Working paper

A fair share of climate finance?

The adaptation edition

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Acronyms

ADB	Asian Development Bank
AfDB	African Development Bank
AIIB	Asian Infrastructure Investment Bank
BR	Biennial Review
CIF	Climate Investment Funds
CO_2	Carbon dioxide
COP	Conference of the Parties
DAC	OECD Development Assistance Committee
EU	European Union
GCF	Green Climate Fund
GEF	Global Environment Facility
GNI	Gross national income
GNP	Gross national product
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IsDB	Islamic Development Bank
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
MCF	Multilateral climate fund
MDB	Multilateral development bank
MIGA	Multilateral Investment Guarantee Agency
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
SIDS	Small Island Developing States
tCO_2	Tonnes of carbon dioxide
UNFCCC	United Nations Framework Convention on Climate Change
V20	Vulnerable Twenty Group

Executive summary

The provision and mobilisation of climate finance by developed countries is critical to enabling and incentivising climate action by developing countries. In 2009, developed countries therefore committed to providing and mobilising $100 billion of climate finance each year by 2020. Subsequently, it was agreed that the target would be maintained up to 2025, when a new goal will be adopted by the UNFCCC Parties.

Despite needs amounting to an estimated $4 trillion by 2030 to keep to a 1.5°C trajectory, the $100 billion target has been missed every year to date (Naran et al., 2022). In 2020, the year the target should have been reached, provision and mobilisation amounted to $ 83.3 billion (OECD, 2022). Cumulatively over 2011–2020, the climate finance gap totals $409.8 billion (calculations based on OECD, 2022; UNFCCC SCF, 2022).

Failure to deliver on the climate finance goal has been laid at the feet of developed countries collectively. Instead of fostering climate ambition as intended, the collective nature of developed countries' climate finance commitments has in practice enabled some states to evade their responsibilities. This failure takes place in an already fraught context where multiple understandings of what constitutes climate finance invite data transparency issues and double counting, and raise questions regarding the 'new and additional' nature of the climate finance provided, i.e. the assurance that climate finance is not reallocated development assistance and is additional to countries' commitment to provide 0.7% of their GNI as official development assistance.

In a bid to strengthen accountability, ODI publishes an annual report assessing each developed country's progress towards its 'fair share' of the $100 billion based on each country's historical responsibility for cumulative greenhouse gas emissions, its gross national income and population size. This report is the third in the series (see Colenbrander et al., 2021; 2022). In this edition, we use the latest 2021 data on international public climate finance flows to evaluate each country's progress. We account for climate finance outflows from the multilateral development banks and multilateral climate funds, rather than the smaller inflows they receive from shareholders.

In addition to the 'fair share' of the $100 billion, this year we also follow the same methodological approach, but for a new assessment for adaptation finance. We present new evidence on each country's progress towards providing its fair share of adaptation finance, which aligns closely with the needs and priorities of developing countries but has received much less funding than mitigation historically, to the point that provider countries were urged to double adaptation finance flows at the Glasgow COP in 2021.

Fair share of climate finance in 2021

We find that only eight countries contributed their fair share of the $100 billion goal in 2021: Norway, France, Sweden, Denmark, Germany, Switzerland, Luxembourg and the Netherlands. Five others are very close to providing their fair share: Austria, Finland, Japan, Iceland and Belgium (Table ES1). That said, it should be noted that the ranking is based on the face value of climate finance, rather than grant equivalence. This means that, where loans are used, rather than grants, provider countries recover some of the climate finance. If data on grant equivalence was available, provider countries would not be making as much progress towards their fair share.

The vast majority of the climate finance gap is due to the US not paying its fair share of international climate finance. The US is currently meeting just 21% of its fair share, and should be providing and mobilising an additional $34 billion each year. Australia, Spain, Canada and the United Kingdom also stand out for their relatively poor performance: each of these countries should be providing an additional $1.86 to 2.09 billion a year.

Table ES1 Scorecard of progress towards Annex II countries' fair share of the US$100 billion climate finance goal (2021)

Annex II country	Fair share of the $100 billion goal (US$ billions)	Climate finance provided in 2021 (US$ billions)	Progress towards providing fair share %
Norway	0.64	1.88	295%
France	5.45	10.33	190%
Sweden	0.94	1.73	184%
Denmark	0.62	1.00	162%
Germany	8.33	11.11	133%
Switzerland	0.93	1.15	124%
Luxembourg	0.09	0.11	122%
Netherlands	1.75	1.93	110%
Austria	0.83	0.82	99%
Finland	0.56	0.55	99%
Japan	11.44	10.92	95%
Iceland	0.04	0.04	94%
Belgium	1.14	1.06	94%
United Kingdom	5.88	3.87	66%
Italy	4.73	3.02	64%
Canada	4.25	2.16	51%
Ireland	0.54	0.27	49%
New Zealand	0.44	0.21	47%
Spain	3.44	1.58	46%
Australia	2.99	1.00	34%
Portugal	0.69	0.17	25%
United States	43.51	9.27	21%
Greece	0.78	0.15	19%

Note: Countries in darkest green are providing more than twice their fair share of climate finance. Those in medium green are providing their fair fare. Colours are thereafter in quartile increments: beige for those paying 75-100% of their fair share; yellow, paying 50-75% of their fair share; orange paying 25-50% of their fair share; red, paying less than 25% of their fair share.

Source: Authors' calculations using data from World Bank (2023a; 2023b), Friedlingstein et al. (2022), OECD (2023a), AfDB et al. (2021), CFU (2023).

Fair share of adaptation finance 2021

The Paris Agreement explicitly establishes the aim of achieving a balance in the provision of mitigation and adaptation finance (Article 9.4). What exactly that balance might look like has not been defined in quantitative terms in the agreement. In the 2021 Glasgow Climate Pact, developed countries were urged to at least double their climate finance provision from 2019 levels by 2025. Importantly, the 2019 baseline was left undefined. We use the quantitative adaptation finance target[1] of $40 billion a year as $20 billion of adaptation finance was reported by the OECD in 2019 (OECD, 2021). We underscore the wholly inadequate quantitative $40 billion target, noting that adaptation needs are estimated at $202 billion per year for this decade (UNEP, 2022).

In this new analysis, we find that developed countries provided $28.3 billion of adaptation finance in 2021 (see Table ES2). In 2021, countries already provided more adaptation finance than the $20 billion baseline in 2019. We assess each countries' starting point in 2021 as they work towards doubling their provision over 2022-2025 to ensure accountability year on year. Eleven countries are already providing their fair share of adaptation finance: Sweden, France, Germany, Norway, Denmark, Luxembourg, Switzerland, the Netherlands, Iceland, Japan and Finland. Austria and Belgium come very close.

The US is primarily responsible for the adaptation finance gap. As with its overall climate finance provision, our methodology suggests that the country is currently meeting just 21% of its fair share, and should be providing at least an additional $13 billion. Australia, Spain, Canada, the UK and Italy should be providing between $500 million and $1 billion more to meet their fair share.

1 We use the word 'target' for the doubling of adaptation finance for ease of reading but acknowledge that developed countries did not agree to a target or a goal but were only urged to at least double provision of adaptation finance.

Table ES2 Scorecard of progress towards Annex II countries' fair share of the doubling of adaptation finance (2021)

Annex II country	Fair share of $40 billion adaptation finance target (US$ billions)	Adaptation finance provided in 2021 (US$ billions)	Progress towards fair share (%)
Sweden	0.38	0.88	233%
France	2.18	5.02	230%
Germany	3.33	5.56	167%
Norway	0.25	0.42	164%
Denmark	0.25	0.40	160%
Luxembourg	0.04	0.06	158%
Switzerland	0.37	0.56	151%
Netherlands	0.70	1.04	148%
Iceland	0.02	0.02	112%
Japan	4.58	4.71	103%
Finland	0.22	0.22	100%
Austria	0.33	0.32	96%
Belgium	0.45	0.44	96%
Ireland	0.22	0.15	68%
New Zealand	0.18	0.11	62%
Italy	1.89	1.17	62%
United Kingdom	2.35	1.40	59%
Canada	1.70	0.99	58%
Spain	1.37	0.57	41%
Australia	1.19	0.48	40%
Portugal	0.28	0.06	24%
United States	17.40	3.65	21%
Greece	0.31	0.04	14%

Note: Countries in darkest green are providing more than twice their fair share of adaptation finance. Those in medium green are providing their fair fare. Colours are thereafter in quartile increments: beige for those paying 75-100% of their fair share; yellow, paying 50-75% of their fair share; orange paying 25-50% of their fair share; red, paying less than 25% of their fair share.

Source: Authors' calculations using data from World Bank (2023a; 2023b), Friedlingstein et al. (2022), OECD (2023a), AfDB et al. (2021), CFU (2023).

Our findings are intended to inform and catalyse advocacy. Countries not paying their fair shares should arguably be the focus of diplomatic and advocacy efforts seeking to increase the total volume of climate and adaptation finance, particularly the US but also Australia, Canada, Italy and the United Kingdom, which are part of the Champions Group on Adaptation Finance established in 2021. We hope this paper can support the articulation of the new climate finance goal in view of improving the overall quantity of climate finance, but also its reporting and its modality of disbursement (access as well as instruments used). Ultimately, climate finance should go beyond the focus on a dollar figure and lead to meaningful change.

1 Introduction

The provision and mobilisation of climate finance by developed countries is critical to enabling and incentivising climate action by developing countries. In 2009, developed countries therefore committed to:

> a goal of mobilizing jointly USD 100 billion dollars a year by 2020 to address the needs of developing countries. This funding will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance (UNFCCC, 2009).

This promise of climate finance was part of the Copenhagen Accord, produced in 2009 at the 15th Conference of the Parties (COP15) to the United Nations Framework Convention on Climate Change (UNFCCC). At subsequent COPs, in Paris[2] in 2015 and Katowice in 2018, Parties agreed to maintain the $100 billion a year target until 2025, when they would adopt a new collective quantified goal (NCQG).

The $100 billion target has been missed every single year to date. It may finally be reached in 2023 – three years late (Wilkinson and Flasbarth, 2021; MEAE, 2023). But despite high-level political statements including the one made at the Paris summit in June 2023, meeting the target is not a given and the 2022 Annex II climate finance delivery plans as mandated in Article 9.5 of the Paris Agreement lack a detailed and robust pathway to the collective delivery of the target (Hattle et al., 2023).

The Copenhagen Accord and the subsequent Paris Agreement do not specify a mechanism for allocating responsibility for the $100 billion goal among developed countries. Shortfalls in climate finance provision have therefore been laid at the feet of developed countries collectively, jeopardising future cooperation and joint ambition on climate change. Instead of fostering climate ambition as intended, the collective nature of developed countries' climate finance commitments has in practice enabled some states to side-step their responsibilities.

