



REDUCING THE RISKS OF  
CLIMATE OVERSHOOT

# Finance and Conclusions

05

SEPTEMBER 2023

# 9. Climate Finance

## Key messages

- ✓ Climate finance must be increased to prevent or limit climate overshoot. Financing needs are greatest for lower-income countries.
- ✓ Massive gaps exist between financial needs and pledges, and between pledges and deliveries. These gaps, which create distrust among developing countries, need to be bridged.
- ✓ Public bodies, including international financial institutions and governments, need to mobilize more resources. Reformed development banks equipped with more resources, debt relief, and innovative financial instruments and strategies are needed to achieve this.
- ✓ Private capital flows should be massively scaled up, especially for emissions reductions, using de-risking strategies, co-financing, and other emerging approaches.
- ✓ New sources of finance and transparent, effective, and efficient carbon markets should also be expanded.



# Background

**Delivering the recommendations in this report will not only require bold new policies, but considerable new financial resources.**

There is no agreed definition of “climate finance.” According to the IPCC, the term “is applied both to the financial resources devoted to addressing climate change globally and to financial flows to developing countries to assist them in addressing climate change.” The Climate Overshoot Commission uses the former, broader definition. The challenge is not only to mobilize more climate finance but to make it more effective and inclusive. Climate finance should be aligned with the goals of the Paris Agreement and the SDGs and support the needs and challenges of different countries, especially the most vulnerable.

Climate overshoot would increase climate financing needs, both for accelerated emissions reductions and for adaptation and resilience. It would also require more investment in CDR.

## Needs and gaps

### What are the financing needs?

Climate finance can come from public or private sources, domestic or international, and can take various forms, such as grants, loans, guarantees, equity or carbon credits. While there is uncertainty about how much climate finance is currently being provided and how much is required, it is beyond question that what is being delivered falls far short of what is needed.

The global volume of climate finance in 2020 was 665 billion USD, 266 billion in the North and 392 billion in the South.<sup>106</sup> Ninety per cent of the total (586 billion USD) went towards reducing emissions, while only 8% supported adaptation.<sup>107</sup>



Industrialized countries are better able to mobilize the funds needed for their emissions cuts and adaptation, and these funds account for a smaller portion of their economies. According to the World Bank, financing needs for climate action average 1.1% of gross domestic product in upper-middle-income countries, increasing to 5.1% in lower-middle-income countries and as much as 8% in low-income countries. The Independent High-Level Expert Group on Climate Finance estimates the financing needs for developing countries (excluding China), covering emissions reductions, adaptation, and loss and damage, at 2 trillion to 2.4 trillion USD per year by 2030.<sup>108</sup>

Flows of climate finance from developed to developing countries reached 100 billion USD per year in 2023.<sup>109</sup> The original target year for this level, pledged at Copenhagen in 2009, was 2020. In general, there has been a significant and recurring gap between promised climate finance and what has been delivered. This has been aggravated by a lack of transparency and consistency in how climate finance is measured, reported and verified, making it difficult to track progress and ensure accountability.

While 100 billion USD per year is a significant achievement, the actual needs of developing countries are at least 20 times higher. This pattern of “too little, too late” has created a strong distrust among developing countries of the pronouncements and promises made by developed countries at international conferences. The international community must urgently close this gap and enhance the quality, effectiveness and accountability of climate finance.

Climate and development finance are inherently intertwined for developing countries. The actions and investments required to achieve development goals, reduce emissions, and adapt to climate change often overlap. Investments needed to transition from a business-as-usual trajectory to a resilient, low-carbon path include both development spending (e.g., enhancing irrigation systems and crop yields) and climate spending (e.g., making irrigation systems more water-efficient and crop varieties more drought-resistant). In such cases, separating climate from development finance would be shortsighted and inefficient. For developed countries, the investments needed to meet climate objectives mainly involve transitioning to greener technologies, but for developing countries, these investments are intimately connected to broader development goals.

Climate and development issues have been exacerbated in recent years. The Covid-19 pandemic and the energy and food security crisis have reversed decades of progress and pushed 120 million people back into extreme poverty. Climate change hits the poor hardest: they are more exposed and vulnerable to its impacts and have fewer resources and opportunities to adapt. Yet there can be no transition to a low-carbon and resilient future, considering the scope of changes required, with a population that faces poverty, food insecurity, lack of education and health care, and inadequate social protection. More financial resources are needed to tackle both climate change and poverty simultaneously; and the most concessional of those resources must target the poor as a priority.



# Recommendations

The Climate Overshoot Commission recommends the following steps to begin to close the climate finance gap.

**01** **First, public bodies – international financial institutions, developed country governments, and developing country governments – should mobilize and deliver more and better resources for developing countries.**

**International financial institutions, such as the World Bank, the International Monetary Fund and the regional development banks, need to grow their balance sheets and take more risks,** increase their lending and grant-making capacity, and coordinate and cooperate more effectively among themselves and with other partners. During the recent Paris Summit for a new financing pact, Group of Seven countries mentioned an increase of 200 USD billion in financing from all MDBs over the next five years. This is a minimum.

Following this, MDBs will need more capital. Every dollar of additional capital generates several dollars in financing.

