UNFCCC Standing Committee on Finance

2014 Biennial Assessment and Overview of Climate Finance Flows Report

United Nations
Framework Convention on Climate Change

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Preface

The 2014 biennial assessment and overview of climate finance flows (BA) presents a picture of climate finance to the extent possible. It reviews the operational definitions and reporting systems used by institutions that collect climate finance data. It also discusses the available estimates of global climate finance and flows of climate finance from developed to developing countries. It then attempts to assess these two sets of information, and identifies areas where further work is needed. The 2014 BA does not make projections of future finance flows and it does not attempt to evaluate the effectiveness of past flows.

The 2014 BA comprises a summary and recommendations that has been prepared by the Standing Committee on Finance (SCF)[1] and transmitted to the Conference of the Parties at its twentieth session (COP 20), and a technical report that was prepared by experts under the guidance of the Committee. The technical report is available on the website of the Committee.

The technical report draws on data and information from various sources. When this technical report was being written, there was no comprehensive system for tracking all climate finance. Therefore, estimates have been gathered from reports and datasets that have been compiled by different sources.

Due diligence has been undertaken to utilize the best information available from the most credible sources. The report encountered challenges in collecting, aggregating and analysing information from diverse sources. For example, each of these sources uses its own definition of climate finance and its own systems and methodologies for reporting. The wide range of delivery channels and instruments used for climate finance also poses a challenge in quantifying and assessing finance. These limitations need to be taken into consideration when deriving conclusions and policy implications from this report.

The SCF will contribute, through its activities, to the progressive improvement of the compilation of climate finance information in future BAs.

1) The SCF assists the COP in exercising its functions with respect to the Financial Mechanism of the Convention in terms of, inter alia, measurement, reporting and verification of support provided to developing country Parties. This involves preparation of BA and work in the area of measurement, reporting and verification of support beyond the BA.

Acknowledgement

The preparation of the 2014 BA would have not been possible without the collaboration between the SCF with external contributors, contributing authors and the secretariat over the past year.

Acknowledgments and appreciation go to all external contributors and their teams:

Climate Policy Initiative (CPI); the Development Co-operation Directorate and the Research Collaborative of the Organization for Economic Cooperation and Development (OECD); the International Development Finance Club; the group of Multilateral Development Banks (MDBs) comprising of the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank (IDB), the International Finance Corporation (IFC) and the World Bank (WB); the Overseas Development Institute; South Center; United Nations Development Programme (UNDP); and the World Resources Institute (WRI).

Acknowledgments go to the consultants of the technical report: Erik Haites, Smita Nakhooda and Dennis Tirpak.

Within the SCF, the 2014 BA was prepared under the guidance of the co-facilitators of the dedicated working group led by Outi Honkatukia and Seyni Nafo.

The 2014 BA has benefited from inputs and guidance from the working group and other Committee members including: Stefan Agne, Georg Børsting, Jessica Brown, Jozef Buys, Sarah Conway, Roger Dungan, Inka Gnittke, Yorio Ito, Edith Kateme-Kasajja, Paul Herbert Oquist Kelley, Raymond Landveld, Diann Black Layne, Ali Daud Mohammed, Kyekyeku Yaw Oppong Boadi, Rajasree Ray, Stefan Schwager, Suzanty Sitorus, Ayman Shasly and Mark Storey.

Summary and Recommendations by the Standing Committee on Finance on the 2014 Biennial Assessment and Overview of Climate Finance Flows

I. Mandate

1. The SCF assists the COP in exercising its functions with respect to the Financial Mechanism of the Convention. The COP requested the SCF to prepare a BA, drawing on available sources of information, and including information on the geographical and thematic balance of flows. Subsequently, the COP requested the SCF to consider:

- Relevant work by other bodies and entities on measurement, reporting and verification of support and the tracking of climate finance;
- Ways of strengthening methodologies for reporting climate finance;
- Ongoing technical work on operational definitions of climate finance, including private finance mobilized by public interventions, to assess how adaptation and mitigation needs can most effectively be met by climate finance.[2]

2. This report is the first of the BAs. It reviews the operational definitions of climate finance and reporting systems used by institutions that collect climate finance data. It also discusses the available estimates of global climate finance and of flows of climate finance from developed to developing countries. It then attempts to assess these two sets of information, and identifies areas where further work is needed. The 2014 BA comprises a summary and recommendations and a technical report. The summary and recommendations on the 2014 BA has been prepared by the SCF. The technical report was prepared by experts under the guidance of the Committee, and draws on data and statistics from various sources.

II. Challenges and limitations

3. The 2014 BA presents a picture of climate finance to the extent possible. Due diligence has been undertaken to utilize the best information available from the most credible sources. The report encountered challenges in collecting, aggregating and analysing information from diverse sources. For example, each of these sources uses its own definition of climate finance and its own systems and methodologies for reporting. The wide range of delivery channels and instruments used for climate finance also poses a challenge in quantifying and assessing finance. These limitations need to be taken into consideration when deriving conclusions and policy implications from this report. The SCF will contribute, through its activities, to the progressive improvement of the compilation of climate finance information in future BAs.

III. Key findings

Methodological issues relating to measurement, reporting, and verification of public and private climate finance

4. **Definitional issues:** The United Nations Framework Convention on Climate Change (UNFCCC) does not have a definition of climate finance. Data collectors and aggregators use different operational definitions but with common elements. The review of the climate finance definitions adopted by data collectors and aggregators identified in this report points to a convergence that can be framed as: "*Climate finance aims at reducing emissions, and enhancing sinks of greenhouse gases and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts.*"

5. Reporting approaches: Institutions report on climate finance for different purposes, and use different methods. Quality assurance of reporting and public disclosure of the underlying data also varies. Efforts to improve the comparability of reported data are beginning. Further efforts to develop common approaches for measuring,

2) Decisions 2/CP.17, paragraph 121(f), 1/CP.18 paragraph 71, 5/CP.18 paragraph 11, 3/CP.19, paragraph 11.

and reporting, to the extent feasible, could improve the quality of data of climate finance in future reports.

6. Measurement and reporting relating to the Convention: Reporting on climate finance provided by developed countries to developing countries (National Communications (NCs) and Biennial Reports (BRs)) is intended to promote transparency as to how, where and for what purpose, climate finance flows. The initial analysis of the BRs on climate finance for this BA report suggests inconsistencies in how UNFCCC guidelines have been used so far. This suggests a need to better understand the reasons. To form a comprehensive picture of climate finance, information on both finance provided by developed countries and finance received by developing countries is needed.

Overview of current climate finance flows 2010–2012

7. Climate finance data are aggregated in two ways in the 2014 BA: (i) Global climate finance which includes public and private financial resources devoted to addressing climate change globally, and (ii) Flows from developed to developing countries aimed at addressing climate change, which includes climate finance reported to the UNFCCC.

8. Global climate finance in all countries ranges from USD 340 to USD 650 billion per year (see figure). Several sources of climate finance are not fully captured by these estimates, so the total may be higher. Some of the sources included report the full investment rather than the climate component. If estimates were limited to incremental costs, the totals might be lower.

9. Flows from developed to developing countries range from USD 40 to USD 175 billion per year. This includes annual flows of USD 35 to 50 billion through public institutions and USD 5 to USD 125 billion of private finance. Public institutions, that help channel climate finance from developed to developing countries, include developed country governments, bilateral finance institutions, MDBs, and multilateral climate funds.

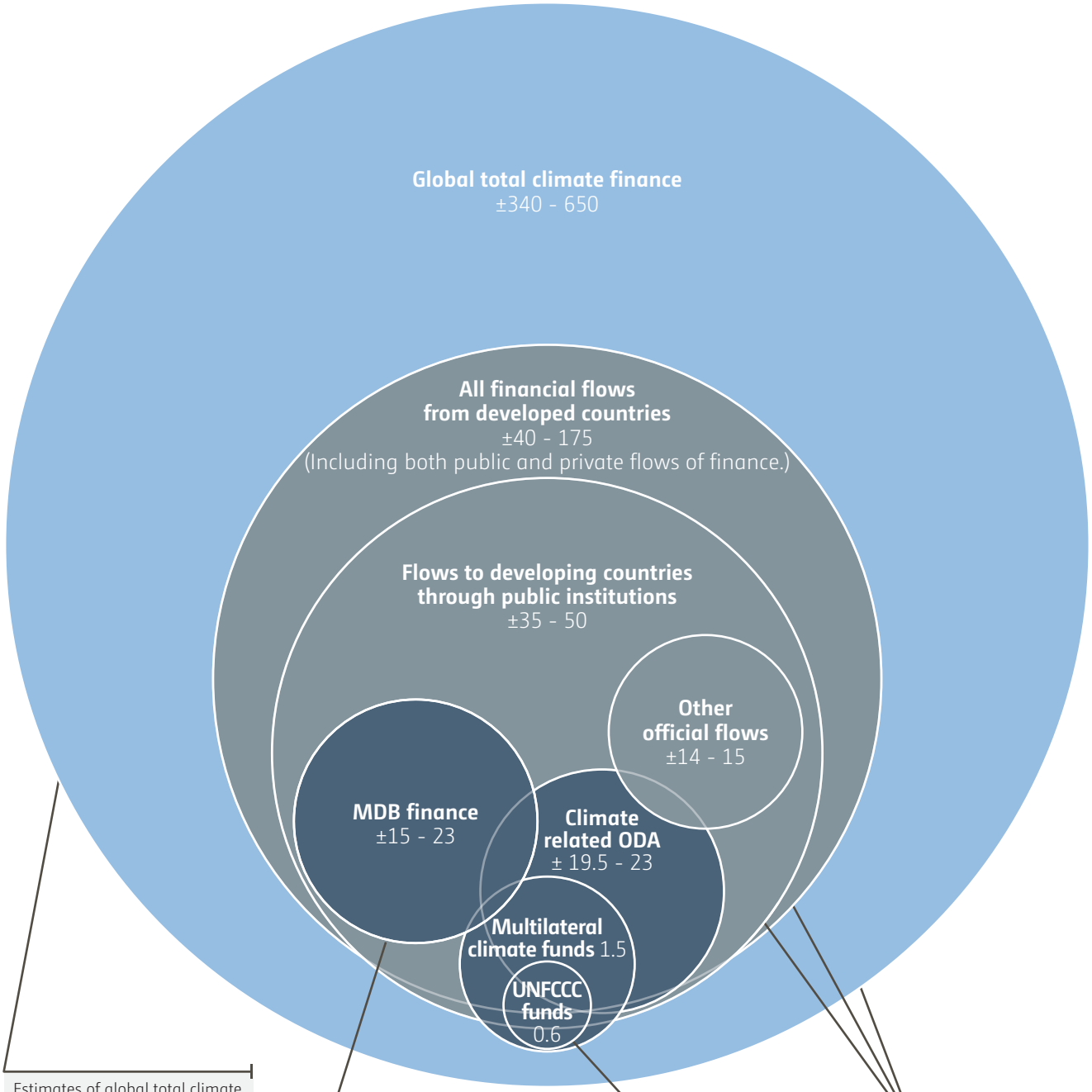
10. **Climate finance reported through the BRs is included in the flows from** developed to developing countries.

- Total climate finance provided by developed countries reported through BRs was USD 28.755 billion in 2011 and USD 28.863 billion in 2012.[3]
- The amount of fast-start finance (FSF) committed and reported by developed countries for the period 2010–2012 exceeded USD 33 billion.

Autumn leaves © Stevie Spiers Photography

3) Figures include mitigation, adaptation, cross-cutting, and core contributions. Data accessed and compiled from the BRs / CTFs by the secretariat on 21 October 2014. The figures may not include the final numbers for the calendar year.

Climate finance flows (USD billion and annualized)



Quality of measurement and reporting:

Notes to diagram

1. Estimates of global total climate finance, which are probably conservative figures include both public and private finance, and incorporate adjusted estimates of energy efficiency investment.
2. Bilateral ODA flows are adjusted to exclude funding through multilateral climate funds to reduce double counting.
3. MDB flows are adjusted to exclude external resources managed by MDBs and funding to economies in transition/developing countries.
4. Other official flows (OOF) consist of: i) grants or loans from the government sector not specifically directed to development or welfare purposes and ii) loans from the government sector which are for development and welfare, but which are not sufficiently concessional to qualify as ODA. These flows are channelled through bilateral channels (e.g. IDFC members, OPIC)
5. Figures represent total ranges of estimated finance (including sub categories identified).
6. The representation is not to scale.

Assessment of climate finance

11. **Current climate finance:** Estimates of global climate finance span a wide range. This is in part due to the lack of adequate information on domestic public spending on adaptation in developing and developed countries; on private finance; on energy efficiency investment; and on finance for reducing non-CO_2 emissions.

12. **Instruments of finance:** Forty-four to fifty-one per cent of funding through multilateral climate funds, as well as FSF and climate-related Official Development Assistance (ODA) is provided as grants. Concessional loans, Other Official Flows (OOFs) and export credit finance for climate change activities were also reported as part of FSF. There appears to have been a greater use of both loan and non-concessional finance in the larger economies of Asia and the Middle East.[4]

13. **Thematic distribution of finance:** Forty-eight to seventy-eight per cent of finance reported as FSF, in BRs, through multilateral climate funds, and through MDBs supports mitigation or other/multiple objectives (6–41%). Classifying REDD-plus[5] finance as contributing to multiple objectives, as many countries have done in their BRs, results in a reduction in the share of mitigation finance relative to that reported in FSF. Adaptation finance in the same sources ranges from 11–24%. There is some evidence that adaptation finance has been increasing, though it remains a small share of the current estimates.[6] The Least Developed Countries Fund (LDCF), Special Climate Change Fund (SCCF) and Adaptation Fund (AF) approved an average USD 190 million per year between 2010 and 2012.

14. **Geographic distribution of finance:** In general, the largest share of funding from multilateral climate funds, FSF, and climate-related development assistance has been directed to the countries of the Asia and Pacific region (38–53%Thirteen to twenty per cent of funding has been directed to global programs that target multiple countries. The countries of Latin America and the Caribbean and Sub-Saharan Africa appear to have received broadly comparable shares of the finance committed (12–15%) of multilateral climate funds and FSF. More than 25% of climate-related development assistance appears to have been directed to Africa.[7]

15. **Understanding mitigation and adaptation impacts:** Climate finance providers are starting to assess the impact of mitigation finance on emissions; many investors are also beginning to account for their emissions' impact. Adoption of such approaches is nascent. Furthermore methodologies are not always consistent. Methodologies for assessing impact on resilience and effective adaptation are much less developed.

16. **Alignment with needs:** Many developing countries are assessing their needs for climate finance and the level of climate change investments. Case studies from Indonesia, the Maldives, Niger and Peru show that efforts are getting underway in developing countries to strengthen national systems to manage climate finance. Needs assessment processes have not always been well linked to decision-making on finance and investment. Better systems to track finance received may help to strengthen alignment with national priorities.

4) Chapter III, Figure III-5.

5) Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

6) Chapter III, Table III-4.

7) Chapter III, Figures III-7, 8 and 9.

Assessing quality and coverage of data

17. **Efforts to improve quality and coverage of climate finance data are underway.** The international assessment and review (IAR), including the ongoing technical review of the first BRs, is likely to identify specific proposals that could improve the accuracy, completeness, and comparability of data on climate finance flows to developing countries. The submissions on the experiences with the first BRs, and on the methodologies used to measure and track climate finance, also include valuable information to enhance these efforts. The Development Assistance Committee of the Organisation for Economic Development (OECD-DAC) is working to improve the application of the Rio Markers, and support more consistent quantified reporting towards the Rio Conventions. Multilateral Development Banks are working to harmonize the reporting of climate finance data in their joint MDB report on mitigation and adaptation finance. They are collaborating with the International Development Finance Club (IDFC) on these matters. Methodologies for reporting on mobilized private finance are at an early stage, with the OECD RC on Tracking Private Climate Finance and MDBs exploring options for estimating mobilized private finance. Efforts are also underway to improve understanding of private flows.

IV. Recommendations

18. **Methodologies:** Further efforts would enable better measuring, reporting and verifying of climate finance flows. This will require many steps over a number of years and require the cooperation of all data producers and aggregators identified in this report. The SCF highlights the following for consideration by the COP:

- Invite a relevant body under the Convention to consider the key findings of the BA with a view to improve the guidelines for reporting climate finance under the Convention;
- Invite a relevant body of the Convention to develop common reporting methods for needs and climate finance received in time for the next cycle of BURs, with consideration of developing countries experiences;
- Invite relevant data producers, collectors, aggregators, and experts from both developed and developing countries to offer suggestions for the enhancement of approaches for measuring and reporting climate finance through, inter alia, (i) introduction of formal data assessment processes; (ii) improvements in the use of common definitions, and; (iii) further efforts to develop common methodologies, particularly for the provision of information on adaptation finance and private climate finance, to the extent possible, and disaggregated data to improve comparability of data;
- Invite multilateral climate funds, bilateral agencies, financial institutions (IFIs) as well as relevant international organizations to continue working to advance common approaches to assess the impact of their finance on greenhouse gas (GHG) emissions, low carbon development, and climate resilience;
- Request the SCF to cooperate with relevant institutions and experts, including from the private sector, to devise practical options for estimating and collecting data on private climate finance, taking into consideration the findings of the OECD RC on Tracking Private Climate Finance; and,
- Invite relevant international institutions, organizations, and experts from both developed and developing countries to explore options to strengthen tracking and reporting of domestic climate finance from public and private sources in developed and developing countries, building on international experience and emerging practices.

19. **Operational definition of climate finance:** The transparency and accuracy of estimates of climate finance could be strengthened with a common definition of climate finance. The SCF highlights the following for consideration by the COP:

- Invite Parties to consider the definitional elements in paragraph 4 above for future reporting under the Convention; and,
- Request the SCF, in collaboration with relevant international IFIs and organizations, to continue technical work on operational definitions.

20. **Ownership, impact and effectiveness:** Steps can be taken to advance the effectiveness and developing country ownership of climate finance. The SCF highlights the following for consideration by the COP:

- Invite climate finance providers to continue to deepen their engagement with recipient countries to strengthen alignment with national needs and priorities;
- Encourage climate finance providers to inform UNFCCC National Focal Points of climate finance committed and reported to the Convention as directed to their country to the extent possible; and,
- Further work with regards to needs assessment processes is needed to inform future BAs of the SCF.

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Introduction

1. Background and objectives

1. In 2010, COP 16 decided, as part of the Cancun Agreements, to establish a SCF to assist the COP in relation to the Financial Mechanism of the Convention. One of the functions of the SCF is to assist the COP with respect to the measurement, reporting and verification of the support provided to developing country Parties through activities such as the preparation of the BA. The COP requested the SCF to prepare a biennial assessment and overview of climate finance flows, drawing on the available sources of information, and including information on the geographical and thematic balance of flows.[8] Subsequently, the COP requested the SCF to consider:

- Relevant work by other bodies and entities on the MRV of support and the tracking of climate finance;[9]
- Ways of strengthening methodologies for reporting climate finance;[10]
- Ongoing technical work on operational definitions of climate finance, including private finance mobilized by public interventions, to assess how adaptation and mitigation needs can most effectively be met by climate finance.[11]

2. At the inception of preparing this report, the SCF assessed the array of available data sources against the mandates and came to the conclusion that the BAs are reports of a technical nature and can be best framed as meta-data studies. As such, the main objective of the technical report is to provide the COP with evidence-based information on current climate finance flows and how they relate to the objectives of the Convention. Since this is the first of the BAs, the SCF also decided to approach it from a gaps- and limitations-analysis angle. This report has been prepared with this in mind. The specific objectives of this report include:

- To provide an overview of global climate finance flows, and climate finance flows from developed to developing countries including discernable trends on specific types of flows and sub-flows based on available literature, and to identify data gaps; and
- To analyze existing and emerging methodologies used for measuring, reporting and verifying public and private finance flows, including the use of operational definitions of climate finance, and identify limitations of such methodologies.

3. At the same session in Cancun, the COP recognized that "*developed country Parties commit, in the context of meaningful mitigation actions and transparency on implementation, to a goal of mobilizing jointly USD 100 billion per year by 2020 to address the needs of developing countries.*"[12] The COP also agreed that the funds provided to developing country Parties may come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. The COP also took note of the collective commitment of developed countries to provide new and additional resources approaching USD 30 billion of Fast-start Finance (FSF), to support mitigation and adaptation action in developing countries for the period 2010–2012 (UNFCCC, 2010a). COP 18 acknowledged the delivery of FSF by developed country Parties to fulfill their collective commitment of USD 30 billion.[13]

2. Scope

4. This technical report presents a picture of climate finance to the extent possible. It provides an overview of global climate finance flows and climate finance flows from developed to developing countries and estimates of specific types of flows such as public, private, multilateral, bilateral and sub-flows such as support and climate finance provided by developed country Parties to developing country Parties reported in BRs, FSF submissions, and climate-related ODA. The report covers the period 2007-2012, with a focus on the period 2010-2012 and is based on available information and existing analyses.

8) Decision 2/CP.17 paragraph 121(f).
9) Decision 1/CP.18 paragraph 71.
10) Decision 5/CP.18 paragraph 11.
11) Decision 3/CP.19, paragraph 11.
12) Decision 1/CP.16, paragraph 98.
13) Decision 1/CP.18, Agreed outcome pursuant to the Bali Action Plan.

5. It further describes the mechanics of the tracking and reporting systems that are used to collect and aggregate the underlying data and the associated operational climate finance definitions.

6. The report then provides a high-level analysis which is applied to these two sets of information, with a view to assessing the extent to which climate finance flows align with the objectives of the Convention and provides insights on the quality, quantity and comprehensiveness of the data on climate finance, and presents the desired characteristics from a technical standpoint. The report was prepared by experts under the guidance of the SCF, and draws on data and statistics from various sources.

7. Informed by the technical report, the SCF has developed a summary and recomendations for consideration by the COP, which are contained in the Annex II to the report of the SCF to COP 20.[14] The technical report is further divided into four chapters.

