breakthrough Agenda Report – Agriculture. [accessed 2025 Oct 13]. Available here.
13. CLIC. 2025. Landscape of Climate Finance for Agrifood Systems 2025. Climate Policy Initiative. [accessed 2025 Oct 10]. Available here.
14. Climate Change Laws. 2020. Polish Offshore Wind Act - Climate Change Laws of the World. [accessed 2025 Oct 16]. Available here.
15. Climate Finance Lab. 2022. Green, Affordable Housing Finance. Glob Innov Lab Clim Finance. [accessed 2025 Oct 14]. Available here.
16. Climate Transparency. 2025. Renewable Energy in Argentina: Are the Current Financing Instruments Driving the Energy Transition? [accessed 2025 Oct 13]. Available here.
17. CPI. 2022. Tracking Investments in Climate Resilient Infrastructure. [accessed 2025 Oct 10]. Available here.
18. CPI. 2024a. Landscape of Green Finance in India 2024. CPI. [accessed 2025 Oct 14]. Available here.
19. CPI. 2024b. The State of Global Air Quality Funding 2024. CPI. [accessed 2025 Oct 14]. Available here.
20. CPI. 2024c. The Cost of Inaction. CPI. [accessed 2025 Sep 4]. Available here.
21. CPI. 2025a. Global Landscape of Climate Finance 2025 Methodology. Climate Policy Initiative. [accessed 2025 Oct 10]. Available here.
22. CPI. 2025b. Tracking the Transition: Global private financial institutions' progress toward net zero. CPI. Available here.
23. CPI. 2025c. Domestic Capital Mobilization for Climate Finance in Southeast Asia. [accessed 2025 Oct 13]. Available here.
24. CPI. 2025d. The Forest-Climate Nexus: A Fit-for-Purpose Framework for Climate Impact. CPI. [accessed 2025 Oct 15]. Available here.
25. CPI. 2025e. Unlocking Climate Finance for Least Developed Countries: Innovations and Opportunities. CPI. [accessed 2025 Oct 14]. Available here.
26. CPI. 2025f. From commitments to capital—are the NDCs 3.0 built to mobilize climate investment? [accessed 2025 Sep 2]. Available here.
27. CPI, IDFC. 2024. IDFC Green Finance Mapping 2024. CPI. [accessed 2025 Oct 14]. Available here.
28. CREA and GEM. 2025. When coal won't step aside: The challenge of scaling clean energy in China. Available here.
29. CREWS. 2025. Annual Report 2024. Available here.
30. Department of Budget and Management of the Philippines. 2018. 'Build Build Build' to generate 1.1 million jobs annually in the medium term. [accessed 2025 Oct 13]. Available here.

31. Department of Finance of the Philippines. 2018. Philippines, Japan sign 104.53-B yen loan accord for 1st phase of Metro Subway project - Department of Finance. [accessed 2025 Oct 13]. Available here.

32. Department of Transportation of the Philippines. 2024. Metro Manila Subway Project hits 'significant progress' in construction: DOTr. Philipp Inf Agency. [accessed 2025 Oct 13]. Available here.

33. Development Aid. 2025. Fostering South-South cooperation and its impact on international development | Experts' Opinions. DevelopmentAid. [accessed 2025 Oct 14]. Available here.

34. Dugasseh FA, Andersen MS. 2024. Non-carbon benefits of REDD+ implementation and sustainable emission reductions – a review. For Trees Livelihoods. 33(4):299–318. doi:10.1080/14728028.2024.2383737.

35. Dupay R. 2023. How UAE is legislating to decarbonise buildings. BUILT Environ J. [accessed 2025 Oct 14]. Available here.

36. Duvar. 2024. Turkey's electric car sales surge eightfold in 2023, data shows. Duvar Engl. [accessed 2025 Oct 15]. Available here.

37. EIB. 2013. Onee - Projet Eolien. [accessed 2025 Oct 13]. Available here.

38. EIB. 2019. ELENA Project Factsheet - Energy Efficiency Finance Facility for Residential Buildings (EEFFRB). EIB. Available here.

39. EIB. 2020. Poland: Solid EIB Group activity in 2019 paves the way for continued support this year, as the economy struggles with coronavirus. European Investment Bank. [accessed 2025 Oct 14]. Available here.