**Special drawing rights (SDRs), a type of international reserve asset created by the International Monetary Fund, can be used to finance development and climate activities.** A 2021 allocation of SDRs worth 650 billion USD provided much-needed liquidity and fiscal space to many countries. Several initiatives have been launched to “rechannel” some of these SDRs from developed countries to developing countries, especially in Africa. A goal of rechanneling at least 100 billion USD of SDRs to developing countries through various mechanisms was agreed to at the Paris Summit. But more rechanneling is required. Some of these SDRs could also

be used to strengthen the capital base of regional development banks, which could then lend more to their clients.

**Resilience requires specific tools and instruments that can provide liquidity quickly, amply, and unconditionally when disaster strikes.** To prepare for and cope with disasters, international financial institutions should consider the establishment of standing financial facilities – pre-arranged credit lines or funds – that could provide liquidity swiftly and on a massive scale to meet immediate needs in the event of a severe climate shock or natural disaster.

**More specific mechanisms could also be used more widely, such as Climate-Resilient Debt Clauses** in debt instruments, which can defer a country’s debt repayments in the event of a predefined climate shock. These tools can offer fast and flexible financing without policy conditions or long negotiations. They can also boost market confidence.

Debt relief is a difficult topic, but considering growing debt distress and near-term disaster risks, we have a duty to act. Specific, innovative mechanisms could also be considered, such as “debt-for-nature” swaps which allow countries to reduce their debt in return for environmental commitments. For example, Ecuador recently bought back 1.6 billion USD of its bonds at a discounted price, pledging to spend more than 323 million USD on conservation on the Galápagos Islands in return.<sup>110</sup>



**The global trend of lowering official development assistance (ODA) must be stopped and reversed, and ODA should be more focused, prioritizing the poorest and most vulnerable.** ODA from developed-country governments remains a vital source of financing for the least developed countries. It can provide grants, loans, guarantees and technical assistance, catalyze private investment and support domestic resource mobilization. But ODA is under pressure. It should be allocated to climate-related activities when they cannot be financed by the private sector – in particular adaptation. One way to increase the leverage and impact of public finance is to use output-based financing mechanisms, which link payments to results and outcomes rather than inputs and activities.

**Domestic resources mobilization and reduction of inefficient and harmful expenditure can complement external financing** and enhance fiscal space for climate action and development for developing-country governments. Domestic resource mobilization can be achieved by strengthening tax systems, broadening the tax base, and combating tax evasion and illicit financial flows. Reduction of fossil fuel subsidies, which according to the International Energy Agency (IEA) reached an all-time high of 1 trillion USD in 2022,<sup>111</sup> can free up resources for green investments and social protection, while reducing carbon emissions and air pollution. These measures require political will and social dialogue, as well as international cooperation and support.

**02 Second, the private sector should massively increase its capital flows in support of climate action, in both developed and developing countries.**

Developed countries use various tools to support green private finance, such as carbon pricing (to encourage low-carbon alternatives), climate information (providing data, standards and taxonomies to assess climate risks and opportunities) and innovative financing instruments (like green bonds). But these tools are not consistent or harmonized across regions, which may, for instance, give rise to trade frictions. (See Section 5.) More policy coordination is needed.

**Efforts to issue financial standards for sustainability-related disclosures should be supported,** such as those led by the International Sustainability Standards Board that are intended to be interoperable with public frameworks. Different approaches to climate information create confusion and inconsistency for investors and issuers of green financial products.

Private flows for developing countries should be hugely increased. Approximately 210 trillion USD in assets are under private management globally; even a tiny fraction of this total would far surpass the 100 billion USD goal.<sup>112</sup> Boosting private climate finance requires addressing several challenges.

**To lower the cost of capital, investment projects in developing countries need proper de-risking.** They often face higher risks, either real or perceived, such as regulatory, technological, political, or currency risks. Instruments or strategies like guarantees, insurance, or hedging can assist with de-risking.



Co-financing could support major projects in key sectors, as long as they ensure a fair distribution of benefits and risks between public and private investors. Instruments such as equity stakes can overcome the challenge of limited availability and affordability of private finance due to large upfront capital expenditures and long payback periods of these projects. These instruments should be designed to optimize the use of public funds and avoid crowding out or subsidizing existing investments.

Adjusting risk weights or capital charges for green investment exposure would incentivize private capital. Currently, some climate investments are considered to be riskier because they may be associated with new technologies or emerging markets that can be more volatile. Yet these investments could be rated investment-grade by using more sophisticated risk models that take into account resilience to physical and transition risks and the long-term benefits of reducing carbon emissions. The Basel Committee on Banking Supervision should explore this issue further and propose steps to help accelerate the climate transition and create new opportunities for economic growth.

**03** **Third, new and underdeveloped sources of finance should be explored and strengthened.**

**New taxes or levies could raise more revenues for climate finance by taxing activities or sectors that contribute to climate change,** such as maritime and air transport and oil and gas. Funds raised in this manner could support development and climate action in general and could also spur decarbonization and innovation in specific sectors. Such taxes or levies would face inevitable

political and technical hurdles – including country coordination and taxpayer avoidance – but they could also have additional positive effects, such as deterring harmful behaviour, stimulating innovation and creating a level playing field. Such taxes or levies have already been implemented or proposed by some countries or regions. Several countries have called on the International Maritime Organization to explore a levy on international shipping; this should be encouraged.