3. Challenges and Limitations

8. Due diligence has been undertaken to utilize the best information available from the most credible sources. The report encountered challenges in collecting, aggregating and analysing information from diverse sources. For example, each of these sources uses its own definition of climate finance and its own systems and methodologies for reporting. The wide range of delivery channels and instruments used for climate finance also poses a challenge to quantifying and assessing finance. These limitations need to be taken into consideration when deriving conclusions and policy implications from this report. The SCF will contribute through its activities to the progressive improvement of the compilation of climate finance information in future BAs.

9. The process of the data gathering on climate finance flows has revealed data gaps, particularly in private finance, and limitations across different types of flows, notably:

- Limitations in the renewable energy data, and limited coverage of energy efficiency investments (particularly household expenditures), sustainable transport, reducing emissions from deforestation and forest degradation; and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks) REDD-plus, and data gaps in other sectors such as water.
- Limited data on finance for non-CO_2 sources of GHG;
- Limited information on issues such as how developed countries are defining additionality, the full range of institutions through which finance is being channelled, and little information on the developing countries that have been targeted, largely due to the fact that developed country BRs are still being processed during the period of the drafting of this report. Finally, BURs are not due untill after this report has been completed;
- Very little data on national public expenditures for climate change activities, in both developed and developing countries. With the exception of bilateral and multilateral flows for the energy sector, and private sector finance for renewables, there is relatively little data on which to base a significant trend; and
- Just a few years of data is available on finance for adaptation in developing countries, and there is limited availability of data on adaptation expenditures in developed countries so far.

4. "Climate Finance" as used in this technical report

10. In this technical report, the term "climate finance" refers to the financial resources devoted to adapting and mitigating climate change globally and to financial flows to developing countries. Global climate finance is important to make progress toward achievement of global goals, such as limiting the increase in the global average temperature to less than 2°C.

11. Climate finance data are aggregated in two ways in this technical report:

(a) **Global total climate finance flows** – includes all financial flows whose expected effect is to reduce net GHG emissions and/or to enhance resilience to the impacts of climate variability and the projected climate change. This covers private and public funds, domestic and international climate finance flows, and expenditures for mitigation and adaptation to current climate variability as well as future climate change. It covers the full value of the financial flow rather than the share associated with the climate change benefit, e.g. the entire investment in a wind turbine rather than the portion attributed to the emission reductions (IPCC 2014). Private finance includes the finance that is mobilized by developed countries and that which is not. Mobilized climate finance is a subcategory of total climate finance, by definition.

14) FCCC/CP/2014/5.

(b) **Climate finance flows from developed to developing countries** – total climate finance flows from developed to developing countries. This report focuses on the share of climate finance delivered through bilateral and multilateral channels, including public budgets and public development banks and through the operating entities of the Financial Mechanism of the Convention. As private climate finance flows from developed to developing countries are not systematically tracked, only limited information relating to those flows is available.

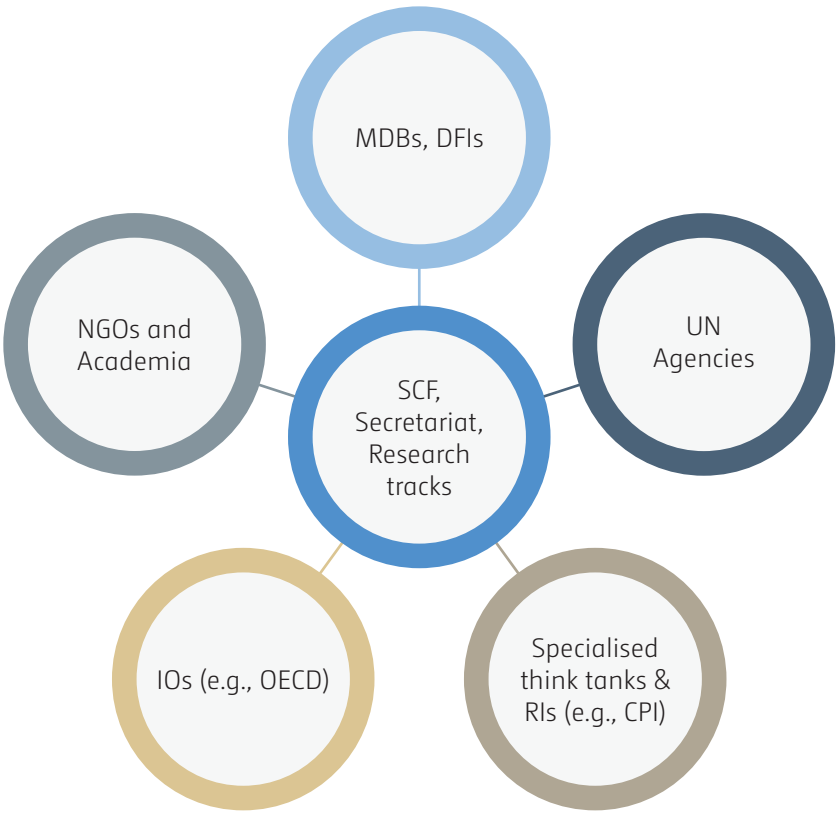
5. Approaches used in preparing the report

12. This technical report is a metadata study as it draws on existing analytical work and available data on climate finance flows.

13. In preparing this report, the SCF collaborated with a number of IFIs, international organizations (IOs), United Nations agencies, non-governmental organizations (NGOs), and representatives of the private sector and civil society. These organizations and their representatives provided data and shared their experiences in tracking and reporting current climate finance flows.

14. The research work combined a literature review and technical meetings involving data providers and organisations specialising in climate finance tracking and reporting such as MDBs, development finance institutions (DFIs), IOs, research institutions and think tanks and private sector IFIs (i.e. external contributors).[15] The work for the preparation of this first BA has, therefore, taken a "hub-and-spokes" approach in gathering and processing data, with the SCF supported by the secretariat being the hub and the external contributors being the spokes. This is shown in Figure I.

Figure I.
The "hub-and-spokes" approach



15) Background information on the activities and external contributors can be viewed on the dedicated section of the SCF website: <http://unfccc.int/8034>.

6. Approach taken in organizing information and data on the overview of current climate finance flows

15. Data gathering and aggregation were carried out in two tracks. The *first track* collected metadata from multiple available sources both internal and external, including analytical reports and databases.[16] Data gathering and aggregation was undertaken as follows:

(a) In the absence of a climate finance definition by the Convention, the reports and datasets that have applied definitions with similarities in the eligible activities/projects were first identified. The estimates for global total climate finance flows were drawn from reports and datasets that include total investment costs and expenditures. The estimates of climate finance flows from developed to developing countries and other sub-flows were drawn from reports and datasets of external contributors that capture activity level data, including multilateral and bilateral flows.[17]

(b) Because the BA is a metadata report and the fact that the underlying data is scattered across different datasets and sources, assumptions made by the cited sources of data on double-accounting apply to this report.

(c) The estimates of mitigation, adaptation and REDD-plus, and where available underlying sectoral data, such as estimates of investments in renewable energy technologies, energy efficiency, and sustainable transport, were then grouped under global total climate finance flows.

(d) Estimates on specific types of flows such as climate finance provided to developing countries through multilateral and bilateral channels, climate finance channelled through multilateral climate funds and operating entities of the Financial Mechanism of the Convention and sub-flows such as climate finance provided to developing countries reported in BRs, FSF submission, and climate-related ODA were grouped under flows from developed to developing countries. The aggregated figures are summarized and shown in the Figure III-1.

(e) Datasets on the global total climate finance flows were also reviewed for data that capture the thematic and geographic distribution of flows at global level. Available datasets were limited. However, it was possible to identify data for two sub-flows (FSF, 2010–12 and BRs, 2011–12), bilateral flows from OECD Creditor Reporting System (CSR) (period 2010–12), multilateral flows from MDBs, multilateral climate funds and funds under the Convention (2010–12).

16. In parallel, a *second track* reviewed existing approaches taken in measuring, reporting, and verifying information and data on climate finance flows. Specifically, it compared and analysed operational definitions of mitigation and adaptation finance with the aim of identifying similarities and differences in the applied definitions and the criteria used by international organizations that collect and aggregate and publish data on climate finance flows, including IDFC, MDBs, OECD-DAC, CPI, Intergovernmental Panel on Climate Change (IPCC), United Nations Conference on Trade and Development (UNCTAD), and United Nations Development Programme (UNDP).

17. It then reviewed and compared approaches taken by Parties included in Annex II to the Convention (Annex II Parties) and Parties not included in Annex I to the Convention of the UNFCCC (non-Annex I Parties), OECD-DAC, MDBs, IDFC, and Bloomberg New Energy Finance (BNEF) in reporting and reviewing public and private finance with the aim of identifying limitations in climate finance data and where improvements can be made in the future. The results of the review undertaken in the second track are presented separately in Chapter I.

16) Examples of internal sources include Fast-start finance submissions and BRs. Examples of external sources include: the Global Landscape of Climate Finance 2013 by the CPI; the Joint MDB Report on Climate Finance 2011, 2012, and 2013; the Creditor Reporting System online database of the OECD-DAC, the Fifth Assessment Report (AR5) of the IPCC, the World Energy Investment Outlook 2014 by the International Energy Agency, the Global Trends in Renewable Energy Investment 2013 by BNEF and the Frankfurt School UNEP Collaborating Centre [for Climate & Sustainable Energy Finance].

17) Data gathered typically capture commitments rather than disbursements so the estimates reported may not necessarily equal the amount received over the same time horizon.

Chapter I

Methodological Issues Relating to Measurement, Reporting and Verification of Public and Private Climate Finance

1.1 Introduction

18. This chapter introduces the reader to the definitional and methodological issues that affect the assessment of climate finance data, particularly the methods for reporting, reviewing, and verifying public and private climate finance from both domestic and international sources. Of these elements, the reporting and reviewing of developed country public finance receives the most attention, particularly in the context of the Convention.

19. This chapter responds to a request by the COP for the SCF to look into relevant work by other bodies and entities on the measurement, reporting and verification of support and the tracking of climate finance (Decision 1/CP.18 para. 71) and to consider ways of strengthening methodologies for reporting climate finance (Decision 5/CP.18, para. 11). Furthermore, recognizing the challenges posed by the lack of a common definition of climate finance, the COP requested the SCF to consider ongoing technical work on operational definitions of climate finance (Decision 3/CP.19, paragraph 11).

20. In order to put climate finance information into context in the subsequent sections, it may be useful to look into the data through the lens of transparency, completeness, and consistency.[18] Ideally, the information should include both mitigation and adaptation and all sources of finance, sectors, instruments, types of project finance and climate finance commitments to, and disbursements by multilateral and bilateral agencies.[19] See Chapter III for additional information. There are other important aspects related to the use of the data which are not discussed in great detail in this report. For example, it may be useful to look at how tracking and reporting methodologies can create the kind of incentives that encourage countries to use the data and information in decision-making processes, including the allocation of funds.[20]

21. Attempts to aggregate climate finance vary as reporting is undertaken for different purposes and is based on different methodologies (see Table I-1).

The sky and a tree © Reto Fetz / Flickr

18) The OECD-RC notes that methodologies can incentivize participation as well as allocation decisions. This relates both to accounting for private finance as well as public finance. Accounting methods for public goods can substantially influence allocation decisions by governments. Accounting methods for climate finance should therefore set the right incentives (and avoid perverse incentives) so that climate finance is allocated where it is most needed and most effective.

19) All sources of finance - public (domestic and international) and private funds (corporate and philanthropic), instruments - loans, grants, guarantees, risk insurance, and equity investments, major sectors that contribute to emissions of GHGs or in which adaptation may be needed, and types of project financing, including capacity building, training, planning, assessments, analysis, research and development, technology demonstrations and technology deployment. However, available data most likely do not include finance for research and development.

20) For views on uses of data submitted by developed country Parties on appropriate methodologies and systems used to measure and track climate finance <http://www4.unfccc.int/submissions/SitePages/sessions.aspx?showOnlyCurrentCalls=1&populateData=1&expectedsubmissionfrom=Parties&focalBodies=COP>.

Table I-1.

Illustration of differences in objectives, reporting approaches and amounts of climate finance for the years 2011 and 2012[21]

	OECD-DAC	Biennial Reports	FSF Report
Objective	To track the financial flows for development, including climate-related ODA provided over time. Data is reported and collected for OECD-DAC members, some countries that are not members, and multinational organizations plus some private donors.	To inform all the Parties to the UNFCCC on how Annex II Parties are meeting their commitments under Articles 4 and 12 of the UNFCCC.	To demonstrate that developed countries fulfilled their pledge to provide USD 30 Billion dollars of climate finance during the period 2010 to 2012.
Reporting Approaches	Grants and loans with at least a 25% concessional element and other official flows are reported. The list of eligible ODA recipients does not include all non-Annex I Parties.[22]	Based on guidelines adopted by the COP, which specify categories (adaptation, mitigation, etc) and channels (bilateral and multilateral, etc) in the common tabular format (CTF) but leave other aspects undefined.	No common reporting format. Reporting was based on sources, instruments, and types of projects as identified by each Party.
Methodology	The OECD-DAC has adopted operational definitions, eligibility criteria and guidelines to classify projects targeting climate adaptation and mitigation objectives.	Parties self determine climate finance but report on which instruments they use.	No agreed definition on what counts as climate finance.

1.2 Issues relating to climate finance definition

22. Table I-2 provides a synthesis of definitions adopted by international institutions. An examination of the definitions used reveals that no institution defines climate finance, but all provide a definition of mitigation and adaptation finance. Collectively, the common core language that these institutions have adopted, can be framed as "*Climate finance aims at reducing emissions, and enhancing sinks of GHG and aims at reducing vulnerability of, and maintaining and increasing the resilience of, human and ecological systems to negative climate change impacts*".[23] It should be noted that finance is a means to an end, not an end in itself.

23. International institutions complement their core definitions with eligibility criteria, definitions of mitigation and adaptation, guidance and other information to help in classifying projects. A closer look at the eligibility criteria and guidelines presented in Table I-2 reveals that the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD-DAC) definition is incorporated into the Rio Markers and is based on an assessment of the purpose or objective of the project; identifying projects which target climate change adaptation and/or mitigation as a "principal" or "significant" objective and are supported by detailed eligibility criteria. The MDBs, and hence individual MDBs' definitions, and the IDFC definitions are similar, but are based on a comprehensive positive list of technologies/activities for mitigation projects. The number and types of technologies that are on such lists differs among international IFIs:

(a) For adaptation, the OECD and MDBs/IDFC use eligibility criteria to determine the purpose and context of the project, and hence, the relevance of a project to climate finance;
(b) The documentation (guidelines and formats) which support the classification and reporting of projects differs in the level of detail. This may result in important differences in making a determination of whether a project is eligible for climate finance.

21) The information for column 1 was obtained from OECD. The column 2 Biennial Reports is based on information from the UNFCCC database and the FSF data. Column 3 is based on information from FSF reports submitted to UNFCCC.

22) The list of ODA eligible countries also includes some Annex I Parties. For example climate-related aid is reported for Croatia, Turkey and Ukraine.

23) This core language omits support for capacity-building that cuts across both adaptation and mitigation such as support for NCs.

Table I-2.

Compilation of definitions of climate finance and criteria used by different international institutions for assessing projects

Aggregators of Data

Institution	Climate Finance	Mitigation Definition	Mitigation Eligibility Criteria
MDBs (ADB, AfDB, EBRD, EIB, IDB, IFC, WB)		An activity can be labeled as contributing to climate change mitigation if it promotes efforts to reduce or limit GHG emissions or enhance GHG sequestration.	Based on a positive list of activities.
IDFC		It is mitigation if it contributes to reducing or avoiding GHG emissions, or to enhancing GHG sequestration.	The activity must contribute to (a) avoiding or reducing emissions of GHGs, including gases regulated by the Montreal protocol; or (b) protecting and/or enhancing GHG sinks and reservoirs; or (c) the integration of climate change concerns with recipient countries' development objectives through institution building capacity development, strengthening the regulatory or policy framework, or research.
OECD-DAC	The OECD-DAC has no definition on climate finance; instead the OECD-DAC defines and reports on climate-related ODA and other official development finance. The Rio Markers distinguish between activities targeting climate change objectives as either "principal" or "significant". The activity will score "principal objective" if it directly and explicitly aims to achieve one or more of the criteria outlined.	It is mitigation if it contributes to the objective of stabilization of GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system by promoting efforts to reduce or limit GHG emissions or to enhance GHG sequestration.	Contributes to: (a) avoiding or reducing emissions of GHGs, including gases regulated by the Montreal protocol; or (b) protecting and/or enhancing GHG sinks and reservoirs; or (c) The integration of climate change concerns with recipient countries' development objectives through institution building capacity development, strengthening the regulatory or policy framework, or research, or (d) developing countries' efforts to meet their obligations under the Convention. Examples of typical activities are outlined in the Handbook.
UNCTAD		A human intervention to reduce the sources or enhance the sinks of GHGs.	

Users of Data

Institution	Climate Finance	Mitigation Definition	Mitigation Eligibility Criteria
CPI	In the absence of an internationally-agreed definition, CPI defines climate finance as "climate-specific finance, referring to capital flows targeting (...) mitigation or adaptation objectives/ outcomes" (Buchner et al. 2013, p.2). These flows include public and private finance, and support for policy and capacity-building.	Based on OECD-DAC CRS Rio Marker definition, see Buchner et al. (2013, p2): "capital flows targeting (...) mitigation (...) objectives/ outcomes".	Based on OECD-DAC CRS Rio Marker eligibility criteria, see Buchner et al. (2013, p52) but excludes investments in fossil fuel-fired power plants; and manufacturing.
IPCC		A human intervention to reduce the sources or enhance the sinks of GHGs.	
UNDP	Country-led definition based on Climate Expenditure and Institutional Reviews - results based approaches (Cambodia), Policy based approach (Viet Nam) and activity objectives (Bangladesh, Nepal).	Results, Policies and Activities that reduce GHG emissions (Indonesia).	

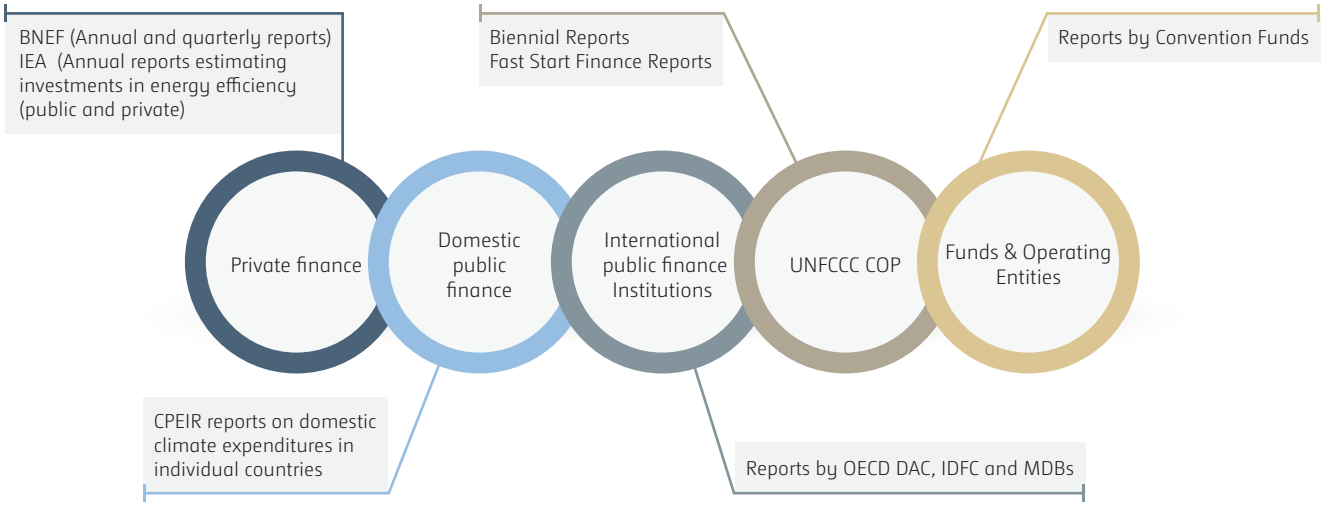
Adaptation Definition	Adaptation Eligibility Criteria	Explanatory text	Reference
In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate.	A project must fulfill three criteria, i.e., a) Include a statement of purpose or intent to demonstrate that the qualifying project element(s) reduces current and/or future vulnerabilities to climate; (b) Set out the context of climate vulnerability specific to the location of the qualifying project element based on current available data, considering both the possible impacts from climate change-related risks as well as climate variability-related risks; (c) Link the qualifying project elements to the context of climate vulnerability.	Mitigation: Project elements that may not immediately reduce emissions or enhance sequestration, but have the potential to lead to future mitigation activities can still be classified as mitigation. If feasible, project components are to be counted as climate finance. Adaptation: Only specific activities are counted i.e. the increment or proportion of the cost for extra components or elements that directly bring the adaptation. The cost of the adaptation activities is counted and not the cost of the things that are adapted.	Joint Report On MDB Climate Finance 2013 <http://www.eib.org/projects/documents/joint-report-on-mdb-climate-finance-2013.htm>.
An activity that intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience.		Adaptation encompasses a range of activities such as information and knowledge generation, capacity development, planning and implementing climate change adaptation actions.	Mapping of Green Finance delivered by IDFC Members on 4 October 2013, supported by Ecofys.
An activity that intends to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience.	An activity is eligible a) the climate change adaptation objective is explicitly indicated in the activity documentation; and b) the activity contains specific measures targeting the definition above. Carrying out a climate change adaptation analysis, either separately or as an integral part of agencies' standard procedures, facilitates this approach. Examples of typical activities are outlined in the Handbook.	Adaptation encompasses a range of activities from information and knowledge generation, to capacity development, planning and the implementation of climate change adaptation actions.	Handbook on OECD-DAC climate Markers, September 2011. <http://www.oecd.org/dac/stats/48785310.pdf>.
Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.		Adaptation not only covers actions undertaken to reduce the adverse consequences of climate change, but also those harnessing the beneficial opportunities it generates.	World Investment Report 2010: Investing in a Low-Carbon Economy, Chapter IV, Leveraging Foreign Investment for a Low-Carbon Economy.