40. EIB. 2023. RETAIL ENERGY & ENVIRONMENTAL SUSTAINABILITY. European Investment Bank. [accessed 2025 Oct 14]. Available here.

41. 2024. Poland received €5.1 billion from EIB Group in 2023 to bolster economy. European Investment Bank. [accessed 2025 Oct 14]. Available here.

42. EIB. 2025. Who's Most at Risk? A Global Index of Climate Risk for Countries. Available here.

43. Enerdata. 2023. ONEE (Morocco) fully commissions a 300 MW wind project | Enerdata. [accessed 2025 Oct 13]. Available here.

44. Energy Transition. 2024. Why Mexico is lagging behind in the energy transition. EnergyTransition.org. [accessed 2025 Oct 13]. Available here.

45. ESG Today. 2024. Brookfield, Alterra Launch $5 Billion Emerging Markets Climate Transition Fund. ESG Today. [accessed 2025 Oct 14]. Available here.

46. ESMAP. 2024a. Off-grid Solar Market Trends Report 2024. The World Bank Group. Available here.

47. ESMAP. 2024b. Access to Electricity. World Bank Group. Available here.

48. EU Neighbours. 2025. Morocco: ONEE raises 300 million euros from the EIB, KfW, and the EU to finance the strengthening of its electrical network. EU Neighb. [accessed 2025 Oct 13]. Available here.

49. EY. 2024. Thailand | Subsidies, duties, excise-tax incentives to encourage development and use of battery electric vehicles. [accessed 2025 Oct 13]. Available here.

50. FAO. 2021. 14th Five-Year National Agricultural Green Development Plan. FAO. [accessed 2025 Oct 14]. Available here.

51. FAO. 2023. Almost half the world's population lives in households linked to agrifood systems. [accessed 2025 Oct 10]. Available here.

52. Finnfund. 2023. Finnfund Annual Report 2023. Finnfund.

53. Garrigues. 2024. Chile: Approval of Significant Changes in Recognition and Compensation of Energy Storage Systems and Hybrid Plants. Garrigues. [accessed 2025 Oct 13]. Available here.

54. GCF. 2019. FP120: Chile REDD-plus results-based payments for results period 2014-2016. Green Clim Fund. [accessed 2025 Oct 14]. Available here.

55. GCF. 2025. FP207: Recharge Pakistan: Building Pakistan's resilience to climate change through Ecosystem-based Adaptation (EbA) and Green Infrastructure for integrated flood risk management. Green Clim Fund. [accessed 2025 Oct 10]. Available here.

56. GIZ. 2023. Supporting the implementation of the National Adaptation Plan in Pakistan (NAP). [accessed 2025 Oct 13]. Available here.

57. GIZ. 2024. Supporting the implementation of the National Adaptation Plan (NAP) in Pakistan. German Cooperation Deutsche Zusammenarbeit. [accessed 2025 Oct 1]. Available here.

58. Global Centre on Adaptation. 2019. Adapt now: a global call for leadership on climate resilience. Glob Cent Adapt. [accessed 2025 Oct 10]. Available here.

59. Gov. Communications Office of Qatar. 2024. Environmental | Government Communications Office. [accessed 2025 Oct 13]. Available here.

60. Government of Bangladesh. 2014. Climate Fiscal Framework. [accessed 2025 Oct 10]. Available here.

61. Government of Bangladesh. 2018. Climate Public Finance Tracking in Bangladesh: Approach and Methodology. [accessed 2025 Oct 10]. Available here.

62. Government of Bangladesh. 2020. Bangladesh Climate Fiscal Framework. [accessed 2025 Oct 10]. Available here.

63. 63. Government of Bangladesh. 2022. National Adaptation Plan of Bangladesh (2023-2050). [accessed 2025 Oct 10]. Available here.

64. Government of Bangladesh. 2023. International Climate Finance Cell. [accessed 2025 Oct 10]. Available here.

65. Government of China. 2025. Notice on Deepening the Market-Oriented Reform of New Energy On-grid Electricity Prices and Promoting the High-Quality Development of New Energy -. Natl Dev Reform Comm. [accessed 2025 Oct 14]. Available here.