In a bid to strengthen accountability, ODI publishes an annual report assessing each developed country's 'fair share' of the $100 billion and its progress towards delivery (Colenbrander et al., 2021; Colenbrander et al., 2022). Annual assessments are important for two reasons: one, the target is per year, and not cumulative over a period and; second, climate finance is to be predictable, implying a steady flow of finance with minimal variations. Last year's report focused on the 'new and additional' dimension of the climate finance provided, showing that Annex II countries not only fell short of their climate finance promise, but also of their commitment to dedicate 0.7% of their GNI to official development assistance (ODA) (Colenbrander et al., 2021). This report is the third in the 'fair share' series. It is distinguished from previous reports in three ways. First, we use updated data on climate finance flows to evaluate each country's progress

2 1/CP.21 paragraph 53.

in 2021. Second, we refine our methodology to account for climate finance outflows from the multilateral development banks and multilateral climate funds, rather than the smaller inflows they receive from shareholders. Third and most importantly, in addition to the 'fair share' of the $100 billion, we provide a new assessment of each country's progress towards providing its fair share of adaptation finance.

In 2020, about twice as much public finance went to mitigation as to adaptation, according to the UNFCCC's Standing Committee on Finance (SCF, 2022).[3] However, the Paris Agreement explicitly establishes the goal of achieving a balance between mitigation and adaptation finance (Article 9.4). What exactly that balance might look like has not been defined in quantitative terms in the Agreement. In 2021 in Glasgow[4] the COP:

> urged the developed country Parties to at least double their collective provision of climate finance for adaptation to developing country Parties from 2019 levels by 2025, in the context of achieving a balance between mitigation and adaptation in the provision of scaled-up financial resources.

Importantly, the baseline for doubling adaptation finance is not defined either. There is therefore continuing uncertainty around developed countries' collective target for adaptation finance. The lack of specificity concerning the volume of adaptation finance is part of a broader lack of precision around climate finance delivery in the Paris Agreement, the Copenhagen Accord and the Glasgow Climate Pact (Pauw et al., 2022). Questions about the adaptation finance target and developed countries' progress towards it will be in the spotlight at COP28, and we hope that this report will enable an informed evaluation of individual countries' performance.

3 Although the Committee notes ongoing challenges in the assessment of balance due to different accounting approaches applied for mitigation and adaptation finance (UNFCCC SCF, 2022).

4 Decision 1/CMA.3, paragraph 18.

Box 1 Developed and Annex II countries

The UNFCCC has historically divided countries into three main groups:

- Annex I Parties[5] are members of the Organisation for Economic Co-operation and Development (OECD) in 1992 or countries with economies in transition.[6] The European Community (now the EU) was included as a discrete entity. When the UNFCCC was established, these were considered the industrialised countries.
- Annex II Parties comprise the same list excluding those countries with economies in transition. Even if not an official UNFCCC grouping, 'non-Annex II countries' has become a shorthand for all Parties not included in Annex II.
- Non-Annex I Parties are all countries not included in Annex I. When the UNFCCC was established, these were considered to be mostly developing countries.

The climate finance commitment made in Copenhagen and the Paris Agreement do not refer to Annex II and non-Annex II countries, but to 'developed countries'. However, members of 'developed' and 'developing' county categories are not explicitly named and identified in the climate regime like those of the annexes. This loose wording was a necessary political compromise due to tensions over – on the one hand – the rising emissions and incomes of some non-Annex I countries and – on the other – the failure of many Annex I countries to fulfil their commitments under the Kyoto Protocol.

In the absence of a set definition of 'developed countries', we apportion responsibility for the $100 billion goal among Annex II countries, effectively treating the term 'developed countries' as equivalent to 'Annex II countries'.

For a more detailed historical perspective on UNFCCC country classifications and new analysis on which countries could be considered 'developed' for the purposes of climate finance provision, see Colenbrander et al. (2023).

In Section 2, we present our methodology (2.1) to assess each country's fair share of the $100 billion goal. We then present our results as tables (2.2), ranking developed countries based on their progress towards meeting their fair share in 2021.

5 Australia, Austria, Belgium, Canada, Denmark, the EU (formerly the European Community), Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the UK and the US. Turkey was originally an Annex II country but was moved to Annex I at its own request at COP7 in Marrakech in 2001.

6 Belarus, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Liechtenstein, Lithuania, Malta, Monaco, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine.

In Section 3, we apply the approach presented in 2.1 specifically to adaptation finance. As explained in Section 3.1, we adapt our methodology to estimate how much adaptation finance each developed country has provided. Again, we present our findings as rankings of each country's progress towards delivering their adaptation finance obligations (3.2). We then outline how our findings can inform and support climate diplomacy to increase the total volume of climate finance reaching developing countries, particularly to enable them to adapt to the impacts of climate change.

2 Which countries are falling short on climate finance?

In this section, we evaluate which developed countries provided their fair share of climate finance in 2021 and the quality of those contributions. We apply a methodology to apportion responsibility among developed countries that we first developed and published in advance of COP26 in Glasgow (Colenbrander et al., 2021). In response to demand from policy-makers, campaigners and journalists, this paper provides an updated assessment of developed countries' progress towards their fair share using more recent data on climate finance flows.

This section focuses on progress towards the goal of $100 billion a year. Given that developed countries have fallen short of this target, alternative climate finance targets have been proposed. For example, the Vulnerable Twenty Group of Ministers of Finance of the Climate Vulnerable Forum have called for developed countries to commit to a minimum of $500 billion between 2020 and 2024 (V20, 2021), and civil society organisations have called for developed countries to provide and mobilise $600 billion between 2020 and 2025 (Farand, 2021). In both cases, these figures average to $100 billion per year in accordance with the spirit of the original commitment, but advocates call for larger contributions in later years to make up for early shortfalls. However, given that the purpose of this section is to strengthen accountability rather than champion specific reforms, we have chosen to benchmark countries' progress towards their fair share of the annual $100 billion in specific years, rather than towards the aggregate figure.

2.1 Methodology

2.1.1 Fair share index

We use three metrics to assess each developed country's fair share of the climate finance goal:

- Gross National Income (GNI) in current US dollars for 2021 as a proxy for ability to pay (using World Bank, 2023a).
- Cumulative territorial carbon dioxide emissions, including land use, land use change and forestry ($GtCO_2$) between 1990 and 2021 as a proxy for historic responsibility for climate change (using Friedlingstein et al., 2022).
- Population in 2021, which is the simplest way of assessing fair share as it allocates equal responsibility for climate finance provision to all people living in developed countries (using World Bank, 2023b).

Each of these metrics speaks to different ways of understanding how responsibility for climate finance could be apportioned. Appendix 1 presents the country-level data for these three different indicators.

Given lively debates around how responsibility for climate action should be apportioned among countries, we developed a composite indicator that uses all three metrics. This indicator is an average of each country's share of developed countries' collective GNI, cumulative territorial emissions and population. Each of the metrics is given an equal weight. Since we first developed this indicator in 2021, these indicators have gained traction in debates around how to equitably attribute responsibility for climate action among countries (Pachauri *et al*., 2022). Other metrics could be considered which may change the apportioning of responsibility. For example, consumption emissions instead of territorial emissions could be used to better reflect a country's emissions adjusted for trade (this would result in increased responsibility for the US, for example). Variables reflecting indebtness (e.g. ratio of debt held) or equity (e.g. vulnerability to climate change) could be used as well. If specific attribution of responsibility for climate finance delivery is considered under the NCQG, such selection choices should all be subject to negotiation by Parties (see Colenbrander et al. Forthcoming). For more details on our fair share methodology, see Colenbrander et al. (2021; 2022).

2.1.2 Climate finance contributions

Debate continues as to what constitutes climate finance as there is no agreed definition in the UNFCCC system – it can be 'public and private, bilateral and multilateral, including alternative sources of finance' (UNFCCC, 2009). Multiple definitions of climate finance are also formulated by institutions external to the UNFCCC (by the OECD DAC, the MDBs, the EU) (UNFCCC, 2022). This limits consistency in reporting between providers, invites double counting and over-estimates, and prevents transparent accounting and verification that the finance is 'new and additional', and not reallocated ODA, as per the Copenhagen accords (Weikmans and Roberts, 2019; Carty, Kowalzig and Zagema, 2020; Colenbrander et al., 2021; Roberts et al., 2021). As a result, assessing progress towards the finance goals relies on data reported by provider countries.

Over recent years, the OECD has been quantifying collective progress towards the annual $100 billion goal. In this report, we adapt the OECD DAC methodology to calculate the total commitment across bilateral and multilateral channels for each Annex II country in 2021. While our methodology is comparable with the OECD's, our estimates are likely to differ slightly because the OECD reports lack some of the methodological information required to replicate their approach in full to obtain matching estimates. We explain our data and methodological choices below while also highlighting the key differences.

Our appraisal focuses on the provision rather than the mobilisation of climate finance. Provision of climate finance typically refers to resources supplied by developed countries' governments – that is, public funds – whether as grants or loans. Mobilisation of climate finance typically refers to resources from private entities that become available as a result of contributors' activities, for example through guarantees or subordinate debt from public funds. In 2020, developed countries mobilised $13.1 billion of private climate finance, which played a significant role in closing the climate finance gap (OECD, 2022). There is ongoing debate around what proportion of the $100 billion goal should be met through publicly provided versus privately mobilised climate finance.

Climate finance provided bilaterally

For bilateral flows, we start with climate-related development finance data from the OECD DAC. The primary alternative is data from the UNFCCC Biennial Reports, which is not yet available for 2021.

Climate-related development finance is ODA tagged by donors as having climate as a 'significant' or 'principal' objective utilising Rio Markers (OECD, 2023a). Countries reporting to both the OECD DAC and the UNFCCC regularly utilise their Rio Marked climate-related development finance data and apply coefficients to transform them into climate finance data for the UNFCCC. We adopted the same method, applying the latest coefficients that countries utilised for their 2020 data (reported in OECD, 2023b) to estimate bilateral climate finance flows for 2021.

Some countries utilise more elaborate methodologies, such as case-by-case coefficients instead of a blanket fixed coefficient for all activities. In these cases, we utilised 'average climate coefficients' from the ratio of countries' reported 2020 bilateral climate finance to the UNFCCC and 2020 bilateral climate-related development finance to the OECD DAC. We applied these average climate coefficients to Rio Markers data tagged as significant, while considering 100% for those tagged as principal, which is consistent with virtually every country's approach. Our approach reflects that the choice of coefficient is normally made by countries with diverse methodologies and assumptions that are not disclosed publicly, which precludes us from replicating them in full.