Adaptation Definition	Adaptation Eligibility Criteria	Explanatory text	Reference
Based on OECD-OECD-DAC CRS Rio Marker definition.	Based on OECD-DAC CRS Rio Marker eligibility criteria, see Buchner et al. (2013, p52).	Excludes manufacturing Includes policy incentives provided as grants and loans but excludes the ones provided as revenue such as feed-in-tariffs.	The Landscape of Climate Finance 2012, CPI, B.Buchner et. al., Venice. B. Buchner et. al., 2013 The Landscape of Climate Finance 2013, CPI, Venice B.Buchner et. al., forthcoming. The Landscape of Climate Finance 2014, Climate.
The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects.		IPCC provides definitions for total finance investment, incremental investment and incremental cost.	<http://www.ipcc.ch/report/ar5/wg3>. <http://www.ipcc.ch/report/ar5/wg2>.
Results based approach assesses expenditures in two scenarios with and without climate change.			<http://www.climatefinance-developmenteffectiveness.org/publications.html>.

1.3 Methodologies for reporting public and private climate finance

24. This section focuses on methods for measuring and reporting public and private finance. It also provides information on several efforts to develop and utilize methodologies for reporting on private and domestic climate finance using diverse data sources. Figure I-1 provides a conceptual representation of the five main reporting methodological categories. Collectively, the methods described here cover methods to report on the different types of flows and sub-flows of global total climate finance. Methodological approaches to aggregating data from all types of flows and sub-flows have also emerged (e.g. aggregation methods used by the CPI). A comparison of approaches used by different institutions reporting on both public and private climate finance is presented in Table I-3.

Figure I-1.
Conceptual representation of five main categories of methodologies for reporting components of global climate finance as applied by different institutions (Examples of reports are shown in boxes)



Notes to figure:

1. BNEF (Bloomberg New Energy Finance); CPEIR (Climate Public Expenditure and Institutional Review); IEA (International Energy Agency); MDBs; OECD-DAC (The Organisation for Economic Co-operation and Development's Development Assistance Committee); UNFCCC COP (United Nations Framework Convention on Climate Change, Conference of the Parties);
2. In this figure, 'International public finance institutions' category refers to methodologies for reporting on public budgets and public finance institutions

1.3.1 Reporting climate finance

1.3.1.1 Reporting by the operating entities of the Financial Mechanism of the Convention and the Kyoto Protocol

25. The Global Environment Facility (GEF) and the Green Climate Fund (GCF) serve as operating entities of the Financial Mechanism of the Convention, while the Adaptation Fund Board (AFB) serves as the operating entity of the Adaptation Fund. The GEF has also been entrusted to operate the SCCF and the LDCF. Reports by the GEF and GCF are provided annually to the COP as provided for in the arrangements between the COP and these funds, while the AFB submits an annual report to the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP).

26. There are no standard methodologies or reporting formats required by these institutions and hence they vary. The information provided includes responses to guidance provided by the COP and CMP, policy decisions, status of project implementation, and financial reports. Information contained also includes geographic and thematic (adaptation and mitigation) distribution. In the case of GEF, it provides information on co-financing.

1.3.1.2 Reporting by Parties to the Convention

27. Annex II Parties are required by decisions 4/CP.5 and 2/CP.17 to report on financing for developing countries in their NCs and (BRs). The more recent of these, the guidance for the preparation of BRs, requires Annex II Parties to report using a standard format known as the common tabular format (CTF) and to indicate what "new and additional" financial resources they have provided pursuant to Article 4.3 and to clarify how they have determined such resources as being "new and additional." Further to this, decision 19/CP.18 requires Annex II Parties to indicate the total amount, status, funding source, financial instrument, and amount of support provided through bilateral, regional and multilateral channels, to specific countries for mitigation and adaptation, and the support provided to the following sectors: energy, transport, industry, agriculture, forestry, water and sanitation, cross-cutting and other. Also, Annex II Parties are to provide data on public finance support for each year over a two-year period through multilateral climate change funds, multilateral IFIs, regional channels and specialized United Nations bodies. In addition, Annex II Parties should report, to the extent that is possible, on private financial flows leveraged by bilateral climate finance towards mitigation and adaptation activities in non-Annex I Parties, and should also report on policies and measures that promote the scaling up of private investment in mitigation and adaptation activities in developing country Parties including the types of instruments used in the provision of their assistance, such as grants and concessional loans. See Tables 7 in decision 19/CP.18.[24] All of these should lead to more transparency and comparability, as lessons are learned by using the CTF, and to its improvement.

28. Through their NCs, non-Annex I Parties submit information on their needs for financial resources and technical support for the preparation of their NCs, as well as the support received from the GEF, Annex II Parties or bilateral and multilateral institutions (UNFCCC 2002a and 2007b). In their biennial update reports (BURs), non-Annex I Parties, should submit updated information on constraints and gaps, and related financial, technical and capacity-building needs. These Parties should also submit updated information on the financial resources, technology transfer, capacity-building and technical support received from bodies such as the GEF, Annex II Parties and other developed country Parties, the GCF, and multilateral institutions for activities relating to climate change, including support for the preparation of the current BURs. However, there is no CTF for reporting on climate finance received.[25]

1.3.2 Reporting by Public Institutions

1.3.2.1 The Organisation for Economic Co-operation and Development - Development Assistance Committee

29. The OECD-DAC collects and monitors aid and other resources provided to developing countries from a range of providers[26] (OECD-DAC members, 27 non-OECD-DAC members, 28 multilateral organizations and private foundations) based on objectives and purpose through the Creditor Reporting System (CRS).[27] The objective of the CRS is to "*provide a set of readily available activity-level data that enables analysis on where aid goes, what purpose it serves and what policies it aims to implement, on a comparable basis for all Development Assistance Committee members.*"[28] The CRS online User's Guide provides information on data quality indicators, and a list of OECD-DAC

24) UNFCCC biennial reporting guidelines for developed country Parties contained in decision 2/CP.17, Annex I. The guidelines also stipulate that Parties should fill in a separate table for each year, namely 20XX-3 and 20XX-2, where 20XX is the reporting year, provide an explanation on methodology used for currency exchange for the information provided in table 7, 7(a) and 7(b), and should explain in their biennial reports how they define funds as being climate-specific, among other information.

25) Decision 2/CP.17, paragraphs 39–42,

26) <http://www.oecd.org/dac/stats/dacdatasubmitters.htm>.

27) <http://stats.oecd.org/Index.aspx?DataSetCode=RIOMARKERS>.

28) Ibid.

members. Information is collected at the activity level, and climate change mitigation and adaptation activities and bilateral commitments are identified using the Rio Markers, a qualitative marker system that identifies the objective of the aid.[29] Rio marker data is collected as part of the overall OECD-DAC statistical system, and CRS database together with over 50 fields of descriptive information on areas such as sector, geography and activity type. For OECD-DAC purposes, grants and concessional "soft" loans are recorded on the face value of the activity at the date a grant or loan agreement is signed with the recipient. Repayments of loans are subsequently deducted when accounting for international development finance on a net basis according to OECD-DAC guidelines.

30. OECD-DAC statistics compile data on bilateral climate-related aid commitments from OECD-DAC members.[30] Contributions to multilateral climate funds (i.e. entirely dedicated to climate) are counted in their totality as multilateral contributions for climate purposes (e.g. CIFs, GEF, LDCF and SCCF). Core contributions to multilateral agencies partly active in the climate field are included in multilateral aid but not Rio-marked, since this would raise comparability issues with different donors scoring contributions to the same multilateral institution differently. Instead, "imputed multilateral contributions" are calculated and attributed back to donors (to the extent possible given the inherent limitations of this process) based on information provided by the agencies concerned on their climate focus and including recent data provided by MDBs.[31] The United Arab Emirates has also begun to provide climate-related aid data to the OECD-DAC. [32] The CRS database is available on line and allows the user to see individual aid activity information such as the sector, purpose and policy objective (including the Rio Markers of biodiversity, climate change adaptation, climate change mitigation and desertification), type (investment, technical cooperation, etc.), channel and donor, or recipient. Sector classifications refer to the sector of the economy at which the aid is targeted (e.g., health, energy or agriculture). Policy objective markers are applied to activities according to three values of degree—principal (2), significant (1), and not targeted (0)—based on the degree of focus of activities on the objectives.

31. When a project reported to OECD-DAC is "Rio marked" as targeting climate change mitigation and/or adaptation as either a "principal or "significant" objective, the total funding committed to the project is reported not the possible share attributable to climate change (OECD, 2013a). The system provides an approximate quantification of financial flows targeting the objectives of the Rio Conventions. In reporting to the UNFCCC on climate finance, many OECD-DAC members draw on the Rio marker data reported to the OECD-DAC, but in doing so, many report only a share of climate-related aid and apply a range of adjustments (OECD, 2014, forthcoming).

1.3.2.2 Reporting by the Multilateral Development Banks

32. In 2010, the MDBs formed a team to explore how they might harmonize the reporting of climate finance data, following the Joint Statement for Copenhagen. As a result the MDBs developed a joint approach for reporting mitigation and adaptation finance data for the years 2011, 2012 and 2013.[33] It includes information from the following institutions: the AfDB, the ADB, the EBRD, the EIB, the IDB, the WB and the IFC from the World Bank Group (WBG).

33. The MDBs joint approach for mitigation finance reporting is based on the following principles or attributes: a) It is activity-based, namely, it focuses on the type of activity to be implemented, and not on its purpose or its actual results; b) The classification is usually *ex-ante* project implementation; c) An activity can be a project or a project component, sub-component, element or proportion, and can be labelled as contributing to climate change mitigation if it promotes "*efforts to reduce or limit GHG emissions or enhance GHG sequestration.*" In the case of mitigation, classification is based on a positive list of technologies and activities that qualify.

34. The MDBs joint approach for climate adaptation finance reporting uses a context and location-specific approach that is intended to reflect the specific focus of adaptation activities, and reduce the scope for over-reporting of adaptation finance against projects, as it is designed to clearly distinguish adaptation finance from good development finance. It can be applied to the 'sub-project' or 'project element' level as appropriate. It also requires an analytical process to ensure that project activities address specific climate vulnerabilities identified as being relevant to the project and its context/location. The methodology comprises the following key

29) <http://www.oecd.org/dac/stats/rioconventions.htm>.

30) Donors are requested to screen each aid activity reported to the CRS by using the Handbook on the OECD-DAC Climate Markers (2011).

31) "OECD methodology for calculating imputed multilateral ODA." Organisation for Economic Co-operation and Development (OECD). Accessed: August 9, 2010. <http://www.oecd.org/document/54/0,3343,en_2649_34447_41037110_1_1_1_1,00.html>.

32) The OECD is currently expanding their database to include more multilateral donors and major foundations, such as the Bill and Melinda Gates Foundation. <http://www.oecd.org/investment/stats/statisticalreportingbythebillmelindagatesfoundationtotheoecddac.htm>.

33) <http://www.eib.org/attachments/documents/joint_report_on_mdb_climate_finance_2012.pdf>. <http://www.eib.org/projects/documents/joint-report-on-mdb-climate-finance-2013.htm>.

Seychelles – Beach © Gerwin Sturm / scarygami@Flickr

steps: a) setting out the context of climate vulnerability of the project, b) making an explicit statement of intent to address climate vulnerability as part of the project and c) articulating a clear and direct link between the climate vulnerability context and the specific project activities. Only activities that have this direct link are counted. For projects where adaptation is included in projects with other objectives, the incremental cost/proportional cost is estimated.

35. The approach covers both the resources of the MDBs, as well as external resources managed by the MDBs (such as funding from the Climate Investment Funds or other Carbon Funds). To prevent double-counting, as external resources may already be covered in bilateral reporting, external resources managed by the MDBs are separated from MDBs' own resources.

1.3.2.3 Reporting by the International Development Finance Club institutions

36. In 2011, the IDFC, comprising of nineteen like-minded development banks of national, sub-regional and international origin, was formed. IDFC members are distributed across Europe, Asia, Central and South America, and Africa. Participants include a mix of organizations, some developed country entities that provide virtually only foreign finance such as Agence Française de Développement (AFD) and Japan International Cooperation Agency (JICA), some that provide domestic and foreign finance Germany, KfW Bankgruppe, and some, especially in developing countries, that are strictly domestic. IDFC members have mapped their green finance contributions by collating and disclosing their aggregated green finance flows for 2011 and 2012, 93% of which was for climate change.[34] Some of these bilateral financing Institutions such as AFD, JICA and KfW Development Bank have also disclosed information on their climate investments individually in their annual reports as well as jointly within the UNEP-BFI climate change working group for the years 2009–11 (Atteridge et al., 2009).

37. The IDFC classifies their most recent report as a 'pioneering' effort which will be improved in the future. It has drawn upon definitions and methodologies employed by both OECD and the MDBs in reporting data. In their most recent report, they reported commitments on the basis of three categories: Green energy and mitigation of GHG emissions, adaptation to climate change impacts and "other" environmental objectives, and a list of sub-categories. One unique feature is that they report green finance[35] flows from institutions based in OECD and non-OECD countries (see section 2.3.3.1).

38. There is no information in the literature which reports on evaluations of the IDFC methodology, including the quality of guidance provided to individual banks and training for project classifiers. It notes in its most recent report that there is a need to better align future mapping studies with other common methodologies. A common set of mapping methodologies would help to align definitions of terminologies, sectors, regions, and data validation processes. It also recognizes the need to

34) Mapping of Green Finance Delivered by IDFC Members on 4 October 2013, supported by Ecofys Inc.

35) Green finance includes climate finance, but is not limited to it. It also refers to a wider range of "other" environmental objectives, for example industrial pollution control, water sanitation, or biodiversity protection.

Table I-3.

Preliminary Comparison of Reporting Approaches Used by different organizations

Topic	UNFCCC	OECD	MDBs
Who submits data	National government	National government	Reporting is done by a central unit in each MDB
Who prepares integrated report or compilation of information	UNFCCC	OECD-DAC (activity level data is compiled and processed by OECD-DAC and published online, in addition OECD-DAC publishes statistical analysis and flyers).	Rotates among WBG and MDBs
Who classifies projects	Countries	OECD-DAC members have the responsibility for applying the markers, which for most part is shared between project officers, sector experts and central statistical units (OECD 2014, forthcoming).	Bank Staff in central location
Basis for reporting (1)	Mixture of projects, activities and sectors.	Project (activity) level data	Project/component/sub-component/ activity level data.
Basis for reporting (2)	Not applicable	Objective or Purpose (drawing on Rio marker definitions and eligibility criteria)	Activity List for mitigation projects
Sectors	Five mitigation, one adaptation and one other.	There are over 30 sectors in the OECD-DAC CRS, and additional sub-sectors, with a few exceptions where Rio Markers are not applied (i.e. general budget support, debt relief etc.).	Seven mitigation sectors and seven adaptation sectors. -Determined by criteria.
Criteria for adaptation eligibility	None	Yes. Detailed eligibility criteria defined.	Yes. Based on purpose, vulnerability context and activity linkage.
Criteria for mitigation eligibility	None	Yes. Based on activity and expected emission reduction.	Yes. Based on activity (and in certain specific cases, such as hydro-power, solid waste, land-use projects expected emission reduction).
Instruments	Grants, concessional loans, non-concessional loans, equity loans, and other.	Bilateral ODA loans, grants, and other official flows	All
Basis for measurement	Committed pledged or provided.	Commitments (disbursements also tracked but under review).	Commitments
Dealing with Overlaps		Allows for both adaptation / mitigation markers to be applied to the same activity; activity level database and publications identify overlap to avoid double counting.	MDBs present adaptation and mitigation data in both categories and, apart from the 2011 report, these figures can be added to give an overall Climate Finance Total.

IDFC	BNEF	Remarks
Individual Development Banks	Experts in over 40 countries	
IDFC secretariat and Steering Group, supported by consultant	Centralized unit in South Africa	Example of UNFCCC compilation - <http://unfccc.int/2736>.
Bank Staff	Experts in countries	In the case of MDBs, project staff classify the project and later it is checked centrally. Specific cases are discussed in the MDB working groups to provide a consensus view.
Project level data	Project /type of technology components as necessary.	Parties to the Convention and IDFC staff use projects for classifying.
Activity List	Activity list	
Nine mitigation subcategories and five adaptation subcategories.	Clean energy: renewable energy, energy efficiency, smart grid, power storage and other new energy technologies.	Bloomberg counts: smaller distributed technologies by cross checking with manufacturers' shipment data; energy efficiency technologies only where the cash flows are identifiable, investments in energy efficiency technology companies and certain larger energy efficiency projects; all smart grid and grid-scale power storage; electric vehicles charging networks, but not investment by car companies; but not property renovation and not upgrading of windows or insulating the walls.
OECD-DAC broad Definition and 5 sub-categories (list of sector/type of projects).	NA	Criteria differ among institutions.
Yes. Based on avoiding or reducing emissions and other factors.	Yes. Based on activity list.	Criteria differ among institutions.
All	All project cost. Includes mergers and acquisitions and carbon markets, but limited to what is public.	Bloomberg notes that they may not get all members of a debt syndicate. Separate datasets are maintained for investments by MDBs. BNEF focuses on cash flows rather than framework loans.
Commitments	Projects are tracked from the first proposal, permitted, financing secured and in construction, partially commissioned, fully commissioned, decommissioned, abandoned.	Bloomberg no longer tracks pledges, disbursements or framework commitments.
Partial reporting of combined mitigation and adaptation projects in both categories/transparent disclosure.		Recognition of issue by OECD and MDB, Approaches differ. Some MDBs separately report finance with adaptation and mitigation – but in these cases they do not include it in their adaptation or mitigation figures – thus the totals can still be added.

Topic	UNFCCC	OECD	MDBs
Granularity	Aggregated by country and sector, some project data provided.	Activity level data, (average activity size less that USD 1 million).	Project component or sub-component, or element or proportion.
Types or sources of funds	ODA, OOF and Other	ODA and OOF	Internal and external
Type of support (e.g., asset finance, R&D, capacity-building)	Adaptation, mitigation, core/general, climate specific, and other.	Specified	Cannot be done for past reports, but could be an interesting addition in the future – in particular 2014 Report is aiming to separate technical assistance finance if possible.
Recipient	Country, region, project or programme.	Country and delivery channels identified.	Not clear except for, in 2013, split by private and public sector first tier recipient/borrower in developing/ emerging economies.
Reporting period	Every two years on calendar basis	Calendar year	Fiscal year
Form of reporting guidance	Guidelines approved by the COP, including formats.	Rio Marker Handbook. Also governed by OECD-DAC Statistical Reporting Directives, addendum 1, addendum 2, addendum 3.	Guidance manuals - no common reporting sheet that any MDB is obliged to use for internal data collection.
Quality control Procedures	Secretariat is responsible for all data management checks and controls.	There are a series of automated checks carried out by the Secretariat when data is entered into the system to check for reporting errors, together with a CRS reporting check list for reporters, providing a list of integrity checks designed to help reporters avoid inconsistencies. For other detail on methodology/resources for DAC stats see: <http://www.oecd.org/dac/stats/methodology.htm>.	Each MDB ensures its data is correct and complete, and in compliance with the methodology.
Review Procedures	According to guidelines adopted by the COP.	Members' reporting performance is reviewed annually by the OECD-DAC Secretariat and results shared with the OECD-DAC Working Party on Development Finance Statistics. This includes issues such as timeliness, consistency of aggregate vs. activity reporting, accuracy of coding (sectors, types of ODA, channels i.e. bilateral vs. multilateral), quality of descriptive information, etc. – e.g., the latest quality review Climate Adaptation Marker Quality Review, OECD-DAC, 2013).	No peer review procedure to date, but being considered for 2014 Report.
Existing Data System	No finance data system	OECD-DAC Creditor Reporting System - activity data publically available online and can be downloaded into MS Excel format.	Data are in Excel files. There is no project-level data submission that could be accessed.

IDFC	BNEF	Remarks
Project level	All countries, but better data is available for bigger countries where information is more transparent.	Varies by institution. OECD data available on line.
Domestic and International banks.	No longer keeps track of grants. Includes public (domestic and cross-border) and private (domestic and cross-border) finance.	Differs among institutions
Reported in aggregated form	Asset finance, research and development, venture capital, but not by training or capacity-building.	Generally not tracked
Project sponsor e.g. national or local governments, private or public sector companies or civil society organizations.	Private and public sector	
Fiscal year	Annually every January, but subsequently revised. Also available quarterly online.	Differs by institution
Guidance , template and survey tool	Written guidelines for experts in different countries.	Differences depend on the length of time the institution has been collecting and reporting in data.
Each IDFC member bank carries out quality assurance procedures according to its internal standards. Consultant checks plausibility and works on analysis.	Yes, but many small projects make this more challenging than large projects such nuclear plants or gas pipelines. No formal error bars by country or technology, but they could be developed.	Differences depend on the length of time the institution has been collecting and reporting in data.
No peer review procedure.	Not formally, but use by wide variety of users and experts identifies gaps and promotes quality control.	
Excel standard template applied.	Internally managed data system.	

further improve data quality and consistency. Some issues encountered by the IDFC participants include insufficient reporting systems, a lack of resources dedicated to collecting data, non-availability of data and confidentiality issues.