66. Government of Ethiopia. 2011. Climate-Resilient Green Economy (CRGE) Strategy - Climate Change Laws of the World. [accessed 2025 Oct 10]. Available here.

67. Government of Ethiopia. 2019a. National Adaptation Plan of Ethiopia | UNFCCC. [accessed 2025 Oct 10]. Available here.

68. Government of Ethiopia. 2019b. Growth and Transformation Plan II | United Nations in Ethiopia. [accessed 2025 Oct 10]. Available here.

69. Government of Ethiopia. 2021. Updated Nationally Determined Contribution. [accessed 2025 Oct 10]. Available here.

70. Government of Ethiopia. 2024. CRGE. [accessed 2025 Oct 10]. Available here.

71. Government of India. 2018. Eco-Niwas Samhita 2018. Bureau of Energy Efficiency Energy Conservation Building Code for Residential Buildings. Available here.

72. Government of India. 2025. The Solar Surge: India's Bold Leap Toward a Net Zero Future. [accessed 2025 Oct 13]. Available here.

73. Government of Indonesia. 2019. Presidential Regulation 55/2019 on electric vehicles - Climate Change Laws of the World. [accessed 2025 Oct 16]. Available here.

74. Government of Kenya. 2013. National Climate Change Action Plan 2013-2017. Available here.

75. Government of Kenya. 2016. A Climate Risk Management Framework for Kenya - Climate Change Laws of the World. [accessed 2025 Oct 10]. Available here.

76. Government of Kenya. 2017 Nov 30. Kenya: National disaster risk management policy 2017 | PreventionWeb. [accessed 2025 Oct 10]. Available here.

77. Government of Kenya. 2018. National Climate Change Action Plan (NCCAP) 2018 - 2022. | UNEP Law and Environment Assistance Platform. [accessed 2025 Oct 10]. Available here.

78. Government of Kenya. 2023. National Climate Change Action Plan (NCCAP) III - 2023-2027. Towards Low Carbon Climate Resilient Development. | UNEP Law and Environment Assistance Platform. [accessed 2025 Oct 10]. Available here.

79. Government of Kenya. 2025. Disaster Risk Management Strategy (2025 - 2030). [accessed 2025 Oct 10]. Available here.

80. Government of Pakistan. 2018. National Water Policy 2018. Ministry of Water Resources | Government of Pakistan. [accessed 2025 Aug 15]. Available here.

81. Government of Pakistan. 2021. Updated Nationally Determined Contributions 2021. | UNEP Law and Environment Assistance Platform. [accessed 2025 Oct 10]. Available here.

82. Government of Pakistan. 2023. National Adaptation Plan Pakistan | UNFCCC. [accessed 2025 Oct 10]. Available here.

83. Government of Pakistan. 2024. Pakistan unveils first climate finance strategy to mobilise funds for national climate action (Revised). Minist Clim Change Environ Coord Gov Pak. [accessed 2025 Oct 1]. Available here.

84. Government of Poland. 2020. Act of 17 December 2020 on the promotion of electricity production in marine wind farms. [accessed 2025 Oct 13]. Available here.

85. Government of Sindh, Pakistan. 2023. Sindh water policy. [accessed 2025 Oct 10]. Available here.

86. Government of The Bahamas. 2022a. Bahamas' Updated Nationally Determined Contribution. | UNEP Law and Environment Assistance Platform. [accessed 2025 Oct 10]. Available here.

87. Government of The Bahamas. 2022b. Disaster risk management Act, 2022. [accessed 2025 Oct 10]. Available here.

88. Government of The Bahamas. 2022c. The Bahamas Climate Spending report 2021—2022. [accessed 2025 Oct 10]. Available here.

89. Government of the Philippines. 2021. Updated Philippine Development Plan 2017-2022. Government of the Philippines. [accessed 2025 Oct 13]. Available here.

90. Government of UAE. 2022. The United Arab Emirates' Third Nationally Determined Contribution (NDC 3.0) | UNFCCC. [accessed 2025 Oct 15]. Available here.

91. Government of Viet Nam. 2013. Viet Nam: Law on natural disaster prevention and control 2013 PreventionWeb. [accessed 2025 Oct 10]. Available here.