Table 1 Annex II countries' coefficients applied to Rio Markers data to compile climate finance data for the UNFCCC

	Coefficient countries apply to Rio Markers data to compile climate finance for the UNFCCC as reported in OECD (2023b)		Calculated Significant coefficients for countries reporting on a case-by-case basis or that did not report to OECD (2023b)
Annex II countries	**Rio Marker 2 Principal coefficient**	**Rio Marker 1 Significant coefficient**	**Ratio of UNFCCC BR5 2020 climate finance over OECD 2020 climate ODA**
Australia	100%	Case-by-case	15%
Austria	100%	50%	
Belgium	100%	Case-by-case	26%
Canada	100%	30%	
Denmark	100%	50%	
EU Institutions (excl. EIB)	100%	40%	
Finland	Not reported	Not reported	28%
France	Case-by-case	Case-by-case	72%
Germany	100%	50%	
Greece	100%	40%	
Iceland	Not reported	Not reported	76%
Ireland	100%	40%	
Italy	100%	40%	
Japan	100%	50%	
Luxembourg*	Not reported	Not reported	Not reported
Netherlands	100%	40%	
New Zealand	100%	30%	
Norway	100%	40%	
Portugal	Not reported	Not reported	94%
Spain	100%	50%	
Sweden	100%	40%	
Switzerland	85%	50%	
United Kingdom	Case-by-case	Case-by-case	51%
United States**	Case-by-case	Case-by-case	107%

Note: See OECD (2023b) for more details on countries' use of coefficients.

* We utilised the 2021 climate-related ODA reported by Luxembourg to the OECD DAC as is because the country has not submitted its 5th Biennial Assessment report containing climate finance flows to the UNFCCC yet.

** We utilised the 2021 climate related ODA reported by the US instead of applying our calculated coefficient because the US reported higher numbers in their 5th Biennial Assessment report than those for the OECD DAC. This is unusual compared to all the other Annex II countries and we suspect there may be issue with their reporting, but cannot confirm this due to lack of information because of self reporting.

Source: OECD, (2023b), UNFCCC 5th Biennial Reports; authors calculations.

For European Union (EU) countries which are part of the Annex II[7] grouping, we adjusted their bilateral provision according to their contribution into the EU budget. The EU bilateral climate-related ODA reported to the OECD DAC is the sum of all EU institutions'[8] bilateral commitments. We attribute this volume of climate finance back to the relevant member state in proportion to their contribution to the EU budget in 2021 (EU, 2021). The European Investment Bank's contribution was not included in this estimate to avoid double counting, as the EIB's climate finance is included in the Multilateral Development Banks' contribution.

Climate finance provided through the Multilateral Development Banks

Annex II countries contribute climate finance through multilateral channels as well as bilaterally. There are two major multilateral channels that we consider in this report: Multilateral Development Banks (MDBs) and Multilateral Climate Funds (MCFs). We adopt different methods for aggregating this data given that the relevant climate finance data is available from different sources and in different formats.

We use the 2021 climate finance outflows reported by MDBs themselves in their latest joint report on climate finance (AfDB et al., 2022). The report covers climate finance from the seven largest global and regional MDBs: the African Development Bank (AfDB), Asian Development Bank (ADB), Asian Infrastructure Investment Bank (AIIB), European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), Inter-American Development Bank Group (IDBG) and World Bank Group (WBG). Finance flows from trust funds and special purpose vehicles managed by MDBs are not included as there is limited publicly available information to discern the extent to which they contribute to climate objectives. The Islamic Development Bank (IsDB) is also excluded from the attribution calculations as no Annex II country is a capital contributor to the bank.

We then attribute these climate finance outflows back to Annex II countries based on their share of capital subscription in each MDB. Some MDBs report voting power instead of capital subscription. In those cases, we used the share of voting power to proxy the share of capital subscription (Appendix 4 shows the subscription share in each MDB). Data on countries' capital subscriptions or voting power is taken from the MDBs' reference annual or financial report (IDA, 2020; ADB, 2021; Bank, 2021; IBRD, 2021; IDBG, 2022; IFC, 2023; AIIB, n.d.; EBRD, n.d.; EIB, n.d.).

7 Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden.

8 European Commission and European Development Fund.

Box 2 Capital inflows versus capital outflows from MDBs

MDBs are significant providers of climate finance, in part because they are able to leverage their inflows from shareholders to increase the total volume of climate finance reaching developing countries. MDBs can increase their outflows of climate finance relative to their inflows by drawing on retained earnings, raising additional resources on capital markets and providing loans from grant resources.

A key methodological development from previous editions of our fair share report (see Colenbrander et al., 2021; Colenbrander et al., 2022) is our use and attribution of capital outflows for climate mitigation and adaptation from the MDBs to Annex II countries. We previously used capital inflows to the MDBs, which are easier to attribute to Annex II countries but are typically smaller than outflows. Therefore, this methodological refinement produces a more accurate picture of developed countries' climate finance contributions. This is especially the case for smaller countries that may give more through MDBs than bilaterally, which may have led us to underestimate their progress towards their fair share. In addition, the focus on outflows could act as an incentive for Annex II countries to ensure that funds get through multilateral channels quicker via improved access to the funds and shortened project approval times.

It is worth highlighting that developing countries may prefer multilateral climate finance to resources provided bilaterally. Multilaterals are perceived to be less vulnerable to political capture by contributors, creating greater scope for the allocation of climate finance according to country needs or potential for impact. Multilaterals are considered to bring valuable technical skills and better facilitate knowledge-sharing across geographies. Multilateral agencies are also regarded as more responsive and flexible than their bilateral counterparts, although some agencies have heavy bureaucracies. While there is not always robust evidence to substantiate these perceptions, there is evidence that developing countries often prefer finance disbursed through multilateral channels (Gulrajani, 2016).

Climate finance provided through multilateral climate funds

The second multilateral channel through which developed countries contribute and report their provision is MCFs. Similar to the approach we adopt for MDBs, we calculate MCFs' climate finance outflows and attribute them back to each individual country. This is also an innovation compared to the previous fair share reports, where we considered climate finance inflows into MCFs rather than outflows, though the difference between the two is not as stark as for MDBs since MCFs do not raise additional capital in the same way as MDBs.

The data on flows from MCFs is sourced from the Climate Funds Update (CFU, 2022). The database aggregates financial pledges and deposits to 23 global and regional climate funds and project approvals and disbursements by year (CFU, 2023).

To estimate developed countries' climate finance contribution through MCFs in 2021, we first calculated what share of cumulative pledges each country made to each MCF. We then used these shares to attribute yearly approved spend in each MCF back to the individual country. This methodology differs slightly from our approach with MDBs because the CFU does not track pledges made to MCFs per year, but rather records aggregate pledges to each climate fund since their establishment.

In calculating each country's share of cumulative pledges to each MCF, we carried out a few adjustments. First, the calculations excluded the EU's contributions to avoid double counting, as those flows are already featured in the bilateral finance calculations. Second, several MCFs reported 'invested income', which is the income they made from their investments that is reinvested in operations. These resources were attributed back to individual countries in proportion to their contributions to that MCF. Third, sales of Certified Emission Reductions (CERS) and private sector investment were excluded from the calculation of shares of cumulative pledges, as trying to attribute them to each individual country would require additional information on their composition.

As outlined in Box 1, our analysis throughout Section 2 focuses on climate finance provision by Annex II Parties, although we recognise that the Copenhagen Accord and its successors refer to 'developed countries' instead.

2.1.3 Limitations

There is an urgent need for better climate finance data, with more consistent and transparent mechanisms for pledging, reporting adjusted by instrument (i.e. grant equivalence where appropriate) and project tagging of what counts as climate finance at project and activity level. In the absence of more robust systems, three data limitations should be taken into account.

First, data on private finance mobilisation by country is not included. If private sector mobilisation could be rigorously attributed, countries would be shown to be making more progress towards their fair share. Climate finance mobilised from private sources in low- and middle-income countries is estimated at $12.9 billion in 2021 (based on AfDB et al., 2022).

Second, we have data for the face value of countries' climate finance provision, rather than for grant equivalence. Loans at concessional rates as provided in climate finance mean that provider countries recover some or all of the finance that they lend. Using the face value of loans as reported to the DAC does not account for these repayments, which of course reduce, if not totally, the total value to recipients. Data on grant equivalence would be a more robust way to measure the actual fiscal commitment of a contributor (see Box 3).

Third, some smaller regional MDBs are not included, such as the Nordic Development Fund and the Caribbean Development Bank, as they do not report collectively and consistently with the larger development banks.

Box 3 Which instruments? Providing climate finance as grants and loans

Grants, loans, equity, guarantees, insurance and other finance mechanisms all have distinct and valuable roles to play in supporting climate change mitigation and adaptation. Each of these approaches has different advantages and disadvantages relating to the cost of finance and its potential to crowd in other sources of funding or build local capabilities. Using the right mix of these instruments is key to maximising the impact of climate finance, taking into account both project specifics and national context (Mustapha, 2022).

One of the major debates in international climate finance concerns the proportion of the $100 billion goal that should be provided as grants (that do not require any repayment) versus loans (that require repayment, either at or below market rates depending on the terms set by the lender) (Achampong, 2022; Carty et al., 2020; Zagema et al., 2023).

The provision of international climate finance in the form of loans has been seen as unfair by many civil society organisations and developing country governments. The use of loans on terms that are unsustainable increases the indebtedness of developing countries at a time when fiscal space is already seriously squeezed, reducing the scope for domestic spending on development and climate action. The use of loans has led to the perception that developed countries are not honouring their climate finance pledges, given that they ultimately recover much of the funding. In this way, the burden of financing climate action still falls on developing countries, adding further inequity to the inherent injustice of climate change (Pettinotti et al., 2022).

There are trade-offs between providing grants, concessional loans and non-concessional loans. Disbursing climate finance solely through grants will mean that a smaller volume of climate finance is available than if that money were provided as loans, which can leverage additional public and private finance for climate action. While grants have an essential role to play, it can be sensible for borrowers to use loans to deliver some climate actions now and pay for them later, when projects have a high return profile or when debtors can sustainably manage their debts (Mustapha, 2022). This is particularly true where loans are used in a way that either expands a country's productive capacity (so it has more income to repay) or boosts its resilience (so that it does not have to borrow so heavily after climate-related shocks and stresses). For example, loans below market rates, equity and guarantees can support developing countries to de-risk investments in renewables, thereby crowding in private sector actors and advancing other climate goals (Duarte, 2021; Mustapha, 2022).

Box 3 Which instruments? Providing climate finance as grants and loans (continued)

All of that said, the choice of financial instrument should be dependent on a country's macroeconomic, development and fiscal context, as well as the targeted climate objective. For instance, using concessional or non-concessional lending in middle-income countries with better-developed capital markets for profit-generating renewable energy projects is more appropriate than using the same instruments for a water adaptation project in a least developed country with constrained fiscal space and a weak private sector.

