



Policy paper for G20

# Making Transformation Happen: Climate Finance

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**Leading authors:** Albert S. van Jaarsveld<sup>a</sup>, Elena Rovenskaya<sup>a\*</sup>, and Jeffrey Sachs<sup>b</sup>

**Contributing authors:** Barbara Buchner<sup>c</sup>, Dmitry Erokhin<sup>a</sup>, Yannick Glemarec<sup>d</sup>, Luis Gomez-Echeverri<sup>a</sup>, Saleemul Huq<sup>e</sup>, Avinash Mishra<sup>f</sup>, Pradeep Monga<sup>a</sup>, and Pratik Patil<sup>a</sup>

<sup>a</sup> International Institute for Applied Systems Analysis (IIASA), Austria

<sup>b</sup> Columbia University, USA

<sup>c</sup> Climate Policy Initiative, USA

<sup>d</sup> Green Climate Fund, Republic of Korea

<sup>e</sup> International Center for Climate Change and Development, Bangladesh

<sup>f</sup> NITI Aayog, India

\*Corresponding author

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## Foreword

The G20, founded as an informal Forum in 1999 in response to the 1997-1998 financial crises, originally focused on global economic cooperation. The G20 has rapidly evolved into a premier platform for exploring global cooperation, policy and governance pathways aligned with the common interests of its member states. The G20's mandate has also expanded to include trade, sustainable development, health, agriculture, energy, environment, climate change, and anti-corruption. India served as the Presidency of the G20 in 2023 and the recent Leaders' Summit in Delhi culminated in the release of a Leaders Declaration<sup>1</sup> under the banner of One Earth, One Family, One Future.

The International Institute for Applied Systems Analysis (IIASA) is an international research institute that provides systemic science-based policy advice to a global audience around matters that are of a global or universal nature. IIASA brings scientific systems analysis approaches to bear on complex global change matters and provides policy options that enhance the resilience and robustness of our shared world. IIASA was established in 1972 during the Cold War to build scientific bridges between East and West and continues to leverage its expertise and political neutrality to promote international cooperation through science and science input to policymaking processes.

This series of IIASA Policy Papers summarizes the recommendations made by panels of experts convened by IIASA upon the request of the G20 India Presidency on key topics of reform that presently face the broader multilateral system. The key areas of reform explored include the United Nations itself, climate finance, the World Health Organization (WHO), and the World Trade Organization (WTO). The recommendations are based on expert panel perspectives underpinned by relevant literature and previous documented explorations of the subjects.

Many recommendations made in these Policy Papers found traction and resonance in the G20 Leadership Declaration. These include:

- Strengthening the role and reach of the global multilateral system while increasing the representativeness, transparency, equity, and accountability of its major institutions;
- Strengthening the voice of developing countries in global decision making;
- Renewing the commitment to open, inclusive, equitable, fair, transparent, and sustainability-promoting global trade, with the WTO at its core;
- Scaling up a diversity of affordable financial sources to support the achievement of global developmental and Agenda 2030 objectives; enhancing the capacity of the Multilateral Development Banks to contribute to this goal;

to name just a few.

These key principles of global transformation targeted during the Indian Presidency of the G20 are anticipated to be carried forward into the upcoming G20 Presidencies of Brazil and South Africa in 2024 and 2025 respectively. This prospective period of renewed global cooperation and improved global governance, possibly against some prevailing headwinds, could prove a turning point for global solidarity for a sustainable future. This ambition, shared by IIASA and the G20 Presidency of India, will hopefully mark a turning point in progressive global cooperation for the benefit of all.



**Amitabh Kant**  
Sherpa G20 India Presidency



**Albert van Jaarsveld**  
IIASA Director General

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## About IIASA

This policy paper has been coordinated by International Institute for Applied Systems Analysis (IIASA). Located in Austria and supported by 21 national and regional member organizations, IIASA conducts policy-oriented research into pressing concerns that affect the future of all of humanity, such as climate change, energy security, population aging, and sustainable development. Over the last 50 years IIASA has established a reputation for excellence in systems analysis and its use for understanding and unravelling complex environmental and socio-economic problems across disciplinary boundaries. A systems analysis approach, convening power, and political independence help IIASA to coordinate knowledge synthesis and co-development of policy recommendation efforts, including this policy paper.