92. Government of Viet Nam. 2015. Viet Nam special report on managing the risks of extreme events and disasters to advance climate change adaptation: Summary for Policymakers - January 2015 [EN/VI] - Viet Nam | ReliefWeb. [accessed 2025 Oct 10]. Available here.

93. Government of Viet Nam. 2017. Decision on the Mechanism to Encourage Solar Power Development in Vietnam - Climate Change Laws of the World. [accessed 2025 Oct 16]. Available here.

94. Government of Viet Nam. 2020a. Decree No. 57/2020/ND-CP dated May 25, 2020 on amendments and supplements to several Articles of the Government's Decree No. 122/2016/ND-CP on export and preferential import tariff schedules, lists of products, absolute, mixed and out-of-quota import duty rates, and to the Decree No. 125/2017/ND-CP amending and supplementing several Articles of the Decree No. 122/2016/ND-CP. [accessed 2025 Oct 13]. Available here.

95. Government of Viet Nam. 2020b. Decision No. 13/2020/QD-TTg on Incentives for Development of Solar Energy in Vietnam - Climate Change Laws of the World. [accessed 2025 Oct 16]. Available here.

96. Government of Viet Nam. 2021a. Return Establishment and Management of Natural Disaster Prevention and Control Funds. Thư Viện Pháp Luật. [accessed 2025 Oct 10]. Available here.

97. Government of Viet Nam. 2021b. Vietnam: National strategy on natural disaster prevention, response and mitigation to 2030, vision to 2050. [accessed 2025 Oct 10]. Available here.

98. Government of Viet Nam. 2022a. Decree 10/2022/ND-CP on registration fee. LuatVietnam. [accessed 2025 Oct 16]. Available here.

99. Government of Viet Nam. 2022b. Decision No. 287/QD-TTg on approval for Planning for Development of the Mekong Delta Region for the 2021 - 2030 Period with Vision towards 2050 - Climate Change Laws of the World. [accessed 2025 Oct 10]. Available here.

100. Government of Viet Nam. 2023. Power Development Plan 8 (PDP8). [accessed 2025 Oct 13]. Available here.

101. Green Finance & Development Center. 2025. China Belt and Road Initiative (BRI) Investment Report 2024. [accessed 2025 Oct 14]. Available here.

102. Grenergy. 2025. The Storage Play.

103. ICAT. 2024. Assessment of the policy framework's impact on the renewable energy generation expansion in the Brazilian power grid. Available here.

104. ICCT. 2022. Promoting the development of electric vehicles in Vietnam. Available here.

105. IDB. 2023a. IDB | Strengthening Disaster Risk Management Governance in The Bahamas. [accessed 2025 Oct 10]. Available here.

106. IDB. 2023b. IDB | Bahamas to Enhance Natural Disaster Risk Management with IDB Support. [accessed 2025 Oct 10]. Available here.

107. IEA. 2019. Morocco Renewable Energy Target 2030. IEA. [accessed 2025 Oct 17]. Available here.

108. IEA. 2021. Net Zero by 2050 A Roadmap for the Global Energy Sector. Available here.

109. IEA. 2024a. Energy Efficiency 2024. Available here.

110. IEA. 2024b. Renewables 2023. IEA. [accessed 2025 Oct 14]. Available here.

111. IEA. 2024c. Energy Efficiency 2024. IEA.

112. IEA. 2024d. Renewable Energy Act – Policies. IEA. [accessed 2025 Oct 16]. Available here.

113. IEA. 2025a. Cost of capital expectations for 2025 diverge amid rising uncertainty – Analysis. IEA. [accessed 2025 Oct 16]. Available here.

114. IEA. 2025b. World Energy Investment 2025. IEA. [accessed 2025 Oct 10]. Available here.

115. IEA. 2025c. Cameroon - Countries & Regions. IEA. [accessed 2025 Oct 13]. Available here.

116. IEA. 2025d. Reduced special consumption tax for Hybrid and Electric Vehicles – Policies. IEA. [accessed 2025 Oct 15]. Available here.

117. IEA. 2025e. Minister of Finance Order No.38 2023 on VAT reduction for Battery Electric Vehicle – Policies. IEA. [accessed 2025 Oct 16]. Available here.