Two measures could help to partially resolve the dispute over the role of loans for climate action, or at least improve transparency around the concessionality of climate finance. One option is that contributors report all loans as their grant equivalence rather than face value, as the EU does. Grant equivalence corresponds to the value of money actually being given away to a developing country, i.e. discounting the finance that lenders will recover as borrowers service their debt. Such reporting would need to be harmonised across different lenders with consistent methodologies to calculate grant equivalence for each instrument in its different configurations, e.g. loans with subordinate lenders, when used for guarantees etc. This reform could provide greater transparency and comparability around developed countries' fiscal commitments, without precluding the use of loans where they are most appropriate.

Alternatively, or additionally as a second option, contributors can recycle the debt service payments they receive into new financial assistance for the poorest countries, as IDA does. This approach enables developing countries to do more than if developed countries only provided grants, and improves developed countries' credibility when reporting the face value of loans. Moreover, climate finance providers, especially multilateral institutions, could better optimise the allocation of constrained climate finance resources by employing more risk transfer instruments, such as guarantees or mezzanine lending, and local currency finance which are better suited to mobilised private capital (Colenbrander et al., 2023).

2.2 Results

We find that developed countries provided $64.33 billion of climate finance in 2021. First, we consider countries that provided their fair share of climate finance in 2021, and those which did not. Table 2 ranks countries based on their progress towards or beyond their fair share of the $100 billion goal in 2021.

Table 2 Scorecard of progress towards Annex II countries' fair share of the US$100 billion climate finance goal (2021)

Annex II country	Fair share of the $100 billion goal (US$ billions)	Climate finance provided in 2021 (US$ billions)	Progress towards providing fair share %
Norway	0.64	1.88	295%
France	5.45	10.33	190%
Sweden	0.94	1.73	184%
Denmark	0.62	1.00	162%
Germany	8.33	11.11	133%
Switzerland	0.93	1.15	124%
Luxembourg	0.09	0.11	122%
Netherlands	1.75	1.93	110%
Austria	0.83	0.82	99%
Finland	0.56	0.55	99%
Japan	11.44	10.92	95%
Iceland	0.04	0.04	94%
Belgium	1.14	1.06	94%
United Kingdom	5.88	3.87	66%
Italy	4.73	3.02	64%
Canada	4.25	2.16	51%
Ireland	0.54	0.27	49%
New Zealand	0.44	0.21	47%
Spain	3.44	1.58	46%
Australia	2.99	1.00	34%
Portugal	0.69	0.17	25%
United States	43.51	9.27	21%
Greece	0.78	0.15	19%

Note: Countries in darkest green are providing more than twice their fair share of climate finance. Those in medium green are providing their fair fare. Colours are thereafter in quartile increments: beige for those paying 75-100% of their fair share; yellow, paying 50-75% of their fair share; orange paying 25-50% of their fair share; red, paying less than 25% of their fair share.

Source: Authors' calculations using data from World Bank (2023a; 2023b), Friedlingstein et al. (2022), OECD (2023a), AfDB et al. (2021), CFU (2023).

Eight countries provided their fair share of climate finance in 2021: Norway, France, Sweden, Denmark, Germany, Switzerland, Luxembourg and the Netherlands. Notably, Germany, Norway and Sweden have been providing their fair share of climate finance since 2017, with Norway

providing almost three times its fair share in 2021. It is worth underscoring that developed countries only managed to get as close to the $100 billion goal as they did because these eight countries provided more – and for some, substantially more – than their fair share.

Compared to the assessment of climate finance we undertook for 2020 (Colenbrander et al., 2022), two additional countries are now providing their fair share: Luxembourg and Switzerland. Austria, Finland, Iceland and Belgium have also seen significant increases in their climate finance contributions and are now very close to providing their fair share, but considering the goal should have been reached by 2020 or before, the fact that they come near to but still do not provide their fair share by 2021 should be pointed out. Some of these increases are likely due to countries providing more in 2021 than in 2020. However, the difference may be explained by our methodological improvements to attribute MDBs' climate finance outflows which are typically larger than inflows given that MDBs can leverage their shareholders' inflow contributions for greater finance (see Box 2).

Italy also increased its contribution compared to 2020, though still falling short of its fair share. In 2021, Italy, presiding over the G20 and co-presiding over COP26, took a significant step by establishing the Italian Climate Fund, which pledged to provide an additional $935 million (€840 million) with a potential 50:50 split between mitigation and adaptation annually from 2022 to 2026 (Ministero della Transizione Ecologica, 2023).[9]

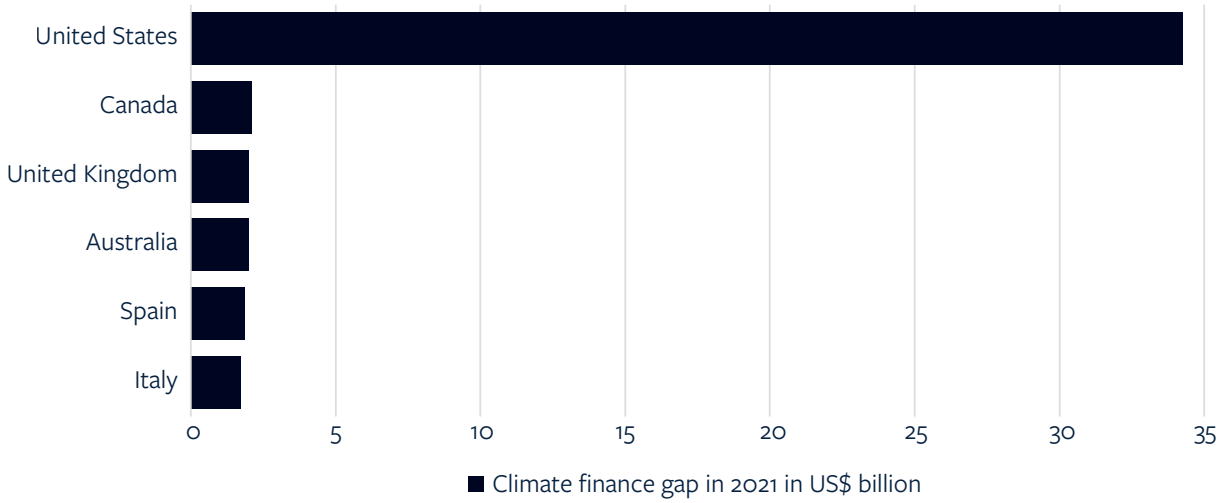
It is also worth drawing attention to Japan's declining climate finance performance. In our previous report, we found that Japan was one of just six countries providing its fair share of climate finance in 2020. However, its contribution has diminished in 2021 despite our methodological refinements, which should lead to an increased volume of climate finance, particularly given that Japan is a major shareholder in several MDBs. It is not clear why Japan's climate finance contributions have fallen, but it may be because the country is now adopting a more rigorous approach to its reporting. Japan has previously been criticised for counting the full value of selected development projects towards its climate finance commitments (see Box 3), even where project documents do not mention climate change, and for counting the face value of its loans rather than their grant equivalent (Ritchie, 2021).

At the bottom of the table, the US is responsible for the largest shortfall in both absolute and relative terms. Given the country's population size, economic heft and historical responsibility for climate change, the US should have contributed $43.5 billion as its fair share, but only provided

9 The fund is not operational yet due to lengthy legislative processes involved in defining its governance and operational guidelines. These procedures required agreement between three ministries: the Ministry of Finance, the Foreign Ministry and the Ministry for Energy Security and Environment. At the time of writing these arrangements had been finalised and investment planning activities were set to begin (MASE, 2023).

$9.27 billion[10] – 21%[11] of its fair share and $34 billion short (Figure 1). The US economy is four times larger than Japan's, five times larger than Germany's and eight times larger than that of France – yet it has provided less climate finance than any of them. The gross under-provision of climate finance by the US singlehandedly accounts for the gap towards the collective climate finance goal of $100 billion in 2020 and 2021.

Figure 1 The six countries primarily responsible for the climate finance shortfall in 2021



Source: Authors' calculations

Australia, Spain and Canada are also large economies that pay less than their fair share, and are each responsible for around $2 billion of the climate finance shortfall (Figure 1). Of these three, Canada deserves recognition for substantially increasing its contributions over the last year, albeit from a low base. The UK has also provided more climate finance, although it still only pays two-thirds of its fair share, and is yet to announce its detailed plan to fulfil the $14.7 billion (£11.6 billion) pledge it made in the lead-up to COP26 (Horton and Greenfield, 2023).

It is worth reiterating that the $100 billion goal was to be reached in 2020, was to be 'new and additional' finance and not ODA reallocation, and was to serve as a floor for climate finance provision thereafter. The continued shortfall by a handful of developed countries (those coloured red, orange and yellow and light yellow in Table 2) has served to undermine the international climate negotiations and jeopardise action on both mitigation and adaptation.

10 This figure includes the US share of MDB climate finance, and as such should not be benchmarked against US President Joe Biden's pledge to provide $11.4 billion per year in climate finance by 2024, since this correspond to bilateral finance only and does not include MDB finance (Colman, 2021).

11 21.30% rounded to the nearest whole number to 21%

3 Which countries are falling short on adaptation finance?

Paragraph 4 in Article 9 of the Paris Agreement stipulates that countries should aim for a balance in the provision of mitigation and adaptation finance, but without specifying how a balance might be understood. Should it be an exact 50:50 split? Should the split be applied to the recipient side in relation to their respective mitigation and adaptation needs? Should it specify a split between grants and loans? What ratio might be acceptable? Should all contributors aim for a balance, or should they play to their different strengths and expertise such that some provide more mitigation finance while others provide more adaptation finance? Should the balance evolve over time, given the need for urgent mitigation action in the next decade while adaptation needs will continue to rise due to increasing climate impacts even under the most successful mitigation scenarios? To date, most developed countries and multilateral institutions have shied away from stating a specific goal, although the Green Climate Fund has committed to a 50:50 split, in grant equivalent terms. Lack of clarity on what such balance is has contributed to the underfunding of adaptation finance, despite growing recognition from Annex II countries of the current skew towards mitigation finance (Hattle et al., 2023).

More recently, in paragraph 18 of the 2021 Glasgow Climate Pact,[12] developed countries were urged to at least double their adaptation finance provision from 2019 levels by 2025. However, there is uncertainty around what this implies. Should the baseline be the $20.3 billion of adaptation finance reported by the OECD (2022) in 2019, or based instead on estimates of 2019 flows compiled by the UNFCCC from Biennial Reports? Could it be based on assessments by developing countries or civil society organisations instead, given persistent evidence that adaptation finance is over-reported (Hattle et al., 2021), which would result in a lower figure? The first option may be the most credible since a footnote in a draft text version of the Pact linked to the OECD numbers, but that would imply that developed countries provide just over $40 billion of adaptation finance in 2025.