**Market mechanisms that can generate carbon credits for emissions reductions or removals could mobilize significant private finance for climate action,** but so far this potential has not been fully met. Carbon credits are tradable instruments that represent a certain amount of carbon emissions reduced, avoided, or removed from the atmosphere. Buyers can purchase credits to voluntarily offset their own emissions or to comply with regulatory obligations. Entities that are awarded credits can sell them in the carbon market to monetize their decarbonation activities.



*Image credit: Markus Spiske, Pexels*

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**Carbon credit mechanisms face several challenges, however, such as:**

- ✓ ensuring that carbon credits represent real, additional and permanent emissions reductions or removals that would not have occurred otherwise;
- ✓ avoiding double counting by different entities or jurisdictions;
- ✓ ensuring transparency and accountability of credit generation, exchange, and impacts; and
- ✓ harmonizing different standards and schemes that certify these credits.

Some reports have exposed serious flaws in some carbon certification schemes, such as over-crediting, leakage, greenwashing and market distortions.

**An international public certification mechanism should verify the additionality, permanence and environmental integrity of emissions reduction projects.** The UNFCCC Article 6.4 Supervisory Body has begun to take over this task from the Clean Development Mechanism.

**While this transition takes place, the World Bank could be entrusted with the responsibility to immediately reinforce the standards currently used in the market,** as it has experience and expertise in setting and enforcing standards for green finance and climate action.

**The Commission also suggests exploring mechanisms for making carbon credits eligible for small direct payments from public funds,** in order to motivate further decarbonization, especially for landowners who successfully preserve forested land or who restore degraded landscapes in developing countries. Such mechanisms could follow the results-based climate finance approach, which links payments to verified outcomes, while carefully ensuring equity, additionality, and sustainability.





# 10. Synthesis and Integration

## Key messages

- ✓ Pursuing any single approach to addressing climate change – emissions reduction, adaptation, carbon dioxide removal, or potential use of SRM – can affect other approaches.
- ✓ Positive spillovers should be encouraged, and negative spillovers discouraged.
- ✓ Cutting emissions, **A**dapting to impacts, **R**emoving carbon from the atmosphere, and **E**xploring SRM – a CARE agenda – holds the promise of reducing overshoot risks while furthering goals of justice, equity, and sustainability.



**As the Climate Overshoot Commission completed this report, the world experienced the three hottest days ever recorded. Massive wildfires in Canada turned the skies over New York red, and heatwaves seared societies across the globe. Yet if we continue on this current course, these could be remembered as some of the cooler years of the 21st century.**

We are living through a climate crisis right now and are on track for even worse. Climate overshoot is not inevitable, but it is getting closer. Reducing and managing the risks of overshoot is a grave global challenge that will require decades to address successfully, yet the world is still not acting as though it understands what lies in store.

Pursuing – or rejecting – the approaches identified above would have significant consequences not only for climate, but also for development, finance, technology, trade, and human rights. To be effective, global governance must encompass these and other fields and tie them together in ways that break down policy silos and identify cross-cutting effects. Holistic thinking is needed, and new or reformed global institutions may be necessary to put such thinking into practice.

Emissions reductions and carbon removal are the primary tools available to limit the magnitude and duration of overshoot. Adaptation should be aimed at reducing the impacts from any realized level of overshoot. SRM, if ever judged acceptable and prudent, would have the same purpose.

Learning more about all four approaches would be a no-regrets approach grounded in precaution. This may involve considering appropriate roles for different kinds of technologies. Discussions, consultations, and decision-making about all of them should be inclusive and ensure the involvement and participation of developing countries. Governments will be central to these processes, which will necessitate substantial capacity-building efforts.



# Spillovers

Pursuing one approach can sometimes produce benefits more typically associated with other approaches. Sometimes, however, the effects of one approach can undermine the benefits produced by another. Some of these spillovers – positive and negative – can be foreseen, but some cannot. Furthermore, spillover effects may change as experience of climate change and responses unfolds and as knowledge and capabilities advance.

Some positive spillovers associated with different approaches are already apparent. Cutting emissions can also strengthen resilience. For example, building public transport systems to reduce emissions can help with disaster response.

Similarly, adaptation initiatives can lower emissions. For example, enhancing energy reliability to boost resilience involves increasing energy efficiency, which reduces emissions. CDR projects can benefit adaptation, and adaptation measures can remove and store carbon from the atmosphere. Forestry activities can do both.

Most forms of climate action could have positive spillovers on a broader range of SDGs, encouraging a cleaner, more equitable economy focused upon the well-being of people and ecosystems. There are massive economic opportunities to grab here; the challenge is to make sure those opportunities can be grabbed by everyone.

Negative spillovers can also arise. Emissions reductions are the primary way to tackle overshoot, so it would be particularly worrying if policymakers were tempted to relax or delay efforts to cut emissions in response to implementing or even considering CDR, adaptation, and/or SRM.

## Recommendations

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The Climate Overshoot Commission recommends the following steps to promote positive spillover effects and discourage negative spillover effects. These recommendations pertain specifically to interactions between different kinds of climate action and are additional to the recommendations made in preceding sections.