118. IEEFA. 2024. The Future of Net-Metered Solar Power in Pakistan. Available here.

119. IFC. 2025. IFC and HDFC Capital Partner to Boost Green Affordable Housing Finance in India with $1 Billion H-DREAM Fund. IFC. [accessed 2025 Oct 14]. Available here.

120. IFC, Amundi. 2024. Emerging Market Green Bonds 2023. Available here.

121. IGC. 2021. Powering up energy investments in fragile states: A call to action. Fragility Counc. [accessed 2025 Oct 15]. Available here.

122. IISD. 2025. Indonesian Electric Vehicle Boom: A temporary trend or a long-term vision? | International Institute for Sustainable Development. [accessed 2025 Oct 13]. Available here.

123. IKI. 2025. The Revised PDP8 Aligns Viet Nam's Energy Policy Closer to JETP Goals and Surpasses NDC Commitments – International Climate Initiative (IKI) in Viet Nam. [accessed 2025 Oct 13]. Available here.

124. IMF. 2023. Bangladesh and its Partners are Launching the Bangladesh Climate and Development Platform to Leverage Adaptation and Mitigation Investments. [accessed 2025 Oct 10]. Available here.

125. IPCC. 2023. Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Intergovernmental Panel on Climate Change. [accessed 2025 Oct 10]. Available here.

126. IRENA. 2024. Renewable Power Generation Costs in 2023. Available here.

127. IRENA. 2025. Renewable capacity statistics 2025. IRENA. [accessed 2025 Oct 14]. Available here.

128. IRENA, ILO. 2024. Renewable Energy and Jobs. Annual Review 2024. Available here.

129. ISSI. 2024. Pakistan's National Climate Finance Strategy: A New Framework for Climate Resilience. Available here.

130. JLL. 2024. Indonesia's rise as an EV hub. [accessed 2025 Oct 13]. Available here.

131. Johnson JA, Baldos U, Cervigni R, Chonabayashi S, Corong E, Gavryliuk O, Hertel T, Nootenboom C, Gerber J, Ruta G, et al. 2021. The Economic Case for Nature. World Bank, Washington, DC. [accessed 2025 Sep 4]. Available here.

132. KAPSARC. 2024. Unlocking Energy Efficiency in the GCC Built Environment. [accessed 2025 Oct 14]. Available here.

133. KSIR. 2014. Energy Efficiency Program for the State of Kuwait. KSIR.

134. Maka AOM, Alabid JM. 2022. Solar energy technology and its roles in sustainable development. Clean Energy. 6(3):476–483. doi:10.1093/ce/zkac023.

135. MDBs. 2024. Joint Report on Multilateral Development Banks' Climate Finance 2023. Multilateral Development Banks. [accessed 2025 Oct 14]. Available here.

136. Ministry of Agriculture and Environment. 2022. Increasing investment resources in earth observation satellite technology. [accessed 2025 Oct 10]. Available here.

137. Ministry of Ecology and Environment. 2024. Letter on the issuance of the "China Climate Change Adaptation Progress Report (2023)." [accessed 2025 Oct 10]. Available here.

138. Ministry of Energy of Morocco. 2010. Law 13-09 on renewable energies. [accessed 2025 Oct 13]. Available here.

139. Ministry of Environment and Forestry of Indonesia. 2023. Indonesia's Climate Actions Towards 2030.

140. Ministry of Finance. 2022. Cổng thông tin điện tử Bộ Tài Chính. [accessed 2025 Oct 16]. Available here.

141. Ministry of Finance of South Africa. 2023. Budget 2023. Available here.

142. Ministry of Heavy Industries of India. Faster Adoption & Manufacturing of Electric Vehicles in India. [accessed 2025 Oct 13]. Available here.

143. Ministry of New and Renewable Energy of India. 2025. Solar Overview | Pakistan's National Climate Finance Strategy: A New Framework for Climate Resilience | India. [accessed 2025 Oct 13]. Available here.

144. Morita K, Matsumoto K. 2023. Challenges and lessons learned for REDD+ finance and its governance. Carbon Balance Manag. 18(1):8. doi:10.1186/s13021-023-00228-y.

145. Morocco World News. 2021. Morocco to Build New Wind Farm Near Essaouira Along Atlantic Coast. Moroc World News. [accessed 2025 Oct 13]. Available here.