While the balance aim of Article 9.4 could be seen as a longer-term goal, there are clearly discrepancies between this quantitative aim and the objective of balancing mitigation and adaptation finance. The $40 billion falls $10 billion short of a 50:50 split at face value between mitigation and adaptation for the $100 billion goal. It may fall even further short of a balance if developed countries belatedly make up for the climate finance shortfall in 2020–2022 as called for by the Least Developed Country (LDC) group at the climate negotiations (LDC Group, 2022). For example, if developed countries provide $140 billion in 2024 to offset the climate finance gap of 2020 and 2021 (at $20 billion each year) and deliver $100 billion, then a 'balance' would imply $70 billion of adaptation finance. It also falls considerably short of developing countries' quantitative

12 Decision 1/CMA.3.

adaptation needs, estimated to be around $202 billion per year from now to 2030, which is at least five times higher than the $40 billion figure (UNEP, 2022). Last, and to recontextualise these quantity-focused considerations, there are also discrepancies between the quantitative focus and developing countries' needs in more qualitative terms, such as capacity-building, technology transfer and access, which discussions around the quantitative split do not address (UNFCCC, 2021; Watson, 2023).

The share of adaptation finance matters for equity. Annex II countries have produced an outsized share of cumulative greenhouse gas emissions: the US alone accounts for over 20% of emissions from fossil fuel combustion and land use change over 1850–2021 (Evans, 2021), although it is currently home to just 4% of the global population (UN DESA, 2021). While a small number of developing countries are now significant emitters by virtue of their large population or have very high per capita emissions (Colenbrander et al., 2023), most have relatively low historic and current emissions. Yet although they have contributed less to climate change, developing countries are typically more vulnerable to its impacts due either to high physical exposure to hazards or deficits in infrastructure and adaptive capabilities. Such deficits may also be a legacy of imperialism, which benefited developed countries at the expense of developing countries and continues to shape countries' economic landscape and productive capacity (Acemoglu and Robinson, 2017; Michalopoulos and Papaioannou, 2017; 2020; Pörtner et al., 2022).

Against this backdrop, mitigation finance can be understood as providing global benefits by helping to limit the extent of climate change globally. It benefits both developed and developing countries since the atmosphere is a non-exclusionary public good (Timperley, 2021; Pettinotti et al., 2022). By comparison, adaptation finance has been understood as yielding primarily local benefits, as it supports countries to prepare for or cope with the impacts of climate change (Khan and Munira, 2021). As noted in Box 3, the choice of financial instruments also applies to adaptation finance. Many adaptation objectives may not suit loans as they have lower or even no return profiles and cannot mobilise private finance on the scale mitigation projects can. In that case, grants can be more appropriate, alongside other options such as debt forgiveness, swaps and restructuring, especially in countries with limited private sector depth and large fiscal constraints, as found in LDCs (Mustapha, 2022).

Investments in adaptation are increasingly important to safeguard local development gains, such as reduced poverty and improved public health (Aligishiev, Bellon and Massetti, 2022). In this spirit, adaptation finance is often considered to align more closely with the needs and priorities of developing countries, particularly those most vulnerable to climate change.

3.1 Methodology

Given the uncertainty around the Glasgow Pact to double adaptation finance, we offer two resources to guide climate diplomacy and advocacy. First, we indicate what percentage of the

adaptation finance target[13] each developed country should provide (see Appendix 2, penultimate column). This figure can then be applied to any quantitative target that might be proposed (last column in Appendix 2).

Second, we use this percentage to indicate what volume of adaptation finance each developed country should provide for the quantitative adaptation finance target currently on the table, i.e. the $40 billion associated with doubling 2019 climate finance flows as estimated by the OECD. We consider this to be the minimum target for developed countries to achieve by 2025, though they may have to provide and mobilise more resources if either the 'doubling' of adaptation finance or 'balance' between mitigation and adaptation finance are understood in more ambitious terms.

We acknowledge that our methodology focuses on quantitative figures and that attention should also be given to what is funded. Attention to a greater provision should not result in a provision favouring expensive hard infrastructure to the detriment of smaller-scale local soft adaptation projects which do not clear billions at one stroke. Again, adaptation needs go beyond a quantum and should be driven by the local context (UNFCCC, 2021).

To determine each developed country's fair share of adaptation finance, we use the same composite indicator as in Section 2.1.1, based on cumulative territorial CO_2 emissions, GNI and population (Appendix 2).

To determine each developed country's progress towards its fair share, we isolate finance pledged/committed and reported or marked specifically for adaptation[14] in 2021. We use the same data sources and methods as detailed in Section 2.1.2: OECD DAC (2021), European Union (2021), AfDB et al. (2021) and CFU (2022).

3.2 Results

First, we consider countries that provided their fair share of adaptation finance in 2021, and those that did not. It is critical to assess the initial starting point in 2021 for accountability year on year, and ensure continued ambition over the years, noting that the aim is to at least double adaptation finance. Table 3 ranks countries based on their progress towards or beyond their fair share of the $40 billion provision in 2021. Appendix 2 includes each country's fair share of adaptation finance as a percentage, so that their progress can be assessed should a different quantitative target be established.

13 We use the word 'target' for the doubling of adaptation finance for ease of reading but acknowledge that developed countries did not agree to a target or a goal but were only urged to double provision of adaptation finance.

14 Adaptation finance figures from the OECD dataset already include finance tagged as cross-cutting.

Table 3 Scorecard of progress towards Annex II countries' fair share of the doubling of adaptation finance (2021)

Annex II country	Fair share of $40 billion adaptation finance target (US$ billions)	Adaptation finance provided in 2021 (US$ billions)	Progress towards providing fair share of the $40 billion adaptation finance target (%)
Sweden	0.38	0.88	233%
France	2.18	5.02	230%
Germany	3.33	5.56	167%
Norway	0.25	0.42	164%
Denmark	0.25	0.40	160%
Luxembourg	0.04	0.06	158%
Switzerland	0.37	0.56	151%
Netherlands	0.70	1.04	148%
Iceland	0.02	0.02	112%
Japan	4.58	4.71	103%
Finland	0.22	0.22	100%
Austria	0.33	0.32	96%
Belgium	0.45	0.44	96%
Ireland	0.22	0.15	68%
New Zealand	0.18	0.11	62%
Italy	1.89	1.17	62%
United Kingdom	2.35	1.40	59%
Canada	1.70	0.99	58%
Spain	1.37	0.57	41%
Australia	1.19	0.48	40%
Portugal	0.28	0.06	24%
United States	17.40	3.65	21%
Greece	0.31	0.04	14%

Note: Countries in darkest green are providing more than twice their fair share of adaptation finance. Those in medium green are providing their fair fare. Colours are thereafter in quartile increments: beige for those paying 75-100% of their fair share; yellow, paying 50-75% of their fair share; orange paying 25-50% of their fair share; red, paying less than 25% of their fair share. Countries are ranked here according to their 2021 provision.

Source: Authors' calculations using data from World Bank (2023a; 2023b), Friedlingstein et al. (2022), OECD (2023a), AfDB et al. (2021), CFU (2023).

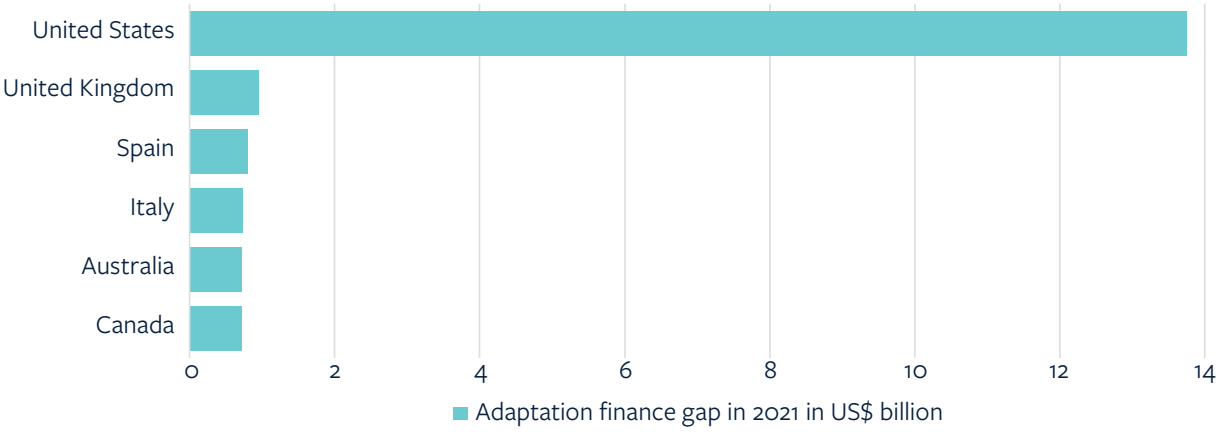
We find that developed countries provided $28.3 billion of adaptation finance in 2021. By comparison, in 2019 $20.3 billion in adaptation finance was reported to the OECD (2022). If developed countries continue to increase adaptation finance flows at this rate, they will likely double adaptation finance from 2019 levels to $40 billion by 2024. However, commitments to adaptation finance tend to be subject to political capture and changes related to domestic politics, and the $40 billion figure falls far short of the finance needed to close the adaptation gap, even if reached by 2025.

Assuming a $40 billion target, 11 countries provided their fair share of adaptation finance in 2021: Sweden, France, Germany, Norway, Denmark, Luxembourg, Switzerland, the Netherlands, Iceland, Japan and Finland. Sweden and France stand out for providing more than twice as much adaptation finance as their fair share. Austria and Belgium are very close to reaching their fair share.

Given that the $40 billion target is for 2025, and was officially adopted in 2021, these 13 countries should be commended for already providing their fair share as of 2021. It should be noted that countries providing their fair share do not necessarily have a balance of mitigation and adaptation on their portfolio; they may be providing their fair share of adaptation finance under a $40 billion quantitative goal but still have a skewed ratio towards mitigation. This may be the case for Japan, France and Germany which, while providing their fair share, planned to provide less than half of their climate finance for adaptation in their delivery plan submitted to the UNFCCC, as per Article 9.5 of the Paris Agreement (Hattle et al., 2023).

The US once again stands out among large economies for its poor performance, accounting for most of the shortfall in the doubling of adaptation finance (Figure 2). We calculate that the US should have provided $17.4 billion of adaptation finance. In fact it provided just $3.6 billion – 21%[15] of its fair share.

Figure 2 The six countries primarily responsible for the adaptation finance shortfall in 2021 assuming a quantitative US$40 billion target



Source: Authors' calculations

15 20.95% rounded to the nearest whole number to 21%

Australia, Spain, Canada, the UK and Italy are also large economies that pay less than their fair share of adaptation finance. Each should have provided between $500 million and $1 billion of additional adaptation finance to be paying their fair share (Figure 2). Interestingly, Australia, Spain and Canada are all making more progress towards their fair share of adaptation finance than they are towards climate finance more generally, suggesting that they may be doing well on a balance of mitigation and adaptation finance. By comparison, Italy and the UK – which are more generous overall – are performing less well in terms of the adaptation finance target.