More information about IIASA can be obtained at <https://iiasa.ac.at/>.

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## About the authors

### Leading authors:

**Albert S. van Jaarsveld** was appointed as the eleventh Director General of IIASA in 2018. Prior to joining IIASA, he served as Vice-Chancellor and Principal of the University of KwaZulu-Natal in South Africa, and President and CEO of the South African National Research Foundation (NRF). Van Jaarsveld holds PhD in Zoology (University of Pretoria), pursued postdoctoral studies and research in conservation biology and global security in Australia and the UK, and completed executive management training at Harvard University. His research work focused on biodiversity, conservation planning, biodiversity and climate change, and ecosystem services. He was appointed full professor at both the Universities of Pretoria and Stellenbosch and published more than 100 primary research papers, including highly cited works in *Science* and *Nature*. Van Jaarsveld held numerous key roles in the global scientific community, including serving as co-chair of the MEA follow-up, chairing the G8 science ministers' group of senior officials on global research infrastructure, and playing essential roles in organizations like IPBES, Belmont Forum, and Future Earth.

**Elena Rovenskaya** is the IIASA Advancing Systems Analysis Program (ASA) Director. She has background in applied mathematics. Her scientific interests lie in the fields of optimization, decision science, and mathematical modeling of complex socio-environmental systems. As the ASA Program Director, Rovenskaya is leading a team of more than a hundred scientists who work on new systems analytical methods, which enable higher levels of agility to support policy and societal decision making. Currently, among other projects, Rovenskaya leads IIASA's Transformations within Reach initiative which aims to address the question of how decision-making systems and processes can be improved to catalyze sustainability transformations and identify effective levers of change for this.

**Jeffrey Sachs** serves as the Director of the Center for Sustainable Development at Columbia University, where he holds the rank of University Professor. Sachs was Director of the Earth Institute at Columbia University from 2002 to 2016. He is President of the UN Sustainable Development Solutions Network, Co-Chair of the Council of Engineers for the Energy Transition, academician of the Pontifical Academy of Social Sciences at the Vatican, Commissioner of the UN Broadband Commission for Development, Tan Sri Jeffrey Cheah Honorary Distinguished Professor at Sunway University, and SDG Advocate for UN Secretary General António Guterres. From 2001-18, Sachs served as Special Advisor to UN Secretaries-General Kofi Annan (2001-7), Ban Ki-moon (2008-16), and António Guterres (2017-18).

### Contributing authors:

**Barbara Buchner** is Global Managing Director of Climate Policy Initiative, and Executive Director of its widely renowned Climate Finance program. Named one of the 20 most influential women in climate change and one of the 100 most influential people in climate policy, she advises leaders on climate, energy, and land use investments around the world.

**Dmitry Erokhin** is a researcher in the Cooperation and Transformative Governance Research Group of the Advancing System Analysis Program at IIASA. He has background in economics. Among other topics, he is currently working on participation in climate change adaptation.

**Yannick Glemarec** is Executive Director of the Green Climate Fund. He was appointed by the GCF Board at its 22nd meeting and took office on 3 April 2019. Glemarec has 30 years of international experience in climate change, development and finance, and their interrelationships.

**Luis Gomez-Echeverri** is Emeritus Research Scholar and Senior Advisor at IIASA. Previously he held numerous senior positions within the United Nations. His current research interests are in the areas concerned with climate and development linkages, implementation of the Paris Agreement and Development Agenda 2030, governance and institutions, climate change, finance, and development cooperation. Recently Gomez-Echeverri co-led the preparation of a major report for the United Nations Department of Economic and Social Affairs (UNDESA) and

the United Nations Framework Convention on Climate Change (UNFCCC) on the SDGs and climate synergies, and their importance.

**Saleemul Huq** is Director of the International Center for Climate Change and Development (ICCCAD) and Professor at the Independent University Bangladesh (IUB) as well as Associate of the International Institute on Environment and Development (IIED) in the United Kingdom. He is an expert in adaptation to climate change in the most Vulnerable developing countries and has been a lead author of the third, fourth and fifth assessment reports of the Intergovernmental Panel on Climate Change (IPCC) and he also advises the Least Developed Countries (LDC) group in the United Nations Framework Convention on Climate Change (UNFCCC). In addition, Huq is affiliated with the UN Food System Summit for 2021 as co-chair of the Action Track 5 on Building Resilience to Vulnerabilities, Shocks & Stress.