1.3.3 Methods to estimate private and domestic finance

1.3.3.1 Methods to estimate private finance

39. *BNEF*[36] is the main data collector that tracks clean energy investments and, to a certain extent, energy efficiency investments. Its data series captures public, private and hybrid investment deals. The BNEF gathers information on financial flows from venture capital, private equity, mergers and acquisitions, equity markets, asset finance and carbon credits. BNEF covers mainly on G20 countries and focuses on clean energy: renewable energy, energy efficiency, smart grid, power storage and other new energy technologies. For renewable energy, BNEF counts all projects above a certain size. They estimate smaller distributed technologies by triangulating with manufacturers' shipment data to get a full picture of quarterly investments across renewable energy. In energy efficiency they only capture a small proportion of investment where the cash flows are identifiable, and this is likely to exclude a large share of efficiency investments that are funded internally. BNEF relies on its clients and independent companies to review and cross check its data. It provides an annual report (subsequently updated) and syntheses of its data on a quarterly basis on line.

40. *OECD Research Collaborative on Tracking Private Climate Finance* - At the request of several member countries, the OECD agreed to facilitate and co-ordinate an international Research Collaborative (RC) project with open membership, to contribute to the development of more comprehensive methodologies and systems to estimate private climate finance. The RC intends to support researchers in working together with relevant policymakers to generate targeted analyses as well as to improve information and methods for tracking private climate finance. The RC includes three main work streams that address: i) private climate finance mapping, data assessment and tracking methods,[37] ii) methods for determining mobilized private climate finance, and iii) potential pilot measurements and ground-testing of methodologies. An initial review of a number of commercial and public data sources found that the reviewed databases capture a vast amount of at least partial data on private finance, investment and instruments in climate-relevant sectors. However, it also identifies and illustrates a number of significant limitations that complicate efforts to use these databases to meaningfully identify, isolate and characterize climate-specific private finance. For example, several of these datasets provide information on syndicated loans, bond issuances, and private equity that can help to paint a more complete picture of private finance to climate-relevant sectors in developing countries. However, in the specific context of the measurement, reporting and verification of support under the UNFCCC, the reviewed data sources generally do not provide 'off-the-shelf' data for estimating the volume and characteristics of these flows. Specifically, they do not allow the analysis of financial flows simultaneously across multiple dimensions (e.g. sector, public or private, geographic origin and destination) without dedicating significant efforts to combine, reconstruct, and re-process data. It also notes a number of outstanding technical issues and limitations with these sources. These relate to core aspects of estimating private climate finance such as how transactions are categorized into broad non-climate-specific sectors, what types of transactions and instruments are covered, and how actors and their flows are characterized as coming from the public or private sector and specific geographical origins. Limitations also relate to important aspects of data collection, transparency, and access. (OECD 2014) [38]

41. *International Energy Agency (IEA)*. For the last twelve years, the IEA has undertaken an annual survey of energy use by sector (transport, industry, power and residential) to determine the annual energy demand and types of equipment purchased in developed countries and Brazil, Russia, India, China and South Africa (BRICS). They also do a survey to determine the cost of technologies in the same countries. The IEA methodology combines both top-down (proxies) and bottom-up (data intensive) approaches to estimate volumes of investment in energy efficiency. To estimate private investments, various regional leverage ratios are applied to public funds, such as funds that typically mitigate risks and build trust, and thus encourage private investment. Both sets of data are fed into the IEA World Energy Model, which can produce an estimate of how energy investments have changed, and are likely to change in the future. Energy efficiency information is the major challenge facing IEA. The methodologies used by the IEA and the underlying assumptions suggest that their modeling and estimation is more relevant for insights rather than accuracy.

36) <http://about.bnef.com/>.

37) For work stream 1, the RC has prepared a paper on potential data sources, including their classification systems, for estimating total private climate finance (OECD 2014). Example of these are FactSet which maintains databases on private equity transactions, M&A, and private company Ownership and Preqin which tracks private Equity + Venture Capital modules of alternative asset funds and deals infrastructure investments and fund modules. These datasets provide information equity that may help to paint a more complete picture of private finance to climate-relevant sectors in developing countries after further work.

38) <http://www.oecd.org/env/researchcollaborative/activities.htm> and <http://www.oecd-ilibrary.org/environment-and-sustainable-development/exploring-potential-data-sources-for-estimating-private-climate-finance_5jz15qwz4hs1-en>.

42. *The Clean Development Mechanism* (CDM) was, until recently, a significant source of finance for climate projects. The CDM has no requirement to report the projected capital, operating expenditures or sources of finance in an application, but information is often included to justify why a project meets additionality criteria. There is no requirement to report what the actual project costs were at the end of a project, or if they changed. There is no process to review financing for projects. The United Nations Environment Programme (UNEP) Technical University of Denmark (DTU) Partnership (formerly UNEP Risoe Centre) maintains a database of all CDM projects, which includes some information on project finance.[39]

1.3.3.2 Methods to estimate domestic finance

43. Partial data on domestic climate finance is available from three categories of sources (see Box II-2, 3, and 4 in sub-section 2.2.4). Some developing countries have national climate funds that report their domestic commitments. Some countries have national or regional development banks that report their commitments to finance domestic mitigation and adaptation actions. In addition, some studies estimate the climate finance share of the national budget. Most of these estimates apply a climate change percentage, ranging from 0%-100%, to budget items and then calculate the climate change amounts. There is no current method to report domestic finance in a consistent manner. All these efforts use different internally-developed methods to estimate climate finance.

44. The most thoroughly documented approach is the Climate Public Expenditure and Institutional Review (CPEIR) process (see Box II-2 in section 2.2.4). It aims to help countries to review how their stated national climate change policies are being reflected in public expenditures, and is intended to facilitate a national response to climate change by helping to prioritize and guide public investment (UNDP/ODI 2012).

45. The CPEIR approach to defining climate change-related expenditures builds on the OECD guidelines and in each country it begins by reviewing existing national policy documents. These provide insights into how climate change actions are being defined within the country and lead to an understanding of the institutional structures (local and national) within the government for addressing climate change. The first challenge is to identify climate change expenditures within the national budget so that the most important aspects of public spending can be analyzed. This requires information about planned and actual spending on climate change related activities are at a disaggregated level, such as expenditure codes across the whole of government. In addition to a review of the central government expenditures, the financial analysis examines local government spending and other sources of public expenditure, including international support that lie outside the national budget, are identified. The entire process of undertaking a CPEIR can take several months to complete.

1.4 Methodologies to review public finance

1.4.1 Methods to review data submitted to the Convention

1.4.1.1 Information provided by developed countries

46. At COP 19, review guidelines for the technical review of information reported under the Convention related to GHG inventories, BRs and NCs by Annex I Parties were adopted. The objectives of the review guidelines are to promote consistency, comparability and transparency in the review of information reported under the Convention related to GHG inventories, BRs and NCs. The reviews are to be conducted by expert review teams (ERTs) who are charged with providing a thorough and comprehensive technical review of all aspects of the implementation of the Convention by Annex I Parties.

47. The guidelines outline the purpose, scope, procedures, reporting guidance and competencies of expert review teams (ERTs). In the case of the NCs nine competencies are listed, including finance, but in the case of the BRs, no such specific competencies are enumerated. In conducting reviews, the ERTs shall adhere to the guidelines and work on the basis of established and published procedures agreed upon by the COP and the Subsidiary Body for Scientific and Technological Advice (SBSTA), including quality assurance and control and confidentiality provisions.

48. The technical review of BRs is a first step of an IAR process. The overall objectives of the IAR process are to review the progress made by developed country Parties in achieving emission reductions, and to assess the provision of financial, technological and capacity-building support to developing country Parties. In addition, the IAR process aims at assessing the implementation of methodological and reporting requirements.

39) See Project pipeline spread sheet (Invest Tab) by going to <http://cdmpipeline.org/overview.htm>.

49. The ERT is required to produce a technical review report, taking into account the comments of the Annex I Party within four weeks of receipt of the comments. All final review reports shall be published and forwarded by the secretariat, together with any written comments on the final review report by the Party that is the subject of the report to the COP. As of 1 October 2014, seventeen technical reviews of BRs undertaken by ERT teams are available on the UNFCCC website. [40] A synthesis of the most recent submissions and findings of the ERTs is found in document FCCC/SBI/2014/INF.20/Add.1.

50. International think tanks use independent methods developed and implemented with their own resources to review data submitted to the UNFCCC. For example, information provided by the countries providing the largest amount of finance, namely Germany, Japan, Norway, the United Kingdom of Great Britain and Northern Ireland and the United States of America on FSF was reviewed by the WRI and the Oversees Development Institution (ODI). As a result of this effort, a series of working papers were developed to provide policymakers and other climate finance practitioners with an assessment of the project data of FSF. The working papers examine characteristics of the finance such as the channeling institutions employed and the extent of support for mitigation and adaptation activities. They also discuss innovative institutions for climate finance, and the degree to which the finance might be considered "new and additional".[41] Revised data will be available on the websites of WRI and ODI.

1.4.1.2 Information provided by developing countries

51. BURs are due from developing countries in early 2015. However, as noted previously, there are no guidelines for reporting financial information in BURs, and, in particular, no CTF.

52. Developing countries face the following challenges in preparing financial information for BURs, which could help to verify the inflow of international finance (WRI 2014):

(a) Inconsistent definitions and criteria to define climate finance;
(b) Inconsistent markers, indicators, and codes to characterize financial data (e.g., by sector and activity);
(c) Insufficient institutional arrangements, including unclear roles and responsibilities of different ministries;
(d) Insufficient technical processes and systems to identify and record climate finance expenditures;
(e) Lack of information on climate finance provided by non-governmental actors;
(f) Lack of capacity to monitor different financial instruments;
(g) Limitations on the availability of private financial data;
(h) Lack of transparency and predictability on the part of development partners who are contributing climate finance;
(i) Limited use by development partners of developing country national systems and different administrative requirements of each development partner.

53. In the context of BURs, developing countries could reap multiple benefits from accurate information about climate finance. It could improve their ability to report the support received in their BURs and allow for the cross-checking (verifying) of information reported by developed countries, thus promoting transparency and integrity. Better data on climate finance can help decision makers in developing countries to identify gaps, improve coordination and management, and raise and allocate funds for climate change activities. Climate finance information can also help countries to draw lessons from the use of different financial instruments and to develop strategies and policies that aim to expand finance for climate change (WRI 2014).

1.4.2 Methods used to review climate finance data submitted to Organisation for Economic Co-operation and Development, Multilateral Development Banks and other financial institutions

54. OECD members' reporting performance is reviewed annually by the OECD-DAC Secretariat and results are shared with the OECD-DAC Working Party on Development Finance Statistics. This includes issues such as timeliness, consistency of aggregate versus activity reporting, accuracy of coding (sectors, types of aid, channels i.e. bilateral versus multilateral), and quality of descriptive information. Donor reporting also periodically goes through quality reviews carried out by the OECD-DAC secretariat to identify possible anomalies. Reports are provided to members for consideration and ultimately to improve the consistency of reporting, such as the 2010 quality review on Rio Markers and the more recent climate adaptation marker quality review undertaken in 2013 after two years of application of this marker[42] (see OECD-DAC 2013).The MDBs and IDFC do not have a standard procedure to review their data. In a few instances, this is due to the proprietary nature of some private information.

40) <http://unfccc.int/8446>.
41) <http://www.wri.org/publication/mobilising-international-climate-finance>.
42) <http://www.oecd.org/dac/environment-development/Climate%20Adaptation%20Marker_Declassified.pdf>.

Chapter II

Overview of Current Climate Finance

2.1 Introduction

55. As noted in the introduction (paragraph 11), this report aggregates climate finance data in two ways: global total climate finance and climate finance flows from developed to developing countries. Global climate finance includes all financial flows whose expected effect is to reduce net GHG and/or to enhance resilience to the impacts of climate variability and the projected climate change anywhere in the world. This covers private and public funds, domestic and international flows, expenditures for mitigation and adaptation, current climate variability, as well as future climate change (IPCC, 2014). Global total climate finance is important for tracking resources and supports the climate change responses required to make progress toward the achievement of global goals, such as limiting the increase in the global average temperature to less than 2 degrees centigrade.

56. Flows of climate finance from developed to developing countries are part of global total climate finance and include the flows covered by the commitments of Annex II Parties under the UNFCCC to assist developing countries address climate change.

57. Climate finance, whether global, or flows from developed to developing countries, has several characteristics that are relevant for tracking and assessment, including the sources of the funds, the institutions managing the funds, the nature of the financial instruments, the recipients of the funds and the type and location of the activities supported.

2.2 Global Total Climate Finance

58. This section reviews the available estimates of the financial resources devoted to climate change mitigation and adaptation actions anywhere in the world regardless of where those resources originate or flow. The basis for the estimates is the annual report published by the CPI. Other data on investment in renewables, energy efficiency, sustainable transport, REDD-plus and adaptation is reviewed and summarized in the subsequent sub-sections. Finally, complementary information on climate change spending by national governments and related institutions is presented.

2.2.1 Climate Policy Initiative Estimates of Global Total Climate Finance

59. The CPI estimate covers capital flows and public framework expenditures targeting low-carbon and climate-resilient development with direct or indirect GHG mitigation or adaptation objectives/outcomes. The CPI figures are a mix of grants, concessional loans and market-rate investments. Therefore, it includes not just finance that covers incremental costs but the total value of the investment in adaptation and mitigation measures. However, it excludes finance and support associated with capacity-building and policy-induced revenues. The CPI data draw on a range of data sources, including OECD-DAC, IDFC, and MDBs. CPI estimates global total climate finance to be USD 343 to 385 billion (USD 364 billion on average) for 2011, and USD 356 to 363 billion (USD 359 billion on average) for 2012 (Buchner et al., 2012; 2013). These are estimates of annual climate finance that reflect new commitments by investors. The 2011/2012 estimates are summarized in Table II-1.

60. CPI's median estimate of global total climate finance for 2011/2012 is USD 359 billion, of which USD 218 billion (61%) originated in developed OECD countries and USD 141 billion (39%) originated in developing non-OECD countries. The funds were deployed almost equally between developed (USD 177 = 49%) and developing (USD 182 = 51%) countries. Note that CPI defines developed countries as OECD members, thus including Chile, Korea and Mexico in the developed country category.

Table II-1.

CPI Estimate of 2011/2012 Global Total Climate Finance by Origin and Destination (USD billion)

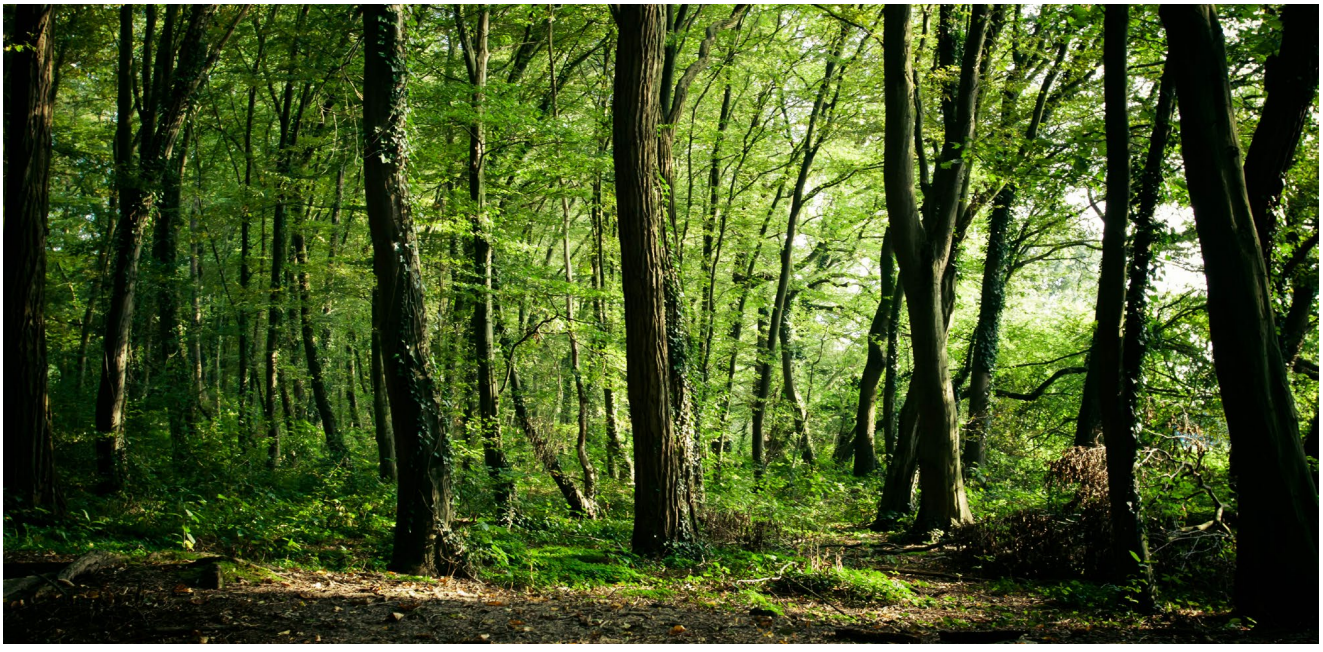
	Developed Countries		Developing Countries		Global
	Originated	Deployed	Originated	Deployed	
Originated and deployed domestically	144	144	129	129	273
Originated in one developed country and deployed in another	32	32			Originated in another country
Originated in one developing country and deployed in another			11	11	
Originated in a developing country and deployed in a developed country		1	1		86
Originated in a developed country and deployed in a developing country	43			43	
Total	218	177	141	182	359

Note: "Developed" countries are defined as OECD member countries and "developing" countries are not OECD member countries. The estimated range for 2011/2012 is USD 356 to 363 billion. For ease of exposition CPI uses the median value of USD 359 billion. All of the figures should be considered to have an (unknown) uncertainty range. The figures may not sum to the total due to rounding.

Source: Buchner et al. 2013, Figure 5.

61. Most climate finance (USD 273 billion = 76%) originates and is deployed in the same country; this is true for both developed (80% of funds deployed) and developing (71% of funds deployed) countries. There are flows between developed (USD 32 billion) countries and between developing (USD 11 billion) countries. A small amount of climate finance (less than USD 1 billion) flows from developing to developed countries.

62. The characteristics of 2011/2012 global total climate finance are shown in Table II-2.



Deep Forest © Heike Ba / Flickr

Table II-2.

CPI Estimate of 2011/2012 Global Total Climate Finance by Origin and Destination (USD billion)

Sources of Capital	Capital Managers	Financial Instruments	Project Owners (location)	Projects
Governments USD 14	Bilateral Finance Institutions USD 22	Grants USD 11	Developed USD 177	Adaptation USD 22
Corporations USD 168	MDBs USD 38	Low cost debt USD 69	Developing USD 182	Renewables USD 265
Households USD 33	National financial institutions** USD 74	Market rate debt USD 70		Energy efficiency USD 32
Capital markets USD 22	Commercial USD 22	Project equity USD 11		Transport USD 19
Public finance institutions / Capital markets USD 121	Climate Funds USD 2	Balance sheet finance USD 198		Mitigation in agriculture and forestry USD 3
	No capital manager USD 201			Other mitigation USD 18
Total = USD 359	Total = USD 359	Total = USD 359	Total = USD 359	Total = USD 359

Notes: *The estimated range for 2011/2012 is USD 356 to 363 billion. For ease of exposition CPI uses the median value of USD 359 billion. All of the figures should be considered to have an unknown uncertainty range. The figures may not sum to the total due to rounding. CPI does not use the terminology of "sources of capital" and "managers of capital" so the figures in those columns are inferred from the data in the CPI report.

Source: Derived from Buchner et al. 2013.

** National financial institutions includes mainly development finance institutions and in some cases governments and their agencies

63. Private finance, mostly corporations and households, dominates the total, but its share declined from 74% (USD 267 billion) in 2011 to 62% (USD 224 billion) in 2012 (Buchner et al., 2012; 2013). Much of the private climate finance, about USD 201 billion (56%), was invested by the sources (corporations and households) themselves, and hence, did not use a capital manager. Many projects implemented by the private sector rely on balance sheet financing (USD 198 billion, 55%).

64. National financial institutions (USD 74 billion, 21%) also mobilize and deploy climate finance domestically.

65. Climate finance mobilized in another country typically involves a capital manager, such as bilateral finance institutions (USD 22 billion, 6%) and MDBs (USD 38 billion, 11%). Most of the grants (overall USD 11 billion, 3%) and part of low-cost debt (overall USD 69 billion, 19%) are flows from developed OECD to developing non-OECD countries.

66. Public spending on adaptation accounted for an average of USD 14 billion for 2010/2011 and USD 22 billion 2011/2012.[43] Mitigation accounts for approximately 95% of the global total climate finance captured – an average of USD 350 billion for 2010/2011 and USD 337 billion for 2011/2012. Mitigation finance is dominated by renewables (USD 265 billion, 74%) with USD 32 billion (9%) for energy efficiency, USD 19 billion (5%) for sustainable transport, USD 3 billion (1%) for mitigation in forestry and agriculture and USD 18 billion (5%) for other measures.

2.2.2 Estimates of investments in mitigation and adaptation

67. Given their significance, the data on investment in renewables, energy efficiency, sustainable transport, mitigation in forestry and agriculture and adaptation, are examined more closely in the following sub-sections.

2.2.2.1 Estimates of Investment in Renewable Energy Technologies

68. The most comprehensive data on global investment in renewable energy technologies is compiled by BNEF (see Chapter I, section 1.3.3.1). CPI uses the BNEF data as the starting point for its estimate of global investment in renewable energy. The Frankfurt School-UNEP Centre and BNEF use the same data to produce an annual report on

43) Governments and private investors routinely invest in measures, such as water supplies and shoreline protection, which improve climate resilience. Most of these investments are not specifically identified as adaptation measures and so are not included in the CPI totals.

Global Trends in Renewable Energy Investment (GTREI), Frankfurt School-UNEP Centre and BNEF, 2014.[44] The GTREI provides historical data from 2004 through 2013, and disaggregates the estimate by renewable energy technology and major country/region. The GTREI estimate for developing countries can be compared with the investment in CDM projects, over 70% of which is for renewable energy projects. In principle, the investment in renewable energy CDM projects is captured in the BNEF data for developing countries. However, the CDM includes project types not included in the CPI and GTREI estimates, so the CDM figure can be higher than the GTREI estimate for developing countries. The data are presented in Table II-3.