4 Conclusion

In Copenhagen in 2009, developed countries collectively committed to provide $100 billion of international climate finance by 2020. They subsequently agreed to continue providing $100 billion a year through to 2025, at which point a new collective quantified climate finance goal will be agreed. However, developed nations fell short of this target in 2020 and again in 2021.

In Paris in 2015, developed countries pledged that international climate finance would be balanced between mitigation and adaptation objectives. Yet as of 2020, adaptation finance represented just 42% of international climate finance – and the total volume of adaptation finance also suffered given the shortfall in the $100 billion goal (OECD, 2022). The small quantum and share of adaptation finance has frustrated developing countries, such that in Glasgow in 2021, developed countries were urged to double adaptation finance by 2025 relative to 2019 levels.

This paper has provided new evidence to help explain the climate finance gap for 2021. It also assesses each country's starting point towards paying their fair share of adaptation finance by 2025.

Building on the methodology ODI developed in the run-up to COP26 and COP27 (Colenbrander et al., 2021; 2022), we apportioned responsibility for the $100 billion goal and for the doubling of the adaptation finance objective among Annex II countries. We did so using a composite indicator comprising GNI in 2021, cumulative territorial CO_2 emissions for the period 1990–2021 and population size in 2021.

We find that only eight countries pay their fair share of the $100 billion goal in 2021: Norway, France, Sweden, Denmark, Germany, Switzerland, Luxembourg and the Netherlands. Five others are very close to providing their fair share: Austria, Finland, Japan, Iceland and Belgium. In most cases, we see larger contributions from developed countries year on year, compared to our assessment of climate finance flows in 2020. This is partly a function of increased ambition in the wake of COP26, and partly a function of our methodological refinements to better capture climate finance channelled through the multilateral system.

The vast majority of the climate finance gap is due to the US not paying its fair share of international climate finance. Our methodology suggests that the country is currently meeting just 21% of its fair share, and should be providing an additional $34 billion each year. Australia, Spain, Canada and the United Kingdom also stand out for their relatively poor performance: each of these countries should be providing an additional $2 billion a year. Rather than laying the shortfall at the feet of all developed countries, climate diplomacy and advocacy should therefore be concentrated on these laggards to close the climate finance gap.

When it comes to our new analysis on the doubling of adaptation finance relative to 2019 levels, we use the baseline estimated by the OECD (2021) and therefore propose a quantitative target

of $40 billion. We find that developed countries provided $28.3 billion of adaptation finance in 2021. While this is nowhere near meeting the needs of developing countries, the figure indicates incremental progress towards doubling the amount provided in 2019.

Eleven countries are already providing their fair share of adaptation finance: Sweden, France, Germany, Norway, Denmark, Luxembourg, Switzerland, the Netherlands, Iceland, Japan and Finland. Austria and Belgium come very close.

Once again, the US is primarily responsible for the adaptation finance gap. Our methodology suggests that the country is currently meeting just 21% of its fair share, and should be providing and mobilising an additional $13 billion a year. Australia, Spain, Canada, the UK and Italy should also be providing between $500 million and $1 billion more to meet their fair share. Once again, these countries should arguably be the focus of diplomatic and advocacy efforts to increase the total volume of adaptation finance – particularly Australia, Canada, Italy and the United Kingdom, which are part of the Champions Group on Adaptation Finance established in 2021.

The criteria we used to define each country's 'fair share' of international climate finance are transparent but normative, and should therefore be the subject of public debate and political negotiation. There are also important complementary questions to be answered through the multilateral process, and the current negotiations under the NCQG should offer such a platform. These questions include the appropriate levels of concessionality for international climate finance and the role of different contributors in delivering mitigation and adaptation finance, as well as improved reporting and transparency from countries and multilateral institutions to avoid double counting and ultimately strengthen trust in the climate negotiations. Last, we reassert that the needs of developing countries cannot solely be answered by a greater quantum of climate finance. While greater finance is definitely necessary, developing countries' needs should also be reflected in the modalities of financial instruments used and the accessibility and quality of the finance provided.

Our findings are intended to inform and catalyse such conversations, supporting diplomatic and advocacy efforts to increase the total volume and quality of climate finance – particularly adaptation finance – and thereby foster greater collective ambition to respond to climate change.

References

Acemoglu, D. and Robinson, J. (2017) 'The economic impact of colonialism' in *The long economic and political shadow of history volume I. A global view*. London: CEPR Press.

Achampong, L. (2022) 'Efficient, equitable and effective high-quality climate finance: recommendations for the post-2025 global climate finance goal' (https://assets.nationbuilder.com/eurodad/pages/3020/attachments/original/1660310566/Eurodad_submission_to_the_NCQG_-_FINAL.pdf?1660310566).

ADB – Asian Development Bank (2021) 'Asian Development Bank financial report 2021: management's discussion and analysis and annual statements'. Asian Development Bank (www.adb.org/sites/default/files/institutional-document/788046/adb-financial-report-2021.pdf).

AfDB – African Development Bank (2021) 'AfDB – Statement of Subscriptions and Voting Powers as at 31 December 2020'. Text. African Development Bank Group – Making a Difference. African Development Bank Group. 29 January (www.afdb.org/en/documents/afdb-statement-subscriptions-and-voting-powers-31-december-2020).

AfDB et al. (2021) *2020 joint report on Multilateral Development Banks' climate finance*. London: EBRD (www.miga.org/sites/default/files/2021-08/2020-Joint-MDB-report-on-climate-finance_Report_final-web.pdf).

AIIB – Asian Infrastructure Investment Bank (n.d.) 'Members and prospective members of the Bank' (www.aiib.org/en/about-aiib/governance/members-of-bank/index.html).

Aligishiev, Z., Bellon, M. and Massetti, E. (2022) 'Macro-fiscal implications of adaptation to climate change. Staff climate notes'. Washington DC: International Monetary Fund (www.imf.org/en/Publications/staff-climate-notes/Issues/2022/03/16/Macro-Fiscal-Implications-of-Adaptation-to-Climate-Change-512769).

Carty, T., Kowalzig, J. and Zagema, B. (2020) *Climate finance shadow report 2020: assessing progress towards the $100 billion commitment*. London: Oxfam (https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621066/bp-climate-finance-shadow-report-2020-201020-en.pdf).

Climate Funds Update (2022) 'The Funds'. ODI and Heinrich Böll Stiftung (https://climatefundsupdate.org/the-funds/).

Colenbrander, S. et al. (2023) 'The time is now: what the World Bank's (R)evolution Roadmap should look like'. *ODI: Think change*, 16 May (https://odi.org/en/insights/the-time-is-now-what-the-world-banks-revolution-roadmap-should-look-like/).

Colenbrander, S., Pettinotti, L., Cao, Y., Robertson, M., Hedger, M., Gonzalez, L. (Forthcoming) The New Collective Quantified Goal and its Sources of Funding How could a 'collective effort' be operationalized in the NCQG? Working Paper . London: ODI

Colenbrander, S., Pettinotti, L. and Cao, Y. (2022) *A fair share of climate finance? An appraisal of past performance, future pledges and prospective contributors*. Working Paper 2. London: ODI (https://cdn.odi.org/media/documents/A_fair_share_of_climate_finance.pdf).

Colenbrander, S. Cao, Y. Pettinotti, L. and Quevedo, A. (2021) A fair share of climate finance: apportioning responsibility for the $100 billion climate finance goal. Working Paper. London: ODI.

Colman, Z. (2021) 'Biden says US will quadruple climate aid to poor countries' Politico (www.politico.com/news/2021/09/21/biden-united-nations-climate-aid-513414).

Duarte, M. (2021) 'Climate explainer: concessional finance'. World Bank (www.worldbank.org/en/news/feature/2021/09/16/what-you-need-to-know-about-concessional-finance-for-climate-action (Accessed: 16 November 2022).

EBRD – European Bank for Reconstruction and Development (n.d.) 'European Bank for Reconstruction and Development Shareholders and Board of Governors' (www.ebrd.com/shareholders-and-board-of-governors.html).

EIB – European Investment Bank (n.d.) 'Shareholders' (www.eib.org/en/about/governance-and-structure/shareholders/index.htm).

EU – European Union (2021) 'General budget of the European Union for the financial year 2021' (eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021B0417&from=EN).

Evans, S. (2021) 'Analysis: which countries are historically responsible for climate change?' CarbonBrief (https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change/).

Farand, C. (2021) 'Heat rises on donor countries to meet overdue $100bn climate finance promise' *Climate Change News* 13 October (www.climatechangenews.com/2021/10/13/heatrises-donor-countries-deliver-overdue-100bn-climate-finance/).

Friedlingstein, P. et al. (2022) 'Global carbon budget 2022' *Earth System Science Data* 14(11): 4811–4900 (https://doi.org/10.5194/essd-14-4811-2022.

Gulrajani, N. (2016) *Bilateral versus multilateral aid channels: strategic choices for donors*. ODI Report. London: ODI (https://odi.org/en/publications/bilateral-versus-multilateral-aid-channelsstrategic-choices-for-donors/).

Hattle, A. et al. (2021) *Climate adaptation finance: fact or fiction?* CARE Report. Copenhagen: CARE (https://careclimatechange.org/wp-content/uploads/2021/01/CARE_Synthesis-report_Final_April-2021.pdf).

Hattle, A., Roy, C. and Nordbo, J. (2023) *Hollow commitments 2023: an analysis of developed countries' climate finance plans*. Copenhagen: CARE (https://careclimatechange.org/hollow-commitments-2023-climate-finance-care/).

Horton, H. and Greenfield, P. (2023) 'Revealed: UK plans to drop flagship £11.6bn climate pledge' *The Guardian* (www.theguardian.com/environment/2023/jul/04/revealed-uk-plans-to-drop-flagship-climate-pledge-rishi-sunak).

IBRD – International Bank for Reconstruction and Development (2021) 'Management's discussion & analysis and financial statements June 30, 2021'. International Bank for Reconstruction and Development.

IDA – International Development Association (2020) 'Management's discussion & analysis and financial statements June 30, 2021'. International Development Association.

IDBG – Inter-American Development Bank (2022) 'Inter-American Development Bank annual report 2021: the year in review'. Inter-American Development Bank (https://publications.iadb.org/en/inter-american-development-bank-annual-report-2021-year-review).

IFC – International Finance Corporation (2023) 'International Finance Corporation subscriptions and voting power of member countries'. International Finance Corporation (https://thedocs.worldbank.org/en/doc/c80cbb3c6ece4fa9d06109541cef7d34-0330032021/original/IFCCountryVotingTable.pdf).

IPCC Inter-governmental Panel on Climate Change (2022a) 'Summary for Policy-makers' in H.-O. Pörtner, D.C. Roberts and M. Tignor (eds) *Climate change 2022: impacts, adaptation and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

Khan, M.R. and Munira, S. (2021) 'Climate change adaptation as a global public good: implications for financing' *Climatic Change* 167(3–4) (https://doi.org/10.1007/s10584-021-03195-w).