**Avinash Mishra** is currently working as Adviser (Water Resources & Land Resources, I&B, Culture, Panchayati Raj, Natural Resource and Environment Vertical) of NITI Aayog, India. He has been working in the National Policy Planning formulation, and Action Plans of India for over 34 years.

**Pradeep Monga** is a Senior Advisor in the Advancing Systems Analysis Program at IIASA. He has of over 35 years policy experience at the senior management level with the United Nations, Government, International NGOs, and Resource Institutions, Government (former Deputy Executive Secretary at UNCCD, Bonn; Director of Energy & Climate change at UNIDO, Vienna; Sustainable Development Advisor and Assistant Resident Representative at UNDP; and senior policy maker and management positions in the Government of India)

**Pratik Patil** is a researcher in the Cooperation and Transformative Governance Research Group of the Advancing System Analysis Program at IIASA, where he works on the Transformations within Reach initiative.

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## Preamble

Climate finance is a key instrument to enable the global response to climate change. Special financial arrangements are required to scale up investment in mitigation alongside adaptation to facilitate the transformation of global societies to a more sustainable, resilient, and equitable future. In 2022, at UNFCCC COP27 the third pillar, a loss and damage fund, was pledged to address the impacts of climate change that cannot be reversed through mitigation or adaptation measures. However, until now, both the quality and quantity of climate finance pledges remains inadequate to fund the required interventions.

This policy paper provides recommendations from a consultation process with a panel of experts, who addressed the challenges and opportunities associated with finding adequate climate finance in pursuit of climate progress and sustainable development. The list of members and their short bios can be found in [About the authors](#).

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## Context and challenges

Socio-economic impacts of climate change, caused by the rising sea levels, extreme weather events, and the loss of biodiversity, among other factors, are becoming increasingly visible and significant. These impacts disproportionately affect the world's most vulnerable populations, particularly those in low and middle-income countries. It is crucial for these countries to be able to access the resources to invest in mitigation and adaptation to the effects of climate change. This could be achieved through raising climate finance. Raising the adequate climate finance faces several challenges, most critically, finding the requisite financial resources to enable interventions that are fit for purpose.

In 2009, at COP15 developed countries committed to a collective goal of mobilizing 100 billion USD per year by 2020 for climate action in developing countries; this ambitious goal was reiterated and temporally extended to 2025 at COP21. However, according to OECD, developed countries provided and mobilized on average some 75 billion USD per year in 2016-2020 (with an increasing trend)<sup>1</sup>. To put these figures into perspective, according to UNEP adaptation needs of developing countries are estimated to necessitate annual expenditures ranging from 140 to 300 billion USD by 2030, and from 280 to 500 billion USD by 2050<sup>1</sup>. The UN Secretary-General's SDG Stimulus to Deliver Agenda 2030 proposes that around 500 billion USD should be mobilized per year to facilitate achieving the SDGs<sup>2</sup>.

The shortfall in the committed finances hampers the ability of developing countries to implement climate change mitigation and adaptation projects. Calls were subsequently made for revisiting the 100 billion USD commitment. With the support of Article 2.1(b,c) of the Paris Agreement, this issue can now be examined from a broader

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<sup>1</sup> The trillion-dollar climate finance challenge (and opportunity) | UN News.  
<https://news.un.org/en/story/2021/06/1094762> (2021).

<sup>2</sup> United Nations Secretary-General's SDG Stimulus to Deliver Agenda 2030. (2023).  
<https://www.un.org/sustainabledevelopment/wp-content/uploads/2023/02/SDG-Stimulus-to-Deliver-Agenda-2030.pdf>.



perspective of a more comprehensive definition of climate finance needs, and one that includes a broader concept of climate change action.

Beyond the mere quantity, the key challenge is to ensure an appropriate balance between mitigation and adaptation in climate finance. Much of the early literature on climate finance focused on and reflected a strong bias towards mitigation including finance provided by the mechanism of the UNFCCC and through public, multilateral, and bilateral sources. The Paris Agreement, through Article 2.1(b,c), introduced a major shift by referring to the collective effort to tackle climate change that is supportive of development and a climate resilient world. With this language, the Paris Agreement sought to rebalance the importance of both mitigation and adaptation, also pointing to the need to include all the financial resources (private, public, domestic, and international) to support these efforts.