69. The data indicates that annual global investment in renewable energy grew by an average of more than 30% per year between 2004 and 2011. Since then, annual investment has declined by an average of 14% per year. The CDM appears to have been a significant driver of the growth in renewable energy investment in developing countries and globally.[45] The very sharp decline in the number of CDM projects registered during 2013 and the declining prices for photovoltaic (PV) installations are significant contributors to the decline in renewable energy investment during that year.

70. Industry sources report different values for renewables investment compared to the values reported by GTREI. For example, the Solar Energy Industries Association indicates that solar PV financing in the US was USD 13.7 billion in 2013 while GTREI reports USD 5.9 billion. Similarly, the American Wind Energy Association puts the investment for wind in the US at USD 25 billion for 2012 while GTREI reports USD 14.5 billion.

71. The CPI estimate for 2011/2012 is virtually identical to the average of the GTREI figures for 2011 and 2012. However, the differences between the GTREI and industry estimates of renewable energy investment suggest that the global estimate of investment in renewables may be subject to a substantial margin of error.

2.2.2.2 Estimates of Investment in Energy Efficiency

72. Estimating global energy efficiency investment is a challenging task due to the need to define an efficiency baseline, and because the efficiency investment is usually part of a larger investment. For example, the efficiency baseline for a new automobile could be the average for the existing fleet or the average for new automobiles, and the efficiency investment would be part of the purchase price of the vehicle. The available estimates of global investment in energy efficiency are summarized in Table II-4.

73. The American Council for an Energy-Efficient Economy Scorecard includes data on energy efficiency spending by governments and/or utilities for 15 countries and the EU (Young et al. 2014). The total is USD 34 billion for governments and USD 16 billion for utilities for the period 2010-2013. The BNEF and CPI estimates of USD 32 and 35 billion include only distinct project-level financial transactions for energy efficiency including public funding for efficiency programmes. The other estimates cover

Table II-3.

Estimates of Global Investment in Renewable Energy Technologies – 2004 to 2013 (USD billion)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
GTREI	39.5	64.5	99.6	145.9	171.2	168.4	226.7	279.4	249.5	214.4
GTREI-Developed	32.0	49.0	74.0	103.0	113.0	106.0	153.0	187.0	142.0	122.0
GTREI-Developing	8.0	16.0	25.0	43.0	58.0	63.0	74.0	92.0	107.0	93.0
CDM	0.0	0.9	9.3	14.1	15.8	31.1	51.8	80.5	197.5	17.9

Note: GTREI figures for developed and developing countries may not sum to the GTREI total due to rounding.

Sources: Global Trends in Renewable Energy Investment 2014; CDM Pipeline February 2014.

44) There are some differences between the reports. GTREI, for example, includes an estimate for small scale renewables, such as roof-top PV units, not tracked by BNEF.

45) CDM investment is shown for the year the project is registered. Many projects were registered during 2012 and some of the associated investment may have occurred during 2013. And some of the projects may not have been implemented due to low CER prices. The GTREI estimate for 2012 is much lower and may not fully reflect the rush to register CDM projects by the end of the year.

Table II-4.

Estimates of Current Global Investment in Energy Efficiency (USD billion)

Amount	Types of data	Comments	Source
USD 200	Model results	Estimate for 2010. Includes investments in energy efficiency plus combined heat and power, waste-to-energy and smart meters	BCC
USD 300 (EUR 147 to EUR 300)	Leverage ratios	Estimate for 2011. Based on surveys and interviews with public and private banks, using a leverage ratio for private capital where data was not available.	IEA-1
USD 32	Project level	Estimate for 2012. Only public investment in demand-side (industry and buildings) and transmission (USD 32 billion).	CPI
USD 298 (124 to 712)	Model results	Estimate for 2012. Includes investments for specific energy - using components of end-use technologies in transport, buildings and industry.	GEA
USD 35	Project level	Estimate for 2013. Includes only investments in smart grids, storage and electric vehicles.	BNEF
USD 130	Model results	Estimate for 2013. Derived from investment needs in transport, buildings and industry in the New Policies Scenario	IEA-2

Sources: BCC = BCC Research 2011; BNEF =BNEF 2014; CPI = Buchner et al. 2013; GEA = Grubler et al. 2012; IEA-1 = IEA 2013; and IEA-2 = IEA 2014

the investment in energy efficiency where it is part of a larger investment such as a more fuel-efficient vehicle or building. These comprehensive estimates range from USD 130 to USD 300 billion per year.

74. Since the CPI estimate of global total climate finance for 2011/2012 includes only USD 32 billion for public funding for energy efficiency investments (Table II-4 above), including all energy efficiency investments would increase the estimate of global total climate finance by USD 80 to 270 billion per year. Most of the additional energy efficiency investment would be financed and implemented by corporations, households and governments.

2.2.2.3 Estimates of Investment in Sustainable Transport

75. Global transport investment is between USD 1.2 and 2.4 trillion annually (WRI, 2014). Private investment constitutes about 58% of the global investment, but this proportion varies by country and mode. There is no agreed operational definition of climate finance for sustainable

A Field of Wheat Stretching on and on... © Mark Stevens / Flickr

Box II-1. Climate Bonds

The Climate Bonds Initiative identifies bonds issued to help fund mitigation and adaptation measures and analyses their characteristics. The analysis covers the portfolio of bonds outstanding at a specified date. The universe of climate-themed bonds outstanding on 10 June 2014 included 1900 bonds from 280 issuers with a face value of USD 503 billion (the face value is the amount that needs to be repaid). Of this total approximately USD 95 billion were issued during 2012.

The outstanding climate bonds were used to finance Transport (USD 358 billion), Energy (USD 75 billion), Climate Finance (USD 50 billion), Buildings and Industry (USD 14 billion), Agriculture and Forestry (USD 4 billion) and Waste and Pollution Control (USD 1 billion). Of the USD 75 billion of bonds for Energy, 36% were linked to hydro (excludes large hydro in tropical regions), 23% to nuclear power, 18% to wind, 15% to solar and 8% to other renewables.

The climate bonds outstanding by country are China USD 164 billion, United Kingdom USD 58 billion, United States of America USD 51 billion, France USD 49 billion, Canada USD 25 billion, South Korea USD 24 billion and others USD 99 billion. Multilateral development banks and other "supra-national" entities accounted for USD 32 billion.

Source: Bonds and Climate Change: The state of the market in 2014. Climate Bonds Initiative, June 2014

transport. Thus the estimated investment in sustainable transport will be sensitive to the definition adopted. Care also needs to be exercised to ensure that investment in energy efficient vehicles is not double-counted.

76. The Climate Bonds Initiative limits transport investment to rail operators, excluding rail built for coal transport, as well as manufacturers of sustainable biofuels and electric vehicles (see Box II-1). As of 10 June 2014, transport was the largest sector with USD 358 billion outstanding bonds mainly for high-speed rail in China and Europe. New bonds issued for sustainable transport typically range between USD 30 and 60 billion per year, which is a small share of the estimated total investment in transportation.

77. The Climate Bonds Initiative data on the value of new bonds issued for transport suggest that the CPI estimate of USD 19 billion for public investment in sustainable transport only covers a small part of sustainable transport investments. However, the balance might well be included in the additional USD 80 to 270 billion of energy efficiency investment. Climate bonds have also been used to mobilize finance (See Box II-1).

2.2.2.4 Estimates of the Investment in REDD-Plus

78. REDD-plus activities are located in developing countries and are funded by a combination of domestic and developed country finance. Global estimates of domestic REDD-plus financing are in the region of USD 10 billion per annum (Streck and Parker, 2012) or twice the level of international REDD+ pledges (Tennigkeit et al, 2013).

79. CPI's estimate of USD 3 billion in international public commitments to mitigation in the agriculture and forestry sectors during 2011/12 covers a broader range of activities than REDD-plus. CPI's estimate is low because it does not cover all domestic finance for these activities.

2.2.2.5 Estimates of the Investment in Adaptation

80. There is no universally agreed operational definition of adaptation so it is not possible to compile a list of adaptation actions and then estimate the investment in those actions. Estimates of adaptation investment are compiled project by project, based on expert judgment. Typically, if a project is designed to address current climate variability or future impacts of climate change, part or all of the investment in the project is considered an adaptation investment.

81. Investment in adaptation, like energy efficiency, is often part of a larger investment. When water supply systems, flood control facilities, port facilities and other infrastructure are adjusted to address the anticipated impacts of climate change part of the overall investment is an adaptation investment. The amount of the adaptation investment is project-specific and may not be reported.

82. Due to these difficulties only limited data on investment in adaptation is available. The data relate, almost exclusively, to climate finance provided to developing countries by developed country governments, MDBs and multilateral climate funds. Virtually no information is available on other publicly funded adaptation investments, or private adaptation investments in developed or developing countries.

83. In its global climate finance estimates, CPI includes public spending on adaptation of USD 14 billion for 2010/2011 and USD 20 to 24 billion (USD 22 billion for 2011/2012). Almost all of this is adaptation finance provided to developing countries through multilateral, bilateral and national channels. Adaptation investment in developed and developing countries by private and domestic public sources would increase the total substantially, but by how much is not known.

2.2.3 Global Total Climate Finance Summary

84. Global total climate finance focuses on the resources devoted to implementing adaptation and mitigation measures throughout the world regardless of where those resources originate or where they are deployed. The most comprehensive estimates of global total climate finance are provided by CPI's annual Global Landscape of Climate Finance reports. The estimates for 2010/2011 and 2011/2012 range from USD 343 to 385 billion per year.

85. The CPI estimates of global climate finance are most probably too low. The figures for adaptation and energy efficiency capture only finance from public budgets and public finance institutions. Data on the current global investment in adaptation is not available. Recent estimates of investment in energy efficiency suggest the total could be USD 80 to 270 billion per year higher than the CPI figure. Global total climate finance then, is estimated to be between USD 340 to 650 billion per year and possibly higher.

86. The broad patterns described by the CPI estimates probably remain substantially the same after including the higher estimates of the investment in adaptation and energy efficiency. Most (76%) climate finance is mobilized in the country where it is deployed. Most (62%) climate finance is private – corporations and households. And many (56%) measures are financed and implemented by the same entity; corporation, government or household.

2.2.4 National Climate Finance Data

87. Conceptually, global total climate finance is the sum of the national climate finance for all countries. Unfortunately, only limited national climate finance data is available. It is limited to a small number of countries and covers spending on domestic mitigation and adaptation measures by national governments or their entities. Private climate finance and the climate-related expenditures of sub-national governments are not included due to lack of data.

88. Estimates of the share of the budget devoted to climate change have been made for several countries and the European Commission. Although the methodologies differ, apart from the CPI Landscape methodology, they typically apply a climate change share ranging, from 0% to 100%, to each budget item. The climate change amounts are then added up by category – adaptation, mitigation and other – and the total is expressed as a percentage of the total budget. The estimates are based on budgets, so actual spending may be different.

89. The available data comes from three sources: estimates of climate change expenditures using the CPEIR methodology, estimates of climate change expenditures by national development banks, and expenditures by national climate funds. These datasets are presented in Box II-2, Box II-3, and Box II-4.

90. The CPEIR and ODI methodologies (Box II-2) have been applied to seven developing countries for multiple years between 2007 and 2012. In all of these countries, excluding Indonesia where the analysis is limited to mitigation, most of the climate spending is directed to adaptation. Excluding Indonesia, climate expenditures as a share of the national budget is lowest (1% to 3%) in Uganda and highest (over 16%) in Cambodia and Samoa. For Bangladesh, Cambodia and Nepal foreign contributions covered over half of the climate spending. The foreign share is lower and more variable in Samoa and the United Republic of Tanzania. The annual climate change expenditure for the six CPEIR countries was almost USD 4 billion per year. Fewer and less complete estimates, all based on different methodologies, are available for developed countries so no patterns can yet be drawn from the data for those countries.

91. The IDFC report their 'green finance', mostly climate finance, commitments annually. Most of their commitments are domestic; USD 44 billion by developing (non-OECD) country institutions and USD 33 billion by devel-

Box II-2. Estimates of climate change expenditures

Country	Year	Currency	Amount	Percent	Adaptation	Mitigation	Other	Foreign
CPEIR Estimates								
Bangladesh[a,b]	2009-10	100,000 Taka	747,081	6.59%	658,047	26,191	62,844	627,002
	2010-11		957,668	7.19%	844,008	27,730	85,931	774,152
	2011-12		910,946	5.46%	811,969	30,427	68,550	695,589
	2009-14	Million USD	1,430.8	6.51%	886.5	57.8	486.5	928.0
Cambodia[b]	2009-11	Million USD	248.7	16.08%	163.0	17.0	68.7	194.7
Indonesia[b,c]	2009	Billion Rupiah	1,716.7	0.18%	NA	1,716.7	NA	NA
	2010		3,142.6	0.30%	NA	3,142.6	NA	NA
	2011		6,651.8	0.52%	NA	6,651.8	NA	NA
	2012		4,451.5	0.29%	NA	4,451.5	NA	NA
	2009-12	Million USD	369.8	0.32%	NA	369.8	NA	NA
Nepal[b]	2007-08	Million Rupee	9,685	5.73%	7,158	2,527	NA	4,440
	2008-09		15,128	6.41%	11,344	3,784	NA	5,870
	2009-10		18,564	6.49%	14,407	4,157	NA	10,140
	2010-11		25,632	7.59%	20,062	5,570	NA	14,232
	2011-12		27,629	7.18%	20,599	7,030	NA	15,440
	2007-12	Million USD	251.6	6.68%	191.7	60.0	NA	130.2
Samoa[b]	2006-07	Million Tala	45.0	9.83%	27.9	1.2	NA	11.7
	2007-08		59.6	10.11%	47.5	8.8	NA	23.3
	2008-09		76.0	11.67%	59.2	28.5	NA	34.5
	2009-10		125.0	16.94%	103.8	60.9	NA	74.2
	2010-11		136.0	17.01%	134.9	39.4	NA	80.0
	2011-12		103.7	14.04%	93.0	35.4	NA	54.8
	2006-12	Million USD	35.5	13.27%	30.5	11.3	NA	18.2
Thailand[b]	2009	Million Bhat	53,414	2.74%	37,606	12,275	3,533	NA
	2010		44,855	2.64%	38,894	9,823	6,138	NA
	2011		59,065	2.72%	40,985	10,312	7,768	NA
	2009-11	Million USD	1,636.8	2.74%	1,117.6	335.4	183.8	NA
National Climate Finance Analysis (ODI)								
Tanzania[d]	2009-10	Billion Shillings	392	4.23%	159	64	33[e]	111
	2010-11		513	4.76%	243	32	82[e]	233
	2011-12		811	6.42%	251	35	320[e]	437
	2012-13		896	NA	221	79	301[e]	351
Uganda[f]	2008-09	Billion Shillings	97	1.58%	28	14	NA	NA
	2009-10		203	2.87%	21	32	NA	NA
	2010-11		154	2.05%	47	20	NA	NA
	2011-12		136	1.38%	47	25	NA	NA
CPI Landscape Methodology								
Indonesia[g]	2011	Billion Rupiah	8,377		384	3,004	4,989	2,851
	2011	Million USD	951	1.48%	42	329	547	324
France	2011	Million Euros	4,900					
Germany[h]	2010	Million Euros	1,200			1,200		
Other Studies								
European Commission	2014	Million Euros	17,632	12.7%				
United States[i]	FY2012	Million USD	19,781	0.56%	88	16,229	2,506	958[j]
	FY2013		22,598	0.66%	95	19,143	2,509	851[j]
	FY2014		21,408	0.61%	105	17,752	2,658	893[j]

Notes: Amount = Indicative budget attributable to climate activities; Percent = Indicative budget attributable to climate activities as a percentage of the national budget expenditures; Adaptation = Indicative budget attributable to adaptation activities; Mitigation = Indicative budget attributable to mitigation activities; Other = Indicative budget attributable to other climate-related activities; Foreign = Funding from foreign sources for programmes with a climate dimension; Components may not sum to the total.

a = revised budget for 2009-10 and 2010-11 and original budget for 2011-12.
b = annual averages calculated using annual average official exchange rates.
c = Indonesia Mitigation Fiscal Framework expenditures excluding roads and irrigation.
d = inflation in the United Republic of Tanzania was over 10% per year during these years. The figures are not adjusted for inflation, so inter-year comparisons need to be interpreted carefully. The Adaptation, Mitigation and Adaptation & Mitigation expenditure figures are for the development budget only and so do not sum to the total Amount.
e = Both Adaptation and Mitigation.
f = inflation in Uganda was between 6 % and 24% per year over the period. The figures are not adjusted for inflation, so inter-year comparisons need to be interpreted carefully. The Adaptation and Mitigation expenditure figures are for the development budget only and so do not sum to the total Amount.
g = the total expenditure is the sum of the foreign resources and budget expenditures (5,526 billion IDR or 627 million USD).
h = the report estimates total climate finance in Germany at EUR 37.2 billion, mostly from corporations EUR 19 billion and households EUR 14 billion.
i = enacted budget authority for FY 2012 and FY 2013 and proposed budget authority for FY 2014. Adaptation is spending for natural resources adaptation; mitigation is spending for clean energy technologies, energy tax provisions and energy payments in lieu of tax provisions net of adjustments for programs included in multiple categories, other is the budget for the US Global Change Research Program. Percentages calculated using actual (FY 2012 and 2013) and proposed (FY 2014) expenditures.
j = congressionally appropriated international assistance provided by core agencies (i.e. Department of State, Department of Treasury, US Agency for International Development) as well as complementary agencies (e.g., Environmental Protection Agency), but not including indirect climate assistance, development finance and export credit agencies.

Sources: Country CPEIR reports, UNDP summaries of CPEIR reports; ODI; Ampri et al. (2014); Juergens et al. 2012; and US Government (2013).

Box II-3. Estimates of national development banks

	Year	Amount	Percent	Adaptation	Mitigation	Foreign
OECD member country institutions						
France, Agence Française de Développement (AFD)	2012	3,113	34%	187	2,926	3,103
Germany, KfW Development Bank	2012	32,027	34%	634	31,393	2,688
Japan, Japan International Cooperation Agency (JICA)	2012	5,983	43%	1,961	4,022	5,983
Korea, Korea Finance Corporation (KoFC)	2012	1,267	11%	62	1,205	11
Other institutions						
Corporación andina de fomento (CAF)	2012	1,215	13%	603	612	
India, Small Industries Development Bank of India (SIDBI)	2012	142	40%	0	142	

Notes: Amount = the domestic climate change finance commitments during the year (in millions of USD); Percent = climate change commitments as a percentage of the total commitments for the year; Adaptation = commitments for adaptation measures during the year (in millions of USD); Mitigation = commitments for mitigation measures during the year (in millions of USD); and Foreign = amount of international climate finance provided to non-OECD countries.

Source: IDFC.

oped (OECD) country institutions. The developed country institutions also lend to non-OECD countries (USD 15 billion) and other OECD countries (USD 2 billion). Across all of the institutions, climate finance commitments in 2012 amounted to USD 65 billion for mitigation, USD 14 billion for adaptation and USD 1 billion for projects with both mitigation and adaptation objectives (Box II-3). Details of the domestic climate finance commitments are available for six of the IDFC institutions. Climate finance committed to non-OECD countries by four of the OECD member countries is also shown.

92. The four institutions of OECD member countries included in Box II-3 provide a significant amount of climate finance. Domestic climate change finance amounted to over USD 42 billion of which 93% was for mitigation measures. In addition, these institutions committed at least USD 11.8 billion of climate change finance for measures in non-OECD countries.

93. Several developing countries have established national climate funds to blend international climate finance with domestic public funds and private sector resources

Box II-4. Estimates of expenditures by national climate funds (USD million)

	Pledged (cumulative)	Approvals (cumulative)	Approvals	Adaptation	Mitigation
Amazon Fund, Brazil	1,033	412	27	89	89
Bangladesh, Climate Change Resilience Fund			NE	54	50
Bangladesh, Climate Change Trust Fund	188	122	NE	66	33
Guyana REDD Investment Fund	250	40	0.4	12	21
Indonesia, Climate Change Trust Fund	21	10			3
Philippines People's Survival Trust	24				
Rwanda National Climate and Environment Fund		22			

Sources: ODI for cumulative pledges and approvals and CPI for annual approval.

(Gomez-Echeverri, 2010; Flynn, 2011). Data on cumulative pledges and approvals together with estimated annual approvals for 2011 through 2013 for seven funds are provided in Box II-4 in million USD. The domestic climate finance provided by national climate funds is still small relative to the finance from national budgets; about USD 200 million per year for five climate funds as compared with almost USD 4 billion from the national budgets of the six countries for which CPIER data are available.

2.3 Climate Finance Flows from Developed to Developing Countries

94. There is no agreed definition of climate finance flows from developed to developing countries. As for global total climate finance, the data often reflects the total investment or cost, for example, the entire investment in a wind turbine rather than the portion attributed to the GHG emission reductions. Data usually relates to commitments rather than disbursements.

Table II-5.