- 01 First, in constructing a complete portfolio of climate finance projects, special attention should be paid to projects featuring positive spillovers.** These include, for example, emissions reduction projects that also benefit adaptation, and responses with positive spillovers for broader sustainable development and biodiversity goals.
- 02 Second, forestry, and in particular efforts to slow and ultimately stop deforestation, should be given higher priority in climate policymaking.** Forestry projects can store carbon and build capacity to cope with climate impacts.
- 03 Third, to ensure that CDR does not displace emissions cuts, CDR policies should not treat carbon removals as substitutable for feasible emissions reductions.**
- 04 Fourth, in pursuing these different approaches, care must be taken not to exacerbate existing inequities, particularly when it comes to historically marginalized groups.**

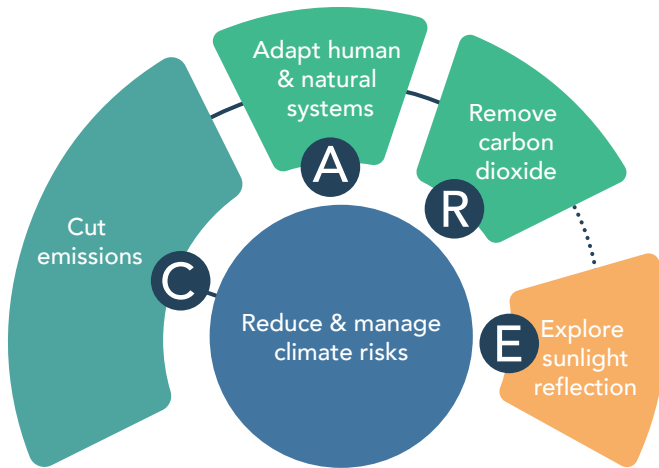


# A CARE Agenda

Taken together, the recommendations made by the Commission constitute integrated components of a “**CARE Agenda**” for reducing risks from climate overshoot:

FIGURE 9

Synthesis.



As this report has stressed throughout, emissions cuts must come first. They will need to be accompanied by more expansive and better financed adaptation measures as well as by a scaling up of carbon removal, including organic and inorganic methods. SRM interventions with risk of significant transboundary harm must be subject to a moratorium, but this technology must also be carefully researched and seriously discussed.

Had countries acted responsibly decades ago, emissions cuts would have been sufficient to address climate change, but adaptation is now essential, while the increasing likelihood of overshoot makes CDR virtually unavoidable. Unfortunately, prudent risk management also demands learning more about SRM in case conditions continue to deteriorate. Caring for people and the planet means doing what we know we must, while equipping ourselves with knowledge that may prove vital in the future.



## Cut emissions

Accelerate emissions reductions and consolidate decarbonization.



## Adapt

Expand adaptation and fully mainstream into development.



## Remove

Develop and deploy higher-quality carbon dioxide removal to help achieve net-zero emissions targets and beyond.



## Explore

Adopt a moratorium on large-scale solar radiation modification and expand research and governance dialogue.



# Final thoughts

Humanity stands at a moment of great importance. The decisions taken today will reverberate for centuries, with the potential to lock in entrenched patterns of inequality and injustice that are increasingly difficult to overcome, or to usher in a more equitable, just, and sustainable world.

There is an understandable reluctance in policy circles to declare last chances, to predict the end of a window of opportunity. Yet we must recognize that our actions today will have long-lasting consequences. We have a responsibility to act with foresight and wisdom, to protect the planet and its people, and to create a safe and better world for generations to come.

## We must act now.



# Endnotes

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- 109 G20. 2023. “Third G20 Finance Ministers and Central Bank Governors Meeting: G20 Outcome Document and Chair’s Summary.” [https://www.g20.org/content/dam/gtwenty/gtwenty\\_new/document/3rd\\_G20\\_FMCBG\\_Outcome\\_Document\\_and\\_Chair’s\\_Summary.pdf](https://www.g20.org/content/dam/gtwenty/gtwenty_new/document/3rd_G20_FMCBG_Outcome_Document_and_Chair’s_Summary.pdf).
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- 111 IEA. 2023. *Fossil Fuels Consumption Subsidies 2022*. International Energy Agency, Paris.
- 112 Prasad, Ananthakrishnan et al. 2022. “Mobilizing Private Climate Financing in Emerging Market and Developing Economies.” IMF Staff Climate Note 2022/007, International Monetary Fund, Washington.



# Abbreviations

|                       |   |
|-----------------------|---|
| <b>BECCS</b>          | Bioenergy with carbon capture and storage                 |
| <b>CCS</b>            | Carbon capture and storage                                |
| <b>CDR</b>            | Carbon dioxide removal                                    |
| <b>CGIAR</b>          | Consortium of International Agricultural Research Centers |
| <b>CO<sub>2</sub></b> | Carbon dioxide  |
| <b>COP</b>            | Conference of the Parties                                 |
| <b>DACCS</b>          | Direct air carbon capture and storage                     |
| <b>EU</b>             | European Union  |
| <b>IEA</b>            | International Energy Agency                               |
| <b>IPCC</b>           | Intergovernmental Panel on Climate Change                 |
| <b>IRENA</b>          | International Renewable Energy Agency                     |
| <b>ITMO</b>           | Internationally transferred mitigation outcome            |
| <b>JET-P</b>          | Just Energy Transition Partnership                        |
| <b>MCB</b>            | Marine cloud brightening                                  |
| <b>MDB</b>            | Multilateral development banks                            |
| <b>NDC</b>            | Nationally Determined Contributions                       |
| <b>ODA</b>            | Official development assistance                           |
| <b>SAI</b>            | Stratospheric aerosol injection                           |
| <b>SDG</b>            | Sustainable Development Goals                             |
| <b>SDR</b>            | Special Drawing Right                                     |
| <b>SRM</b>            | Solar radiation modification                              |
| <b>UN</b>             | United Nations  |
| <b>UNEA</b>           | United Nations Environment Assembly                       |
| <b>UNEP</b>           | United Nations Environment Programme                      |
| <b>UNFCCC</b>         | United Nations Framework Convention on Climate Change     |
| <b>WMO</b>            | World Meteorological Organization                         |