LDC Group (2022) 'Dakar Least Developed Countries Group Ministerial Declaration on Climate Change 2022' (www.ldc-climate.org/press_release/dakar-least-developed-countries-group-ministerial-declaration-on-climate-change-2022/).

MASE – Ministero dell'Ambiente e della Sicurezza Energetica (2023) 'Fondo Clima: insediato Comitato di indirizzo'. Ministero dell'Ambiente e della Sicurezza Energetica (www.mase.gov.it/comunicati/fondo-clima-insediato-comitato-di-indirizzo).

Michalopoulos, S. and Papaioannou, E. (eds) (2017) *The long economic and political shadow of history - Volume I. A global view*. London: CEPR Press (https://cepr.org/system/files/publication-files/60189-the_long_economic_and_political_shadow_of_history_1_a_global_view.pdf).

Michalopoulos, S. and Papaioannou, E. (2020) 'Historical legacies and African development' *Journal of Economic Literature* 58(1): 53–128 (https://doi.org/10.1257/jel.20181447).

Ministero della Transizione Ecologica (2023) *DECRETO 21 ottobre 2022 – Modalità di funzionamento del comitato di indirizzo e modalità di composizione e funzionamento del comitato direttivo del Fondo italiano per il clima* (www.gazzettaufficiale.it/eli/gu/2023/02/14/37/sg/pdf).

MEAE – Ministère de l'Europe et des Affaires Etrangères (2023) 'Chair's summary of discussions at the Summit on a New Global Financing Pact'. Synthesis report. Paris: Ministere de l'Europe et des Affaires Etrangeres (https://nouveaupactefinancier.org/pdf/chairs-summary-of-discussions.pdf).

Mustapha, S. (2022) *Using the right mix of financial instruments to provide and mobilize climate finance*. iGST Discussion Series. London: independent Global StockTake (www.climateworks.org/wp-content/uploads/2022/11/Using-the-Right-Mix-of-Financial-Instruments-to-Provide-and-Mobilize-Climate-Finance_iGSTFinance_Nov2022.pdf).

Naran, B. et al. (2022) *Global landscape of climate finance 2021*. London: Climate Policy Initiative (www.climatepolicyinitiative.org/wp-content/uploads/2021/10/Global-Landscape-of-Climate-Finance-2021.pdf).

OECD – Organisation for Economic Cooperation and Development (2020) *OECD DAC Rio Markers for Climate Handbook*. Paris: OECD (www.oecd.org/dac/environment-development/Revised%20climate%20marker%20handbook_FINAL.pdf).

OECD (2021) 'Climate finance provided and mobilised by developed countries: aggregate trends updated with 2019 data'. Paris: OECD (www.oecd.org/env/climate-finance-provided-andmobilised-by-developed-countries-aggregate-trends-updated-with-2019-data-03590fb7-en.htm).

OECD (2022) Aggregate Trends of Climate Finance Provided and Mobilised by Developed Countries in 2013-2020. OECD (Climate Finance and the USD 100 Billion Goal). Available at: https://doi.org/10.1787/d28f963c-en.

OECD (2022) *Climate finance provided and mobilised by developed countries in 2016–2020: Insights from disaggregated analysis*. OECD (https://doi.org/10.1787/286dae5d-en).

OECD (2023a) *Climate change: OECD DAC External Development Finance Statistics* (www.oecd.org/dac/financing-sustainable-development/development-finance-topics/climate-change.htm).

OECD (2023b) *Results of the survey on the coefficients applied to 2019–20 Rio Marker data when reporting to the UN Environmental Conventions*. DCD/DAC/STAT(2022)24/REV1. OECD DAC Working Party on Development Finance Statistics (https://one.oecd.org/document/DCD/DAC/STAT(2022)24/REV1/en/pdf).

Pachauri S., Pelz, S., Bertram, C. et al. (2022) 'Fairness considerations in global mitigation investments' *Science* 378(6624): 1057–1059.

Pauw, W.P. et al. (2022) 'Post-2025 climate finance target: how much more and how much better?' *Climate Policy* 22(9–10) (https://doi.org/10.1080/14693062.2022.2114985).

Roberts, J.T. et al. (2021) 'Rebooting a failed promise of climate finance' *Nature Climate Change* 11(3) (https://doi.org/10.1038/s41558-021-00990-2).

Pauw, W.P. et al. (2022) 'Post-2025 climate finance target: how much more and how much better?' *Climate Policy* 22(9–10) (https://doi.org/10.1080/14693062.2022.2114985).

Pörtner, H.-O., Roberts, D.C., Adams, H. et al. (2022) 'Technical summary' in H.-O. Pörtner, D.C. Roberts, M. Tignor et al. (eds) Climate change 2022: impacts, adaptation and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.

Ritchie, E. (2022) *Wealthy countries may be contributing less to global climate finance than we think*. Development Initiatives (https://devinit.org/blog/wealthy-countries-contributing-less-global-climate-finance/).

Roberts, J.T. et al. (2021) 'Rebooting a failed promise of climate finance' *Nature Climate Change* 11(3) (https://doi.org/10.1038/s41558-021-00990-2).

Timperley, J. (2021) 'The broken $100-billion promise of climate finance – and how to fix it' *Nature* 598(7881) (https://doi.org/10.1038/d41586-021-02846-3).

UN DESA – United Nations Department of Economic and Social Affairs (2023) *World population prospects 2022*. United Nations Department of Economic and Social Affairs (https://population.un.org/wpp/Download/Standard/Population/).

UNEP – United Nations Environment Programme (2022) *Adaptation gap report 2022. Too little, too slow. Climate adaptation failure puts world at risk*. Nairobi: UN Environment Programme (www.unep.org/resources/adaptation-gap-report-2022).

UNFCCC – United Nations Framework Convention on Climate Change (1992) 'United Nations Framework Convention on Climate Change' (https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf).

UNFCCC (2009) Copenhagen Accords. United Nations Framework Convention on Climate Change (https://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf).

UNFCCC (2015) 'Paris Agreement on Climate Change'. United Nations Framework Convention on Climate Change (https://unfccc.int/process/conferences/pastconferences/paris-climate-change-conference-november-2015/paris-agreement).

UNFCCC SCF – UNFCCC Standing Committee on Finance (2021) 'First report on the determination of the needs of developing country Parties related to implementing the Convention and the Paris Agreement. UNFCCC First NDR technical report'. Bonn: United Nations Framework Convention on Climate Change Standing Committee on Finance (https://unfccc.int/sites/default/files/resource/54307_2%20-%20UNFCCC%20First%20NDR%20technical%20report%20-%20web%20%28004%29.pdf).

UNFCCC (2021) 'Glasgow Climate Pact. Cover decision'. United Nations Framework Convention on Climate Change (https://unfccc.int/sites/default/files/resource/cop26_auv_2f_cover_decision.pdf).

UNFCCC (2022) 'Fourth biennial reports – annex I'. Bonn: UNFCCC (https://unfccc.int/BRs).

UNFCCC SCF (2022) Fifth Biennial Assessment and Overview of Climate Finance Flows. Biennial Assessment Fifth. Bonn: Standing Committee on Finance (https://unfccc.int/sites/default/files/resource/J0156_UNFCCC%20BA5_2022_Report_v4%5B52%5D.pdf (Accessed: 2 December 2022).

V20 – Vulnerable Twenty Group (2021) '1st Climate Vulnerable's Finance Summit Communiqué'. Convening of the V20 Ministerial Dialogue VII (www.v-20.org/activities/ministerial/1stclimate-vulnerables-finance-summit-communique).

Watson, C. (2023) *Options for embedding developing country needs in the New Collective Quantified Goal on climate finance*. ODI Working Paper. London: ODI (https://cdn.odi.org/media/documents/ODI_Embedding_developing_country_needs_in_NCQG_on_climate_finance.pdf).

Weikmans, R. and Roberts, J.T. (2019) 'The international climate finance accounting muddle: is there hope on the horizon?' *Climate and Development* 11(2): 97–111 (https://doi.org/10.1080/17565529.2017.1410087).

Wilkinson, J. and Flasbarth, J. (2021) 'Climate finance delivery plan: meeting the US$100 billion goal'. COP26 Presidency (https://ukcop26.org/wp-content/uploads/2021/10/Climate-Finance-Delivery-Plan-1.pdf).

World Bank, AfDB, ADB, AIIB et al. (2022) '2021 joint report on Multilateral Development Banks' climate finance'.

World Bank (2023a) 'GNI (current US$)'. DataBank (https://data.worldbank.org/indicator/NY.GNP.MKTP.CD).

World Bank (2023b) 'Population, total'. DataBank (https://data.worldbank.org/indicator/SP.POP.TOTL).

Zagema, B. et al. (2023) *Climate finance shadow report 2023: assessing the delivery of the $100 billion commitment*. Oxford: Oxfam International (https://doi.org/10.21201/2023.621500).

Appendix 1

Table AS1 Metrics for apportioning responsibility for the $100 billion goal

	Gross National Income (2021)		Cumulative CO_2 emissions (1990-2021)		Population (2021)		Fair share of the quantitative climate finance goal based on a composite index (%)
	US$ trillions	Share (%)	$GtCO_2$	Share (%)	Millions	Share (%)	
Australia	1.535	2.93%	11.7	3.33%	25.7	2.70%	2.99%
Austria	0.483	0.92%	2.2	0.62%	9.0	0.94%	0.83%
Belgium	0.600	1.14%	3.7	1.05%	11.6	1.22%	1.14%
Canada	1.990	3.79%	17.4	4.96%	38.2	4.01%	4.25%
Denmark	0.412	0.79%	1.6	0.46%	5.9	0.62%	0.62%
Finland	0.301	0.57%	1.8	0.51%	5.5	0.58%	0.56%
France	3.045	5.80%	12.0	3.43%	67.7	7.11%	5.45%
Germany	4.411	8.41%	27.6	7.85%	83.2	8.74%	8.33%
Greece	0.214	0.41%	2.9	0.82%	10.6	1.12%	0.78%
Iceland	0.024	0.05%	0.1	0.03%	0.4	0.04%	0.04%
Ireland	0.383	0.73%	1.3	0.37%	5.0	0.53%	0.54%
Italy	2.155	4.11%	13.6	3.88%	59.1	6.21%	4.73%
Japan	5.249	10.00%	39.1	11.12%	125.7	13.20%	11.44%
Luxembourg	0.060	0.11%	0.3	0.09%	0.6	0.07%	0.09%
Netherlands	0.989	1.89%	5.4	1.53%	17.5	1.84%	1.75%
New Zealand	0.249	0.47%	1.1	0.30%	5.1	0.54%	0.44%
Norway	0.502	0.96%	1.3	0.38%	5.4	0.57%	0.64%
Portugal	0.251	0.48%	1.8	0.50%	10.3	1.08%	0.69%
Spain	1.435	2.73%	9.1	2.59%	47.4	4.98%	3.44%
Sweden	0.661	1.26%	1.7	0.47%	10.4	1.09%	0.94%
Switzerland	0.783	1.49%	1.4	0.39%	8.7	0.91%	0.93%
United Kingdom	3.118	5.94%	16.4	4.67%	67.0	7.04%	5.88%
United States	23.617	45.02%	177.8	50.64%	332.0	34.87%	43.51%
Total developed countries	**52.46**	**100%**	**351.2**	**100%**	**952.27**	**100%**	**100.00%**

Source: Calculations based on World Bank (2023a and b); Friedlingstein et al. (2022).