Amounts of climate specific finance and totals provided by Annex II Parties to developing countries in 2011 and 2012 as reported in their Biennial Reports (USD million)

	2011						
Country	**Mitigation**	**Adaptation**	**Cross-cutting**	**Other**	**Sub-total**	**Core General**	**Grand total**
Australia	66.68	79.48	15.86	0.92	162.94	346.78	509.72
Austria	12.35	14.76	16.46	-	43.57	-	43.57
Belgium	2.058	17.37	23.90	-	43.32	-	43.32
Canada	101.87	124.03	226.02	-	451.92	54.15	506.07
Denmark	72.90	36.20	-	-	109.10	287.00	396.10
European Union	119.40	123.32	631.23	-	873.95	-	873.95
Finland	18.81	6.71	59.98	-	85.50	353.12	438.62
France	2,348.50	565.81	59.12	-	2,973.42	1,006.96	3,980.38
Germany	901.96	544.84	149.86	544.13	2,140.79	73.09	2,213.88
Greece	19.90	-	0.36	-	20.26	0.83	21.09
Iceland	0.68	2.86	3.72	-	7.26	5.00	12.26
Ireland	0.24	61.19	-	0.07	61.50	41.18	102.68
Italy	14.68	2.79	53.38	2.78	73.62	351.88	425.51
Japan	2,818.22	490.86	832.15	-	4,141.23	657.77	4,799.00
Luxembourg	9.24	27.55	1.91	-	38.70	-	38.70
Netherlands	128.65	15.94	141.35	-	285.95	1,476.92	1,762.88
New Zealand	9.95	8.05	-	8.62	26.62	33.78	60.40
Norway	11.81	1.53	415.57	128.42	557.32	487.08	1,044.40
Portugal	21.37	0.26	-	-	21.64	36.41	58.05
Spain	311.26	14.81	4.80	2.22	333.10	531.95	865.04
Sweden	80.93	164.43	215.64	-	461.00	1,043.87	1,504.87
Switzerland	55.80	71.30	39.28	-	166.38	457.75	624.13
United Kingdom	407.25	156.05	11.56	127.34	702.20	2,722.06	3,424.26
United States	2,583.45	555.23	54.91	-	3,193.59	1,813.03	5,006.62
TOTAL	10,117.97	3,085.37	2,957.05	814.50	16,974.89	11,780.62	28,755.51

	2012						
Country	Mitigation	Adaptation	Cross-cutting	Other	Sub-total	Core General	Grand total
Australia	82.26	115.42	17.88	1.63	217.19	335.94	553.13
Austria	19.06	13.38	25.42	-	57.86	-	57.86
Belgium	0.49	12.61	21.52	1.93	36.54	-	36.54
Canada	123.34	111.93	200.29	0.00	435.56	56.67	492.23
Denmark	83.11	53.67	-	-	136.78	264.50	401.28
European Union	237.33	101.59	604.20	-	943.11	-	943.11
Finland	22.20	17.77	99.14	-	139.11	506.47	645.57
France	3,399.43	86.39	52.70	-	3,538.52	889.17	4,427.69
Germany	891.62	464.80	177.60	566.07	2,100.09	91.98	2,192.07
Greece	0.07	0.54	-	-	0.61	-	0.61
Iceland	0.74	4.59	4.38	-	9.71	4.40	14.11
Ireland	0.20	42.17	-	0.30	42.67	32.78	75.45
Italy	18.48	2.13	36.96	-	57.57	260.50	318.07
Japan	3,226.18	401.82	460.90	5.00	4,093.90	704.57	4,798.47
Luxembourg	15.62	29.61	3.27	-	48.49	-	48.49
Netherlands	111.80	58.74	186.54	-	357.09	1,408.87	1,765.96
New Zealand	20.86	5.86	-	10.44	37.16	24.33	61.49
Norway	46.79	4.36	799.80	-	850.95	458.60	1,309.55
Portugal	18.53	0.11	-	0.10	18.74	16.54	35.28
Spain	192.73	30.07	39.02	2.55	264.37	84.86	349.23
Sweden	80.19	196.96	172.45	-	449.60	1,038.93	1,488.53
Switzerland	82.76	72.85	19.67	-	175.28	449.60	624.89
United Kingdom	408.97	219.63	11.07	146.10	785.77	2,812.97	3,598.74
United States	1,821.39	393.22	69.91	-	2,284.52	2,340.29	4,624.81
TOTAL	10,904.14	2,440.22	3,002.71	734.12	17,081.20	11,781.98	28,863.17

Notes to the table:

Data accessed on 21 October 2014 . Some data relate to national fiscal years rather than the calendar years.

For countries that provided information in their respective domestic currency only the relevant exchange rates for the respective reporting period were obtained from the OECD exchange rates (<http://stats.oecd.org/index.aspx?queryid=169>). For 2011. 0.719 USD to 1 Euro; 2012. 0.778 USD to 1 Euro. For 2011. 5.606 NOK to 1 Euro; 2012. 5.815 NOK to 1 Euro

The Sub-total includes the amounts for climate-specific namely; 'mitigation', 'adaptation', 'cross-cutting', and 'other'.

The Grand Total includes the sub-total and the 'core general'.

The figures may not include the final numbers for the calendar year.

95. This section begins with a review of data on the climate finance provided to developing countries by developed country governments. All of these reports include funds provided to multilateral climate funds, MDBs and other multilateral bodies, as well as funds delivered bilaterally. Then estimates of climate finance flows from developed to developing countries via MDBs, multilateral climate funds, bilateral institutions and, finally, via private sources are discussed. Adjustments to the data to eliminate duplication are discussed where appropriate.

2.3.1 Reports on Climate Finance Provided by Developed Country Governments

96. Developed country governments report climate finance provided to developing countries in three different reports: NCs and BRs submitted to the UNFCCC, FSF reported to the UNFCCC and development assistance data submitted to the OECD. The climate finance reported in each of these reports is examined in turn.

Table II-6.

Climate-related ODA reported by OECD Development Assistance Committee members for 2011 and 2012* (million USD, nominal prices)

	2011	2012**
Bilateral climate-related	18,044	21,469
Multilateral climate-related ***(partial, based on imputed shares reflecting a limited number of funds)***	3,415	4,015
Total	21,459	25,484

Source: OECD-DAC Creditor Reporting System statistics, accessed 12 September 2014.

* Data for the United States of America for 2011 are only partial and are currently being revised following the development of a new data screening process designed to significantly improve Environment and Rio Markers. The process, however, has not been fully implemented as of the time of this publication. The United States of America aims to provide the DAC with 2010-2012 data with improved markers for the Environment and Rio Conventions based on this new screening process as soon as this information becomes available.

** The figures for 2012 do not include data from the United States of America, as per the note above.

2.3.1.1 Climate finance reported by Parties to the Convention in their Biennial Reports

97. Annex II Parties and some other Annex I Parties report the financial resources they provide to developing countries and relevant multilateral entities in their NCs and, more recently, in their BRs. The summary of the fifth NCs shows that Annex II Parties provided climate finance amounting to USD 58.4 billion for the period 2005 through 2010; this is an average of nearly USD 10 billion per year (UNFCCC, 2011a). The first BRs with climate finance information, submitted early in 2014, are summarized in Table II-5. The table summarizes the climate finance reported for 2011 and 2012 in table 7 of the BRs.

98. The total funding provided was approximately USD 28,6 and 28,7 billion per year in 2011 and 2012 respectively. Approximately USD 11,8 billion annually was for "core-general" support, support to multilateral institutions that Parties cannot specify as climate-specific. Imputed climate finance is only available for a limited number of funds, however the OECD is working to resolve this issue. The Parties provided approximately USD 17 billion per year of climate-specific finance. Most of the climate-specific funding was provided for mitigation (62 to 67%), followed by cross-cutting and other areas (18 to 19%), and then adaptation (15 to 19%). Although not shown in Table II-5, most of the funding was provided through bilateral, regional and other channels, followed by multilateral channels. Further information can be found in the compilation and synthesis report of the sixth NCs and the first BRs.[46]

2.3.1.2 Fast-start Finance reported to the Convention by Developed Countries[47]

99. At the UN Climate Change Conference in Copenhagen in 2009, developed countries committed to provide new and additional resources approaching USD 30 billion of FSF to support mitigation and adaptation action in developing countries during 2010-2012. The amount of FSF reported by developed countries for the 2010 to 2012 period exceeds USD 33 billion.

100. Germany, Japan, Norway, United Kingdom of Great Britain and Northern Ireland, United States of America, are the five biggest donors, reported commitments amounting to roughly USD 31 billion. For these five countries, about 43% of the funds went to Asia and the Pacific followed by 18% for Sub-Saharan Africa. Approximately 61% of the funds had been committed for mitigation, 10% for REDD-plus and 18% for adaptation. The donors reported commitments to recipient country governments through bilateral channels (33%), multilateral climate funds (20%), recipient country companies (12%) and multilateral institutions (9%).

2.3.1.3 Climate finance reported by Developed Countries to OECD

101. The OECD-DAC monitors and reports the amount of ODA committed for projects that have climate change mitigation or adaptation as a "principal" or "significant" objective by its 29 members. ODA is defined as flows to countries on the OECD-DAC list of ODA recipients and to multilateral institutions provided by official agencies. ODA

46) FCCC/SBI/2014/INF.20/Add.1.

47) Although UNFCCC COP took note of the FSF commitment in paragraph 95 of Decision 1/CP.16 (UNFCCC, 2010) and the funds committed have been reported annually to the UNFCCC, the FSF is not formally climate finance under the UNFCCC.

48) Partial estimates include: GEF, GEF administered LDCF and SCCF, IDA, CIFs (CTF and SCF for 2012 flows only, 2011 flows are included in bilateral figures), Adaptation Fund, Montreal Protocol, and UNFCCC.

Table II-7.

Overview of multilateral climate funds (USD million)

Name	Focus	Administrator	Year Operational	Funds Pledged	Funds Deposited	Funds Approved	Funds Disbursed
Adaptation Funds							
AF*	Adaptation	AFB	2009	416	395	226	92
LDCF*	Adaptation	GEF	2002	907	832	726	133
Pilot Program for Climate Resilience**	Adaptation	CIF AU	2008	1,160	973	772	41
SCCF*	Adaptation	GEF	2002	344	299	242	216
Adaptation Total				2,827	2,499	1,965	483
REDD-plus Funds							
Congo Basin Forest Fund	REDD-plus	AfDB	2008	186	165	95	53
Forest Carbon Partnership Facility	REDD-plus	WB	2008	743	539	114	40
Forest Investment Program**	REDD-plus	CIF AU	2009	599	530	279	5
UN REDD Programme	REDD-plus	UNDP	2008	249	215	193	182
REDD-plus Total				1,777	1,448	682	279
Mitigation Funds							
Clean Technology Fund**	Mitigation	CIF AU	2008	5,242	4,599	3,549	427
GEF Trust Fund* a	Mitigation	GEF	2010	1,350	777	721	279
Scaling Up Renewable Energy Program for Low Income Countries**	Mitigation	CIF AU	2009	521	506	136	4
Mitigation Total				7,113	5,882	4,405	709
Total All Funds				11,718	9,828	7,053	1,471

Notes: Amounts may not sum to the total due to rounding; CIF AU = CIF administrative unit; Funds Pledged = contributor pledges; Funds Deposited = funds received from contributors; Funds Approved = funds committed to approved projects; Funds Disbursed = funds transferred to the implementing entity for the project; REDD-plus = projects to reduce emissions from deforestation and forest degradation, foster conservation and sustainable management of forests, and enhance forest carbon stocks; * denotes a fund under the UNFCCC; ** denotes a fund that is part of the Climate Investment Funds; a = Data relate to the fifth replenishment of the GEF Trust Fund.

Source: Climate Funds Update website, accessed August 27, 2014.

must be used to promote the economic development and welfare of developing countries and must be concessional in character; grants or concessional loans with a grant element of at least 25% calculated at a discount rate of 10% (OECD 2008). The total value of the project, rather than an estimated share attributable to climate change mitigation and/or adaptation, is tabulated.

102. The OECD reports both bilateral commitments, and, where available, imputed multilateral commitments. Bilateral commitments are funds committed to projects for which a specific recipient country is identified. Bilateral climate-related ODA is discussed in section 2.3.3 below. Multilateral commitments relate to the funding provided to international institutions that finance climate-related measures in developing countries. The share of the institution's funds devoted to climate purposes is used to impute the contributing country's climate-related ODA.[48] The amounts of bilateral and multilateral climate-related ODA for 2011 and 2012 are shown in Table II-6.

2.3.2 Climate finance provided to developing countries through multilateral channels

103. Climate finance flows from developed to developing countries through two types of multilateral institutions – multilateral climate funds and MDBs. Multilateral institutions use either their own resources, or resources provided by contributing countries to finance climate change projects and programmes in developing countries.

49) See Climate Funds Update. <http://www.climatefundsupdate.org/listing>.

50) The MDB Committee includes representatives from the AfDB, ADB, EBRD and IDB and World Bank Group.

2.3.2.1 Climate finance provided to developing countries through multilateral climate funds

104. A number of climate funds have been established in recent years.[49] This section focuses on multilateral climate funds; those funded by several developed countries that provide financial support to projects in multiple developing countries. Climate funds differ from carbon funds, as the former help to channel foreign financial resources to adaptation and mitigation projects in developing countries while the latter seek to earn a return – credits and/or a financial return – for their investors. Carbon funds are discussed in section 2.3.4.2.

105. There are multiple funds for adaptation, REDD-plus and other mitigation measures whose combined pledged funds represent 24%, 16% and 61% of the total respectively (see Table II-7). Four of the funds, accounting for 64% of the total pledges, are part of the Climate Investment Funds administered by the CIF Administrative Unit (CIF AU), subject to decisions by the MDB Committee.[50] Three of the adaptation funds and one mitigation fund operate under the UNFCCC. They account for 26% of the pledged funds.

106. Seventy percent of the funds pledged for adaptation and 62% of the funds pledged for mitigation have been committed to projects, but only 38% of the REDD-plus pledges have been committed to projects. Data on the regional distribution of the amount committed to projects approved is not readily available for all of the funds.

107. Most of the funds pledged to multilateral climate funds come from developed country governments although a few developing countries also contribute to these funds. These pledges are included in the FSF reports and BRs of developed country governments. Contributions to the CIF and UNFCCC funds are considered multilateral funding, while contributions to the other funds are included in climate-related ODA reports to the OECD-DAC. Hence, care needs to be exercised to avoid double-counting.

2.3.2.2 Climate funds administered by the operating entities of the Financial Mechanism of the Convention and the Kyoto Protocol

108. The GEF has been an operating entity of the Financial Mechanism of the Convention since 1996. The GEF also manages the LDCF, and the SCCF. The AF, established under the Kyoto Protocol, is administered by its own board. The GCF, which is just being capitalized, is the second operating entity of the Financial Mechanism. These funds are described in turn.

109. The GEF Trust Fund finances the agreed incremental costs of the approved mitigation projects and is replenished on a four year cycle.[51] For the GEF's fifth replenishment (GEF-5, 2010 to 2014), USD 1.35 billion was allocated to climate change. For the GEF's sixth replenishment (GEF-6, 2014 to 2018), USD 1.260 billion is allocated for climate change.[52] Over 97% of the pledged contributions are from members of the OECD-DAC. Almost all of the resources have been allocated to mitigation projects, including renewable energy (36%), energy efficiency (30%), and low GHG emitting technologies (13%).

110. The LDCF, established in 2001, supports projects that address the urgent and immediate adaptation needs of the least developed countries (LDCs). Contributions to the LDCF are voluntary. To-date, USD 907.0 million has been pledged, of which USD 831.5 has been received. Initially each of the eligible LDCs was given up to USD 200 000 to prepare a National Adaptation Programme of Action (NAPA). Of the 50 countries that have completed their NAPAs, 48 have accessed a total of USD 726.25 million for 138 projects that address urgent and immediate adaptation needs. The regional distribution of LDCF projects reflects the distribution of LDCs, 68% of which are located in Africa.

111. The SCCF, also established in 2001, has two active funding windows: adaptation and technology transfer. Contributions to the SCCF are voluntary. As of the first half of 2014, USD 344.3 million has been pledged and USD 299.1 million has been received. Fifty adaptation projects with funding of USD 201.8 million have been approved together with eight technology transfer projects with funding of USD 40.5 million. Demand for adaptation funding exceeds the available resources. The largest categories of adaptation projects are enhancing the resilience of water resources management and agriculture, each with 27% of the approved resources. The geographic distribution of SCCF funding is: Africa (29%), Asia (28%) and Latin America and the Caribbean (22%).

112. The AF, which became operational in 2009, was established to finance concrete adaptation projects and programmes in developing country Parties to the Protocol, especially those that are particularly vulnerable to

51) The GEF Trust Fund has also dedicated USD 50 million to adaptation and USD 35 million to a technology transfer programme. The GEF Trust Fund also serves other environmental agreements.

52) GEF/C.46/07/Rev.01.

53) The GEF serves as the secretariat of the AF and the WB is its trustee.

54) In decision 1/CMP.8, Parties decided that for the second commitment period, the Adaptation Fund shall be further augmented through a 2 per cent share of proceeds levied on the first international transfers of AAUs and the issuance of ERUs for Article 6 projects immediately upon the conversion to ERUs of AAUs or RMUs previously held by Parties.

55) Provision of funds to an accredited national or regional implementing entry is called "direct access".

Table II-8.

Climate finance commitments by multilateral development banks from their own resources (USD million)

	2011			2012		
MDB	Adaptation	Mitigation	Total	Adaptation	Mitigation	Total
AfDB	593	859	1,452	445	1,463	1,908
ADB	585	2,196	2,781	821	2,001	2,822
EBRD	181	3,400	3,581	188	2,812	3,000
EIB	225	5,306	5,531	179	3,484	3,663
IDB	288	1,741	2,029	139	1,619	1,758
IFC[a]		1,664	1,664		1,552	1,552
WB	2,304	6,180	8,484	3,813	6,168	9,981
Total	4,176	21,346	25,522	5,585	19,100	24,685

Notes: a: IFC began tracking adaptation finance in 2013. AfDB = African Development Bank, ADB = Asian Development Bank, EBRD = European Bank for Reconstruction and Development, European Investment Bank, IDB = Inter-American Development Bank, IFC = International Finance Corporation, WB = World Bank.

Sources: AfDB et al., 2012a;b; 2013.

the adverse effects of climate change. It is supervised by the AFB under the authority and guidance of the CMP.[53] The AF is funded by a levy of 2% of the Certified Emission Reduction (CERs) issued for most CDM projects as well as voluntary contributions.[54] From its inception to the end of 2013 the Fund realized USD 190 million from the sale of CERs and received contributions of USD 225 million. A developing country can submit a proposed project and, if approved, receive funding through an accredited "national implementing entity" or a multilateral institution such as the WB or UNDP.[55] To be accredited, a national or regional implementing entity, must meet fiduciary standards and other criteria. To date, 34 projects with funding of USD 226 million have been approved.

113. In 2010 at COP 16, the COP decided to establish the GCF as an operating entity of the Financial Mechanism of the Convention. It also established a Transitional Committee to design the Fund. A year later, the COP approved the governing instrument for the GCF drafted by the Transitional Committee and requested the board of the GCF to operationalize the fund in an expedited manner. The governing instrument included provisions for direct access to national implementing entities, a private sector facility and a balanced allocation of resources between adaptation and mitigation.

114. In its report to COP 19 in 2013, the GCF outlined a plan for its initial resource mobilization process. A list of eight requirements that are essential for the Fund to receive, manage, programme and disburse financial resources had been agreed by the GCF board. At its May 2014 meeting the GCF board decided that, as the eight essential requirements had been met, they would launch the initial resource mobilization process (GCF, 2014b).

2.3.2.3 Climate Finance Provided to Developing Countries by Multilateral Development Banks

115. Seven MDBs reported climate finance commitments of about USD 27.1 and USD 26.8 billion in 2011 and 2012 respectively. Recipient countries include developing countries and 13 EU economies in transition (EU13). Funding can take the form of a grant, a loan, a guarantee, equity, or a performance-based instrument. Funding is not required to include a grant component. The value of the commitments covers MDBs' own resources as shown in Table II-8, plus USD 1,569 to 2,138 million of external resources managed by the MDBs.

116. The data reflect the financing committed to projects or components, sub-components or elements within projects that provide mitigation or adaptation co-benefits rather than the entire project cost.

117. In both 2011 and 2012, roughly 80% of the total funding was for mitigation. Renewable energy took the

largest share of the mitigation funding with 36% of the total in 2012. Of the 2012 adaptation funding, 37,1% went to the infrastructure, energy, and built environment sector and 31,9% went to support the increase of resilience to climate change in the agriculture sector. On a regional basis, Latin America and the Caribbean regions received the largest share of the 2012 funding (18%).

2.3.3 Climate finance provided to developing countries through bilateral channels

2.3.3.1 Climate Finance Provided to Developing Countries by Bilateral Development Banks

118. Some developed countries use bilateral development banks, such as AFD, JICA, KfW Development Bank, and the Overseas Private Investment Corporation (OPIC) to deliver development assistance including climate finance. These institutions receive funds from the national government but may also use their own resources.

119. The IDFC reports that OECD member institutions provided USD 15 billion in climate finance to non-OECD countries in both 2011 and 2012 (Ecofys 2012 and IDFC 2013). Information from AFD, JICA and KfW Development Bank indicates that they provided essentially all of this funding. In addition OPIC, not a member of IDFC, committed USD 1.8 billion to climate-related projects in developing countries during the 2011-2012 fiscal years, which was reported as FSF (USA, 2014).

120. Deducting finance provided to OECD members (not considered as developing countries), CPI estimates the climate finance committed to developing countries by developed country bilateral development banks to be USD 14 billion for 2012.

2.3.3.2 Climate-related Bilateral Overseas Development Assistance

121. Table II-9 shows the bilateral assistance reported by OECD-DAC members for climate change mitigation and adaptation projects for the period 2007 through 2012. Over the period, funding for projects with climate change mitigation as a "principal" objective increased from USD 2.2 billion to USD 13.5 billion in 2010, before declining to USD 10.4 billion in 2012. In addition, funding for projects with climate change mitigation as a "significant" objective grew from USD 1.8 billion in 2007 to USD 5.1 billion in 2012. Data on adaptation is only available from 2010.

Table II-9.

Bilateral assistance reported by OECD development assistance committee members for climate change mitigation and adaptation-related projects, 2007 through 2012** (million USD, nominal prices)

	Mitigation-related		Adaptation-related		Both	Total* (Principal + Significant)
	Focus	Administrator	Year Operational	Funds Pledged		
Year	Principal	Significant	Principal	Significant		
2007	2212	1781	NA	NA	NA	3994
2008	5547	3161	NA	NA	NA	8707
2009	6972	3287	NA	NA	NA	10259
2010	13540	4285	2705	5772	3624	22678***
2011	8294	4919	2067	6450	3686	18044***
2012	10442	5089	2680	7422	4164	21469***

Notes: Adaptation projects were not tracked prior to 2010.