# Commissioners

Commissioners contributed to the report in their personal capacities. Their views may not reflect those of their affiliated organizations.



**Mr. Pascal Lamy, Chair**

*Vice-President of the Paris Peace Forum; former Director-General of the World Trade Organization, France*

Pascal Lamy is the Vice President of the Paris Peace Forum, and the current Chair of the European branch of the Brunswick Group. He coordinates the Jacques Delors Institutes (Paris, Berlin, Brussels). Mr. Lamy is also President or member of various boards with a global, European or French vocation. He is an affiliated professor at the China Europe International Business School CEIBS (Shanghai) and at HEC (Paris). From 2005 to 2013, Mr. Lamy served two consecutive terms as Director-General of the World Trade Organization. He was previously European Trade Commissioner, Director General of Crédit Lyonnais, Chief of Staff of the President of the European Commission, Jacques Delors and his G7 Sherpa, Deputy Chief of Staff of the French Prime Minister and to the French Minister of the Economy and Finance.

**Dr. Muhamad Chatib Basri**

*Former Minister of Finance of Indonesia*

Muhamad Chatib Basri is a former Minister of Finance of Indonesia. Previously he was the Chairman of the Indonesian Investment Coordinating Board. Dr. Basri is now the Chairman of the PT Bank Mandiri tbk. and Chairman of the PT XL-Axiata tbk. He is a member of various International advisory councils including the High-Level Advisory Group on Sustainable and Inclusive Recovery and Growth formed by the World Bank and the International Monetary Fund in the face of dual crisis posed by COVID-19 pandemic and climate change; the World Bank Advisory Council on Gender and Development; Group Eminent Personalities of the Organisation for Economic Co-operation and Development Development Centre and the Advisory Board, Centre for Applied Macroeconomic Analysis, the Australian National University. Dr. Basri is also a member of the Governing Board of the Lee Kuan Yew School of Public Policy, National University of Singapore. His expertise is International Trade, Macroeconomics and Political Economy.







**Ms. Frances Beinecke**

*President Emerita, Natural Resources Defense Council; board member, World Resources Institute, United States*

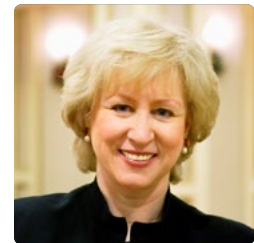
Frances Beinecke is President Emerita of the Natural Resources Defense Council (NRDC), a US based environmental nonprofit with 3 million members and activists that works internationally to curb global warming, protect people’s health, preserve wild landscapes, and foster vibrant and sustainable communities. Using legal and scientific expertise, NRDC works to design, implement and enforce the laws and policies that protect our environment. In 2010, She was appointed by President Obama to the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. Ms. Beinecke sits on the boards of World Resources Institute, the NRDC Action Fund, and ClientEarth. She is a member of the Council on Foreign Relations. She is a graduate of Yale College and the Yale School of the Environment.

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**The Right Honourable Kim Campbell**

*Canada’s 19th Prime Minister, Founding Member of the Club de Madrid*

After holding elected office at all three levels of Canadian government, Kim Campbell served as Canada’s nineteenth and first female Prime Minister in 1993. She was also the first woman to hold the Justice and Defence portfolios. Ms. Campbell is a founding member of the Club de Madrid and of the Council of Women World Leaders (Chair Emerita). She was global President of the International Women’s Forum. Trained as a Political Scientist (Soviet Specialist) and a lawyer, in 2014 Ms. Campbell created the groundbreaking Peter Lougheed Leadership College at the University of Alberta, serving as its Founding Principal until 2018. In 2021, she joined the board of the Glen Gould Foundation and the advisory board of The Vancouver Anti-Corruption Institute, a project of The International Centre for Criminal Law Reform and Criminal Justice Policy (ICCLR). Ms. Campbell resides in Florence, Italy with her husband, Hershey Felder.





**Mr. Jamshyd Godrej**

*Chairman of the board of Godrej & Boyce Mfg. Co. Ltd. and of the Council on Energy, Environment and Water, India*

Mr. Jamshyd N. Godrej is the Chairman of the Board of Godrej & Boyce Manufacturing Company Limited. He graduated in Mechanical Engineering from Illinois Institute of Technology. Mr. Godrej is the Chairperson of the Board of Directors of the Council on Energy, Environment and Water; Shakti Sustainable Energy Foundation; India Resources Trust; and CII Sohrabji Godrej Green Business Centre. He is a Director of World Resources Institute, USA. Moreover, Mr. Godrej is a Trustee of the World Wide Fund for Nature in India, and also a Trustee of the Asia Society in the USA. He is a member of the Board of Governors of the Centre for Asian Philanthropy and Society, and the Past President of Confederation of Indian Industry and also of the Indian Machine Tool Manufacturers' Association. The President of India conferred on Mr. Godrej the "Padma Bhushan" on 3rd April 2003.