A further challenge is the lack of coherence and coordination among climate finance providers. There are numerous institutions and mechanisms that provide climate finance, including multilateral development banks, bilateral aid agencies, and private sector actors. However, the diversity of sources and instruments used, leads to fragmentation and even duplication of efforts, making it difficult to achieve effective climate finance delivery and monitoring. Additionally, there is a lack of transparency and clarity around criteria and processes for allocating climate finance, leading to inequitable access to the available funding. There is an urgent need to ensure that climate finance reaches the most vulnerable populations and supports the development of sustainable and resilient communities. The current focus on large-scale infrastructure projects often overlooks the pressing needs of small-scale and community-led initiatives.

In the coming eighteen months, there will be several opportunities to address some of these issues. This includes, among others, the forthcoming UN SDG Summit in September 2023, the forthcoming COP28 in Dubai, and most importantly, the UN Summit of the Future in 2024 approved through a resolution by the UN General Assembly (A/RES/76/307). One of the main areas of potential action highlighted by the UN Secretary General for this Summit is the area of finance and the need for its reform - "a reform to ensure it delivers more effectively and fairly for everyone and particularly the Global South, including through objectives that are aligned with the SDGs, debt sustainability, a global financial safety net, and more". The overarching challenge is to strengthen the framework of cooperation so that it can more easily and effectively catalyze the flow of climate finance to developing countries from public and private sector sources. The discussion should shift to a broader and more comprehensive conversation on climate finance. Give the major new focus provided by Article 2.1(c) of the Paris Agreement, the opportunity now is to discuss the overall financial architecture which includes, among others, governments, multilateral development banks, and private financial institutions. Many countries, including India<sup>3</sup>, are calling for reforms which can make these institutions more climate-responsive and to make it easier for these institutions to work together toward climate and development goals (including debt) and to facilitate blended finance. Considering the above challenges, this policy paper provides recommendations for enhancing the quantum, effectiveness, and impact of the available climate finance.

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<sup>3</sup> Economic Survey (India) 2022-23, Chapter 7 Climate Change and Environment  
<https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/epreface.pdf>.

## Key recommendations

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### 1. Mainstream climate action into the development agenda

According to OECD, about 28% of the available bilateral official development assistance (ODA) pursued climate objectives during 2021<sup>4</sup>. Compelling scientific evidence regarding the systemic risks posed by climate change combined with progress in the available technologies suggests that taking stronger climate action “can unleash higher growth, at least for a period in the coming two or three decades”, and improve societal well-being by boosting innovation, generating novel and new jobs, and reducing societal risks and vulnerabilities<sup>5</sup>. Mainstreaming climate action into the global development agenda could yield substantial synergies between these two areas. Key areas for action include the following:

#### 1.1 Utilize a systemic approach

Climate policies and finance are complementary because better policies attract private investment, in turn helping meet policy objectives. Thus, climate policies must be framed to include ways to reduce risk and increase incentives.

Overall, synergies between climate policies and other development goals should be strengthened. As an important example, climate finance should be strongly linked with infrastructure activities. Climate-resilient infrastructure developed with participation of citizens should be prioritized.

Furthermore, the link between climate action and nature-based solutions should be strengthened by using climate finance to co-finance also for biodiversity conservation and land restoration. Climate finance should be linked with eco-restoration, land degradation neutrality, food security, just transitions, loss and damage, building adaptation and resilience, and water security. The focus should be on maximizing co-benefits, such as positive social impacts, e.g., new jobs and income for vulnerable groups such as farmers and rural communities.

#### 1.2 Increase the role of development institutions in supporting climate action

Development funders who operate public funding including multilateral development banks (MDBs), national development banks (NDBs), and others, should increase the alignment of the funding that they provide with the climate agenda and to scale up resource allocations for climate mitigation and adaptation. High-income countries should increase the capitalization of MDBs and NDBs, to help overcome developmental setbacks incurred over recent years while advancing and fast-tracking climate action.

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## 2. De-risk investment in decarbonization projects in developing countries to attract private investment

Public funding alone cannot provide the resources required to mitigate climate change. Mobilizing private funding, particularly institutional, is necessary, as most solutions for a low-carbon economy require high levels

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<sup>4</sup> Climate-related official development assistance in 2021: A snapshot. <https://www.oecd.org/dac/climate-related-official-development-assistance.pdf>.