*Many activities target multiple climate objectives, the total adjusts for this overlap to ensure there is no double counting.

Source: OECD-DAC Creditor Reporting System statistics, accessed 12 September 2014

**Data for the United States of America for 2011 are only partial and are currently being revised following the development of a new data screening process designed to significantly improve Environment and Rio Markers. The process, however, has not been fully implemented as of the time of this publication. The United States of America aims to provide the OECD-DAC with 2010-2012 data with improved markers for the Environment and Rio Conventions based on this new screening process as soon as this information becomes available.

*** This figure does not include data from the United States of America for 2012, as per the note above.

Table II-10.

Bilateral assistance reported by developed country bilateral climate funds (cumulative since inception of each fund, million USD, nominal prices)

Fund	Country	Pledged	Deposited	Approved
International Forest Carbon Initiative	Australia	190	67	126
Global Climate Change Alliance	European Commission	385	385	383
International Climate Initiative	Germany	1,082	1,082	986
International Climate and Forest Initiative	Norway	1,608	1,608	305
International Climate Fund	United Kingdom	6,002	1,318	1,056
Total		9,267	4,460	2,856

Notes: Amounts may not sum to the total due to rounding; Pledged = contributor pledges; Deposited = funds received from contributors; Approved = funds committed to approved projects
Source: Climate Funds Update website, accessed August 27, 2014.

Funding for projects with an adaptation objective grew from USD 8.5 billion that year to USD 10.1 billion in 2012. Adaptation is usually not the principal objective of a project; the value of projects with adaptation as a significant objective is much higher. Projects with a value of between USD 3.6 and 4.2 billion contribute to both mitigation and adaptation.

122. Several developed countries have established bilateral climate funds to deliver climate finance to developing countries. These funds are accounting mechanisms to track and publicize the country's international climate finance contributions. Unlike bilateral development banks, they are not distinct funding entities. The funds are disbursed by established institutions such as the country's development agency. Virtually all of the resources come from the national government. These funds are listed in Table II-10.

123. The financial support provided by these bilateral funds is usually included in the reports of climate finance submitted by the respective developed country governments to the UNFCCC and the OECD-DAC.

2.3.3.3 Other Bilateral Climate Finance Flows to Developing Countries

124. In addition, to climate-related ODA, some DAC members have started to voluntarily report climate-related OOF; funds, such as non-concessional development loans, that do not include a sufficient grant element to qualify as development assistance. For the period 2010 through 2012 partial reporting shows that total climate-related OOF averaged USD 843 million per year, mainly from AFD (USD 684 million per year) and KfW Development Bank (USD 158 million per year).[56] Information on OOF is confidential at the level of individual activities. The Export-Import Bank of the United States of America committed USD 500 million during FY 2011–2012 (USA 2014).

2.3.4 Private Climate Finance Flows to Developing Countries

2.3.4.1 Estimates of Private Climate Finance Flows to Developing Countries

125. Private climate finance flows to developing countries are not systematically tracked, so their magnitude is highly uncertain. Clapp et al. (2012) distinguish public-private channels – export credits and primary purchases of CERs from CDM projects – as well as private investment and finance. Their estimate of total private finance of USD 39 to 75 billion is dominated by private investment in the renewable energy sector, which is estimated at USD 37 to 72 billion per year, based on 2009-2010 data.

126. Stadelmann et al. (2013) estimate private climate finance flows to developing countries to be between USD 27 and 123 billion based on 2008 to 2011 data from a variety of sources. They include foreign direct investment (FDI), portfolio investments, investment mobilized by the climate policies of industrialized countries, payments for CERs (voluntary and compliance purchases), and private donations. The principal components are investment mo-

56) <http://www.oecd.org/dac/environment-development/Climate-related%20aid%20Flyer%20-%20May%202014%20final.pdf>.

57) The Prototype Carbon Fund managed by the WB was the first carbon fund.

58) The CDM is administered by the CDM Executive Board subject to guidance from the CMP. A proposed project must be approved by the host government and use a monitoring plan and methodology for calculating the emission reductions approved by the Executive Board before it can be registered. Emission reductions must be independently verified before CERs can be issued.

bilized by the climate policies of developed countries (USD 15 to 84 billion) and foreign direct investment (USD 10 to 37 billion).

2.3.4.2 Carbon Funds

127. Since 1999 almost 100 carbon funds with a capitalization of USD 14.2 billion have been established (Alberola and Stephan, 2010).[57] Carbon funds are investment vehicles that raise capital to purchase carbon credits (52%) and/or invest in emission reduction projects (23%). A fund may have only private investors (48%), only public investors (29%), or a mix of both (23%). Investment may be restricted to a specific region or project type (e.g., REDD-plus). Financial data, especially for private funds, is often confidential so the amount of finance provided to developing countries via carbon funds is not available.

2.3.4.3 Clean Development Mechanism

128. The CDM under the Kyoto Protocol creates an incentive to implement mitigation actions in developing countries.[58] It does this by awarding CERs achieved by a registered project to the project owners. The CERs can be sold to firms and governments in developed countries and be used by Annex I Parties to meet their national emissions limitation commitments under the Kyoto protocol. By the end of 2013, over 7,400 projects had been registered in 93 developing countries representing an estimated investment in excess of USD 400 billion (Fenhann, 2014).

129. Data for over 4,800 CDM renewable energy projects indicate that about 5% of the projects accounting for over 12% of the total investment involve both domestic and foreign investors (Kirkman et al. 2013). The share of CDM renewable energy projects with foreign investors increased over time, as projects became larger and the renewable energy industry grew. Of the projects with some foreign investment, approximately one-third (4%) each came entirely from Annex I Parties, a combination of the latter with non-Annex I Parties, and other non-Annex I Parties. The last group consists mostly (73%) of projects in China with Hong Kong investors.

130. Over 1.4 billion CERs have been issued. The most common project types are wind: 32% (23% of projected emission reductions), small hydro: 27% (27%), biomass energy: 8.5% (4.5%), and methane avoidance at wastewater treatment plants and manure operations: 8.5% (2.5%). China and India dominate with 50% and 20% of the projects (Fenhann 2014).

Table II-11.

Summary of Estimated Climate Finance Flows from OECD to non-OECD Countries for 2011/2012

Channel	Low Estimate (USD billion)	High Estimate (USD billion)	Comments/Scope/Caveats
Multilateral			
MDBs	15	22	High estimate is total climate commitments to developing countries. Low estimate is the industrialized countries' share of MDB ownership applied to the total commitments.
Multilateral Climate Funds	1.4	1.4	Capital investment costs and grants.
Bilateral			
Government Bodies	4	11	Low estimate is ODA where climate change is the "principal" objective. High estimate also includes projects with climate change as a "significant" objective.
Bilateral Finance Institutions	14	14	Total climate commitments to developing countries.
Private			
Private Investment in Renewables	4	13	Low and high estimates based on different sources. The high estimate includes foreign direct investments in renewable energy manufacturing companies, which is not captured in the overall CPI landscape numbers to avoid potential double counting.
Total	39	62	

Source: Buchner, et al. 2013a, Box 2.

59) The data sources, for example, define developed and developing countries differently. CPI defines developing countries as non-OECD members, OECD has a list of ODA eligible countries, the MDBs provide data on climate finance provided to member countries, including some EU member states in the case of the EIB, and climate finance recipients under the UNFCCC are non-Annex I Parties.

131. The main market for CERs is installations subject to the EU emissions trading system (ETS). Subject to specified limits, they can use CERs for compliance. During the latter half of 2012 it became evident that the supply of CERs could exceed the limit on their use by EU ETS installations. This led to a decline in the price of CERs from about four Euros at the beginning of the year to less than one Euro at the end of the year with further reductions since then. As a result, few new projects are being developed, and some existing projects have ceased monitoring their emission reductions.

2.3.5 Summary of Estimates of Climate Finance Flows from Developed to Developing Countries

132. The preceding sections reviewed data on the major components of climate finance flows from developed to developing countries, multilateral channels, bilateral channels and private flows. Several gaps and overlaps were noted, so the data needs to be adjusted to compile an overall estimate of the climate finance flowing from developed to developing countries.[59] CPI's estimate for 2011/2012 is presented in Table II-11.

133. When the managed resources and the EU 13 countries are excluded from the MDB data presented in Table II-8, the climate finance provided to developing countries by MDBs is approximately USD 15 to 23 billion per year as shown in table II-11. For its low estimate, CPI counts only the share of developed countries ownership in the MDBs of the total climate finance commitments.

134. Table II-7 reports total commitments (pledged) by multilateral climate funds over their respective lifetimes of about USD 1.2 billion. That is broadly consistent with CPI's estimated annual commitment for 2011/2012 of USD 1.4 billion (Table II-11).

135. The CPI estimates of finance provided by developed country government bodies and that is not flowing through climate funds or bilateral development banks, USD 4 to 11 billion, is based on the bilateral aid data presented in Table II-9. The low estimate accounts for projects with climate change as a 'principal' objective while the high estimate includes projects with climate change as both a 'principal' and 'significant' objective. The range of USD 4 to 11 billion is substantially lower than the amounts shown in Table II-9, mainly because USD 14 billion of climate finance provided by bilateral development banks, is shown separately.

136. The figure of USD 14 billion for bilateral finance institutions is derived from the USD 15 billion reported by the principal bilateral development banks adjusted for finance provided to non-OECD members that are not developing countries.

137. CPI's figures for private investment flows from developed to developing countries for 2011/2012 – USD 4 to 13 billion – includes only investment in renewable energy and do not include private investments in developing countries mobilized by developed countries. As a result, they are much lower than other estimates of the climate-related private investment flows from developed to developing countries – USD 27 to 123 billion (Stadelmann et al. 2013) and USD 39 to 75 billion (Clapp et al. 2012).

138. Replacing the CPI estimates of private finance flows with the Stadelmann et al. figures yields a range for the climate finance flow from developed to developing countries, including both public and private funds, of USD 40 to 175 billion. This encompasses the only other estimate of the flow from developed to developing countries of USD 70 to 120 billion per year based on 2009/2010 data (Clapp et al., 2012).

139. The estimates of climate finance for the period 2011 to 2012 are summarized in Figure III-I. Global total climate finance is estimated to range between USD 340 and 650 billion per year, and possibly higher. Climate finance flows from developed to developing countries are estimated to range between USD 40 and 175 billion per year. This includes flows from public budgets and public finance of USD 35 to 50 billion per year from developed to developing countries.

Chapter III

Assessing the state of climate finance

3.1 Introduction

140. This chapter provides insights and trends on the climate finance flows presented in Chapter II of this report, to the extent possible given the challenges of compiling data from various institutions and processes. The focus of the chapter is on public flows from developed countries to developing countries, as a result of the particular commitments made in the UNFCCC context. In many cases, data limitations meant that the report could only assess a subset of flows against the considerations identified:

(a) **Financial considerations** which includes the scale of finance flowing, additionality, financial instruments used, the pace and efficiency in the approval and disbursements of funds of selected mechanisms;
(b) **Policy considerations** which includes a discussion on whether climate finance targets adaptation, mitigation, REDD-plus activities, or multiple cross-cutting objectives, and the geographic distribution of climate finance – recognising agreements to ensure adaptation finance prioritises least developed countries, small-island developing states, and African states.

Possible areas for future work

141. There were also a number of issues that would ideally have been included in the assessment, but could not be addressed adequately due to data availability and time limitations. An initial exploration of these issues has been included:

142. Impact and effectiveness which include issues of country ownership, alignment of international finance received with needs; mobilized private finance, mitigation impact, adaptation impact, and cost effectiveness. It was not possible to reach conclusions on these issues, although insights to inform future work were drawn. Better understanding of these issues is an important area for future work.

143. The need for more complete information on global total climate finance impedes an understanding of the degree to which such finance is enabling progress towards the goal of keeping global climate change within 2 degrees centigrade. If more complete information on all flows, including domestic spending on climate change adaptation and mitigation as well as private finance, becomes available, this critical question should become more possible to address.

3.2 Financial Considerations

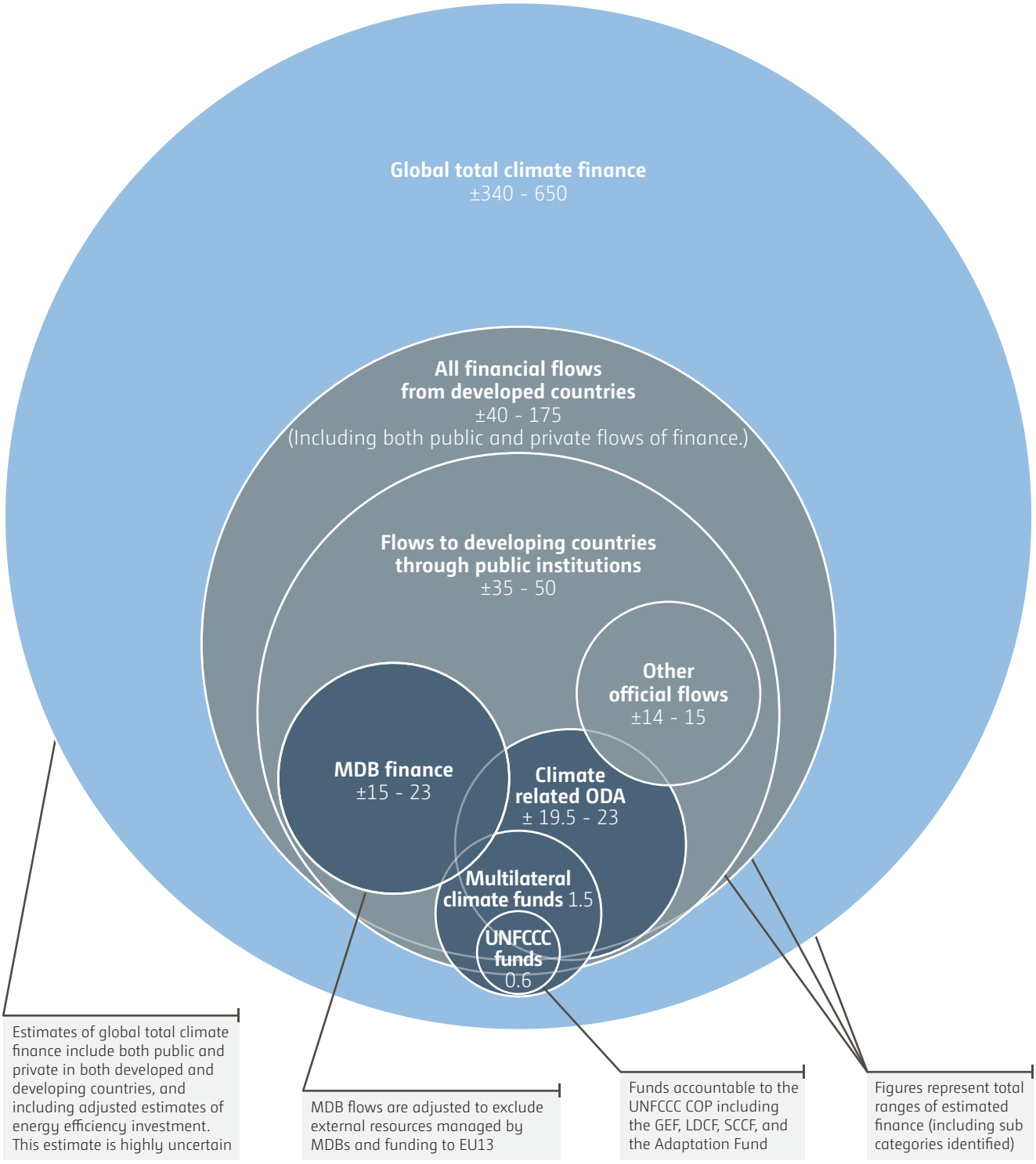
3.2.1. Climate finance flows

144. The overview of flows suggests that the global total climate finance (in both developed and developing countries and from both public and private sources) is between USD 340 and 650 billion per year (including adjusted estimates of energy investment). There is relative uncertainty in this figure, as a result of a lack of complete data on domestic spending on both adaptation and mitigation from public and private sources, particularly regarding adaptation.

145. Figure III-1 summarizes the ranges of finance available globally to support efforts to address climate change between 2010 and 2012 on the basis of annualized commitments. It indicates the range of finance at different levels, including estimated global total finance, as well as finance from developed countries to developing countries. It seeks to distinguish between finance delivered through the operating entities of the Financial Mechanism of the Convention and the Kyoto Protocol (such as the GEF and AF) and the dedicated multilateral climate funds such as the Climate Investment Funds; finance spent through bilateral channels reported as climate relevant ODA, climate

Figure III-1.

Climate finance flows (USD billion and annualized)



relevant development finance flows, including funding managed by MDBs, and wider estimates of finance from developed to developing countries, including private finance. The estimates include different types of finance loans, guarantees, grants, equity, and others: ideally, these estimates could be presented in a more comparable form such as grant equivalents. The estimate of international finance includes domestic, private and international finance. The concentric circles are not to scale, although the size of the circles has been adjusted to illustrate the relative volumes of finance involved.

146. Confidence in the quality, measurement and reporting on finance which is channelled through operating entities of the Financial Mechanism of the Convention, such as the GEF who report on approved projects, their geographic distribution, their objectives, the instruments involved as well as other considerations such as co-finance, leveraged finance, and impact to varying degrees is relatively certain. Similar practices are adopted by other multilateral climate funds, such as the Climate Investment Funds, though in some cases information on private sector programs is not reported, and information on disbursement is of varying quality. Independent climate finance tracking initiatives such as the Oversees Development Institute (ODI) and the Heinrich Boll Stiftung (HBF) Climate Funds Update compile this information, making analysis relatively easy. However the relative volume of finance through these channels is modest at less than USD 1.5 billion per year. The OECD CRS also includes project-level data that is made publicly available to support assessments. There are, however, recognised challenges related to the precision of the application of climate-related markers in CRS reporting. While a subset of finance channelled through the Convention funds and dedicated climate finance is also reported as ODA, the range of finance seeks to exclude these flows to reduce double-counting. The MDBs have also begun to report on climate change and adaptation related spending using detailed guidance and typologies that allow greater precision. A lack of public reporting of the underlying data reduces the scope for independent scrutiny of how this guidance has been applied in practice. The figure presents MDB finance adjusted to exclude special funds reported as ODA, and funding to EU13. As a result, there is relative certainty in the quality of measurement and reporting of finance channelled through international public institutions to developing countries.

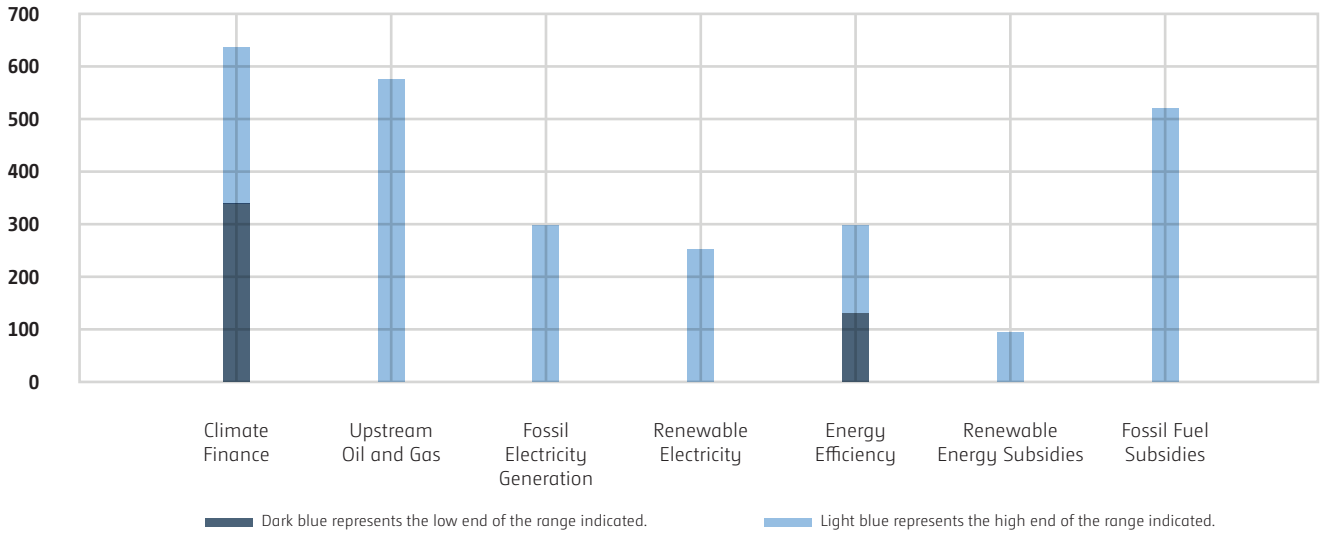
147. There is, however, substantial uncertainty regarding domestic public spending on climate change in both developed and developing countries (notably on adaptation). Similarly, much of the available information on private finance for climate change is focused on energy, particularly renewable energy, complemented to some extent by IEA estimates of investment in energy efficiency. Information on climate relevant spending by the private sector on transport, agriculture, water, and other sectors is much more limited. Consequently, it is likely that the estimate of global total climate finance may be relatively conservative. On the other hand, different estimates reflect different types of finance, from the total cost, to just the share of climate-related finance. If only the climate-related component was reported for all types of finance, then the estimated totals might be lower. Better information on the global picture is crucial to understand whether global total climate finance is helping to keep global warming within 2 degrees centigrade. The global total climate flows in 2013 estimates have many gaps, and include some double-counting. These figures are therefore relatively uncertain. Of course these figures must be read in the context of wider investment in business as usual high carbon approaches, and investments that do not account for climate risk, which are estimated to be substantially higher.