146. Natural Power. 2023. Navigating Regulatory Challenges in Poland's Offshore Wind Sector. Nat Power. [accessed 2025 Oct 13]. Available here.

147. NDC Partnership. 2019 Apr 3. National Climate Funds – A Catalyst for Country-driven NDC Implementation |. [accessed 2025 Oct 10]. Available here.

148. ND-GAIN. 2025. Rankings // Notre Dame Global Adaptation Initiative // University of Notre Dame. [accessed 2025 Oct 16]. Available here.

149. NEPAD. 2025. The Missing Connection: Unlocking Sustainable Infrastructure Financing in Africa. [accessed 2025 Oct 13]. Available here.

150. NEPRA Pakistan. 2023. State of Industry Report 2023. Available here.

151. Northland Power. 2023. Northland Power Announces Signing of Credit Agreement for $5.2 Billion Project Financing at Baltic Power Offshore Wind Project. [accessed 2025 Oct 16]. Available here.

152. ODI Global. 2025. Southern-led multilateral channels for climate finance. Available here.

153. OECD. 2015. Green Finance and Investment. Overcoming Barriers to International Investment in Clean Energy. Available here.

154. OECD. 2025a. A Long-Term Strategy for Building Renovation | STIP Compass. STIP COMPASS. [accessed 2025 Oct 14]. Available here.

155. OECD. 2025b. Regulating for the planet: OECD Regulatory Policy Outlook 2025. OECD. [accessed 2025 Oct 17]. Available here.

156. Renewables Now. 2016 Jan 4. Morocco amends renewable energy law | Solar Power News | Renewables Now. [accessed 2025 Oct 13]. Available here.

157. Reuters. 2019. Turkey unveils first fully homemade car in $3.7 billion bet on electric. Reuters. [accessed 2025 Oct 15]. Available here.

158. Reuters. 2023. Indonesia relaxes tax rules on EV imports to attract investment. Reuters. [accessed 2025 Oct 13]. Available here.

159. Standard Chartered. 2023. Standard Chartered announces EUR1.29 billion financing for development of solar-powered electricity infrastructure in Angola. U K. [accessed 2025 Oct 17]. Available here.

160. State Bank of Pakistan. 2025. SBP Financing Scheme for Renewable Energy. [accessed 2025 Oct 13]. Available here.

161. Tesfaye L. 2024. Climate-smart agriculture investment plan for Ethiopia. Alliance Bioversity Int - CIAT. [accessed 2025 Oct 10]. Available here.

162. Ukoba K, Yoro KO, Eterigho-Ikelegbe O, Ibegbulam C, Jen T-C. 2024. Adaptation of solar energy in the Global South: Prospects, challenges and opportunities. Heliyon. 10(7):e28009. doi:10.1016/j.heliyon.2024.e28009.

163. UN MPTF. Ethiopia establishes the Ethiopia Climate Resilient Green Economy (CRGE) Facility. [accessed 2025 Oct 16]. Available here.

164. UN Office for South-South Cooperation. 2023. G77 Havana Declaration Focuses on Science, Technology, and Innovation Ahead of the UNGA. [accessed 2025 Oct 14]. Available here.

165. UNCDF. 2025. Zimbabwe's First Renewable Energy Fund: Building a Distributed Energy Market from the Ground Up. [accessed 2025 Oct 13]. Available here.

166. UNDP. 2019. Strengthening M&E for Climate Financing. [accessed 2025 Oct 10]. Available here.

167. UNDP. STANDARD JOINT PROJECT DOCUMENT -Local Government Initiative on Climate change (LoGIC). [accessed 2025 Oct 10]. Available here.

168. UNDRR. 2025. Global Assessment Report (GAR) 2025 | UNDRR. [accessed 2025 Oct 10]. Available here.

169. UNECE. 2014. Promoting Energy Efficiency Investments for Climate Change Mitigation and Sustainable Development. UNECE.

170. UNEP. 2013. Law on Natural Disaster Prevention and Control | UNEP Law and Environment Assistance Platform. [accessed 2025 Oct 10]. Available here.

171. United Nations. 2025. CCA 2024 Update: Climate Financing and Policy Recommendations | United Nations in Pakistan. [accessed 2025 Oct 10]. Available here.