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**Ms. Arancha González Laya**

*Dean, Paris School of International Affairs at Sciences Po, former Foreign Minister of Spain*

Arancha González is the Dean of PSIA at Sciences Po and first woman to lead the world's third school for Politics and International Studies. Prior to joining PSIA, Ms. González served as Spain's Minister of Foreign Affairs, European Union and Cooperation (2020-2021). She previously was Assistant-Secretary-General of the United Nations and Executive Director of the International Trade Centre (2013-2020). Between 2005 and 2013 Ms. González served as Chief of Staff to the Director-General of the World Trade Organization. Before that she held senior positions at the European Commission in the areas of international trade and development. Ms. González started her career as a lawyer in the private sector.





### **His Excellency Mahamadou Issoufou**

*Former President of Niger Republic, President of Issoufou Mahamadou Foundation*

His Excellency Mr. Issoufou Mahamadou began his professional career in the mining sector, just after his university studies. His commitment towards values of freedom, justice, democracy, and the rule of law led him to secretly found a political action group from which emerged the Nigerian Party for Democracy and Socialism. In 2011, His Excellency Issoufou was elected President of the Republic of Niger for a term of 5 years and renewed in 2016. He was appointed co-chair of the Presidential Working Group on the Single Currency Project of the Economic Community of West African States, Chairman of the Climate Commission for the Sahel region during the 2015 UN climate summit in Paris, and Chairman of the High-Level Committee for Food Security of the West African Economic and Monetary Union. His Excellency Issoufou's new mission is to help promote peace, democracy, Pan-Africanism, and the climate. To achieve this, he launched the Foundation Issoufou Mahamadou.

### **Dr. Agnes Kalibata**

*UN Secretary-General's Special Envoy to the Food Systems Summit; President of the Alliance for a Green Revolution in Africa, Rwanda*

Dr. Agnes Kalibata is the President of the Alliance for a Green Revolution. She leads the organization's efforts to ensure a food secure and prosperous Africa through rapid, inclusive, sustainable agricultural growth, improving the productivity and livelihoods of millions of smallholder farmers in Africa. Dr. Kalibata was Rwanda's Minister of Agriculture and Animal Resources, where she drove programs that moved her country to food security helping to lift more than a million Rwandans out of poverty. She served as the Special Envoy of the UN Secretary-General for the 2021 Food Systems Summit. Dr. Kalibata was awarded the Yara Prize, now the Africa Food Prize, in 2012, an Honorary Doctorate from the University of Liège, and the National Academy of Sciences' Public Welfare Medal for her work to drive Africa's agricultural transformation through modern sciences and effective policy thereby improving livelihoods of smallholder farmers. Dr. Kalibata holds a doctorate in Entomology from the University of Massachusetts Amherst.





**Ms. Hina Rabbani Khar**

*Former Minister of Foreign Affairs of Pakistan*

Hina Rabbani Khar started public service in 2002, directly elected from Muzaffargarh. Since then, she has been twice elected to Parliament, both from Pakistan People Party's platform. Ms. Khar has served as Foreign Minister of Pakistan, Minister of State for Finance, Minister of State for Economic Affairs and while a member of the Climate Oversight Commission—Minister of State for Foreign Affairs. Her term as Foreign Minister is best remembered for the 'Regional Pivot' to Pakistan's foreign policy, where Ms. Khar concentrated on building ties with Pakistan's immediate neighbours. This included the normalization of trade relations with India and a policy of reaching out to all political parties and ethnicities in Afghanistan. Her tenure in Finance & Economic Affairs led Pakistan's bilateral and multilateral economic diplomacy. Ms. Khar graduated from the prestigious Lahore University of Management and Sciences with a BSC in Economics and later received her Master's in Management from the University of Massachusetts Amherst.

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**His Excellency Anote Tong**

*Former President of the Republic of Kiribati*

Anote Tong is a former President of the Republic of Kiribati, serving three terms from 2003 to 2016. During his terms in office, he was responsible for drawing international attention to the existential threat faced by people in countries affected by climate change. Pres. Tong continues to speak at conferences and institutions worldwide. He was responsible for declaring what was then the largest marine protected area, which was later listed by UNESCO as a World Heritage Site. For his advocacy work on climate change and ocean conservation, Pres. Tong has been nominated twice for the Nobel Peace Prize, and was awarded with various outstanding prizes. He received his B.Sc. from the University of Canterbury, his Master's in Economics from the London School of Economics, as well as an Honorary Doctorate in Engineering from The National Pukyong University, and an Honorary Doctorate in Law from the University of the South Pacific in Fiji.