Appendix 2

Table AS2 Metrics for apportioning responsibility for the doubling of adaptation goal assuming a US$40 billion target

	Gross National Income (2021)		Cumulative CO_2 emissions (1990-2021)		Population (2021)		Fair share of the quantitative climate finance goal based on a composite index (%)	Fair share of the quantitative climate finance goal based on a composite index (billion US$ p.a.)
	US$ trillions	Share (%)	$GtCO_2$	Share (%)	Millions	Share (%)		
Australia	1.535	2.93%	11.7	3.33%	25.7	2.70%	2.99%	1.19
Austria	0.483	0.92%	2.2	0.62%	9.0	0.94%	0.83%	0.33
Belgium	0.600	1.14%	3.7	1.05%	11.6	1.22%	1.14%	0.45
Canada	1.990	3.79%	17.4	4.96%	38.2	4.01%	4.25%	1.70
Denmark	0.412	0.79%	1.6	0.46%	5.9	0.62%	0.62%	0.25
Finland	0.301	0.57%	1.8	0.51%	5.5	0.58%	0.56%	0.22
France	3.045	5.80%	12.0	3.43%	67.7	7.11%	5.45%	2.18
Germany	4.411	8.41%	27.6	7.85%	83.2	8.74%	8.33%	3.33
Greece	0.214	0.41%	2.9	0.82%	10.6	1.12%	0.78%	0.31
Iceland	0.024	0.05%	0.1	0.03%	0.4	0.04%	0.04%	0.015
Ireland	0.383	0.73%	1.3	0.37%	5.0	0.53%	0.54%	0.22
Italy	2.155	4.11%	13.6	3.88%	59.1	6.21%	4.73%	1.89
Japan	5.249	10.00%	39.1	11.12%	125.7	13.20%	11.44%	4.58
Luxembourg	0.060	0.11%	0.3	0.09%	0.6	0.07%	0.09%	0.04
Netherlands	0.989	1.89%	5.4	1.53%	17.5	1.84%	1.75%	0.70
New Zealand	0.249	0.47%	1.1	0.30%	5.1	0.54%	0.44%	0.18
Norway	0.502	0.96%	1.3	0.38%	5.4	0.57%	0.64%	0.25
Portugal	0.251	0.48%	1.8	0.50%	10.3	1.08%	0.69%	0.28
Spain	1.435	2.73%	9.1	2.59%	47.4	4.98%	3.44%	1.37
Sweden	0.661	1.26%	1.7	0.47%	10.4	1.09%	0.94%	0.38
Switzerland	0.783	1.49%	1.4	0.39%	8.7	0.91%	0.93%	0.37
United Kingdom	3.118	5.94%	16.4	4.67%	67.0	7.04%	5.88%	2.35
United States	23.617	45.02%	177.8	50.64%	332.0	34.87%	43.51%	17.40
Total developed countries	**52.46**	**100%**	**351.2**	**100%**	**952.27**	**100%**	**100.00%**	**40**

Source: Calculations based on World Bank (2023a and b); Friedlingstein et al. (2022).

Appendix 3

Table AS3 Apportioning the EU's climate finance contribution

Annex II	EU country	EU Budget Share 2021
Yes	Austria	2.90%
Yes	Belgium	3.46%
	Bulgaria	0.45%
	Croatia	0.38%
	Cyprus	0.15%
	Czech Republic	1.45%
Yes	Denmark	2.26%
	Estonia	0.20%
Yes	Finland	1.73%
Yes	France	18.01%
Yes	Germany	25.73%
Yes	Greece	1.29%
	Hungary	0.96%
Yes	Ireland	1.86%
Yes	Italy	12.48%
	Latvia	0.22%
	Lithuania	0.34%
Yes	Luxembourg	0.34%
	Malta	0.09%
Yes	Netherlands	5.70%
	Poland	3.62%
Yes	Portugal	1.53%
	Romania	1.57%
	Slovakia	0.67%
	Slovenia	0.35%
Yes	Spain	8.85%
Yes	Sweden	3.39%
Yes	United Kingdom	0.00%
	Total Annex II countries	**89.53%**

Source: Calculations based on EU (2021).

Appendix 4

Table AS4 Apportioning MDB capital outflow

	Share of MDB total capital subscription/voting power						
	EBRD	**AfDB**	**AIIB**	**EIB**	**ADB**	**IDBG**	**WBG**
Australia	1.1%	0.0%	3.8%	0.0%	5.8%	0.0%	1.4%
Austria	2.4%	0.6%	0.5%	2.6%	0.3%	0.2%	0.4%
Belgium	2.4%	0.4%	0.3%	5.2%	0.3%	0.3%	0.9%
Canada	3.7%	2.6%	1.0%	0.0%	5.2%	4.0%	1.5%
Denmark	1.3%	1.7%	0.4%	2.6%	0.3%	0.2%	0.4%
Finland	1.3%	0.3%	0.3%	1.5%	0.3%	0.2%	5.1%
France	9.1%	2.5%	3.5%	18.8%	2.3%	1.9%	2.1%
Germany	9.1%	6.0%	4.6%	18.8%	4.3%	1.9%	2.2%
Greece	0.7%		0.0%	1.4%			0.1%
Iceland	0.1%		0.0%	0.0%			0.3%
Ireland	0.3%	0.5%	0.1%	0.7%	0.3%		0.2%
Italy	9.1%	3.5%	2.7%	18.8%	1.8%	2.0%	1.3%
Japan	9.1%	7.9%		0.0%	15.6%	5.0%	4.0%
Luxembourg	0.2%	0.1%	0.1%	0.1%	0.3%		0.0%
Netherlands	2.7%	1.3%	1.1%	5.2%	1.0%	0.2%	1.0%
New Zealand	0.0%			0.0%			0.2%
Norway	1.3%	1.7%	0.6%	0.0%	0.3%	0.2%	0.3%
Portugal	0.5%	0.2%	0.1%	0.9%	0.3%	0.1%	0.2%
Spain	3.7%	1.5%	1.8%	11.3%	0.3%	2.0%	1.0%
Sweden	2.4%	2.3%	0.6%	3.5%	0.3%	0.3%	0.4%
Switzerland	2.4%	1.0%	0.7%	0.0%	0.6%	0.5%	0.7%
United Kingdom	9.1%	2.6%	3.2%	0.0%	2.0%	1.0%	2.0%
United States	10.7%	4.4%		0.0%	15.6%	30.0%	8.4%
Total developed countries	**83.1%**	**41.1%**	**25.4%**	**91.3%**	**57.6%**	**49.7%**	**34.2%**

Note: Data is for 2021 or latest year available. Where a country does not subscribe to the multilateral bank, the cell is left blank.

Source: Calculations based on IDA (2020); ADB (2021); Bank, 2021; IBRD (2021); IDBG (2022); IFC (2023); AIIB (n.d.); EBRD (n.d.); EIB (n.d.)

Appendix 5 Accessible tables

Table ES1 Accessible version Scorecard of progress towards Annex II countries' fair share of the US$100 billion climate finance goal (2021)

Annex II country	Fair share of the $100 billion goal (US$ billions)	Climate finance provided in 2021 (US$ billions)	Progress towards providing fair share %
Norway	0.64	1.88	295%
France	5.45	10.33	190%
Sweden	0.94	1.73	184%
Denmark	0.62	1.00	162%
Germany	8.33	11.11	133%
Switzerland	0.93	1.15	124%
Luxembourg	0.09	0.11	122%
Netherlands	1.75	1.93	110%
Austria	0.83	0.82	99%
Finland	0.56	0.55	99%
Japan	11.44	10.92	95%
Iceland	0.04	0.04	94%
Belgium	1.14	1.06	94%
United Kingdom	5.88	3.87	66%
Italy	4.73	3.02	64%
Canada	4.25	2.16	51%
Ireland	0.54	0.27	49%
New Zealand	0.44	0.21	47%
Spain	3.44	1.58	46%
Australia	2.99	1.00	34%
Portugal	0.69	0.17	25%
United States	43.51	9.27	21%
Greece	0.78	0.15	19%

Note: Countries in lightest grey are providing more than twice their fair share of climate finance. Those in light grey are providing their fair fare. shades of grey are thereafter in quartile increments: from medium to darkest grey for those paying 75-100% of their fair share; paying 50-75% of their fair share; paying 25-50% of their fair share and; paying less than 25% of their fair share.

Source: Authors' calculations using data from World Bank (2023a; 2023b), Friedlingstein et al. (2022), OECD (2023a), AfDB et al. (2021), CFU (2023).

Table ES2 Accessible version Scorecard of progress towards Annex II countries' fair share of the doubling of adaptation finance (2021)

Annex II country	Fair share of $40 billion adaptation finance target (US$ billions)	Adaptation finance provided in 2021 (US$ billions)	Progress towards providing fair share of the $40 billion adaptation finance target (%)
Sweden	0.38	0.88	233%
France	2.18	5.02	230%
Germany	3.33	5.56	167%
Norway	0.25	0.42	164%
Denmark	0.25	0.40	160%
Luxembourg	0.04	0.06	158%
Switzerland	0.37	0.56	151%
Netherlands	0.70	1.04	148%
Iceland	0.02	0.02	112%
Japan	4.58	4.71	103%
Finland	0.22	0.22	100%
Austria	0.33	0.32	96%
Belgium	0.45	0.44	96%
Ireland	0.22	0.15	68%
New Zealand	0.18	0.11	62%
Italy	1.89	1.17	62%
United Kingdom	2.35	1.40	59%
Canada	1.70	0.99	58%
Spain	1.37	0.57	41%
Australia	1.19	0.48	40%
Portugal	0.28	0.06	24%
United States	17.40	3.65	21%
Greece	0.31	0.04	14%

Note: Countries in lightest grey are providing more than twice their fair share of climate finance. Those in light grey are providing their fair fare. shades of grey are thereafter in quartile increments: from medium to darkest grey for those paying 75-100% of their fair share; paying 50-75% of their fair share; paying 25-50% of their fair share and; paying less than 25% of their fair share.

Authors' calculations using data from World Bank (2023a; 2023b), Friedlingstein et al. (2022), OECD (2023a), AfDB et al. (2021), CFU (2023).