172. UN-REDD. 2024. 15th consolidated annual progress report of the UN-REDD Programme Fund.

173. UPM. 2024. Sustainable Eucalyptus plantations in Uruguay. Available here.

174. US Chamber of Commerce. 2024. The Preparedness Payoff: The Economic Benefits of Investing in Climate Resilience. [accessed 2025 Oct 10]. Available here.

175. US Chamber of Commerce. 2025. Beyond the Payoff: How Investments in Resilience and Disaster Preparedness Protect Communities. [accessed 2025 Oct 10]. Available here.

176. WMO. 2024. State of Global Water Resources 2023. World Meteorol Organ. [accessed 2025 Oct 10]. Available here.

177. World Bank Group. 2017. People's Republic of Bangladesh – Multisector Approaches to Delta Management – Investment Plan for the Bangladesh Delta Plan 2100 – Volume 1 : The Plan. [accessed 2025 Oct 10]. Available here.

178. World Bank Group. 2021a. International Bank for Reconstruction and Development Program Document for a Proposed Loan in the Amount of Us$500 Million to Republic of Philippines for the Fourth Disaster Risk Management Development Policy Loan with a Catastrophe Deferred Drawdown Option. [accessed 2025 Oct 10]. Available here.

179. World Bank Group. 2021b. World Bank Catastrophe Bond Provides Jamaica $185 Million in Storm Protection. [accessed 2025 Oct 14]. Available here.

180. World Bank Group. 2022a. Pakistan - Country Climate and Development Report. World Bank Group. [accessed 2025 Oct 10]. Available here.

181. World Bank Group. 2022b. Concept Program Information Document (PID) - Dominican Republic Second DRM Development Policy Loan with a Catastrophe Deferred Drawdown Option - P178122 (English). World Bank. [accessed 2025 Oct 10]. Available here.

182. World Bank Group. 2023a. International Development association program document - Malawi first growth and resilience dpo with a catastrophe deferred drawdown option. [accessed 2025 Oct 10]. Available here.

183. World Bank Group. 2023b. New Solar Power Plants to Be Launched in Uzbekistan with World Bank Support, Helping Expand Access to Clean Energy. World Bank. [accessed 2025 Oct 13]. Available here.

184. World Bank Group. 2024a. World Bank and Government of Türkiye kickoff a $400 Million Project to Make the Country's Forests More Resilient. World Bank. [accessed 2025 Oct 14]. Available here.

185. World Bank Group. 2024b. The Cost of Inaction: Quantifying the Impact of Climate Change on Health in Low- and Middle-Income Countries. Washington, DC: World Bank. [accessed 2025 Sep 4]. Available here.

186. World Bank Group. 2024c. Scaling Up Locally Led Climate Action to Enable Community Resilience and Equitable Climate Transitions. World Bank. [accessed 2025 Oct 10]. Available here.

187. World Bank Group. 2024d. Climate Action in Ethiopia: Acting Now to Build Resilience and Leverage Opportunities. World Bank. [accessed 2025 Oct 10]. Available here.

188. World Bank Group. 2025a. Global Fuel Subsidies and Price Control Measures Database | Data Catalog. [accessed 2025 Oct 16]. Available here.

189. World Bank Group. 2025b. Chile Receives $5.1 Million for Reducing 1.03 Million Tons of Carbon Emissions. World Bank. [accessed 2025 Oct 14]. Available here.

190. World Economic Forum. 2024. Pakistan is experiencing a solar power boom. Here's what we can learn from it. World Econ Forum. [accessed 2025 Oct 13]. Available here.

191. WRI. 2023. Developing Countries Won't Beat the Climate Crisis Without Tackling Rising Debt. [accessed 2025 Oct 14]. Available here.

192. Wunder S, Schulz D, Montoya-Zumaeta JG, Börner J, Ponzoni Frey G, Betancur-Corredor B. 2024. Modest forest and welfare gains from initiatives for reduced emissions from deforestation and forest degradation. Commun Earth Environ. 5(1):394. Available here.

193. WWF. 2023. Recharge Pakistan Project receives $77.8 million funding boost. World Wildl Fund. [accessed 2025 Oct 10]. Available here.

194. Yamada E, Jian Y. 2025. The Impact of Dhaka Mass Rapid Transit on Road Congestion.