**Prof. Laurence Tubiana**

*CEO of the European Climate Foundation; former Climate Change Ambassador and Special Representative for COP21 of France*



Laurence Tubiana is CEO of the European Climate Foundation (ECF) and a Professor at Sciences Po, Paris. She previously chaired the Board of Governors at the French Development Agency, as well as the Board at Expertise France. Before joining the ECF, Prof. Tubiana was France's Climate Change Ambassador and Special Representative for the 21st UN climate change summit (COP), and as such a key architect of the landmark Paris Agreement. Following COP21 and through COP22, she was appointed UN High-Level Champion for climate action. From 1997-2002, Prof. Tubiana served as Senior Adviser on the Environment to the French Prime Minister Lionel Jospin. From 2009-2010, she created and led the newly established Directorate for Global Public Goods at the French Ministry of Foreign Affairs. She founded in 2002 and directed until 2014 the Institute of Sustainable Development and International Relations (IDDRI). Prof. Tubiana has held academic positions and has been a member of numerous boards and scientific committees.



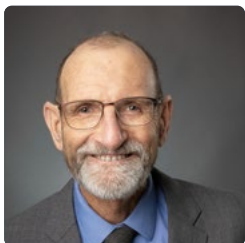
**Prof. Xue Lan**

*Cheung Kong Distinguished Chair Professor and Dean of Schwarzman College, Tsinghua University, China*

Xue Lan is a Cheung Kong Distinguished Chair Professor and Dean of Schwarzman College, Tsinghua University, where he also serves as Director of the Institute for AI International Governance and of the Global Institute for Sustainable Development Goals. Prof. Xue's interests include science, technology and innovation policy; crisis management; and global governance. In China, he is a Counsellor of the State Council, Chair of the National Expert Committee on the Governance of Next Generation of AI, and a member of the Standing Committee of Chinese Association of Science and Technology. Internationally, Prof. Xue serves on the UN Committee of the Experts on Public Administration, the Sustainable Development Solution Network's board, and Internet Governance Forum Leadership Panel. He is an adjunct professor at Carnegie Mellon University and a non-resident senior fellow of the Brookings Institution. Prof. Xue has received the National Medal of Innovation Excellence, the Distinguished Contribution Award from the Chinese Association of Science and Technology Policy, and the Fudan Distinguished Contribution Award for Management Science. Prof. Xue holds a PhD in Engineering and Public Policy from Carnegie Mellon University.

# Science advisors

Science advisors contributed in their personal capacities. The report may not reflect their own views.



**Prof. Chris Field**

*Director of the Stanford Woods Institute for the Environment and Professor for Interdisciplinary Environmental Studies*

Prof. Field's research focuses on climate change, especially solutions that improve lives now, decrease the amount of future warming, and support vibrant economies. Recent projects emphasize decreasing risks from coastal flooding and wildfires. He has been deeply involved with national and international efforts to advance understanding of global ecology and climate change. Prof. Field was co-chair of Working Group II of the IPCC (2008-2015), where he led the effort on *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (2012), and *Climate Change 2014: Impacts, Adaptation, and Vulnerability* (2014). His widely cited work has earned many recognitions, including election to the US National Academy of Science's and the American Academy of Arts and Sciences, the Max Planck Research Award, and the Roger Revelle Medal. Prof. Field is a member of the Board of Directors of World Wildlife Fund (US) and the Board of Trustees of the California Academy of Sciences. He is a fellow of the American Association for the Advancement of Science, the American Geophysical Union, and the Ecological Society of America.

**Dr. Thelma Krug**

*Vice-chair, Intergovernmental Panel on Climate Change (through July 2023)*



Thelma Krug is a former researcher at the Earth Observation Coordination at the National Institute for Space Research in Brazil, under the Ministry of Science, Technology, Innovation and Communication (MCTIC). She was elected as vice-chair of the IPCC for the Panel's Sixth Cycle (October 2015 – October 2023), after having been co-chair of the IPCC Task Force on National Greenhouse Gas Inventories from 2002 until 2015. Dr. Krug has been Deputy National Secretary at the Secretary on Policies and Programs of Science and Technology at MCTIC; National Secretary at the Secretary on Climate Change and Environmental Quality from the Ministry of the Environment (MMA), and Director of the Department on Policies to Combat Deforestation under the Secretary of Climate Change and Forests at MMA. For more than 15 years, she represented Brazil in the negotiations at the UN Framework Convention on Climate Change, with particular focus on issues related to land use, land-use change and forestry; research and systematic observations; and reporting guidelines.



**Prof. Michael Obersteiner**

*Professor and Director of the Environmental Change Institute, University of Oxford*

Prof. Obersteiner is the Director of the Environmental Change Institute (ECI), University of Oxford. His research experience stretches from biophysical modelling in the areas of ecosystems, forestry and agriculture to economics, finance and integrated assessment, and he works across ECI's research themes. Prof. Obersteiner joined the institute from the International Institute for Applied Systems Analysis (IIASA), where he was the Director of the Ecosystems Services and Management (ESM) Program. Prof. Obersteiner joined the IIASA Forestry Program in 1993 and has been leading and developing the ESM Program, which is currently the largest research program at IIASA, since 2011. Under his leadership several national and international organizations, including inter alia the European Commission, WWF, the Organisation for Economic Co-operation and Development, and other national and international institutions have received science-based policy advice using quantitative modelling techniques. Prof. Obersteiner is author of over 250 scientific papers and is a highly cited researcher, ranking in the top 1% of citations in the Web of Science according to Clarivate research.