<sup>5</sup> Stern, N. & Stiglitz, J. E. Climate change and growth. *Industrial and Corporate Change* 32, 277–303 (2023).

of upfront investment. In the current market conditions, accessibility of finance becomes the key factor that determines whether a particular project is going to be implemented. The significant gap – up to 8 percentage points – in country risk premiums between developed and developing countries presents a major obstacle to investment in low-carbon economy initiatives in developing countries<sup>6</sup>. This discrepancy in the cost of finance exacerbates the climate investment trap in developing economies, hindering their ability to attract capital for climate-friendly projects and worsening the existing gap in sustainable development between developed and developing nations. This is compounded by the existing heavy debt burdens of developing countries, which further diminishes the fiscal capacity of these countries, limiting their ability to finance sustainable development.

In making their investment decisions, private funders rely on their assessment of risk-adjusted returns. De-risking, i.e., reducing the actual and perceived risks of investing in projects in developing countries, which will also decouple economic growth from greenhouse gas emissions, is therefore key to redirecting investors towards such projects in the developing world. For that to happen, public finances should be deployed strategically. Key recommendations in this regard include the following:

## **2.1 Involve and support local investors**

Local investors can be expected to have more realistic perceptions of risks in their domestic environment, and this may not necessarily be reflected in national credit ratings. Using the local currency is also an advantage. Incentives should therefore be created for investors from developing countries to invest in projects in their own countries. Raising awareness about existing opportunities and sharing track records of technology investments between similar countries would also facilitate private domestic investment.

## **2.2 Strengthen regulatory frameworks**

To accelerate the deployment of funds towards climate finance projects and facilitate the achievement of climate targets, expediting licensing processes is crucial. This can be achieved through streamlined regulatory procedures, increased transparency and accountability, technical assistance to project developers, strengthening local capacities, and close collaboration with international partners.

## **2.3 Invest public finance in feasibility studies and pilot projects**

Perceptions about risks for investors from developed countries for local investment can be reduced if proposed projects are accompanied by high quality feasibility studies. More large-scale projects can be initiated through pilot projects which also informs risk assessments. Public finances could be more frequently used to fund feasibility studies and pilot activities.

## **2.4 Scale up blended finance**

Where financial risks are considered high, lowering these risks can be achieved through various forms of blended finance. This includes guarantees, insurance, concessional loans, and other mechanisms provided through the deployment of public funds. Blended finance should be executed via appropriate development banks and scaled up.

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<sup>6</sup> Higher cost of finance exacerbates a climate investment trap in developing economies | Nature Communications. <https://www.nature.com/articles/s41467-021-24305-3>.

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### **3. Following a disaster ensure that we are “building back better”, and not worse**

Damages to the built environment caused by natural or anthropogenic disasters should be used as an opportunity to invest into more sustainable and resilient buildings and infrastructure. New buildings and infrastructure should be able to withstand future disasters and contribute to climate action through, for example, innovative and sustainable building materials and designs that are energy-efficient and minimize the use of carbon-intensive materials.

Evidence exists that disasters often turn out to be missed opportunities in this regard. Strong pressure on public finances, the need to respond rapidly, and increased risk perceptions in the aftermath of a disaster<sup>7</sup> are factors which often cause building-back initiatives to rely on the cheapest and most readily available materials and technologies. These are often not favorably aligned with the climate agenda or can even be regressive. To overcome these barriers, the following is recommended:

#### **3.1 Enhance preparedness for disasters**

To reduce risk, land-use planning and zoning regulations should be strengthened across the world and especially in developing countries to prevent development in high-risk areas and promote relocation of vulnerable communities to safer locations that are climate aligned.

To prepare for disasters, more detailed risk analyses and emergency reconstruction plans should be developed in advance to prepare for potential disaster scenarios. These plans should provide clear frameworks for building back better efficiently and rapidly.

#### **3.2 Enhance international cooperation on disasters**

International capacity for emergency assistance from which regions can draw on when they are affected by a disaster should be enhanced. This should include the necessary expertise and finances to build back better.