## Youth Engagement Group

Members of the Youth Engagement group provided input into the report. The report may not reflect their own views.

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### **Shirmai Chung**

#### *Hong Kong, sustainable finance*

Shirmai Chung is a sustainability advocate born and raised in Hong Kong. She is pursuing an MPP at the Hertie School as a Sustainability and Energy Policy Scholar. Before moving to Berlin, Shirmai studied Environmental Studies and Government at Wesleyan University. There, she co-founded the university's Community Fridge Initiative, helped divest a portion of its endowment away from fossil fuels, and taught a student forum on sustainable behaviour and systemic change. Shirmai is interested in contributing non-western perspectives on climate governance.

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### **Alex Clark**

#### *United Kingdom, climate economics & China*

Alex Clark recently completed his PhD at the University of Oxford, where his research focused on fossil-fuel related economic risks, and how governments and their agents should respond to these risks, with a focus on China. Alex has supported Oxford's engage-

ment with stakeholders in China through the Economics of Energy Innovation and Systems Transition project. He is a former visiting fellow at Harvard Kennedy School and Columbia Climate School, a former Global China Initiative Fellow at Boston University, a former Climate Fellow at the European Council on Foreign Relations. Prior to his doctoral studies, Alex was a climate finance analyst at the Climate Policy Initiative. He holds an MSc from Oxford University and a BA (Hons) from Warwick University.

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### **Louise Mabulo**

#### *Philippines, farming and food systems*

Louise Mabulo is a chef, farmer, and entrepreneur. She is the Founder of The Cacao Project, which cultivates resilient and Climate-smart livelihoods, positioning farmers for sustainable success in San Fernando, Camarines Sur, Philippines. Louise is a National Geographic Young Explorer, Young Champion of the Earth under the United Nations, a Forbes Asia's 30 Under 30 honouree, Young Activist Summit Laureate and an honouree of Tatler's "Generation T."





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**Chandelle O'Neil*****Trinidad & Tobago, human rights***

Chandelle O'Neil is a Sustainable Energy Engineer and Human Rights Advocate in Trinidad and Tobago. They graduated with distinction with a bachelor's degree in mechanical engineering from the University of Guelph Honours program in 2017. Chandelle completed their post-graduate diploma in Global Leadership from the UN Mandated University for Peace, focused on Regenerative Leadership in 2022. Chandelle is a Climate Reality Leader and Youth Climate Expert, focusing on the intersection of gender and climate change. They are currently the National Director for TT with the International Student Environmental Coalition. Chandelle is also a social entrepreneur with their own enterprise, Mawu Energy Services, which supports energy efficiency, sustainable design and resource management established in July 2019.

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**Yuv Sungkur*****Mauritius, small island developing states***

Yuv Sungkur is a Mauritian climate advocate. He is passionate about climate change issues and fighting its impact on Small Islands Developing States. He delivered a TEDx Talk in 2022 and spoke alongside UN Secretary-General Antonio Guterres during the United Nations General Assembly in New

York in September 2022. He flew to COP 27 in Egypt to represent the interests of Mauritian youth on various climate-related issues (education, climate migration, loss of cultural heritage). Yuv is the founder of a local nongovernmental organization called Food Water Hygiene Mauritius, an organization that aims to support the Mauritian population living in situations of hunger, poverty and inequality by providing food, water and essential hygiene products. He holds an MSc in Global Environmental Governance from Vrije Universiteit Amsterdam, and a BA in Political Science and International from McGill University.

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**Jeremiah Thoronka*****Sierra Leone, energy poverty***

Jeremiah Thoronka is an innovator, entrepreneur, and scholar with intimate knowledge of energy, climate change, environment, sustainability, and development. In 2021, he was laureate of the inaugural Global Student Prize and the Commonwealth Youth Awards for Excellence in Development Work - Africa; cited for demonstrating exemplary excellence in innovating Clean Energy Systems, promoting Locally Sustainable Solutions, and Youth involvement in the Sustainable Development Goals. He holds an MSc in Sustainability, Energy, and Development from Durham University as a Commonwealth Shared Scholar.

# Secretariat

**Jesse Reynolds**, Executive Secretary

**Adrien Abécassis**, Principal and Special Advisor to the Chair

**Khalid Tinasti**, Director of External Relations

**Joshua Horton**, Research Director

**Sophia Luisa La Marca**, Operations Manager

**Annelle Lilibeth Gonzalez**, Communications Officer

**Zarah Kandjee**, Administrative Assistant



# The Paris Peace Forum

The Commission is hosted by the *Paris Peace Forum*. The Paris Peace Forum is a French initiative launched in 2018 to create a multi-actor platform in Paris to address global governance issues. Throughout the year, the Forum works to strengthen the governance of global commons, such as space, cyberspace, or the oceans, and improve the international management of global issues, the development of artificial intelligence and disruptive technologies, or the ecological and social transition of the economy. Its annual event gathers heads of state, government and international organization, as well as civil society and private sector leaders, around concrete initiatives with an emphasis on the global South.

## Acknowledgements

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- LAD Climate Fund

The Commission held its first meeting at the Bellagio Center, provided by the Rockefeller Foundation.

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