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### **4. Optimize the use of blended and concessional finance to support high-impact adaptation projects**

It is becoming increasingly clear that the Earth will see warming of at least 1.5°C or, likely, 2°C<sup>8</sup>. Financing adaptation measures should be scaled up accordingly. Blended finance, which combines concessional public finance (i.e., finance at the cost that is below the market rate) with non-concessional private finance (i.e., finance at the cost equal to the market rate) and expertise from the public and private sector is considered a powerful catalyst to scale up efforts to achieve the SDGs, including dealing with climate change. Current blended finance flows average around 9 billion USD per annum over the past five years. This is orders of magnitude too

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<sup>7</sup> Koks, E. E. et al. A global multi-hazard risk analysis of road and railway infrastructure assets. *Nature Communication*, 10, 2677 (2019).

low to provide sufficient resources to achieve the climate change agenda<sup>8</sup>. The following recommendations aim to scale up the quantity and increase the quality of blended finance available for climate action:

#### **4.1 Scale up blended finance**

A strategy to attract private donors should be an essential pillar of any blended finance arrangement.

The amount of concessional finance available to low-income countries should increase<sup>9</sup>. As one source, philanthropies could be attracted to provide concessional finance to blended finance arrangements.

An investment vehicle for green bonds (to finance environmentally sustainable projects), blue bonds (to finance projects focusing on marine and ocean conservation), and resilience bonds (to finance projects aimed at building resilience to climate change and natural disasters) should be established for Africa.

#### **4.2 Open data**

The area of blended finance suffers from poor information about evidence on how this instrument can facilitate development. Blended finance data at the transaction level should be made publicly available, including financial performance and ex-post impact assessment. This will help in risk assessments of future (replicate) projects<sup>10</sup>.

#### **4.3 Enhance the capacity of intermediaries**

More intermediaries that can operate blended finance projects effectively are required. Hence this capacity should be developed globally<sup>12</sup>.

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### **5. Scale up available carbon markets**

#### **5.1 Promote carbon pricing**

Carefully designed frameworks for carbon pricing should be further implemented across the world to provide incentives for investors to channel more funds into climate-beneficial projects.

#### **5.2 Scale up carbon trading**

Voluntary carbon markets (VCMs) informed by the best available scientific knowledge and aligned with international requirements need to be promoted. Mechanisms to support the participation of small-scale carbon credit issuers and buyers in VCMs should be developed and implemented. An internationally recognized, unified framework should be designed to guide the international operations of VCMs.

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<sup>8</sup> UN. Addis Ababa Action Agenda of the Third International Conference on Financing for Development. [https://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA\\_Outcome.pdf](https://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf) (2015).

<sup>9</sup> <https://www.worldbank.org/en/news/feature/2021/09/16/what-you-need-to-know-about-concessional-finance-for-climate-action>.

<sup>10</sup> The State of Blended Finance 2021 (Convergence Finance).

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## 6. Strengthen transparency in climate finance

### 6.1 Establish a common definition of climate finance

The UNFCCC suggests that “climate finance refers to local, national or transnational financing, drawn from public, private and alternative sources of financing that seeks to support mitigation and adaptation actions that will address climate change”<sup>11</sup>. However, proposals have been made that the definition of climate finance should be broadened to include climate co-benefits such as land-use and restoration issues should be established. An agreement on the definition is important for transparency as to what and where it is being invested; for accountability to measure real values of commitments and compliance; and for measuring additionality. Adoption of a common definition of climate finance thus will help to address current controversies and criticisms by developing countries regarding the commitments made by developed countries and their fulfilment.

On the basis of a common definition, standardization and transparency of climate finance data should be enhanced to track progress and compare different types of efforts.

### 6.2 Collect and share data

A public data hub that brings together data from different countries should be created to better understand their needs and foster more transparency. This will help to reframe the discussion on climate finance, to include both quantitative and qualitative perspectives. The quality aspect should emphasize impact and effectiveness.

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## 7. Strengthen capacity of investors

Capacity building programs for investors to raise their awareness about climate finance sources, risk assessment, and cope-up mechanisms should be enhanced.

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<sup>11</sup> Introduction to Climate Finance | UNFCCC. <https://unfccc.int/topics/introduction-to-climate-finance>.



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Applied Systems Analysis  
[www.iiasa.ac.at](http://www.iiasa.ac.at)