148. Subsets of the finance managed by public institutions identified in the diagram were included in FSF and in the BRs of developed countries respectively. While there is substantial overlap between the flows reported as FSF and as finance delivered in the BRs, there are understandably several differences. For example, several

JEJU Island © MIN_Photo / Flickr

Figure III-2.

Estimates of Annual Investments and Subsidies (USD billion)



Source: Source: IEA, 2014

Note: Some capital expenditures are subsidized in some countries, but subsidies also support production and lower prices and so encourage consumption. The subsidies estimated include government budget expenditure as well as foregone revenues.

countries only counted a subset of their climate-related international spending as FSF, whereas they have reported all related support in their BRs.

149. The resources devoted to increasing GHG emissions, such as investment in upstream oil and gas, investment in fossil fuel-fired generation, are almost double the global resources devoted to addressing climate change, including renewable energy and energy efficiency (see Figure III-2 above). A wide body of work from the IMF, IEA, and others makes the case for reducing fossil fuel subsidies in developed and developing countries, as part of the creation of an enabling environment for low carbon investment. Implementation can be challenging, however, and potential negative impacts on the poor need to be managed carefully. The potential for this reduced spending in creation of fiscal space for greater climate finance has also been recognized (AGF 2010, Whitley et al 2013).

3.2.2 Climate finance for developing countries in context

150. Climate finance from developed to developing countries is estimated to range between USD40 billion and USD 175 billion per year. This represents a substantial share of estimated global total climate finance.

151. Institutions are needed to facilitate the cross-border flow of resources, which provides an opportunity for better tracking. Several multilateral and bilateral channels report on climate-related spending. However there is some overlap between reported flows. For example, development finance institutions provide both development assistance and OOF. Biennial reports of developed country finance contributions include a subset of funding channelled through multilateral institutions, development institutions, and others.

152. Table III-1 compares public climate finance for developing countries with ODA, and private flows from developed to developing countries, to illustrate the scale of effort. Public climate finance accounts for 10 to 15% of the development assistance provided by multilateral institutions and 20 to 28% of the bilateral development assistance in 2012. Private climate finance ranges between 8% to 38% of the total private flows from developed to developing countries in 2011. The wide range reflects the substantial uncertainty around the scale of these flows.

Table III-1.

Comparison of estimated public climate finance flows to developing countries with development assistance and private flows for 2011 and 2012 (billion USD)

	2011			2012		
	Different Flows from developed to developing countries	Climate Finance Amount	Climate Finance %	Different Flows from developed to developing countries	Climate Finance Amount	Climate Finance %
Multilateral flows	184.4[g]	22.7[a]	12%	157.7[g]	21.8[a] 16.4-23.4[b]	14% 10-15%
Bilateral flows	94.4	17.8[c]	19%	88.6	21.5[c] 18.0-25.0[d]	24% 20-28%
Private flows at market terms	326.6	39-75[e] 27-123[f]	12-23% 8-38%	307.8		
Of which FDI	219.6	10-37[f]	5-17%	207.1		
Net private grants	32.0			29.8		

Note: a = own resources for seven MDBs less funding to 13 European Union countries; b = Landscape estimates for MDBs and multilateral climate funds; c = OECD-DAC figures for projects that have climate change as a "principal" or "significant" objective; d = Landscape estimates for government bodies and bilateral IFIs; e = average for 2009-2010; f = average for 2008-2011; g = commitments during the year as obtained from the annual reports of the MDBs.

Sources: Development assistance and private flows from OECD Total Flows by Donor. Available at: <http://stats.oecd.org/Index.aspx?datasetcode=TABLE1>

153. Most of the climate finance to developing countries reported by Annex II Parties flows through bilateral or multilateral channels. This finance, which is about USD 16 billion per year, dominates climate finance under the UNFCCC. The amount of finance channelled through operating entities of the Financial Mechanism of the UNFCCC and the Adaption Fund represents a modest volume of spending of less than USD1 billion per year.

3.2.3 Additionality of Climate Finance to Developing Countries

154. Article 4.3 of the Convention states that financial resources to support climate actions should be new and additional. The additionality of FSF was a particular consideration. At COP 16, Parties took note of the collective commitment by developed countries to provide new and additional resources approaching USD 30 billion for the period 2010–2012 (otherwise known as the FSF)[60]. A review of the literature (Brown et al 2010, Stadlemann et al, Nakhooda et al 2014) suggests the following possible considerations for determining that the funds are additional:

(a) Only funds mobilized from new sources, such as a levy on emissions trading;
(b) Only funds delivered through new channels, such as the GCF;
(c) Only funds in excess of a 0.7% of GNI contribution to ODA;
(d) Only funds in excess of current ODA;
(e) Only funds in excess of ODA levels from a specified baseline year;
(f) Only funds in excess of projected ODA calculated using a specified formula;
(g) Only a specified share of the increase in ODA;
(h) Only funds in excess of current climate finance;
(i) Only climate finance that is not reported as ODA.

155. The information provided in the FSF reports ranges from virtually none to almost all are new and additional depending on the criterion used. In the agreed guidelines for NCs and BRs, developed countries are expected to provide information on how they have determined that the resources provided to developing countries are new and additional. Table III-2, summarizes the parameters that developed countries have used in the BRs.

60) Decision 1/CP.16, paragraph 95.

Table III-2.

Information on new and additional resources provided in the Common Tabular Forms of developed countries

Country	Information provided
Australia	The Sixth NC captures two of the three years of Australia's USD 599 million fast-start finance commitment (2010-11 to 2012-13), which is delivering effective adaptation and mitigation outcomes, and valuable lessons for future support to developing countries. Beyond the fast-start finance period, Australia remains committed to the global goal of jointly mobilizing USD 100 billion per year by 2020 from a wide variety of sources – public, private, bilateral, multilateral and alternative – in the context of meaningful mitigation actions by developing countries and transparency on implementation.
Austria	Refers to the national communication.
Canada	Canada provided USD 1.2 billion in support to projects that were above and beyond what was planned prior to the Copenhagen Accord.
Denmark	When the terminology "new and additional" was used in Article 4.3 of the UNFCCC, the intent was to ensure that no development assistance funds would be diverted by Annex II developed country Parties to meet their obligations under the Convention. The Danish development assistance related to the UNFCCC is not diverted away from other priorities and is contained in the Danish ODA beyond the UN target of 0.7% of GNI.
Finland	Finland has contributed additional resources to the GEF... during the fourth replenishment period (July 2006–June 2010), the contribution was EUR 7.8 million per year[for a total of] EUR 31.2 million. During the current fifth replenishment period, Finland's contribution is EUR 57.3 million in total: EUR 15.0 million per year during the years 2010–2011 and EUR 13.7 million per year during the years 2012-2013.
France	La France est le cinquième contributeur au FEM et le finance à hauteur de 215 millions d'euros sur la période 2011–2014 (en incluant la participation au fonds pour les pays les moins avancés – LDCF – géré par le FEM), ce qui représente une augmentation de 57 % de la contribution française par rapport à la reconstitution précédente (2007¬–2010). *France is the fifth-largest contributor to the GEF and provided 215 million Euros between 2011–2014 (including participation in the LDCF). This represents an increase of 57 % of the French contribution over the previous replenishment (2007–2010)*
Germany	Germany reports new commitments for bilateral contributions and disbursements for multilateral contributions of the relevant year. Since Germany considers 40% of its GEF contribution as climate relevant (see footnote) its officially communicated contribution to international climate finance in the year 2011 adds up to 1,5602 million Euro[61].
Japan	Japan defines new and additional climate finance as newly committed or disbursed finance... during a given period. In other words, we do not include previously committed or disbursed climate finance.
Netherlands	During the period under review, climate finance has generally been additional to the 0.7 % ODA spending for the MDG's... 'New and additional' during this period is determined at the budget/input level. In 2010, climate change policy, together with other ODA for support to environmental activities in developing countries, was funded on top of the 0.7 % GNI commitment, raising the Dutch ODA level to 0.8% of GDP. In addition, in the context of the Copenhagen Accord, The Netherlands provided EUR 300 million for FSF in support of climate adaptation and mitigation in developing countries. This was in addition to the 0.8 % budget for 2010. In 2011 and 2012 the overall ODA budget decreased to 0.75 % in 2011 and 0.7 % in 2010, including climate financing. On average total spending in 2010 – 2012 still exceeds the 0.7 %. The FSF period has triggered a renewed focus on climate in all ODA programming.
New Zealand	Climate-related finance accounted for a growing proportion of expenditure within ODA, which also increased over the previous three years. The New Zealand Aid Programme's approach of integrating environment (and climate change objectives) in all activities as cross-cutting issues is in keeping with international best practice.
Norway	Refers to the national communication.

61) The full BR (p 42) notes that Germany has defined determined additionality with regard to its fast-start pledge as follows: "the funds represent an increase over climate-related funds in 2009 or come from an innovative source of finance such as revenue from emissions trading."

Country	Information provided
Sweden	One common definition, supported by many countries, is that climate financing should be additional to the international development aid [goals]. Sweden's climate finance could be viewed as new and additional, since the country's development co-operation has for many years exceeded the 0.7% target. Sweden has, since 2006, provided 1% of GNI in international development aid.
Switzerland	In February 2011, the Swiss Parliament decided to increase the level of ODA to 0.5% of Gross National Income (GNI). As part of this decision, a new and additional amount of CHF 140 million was allocated with immediate effect for the purpose of Swiss Fast-Start-Finance. This amount is new and additional to prior levels of Swiss climate change financing for developing countries from public sources.
United Kingdom	In 2010 the UK government announced a new and additional 4 year (financial years 2011/12 to 2014/15) budget allocation for international climate finance of £2.9 billion known as the International Climate Fund (ICF). In 2013, this was increased by £969 million for financial year 2015-16, giving a total of £3.87 billion. The United Kingdom climate finance reported for the Fast-start years of 2011 and 2012 were funded from this budget.
United States	Since ratifying the Convention, which is where the term "new and additional" was first used, U.S. international climate finance increased from virtually zero in 1992 to an average of USD 2.5 billion per year during the FSF period (2010 to 2012). During the period, average annual appropriated climate assistance increased fourfold compared with 2009 funding levels. United States climate assistance has increased in the context of an overall increasing foreign assistance budget.

Note: a = own resources for seven MDBs less funding to 13 European Union countries; b = Landscape estimates for MDBs and multilateral climate funds; c = OECD-DAC figures for projects that have climate change as a "principal" or "significant" objective; d = Landscape estimates for government bodies and bilateral IFIs; e = average for 2009-2010; f = average for 2008-2011; g = commitments during the year as obtained from the annual reports of the MDBs.

Sources: Development assistance and private flows from OECD Total Flows by Donor. Available at: <http://stats.oecd.org/Index.aspx?datasetcode=TABLE1>

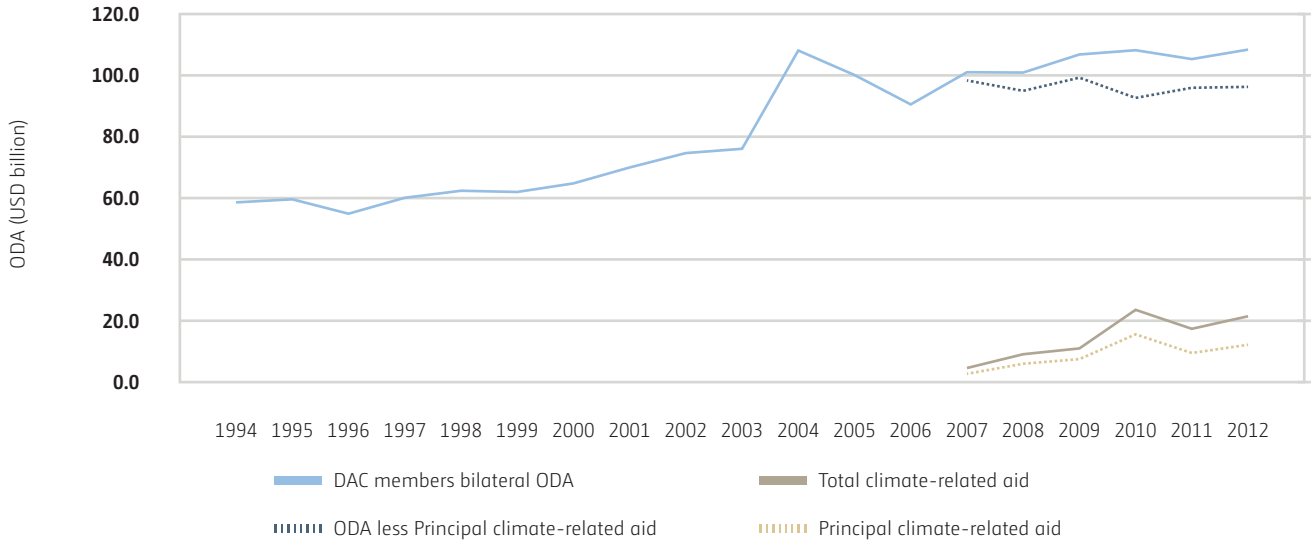
Beautiful Wind Turbine for Renewable Electricity Generator © epSos .de / Flickr

156. Several countries did not provide details on the criteria on which they had considered their contribution to be new and additional. As Table III-2 shows, there is substantial heterogeneity across information on new and additional sources included in CTFs. This heterogeneity reflects contributor country circumstances to some extent. Several countries determine their contributions as additional relative to their ongoing delivery of 0.7% of GNI as ODA. Others determine additionality relative to prior levels of ODA, and note its role in a growing ODA budget. Some determine it relative to a baseline of spending on climate-related activities prior to 2010, and others, have defined additionality relative to prior contributions to the Financial Mechanism of the UNFCCC such as the GEF and LDCF.

157. The main concern is the possible diversion of funding away from non-climate-related development needs to climate finance. There is also, however, a need to ensure that development assistance is compatible with efforts to reduce emissions, and is resilient to the impacts of climate change; this imperative makes it difficult to pinpoint diversion. Nevertheless, one test of possible diversion is whether both climate finance and ODA net of climate finance continue to grow in absolute terms over time until agreed needs or commitments (such as 0.7% of GNI as ODA) are met. This test can be applied to individual countries and to developed countries in aggregate. Figure III-3 shows the trends in aggregate bilateral climate finance and bilateral ODA net of climate finance.

Figure III-3.

Bilateral climate related ODA reported to the CRS compared with bilateral development assistance



Source: Provided to OECD DAC

158. The limited historic data on bilateral climate finance suggest that the amount has grown rapidly. These figures exclude finance channelled through dedicated climate funds or other multilateral institutions. If bilateral mitigation finance is deducted, bilateral ODA has been roughly constant since 2006. If total climate finance – mitigation and adaptation – is deducted, bilateral ODA may have declined slightly. Those trends overstate the effect of climate finance on ODA because climate finance is the total value of projects with mitigation or adaptation as a "significant" or "principal" objective.

3.2.4 Approvals and Disbursement of Climate Finance

159. The pace at which public finance for developing countries is spent is one possible indicator of the efficiency of the global system, and the institutions that are part

of it. The overview of the current chapter on climate finance largely includes information on commitments of finance. Information on the status of programmes i.e. how much has been approved to support particular interventions, and how much funding has actually been disbursed to recipient institutions is unevenly available, and difficult to aggregate. Assessing the rate of approval and disbursement for all flows discussed is therefore challenging.

160. All data on climate-related ODA from the OECD-DAC reflects information on funding committed by countries. However, it sometimes includes contributions to intermediaries including development agencies, NGOs, or other organizations, who then disburse funding to entities in developing countries. As a first effort to shed some light on this issue, we have analysed information available on dedicated climate funds for which data was available.

161. The data in Figure III-4 suggests that overall, nearly 60% of pledged funds have been approved (allocated to a project). For adaptation the share is 69%, for mitigation the share is 60% and for REDD+ the share is only 28%. For several funds, low approval rates reflect a different approach to delivery. For example, for the Pilot Program on Climate Resilience or the Clean Technology Fund, all available funding has already been "allocated" to a set of approved investment plans for a number of countries, so the remaining funding is essentially committed, even though constituent projects and programmes have yet to be approved. Slow rates of project approval may reflect capacity constraints on the part of recipient country government counterparts, as well as the competing priorities and incentives of implementing agencies (Amin and Nakhooda 2013, CIF Evaluation 2014).

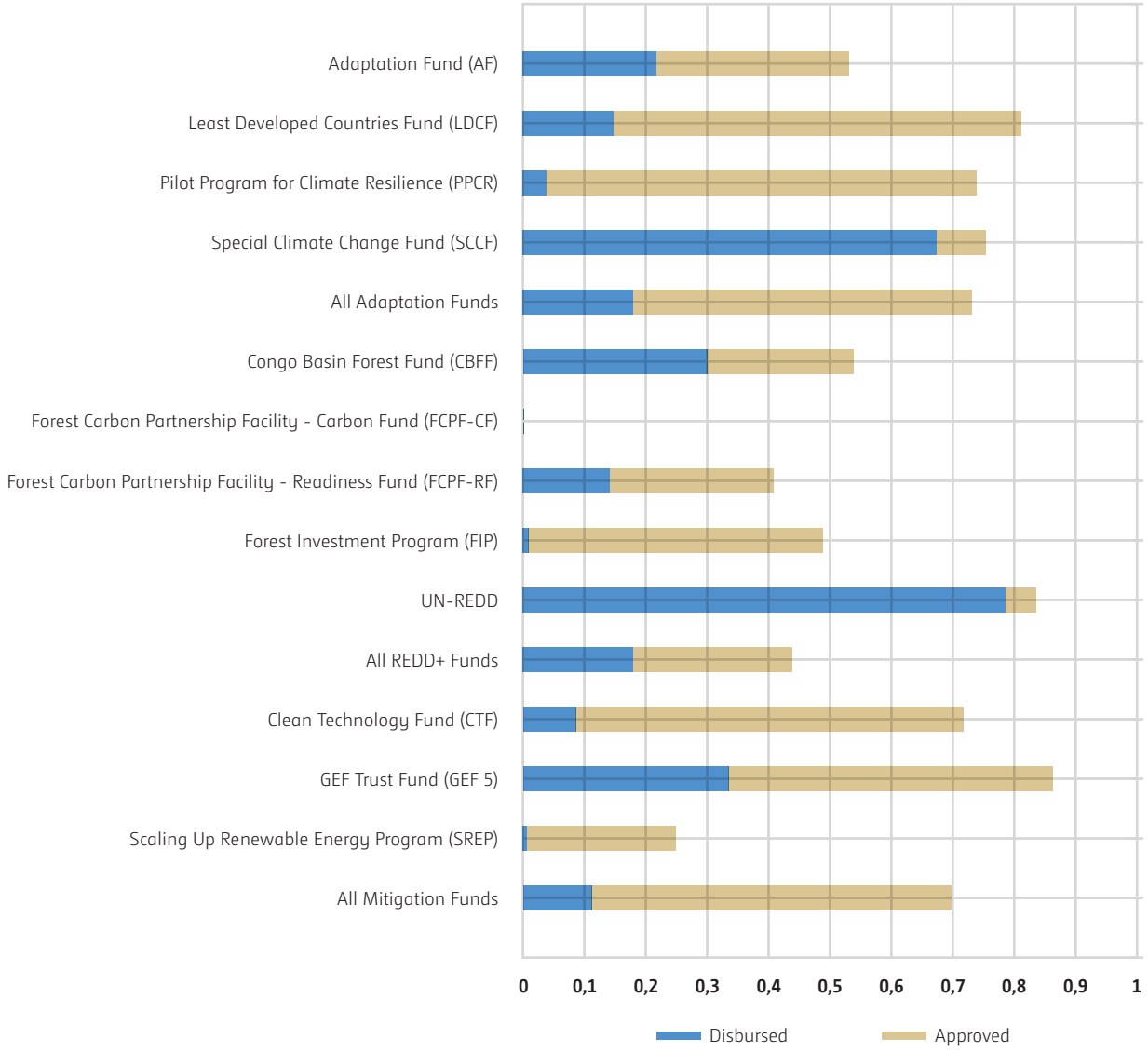
162. In most cases available funding has been committed to projects or programmes. There is often a substantial pipeline of programmes waiting for support, for example in the case of the Clean Technology Fund, the Pilot Programme for Climate Resilient (PPCR), the LDCF, and the multilateral window of the AF. The CIFs have introduced over-programming of pipelines in order to accelerate the pace of project approval. This has effectively introduced a degree of competition in the pipeline among implementing agencies to ensure conceived projects are brought forward for approval (Amin and Nakhooda 2013).

163. Data on disbursement is incomplete. Some funds do not report on funding disbursed to the private sector for business confidentiality reasons. Several funds only report on funding disbursed to implementing entities rather than by these entities to real projects and programmes. Where data is available, the evidence suggests that progress has generally been slow. In the case of performance-based mechanisms such as the Forest Carbon Partnership Facility (FCPF) Carbon Fund, disbursement necessarily takes place over time as results are reported, rather than up-front to support activity implementation.

Morning Wind © Daniel Hoherd / Flickr

Figure III-4.

Pledges, approvals and disbursements of multilateral climate funds



Similarly, disbursement of loans may be linked to progress towards agreed milestones over a significant period of time. The fifth review of the Financial Mechanism of the UNFCCC analyses these issues in the case of Convention funds in greater depth.

3.2.5 Instruments used for climate finance

164. The table below summarises the information that have been gathered so far on the instruments that have been used to deliver public finance to developing countries. The share of finance provided in the form of grants appears to range between 44% and 51% (the latter being in the case of multilateral climate funds). ODA loans have largely been used to finance revenue-generating mitigation investments. OOF have also been used to this purpose. However, they have also been used to finance adaptation interventions to some extent. A recent compilation of information on sources of finance in 2011 and 2012 reported by developed countries in their BRs suggests that 51% of finance is grant (see Table III-3). Other instruments were specified for 31% of reported finance. Six per cent of reported finance during this period was classified as OOF, and other classifications were listed for 13% of the reported funding. Countries did not report this information for 100% of total reported contributions.

Table III-3.

Instruments across reported public climate finance to developing countries

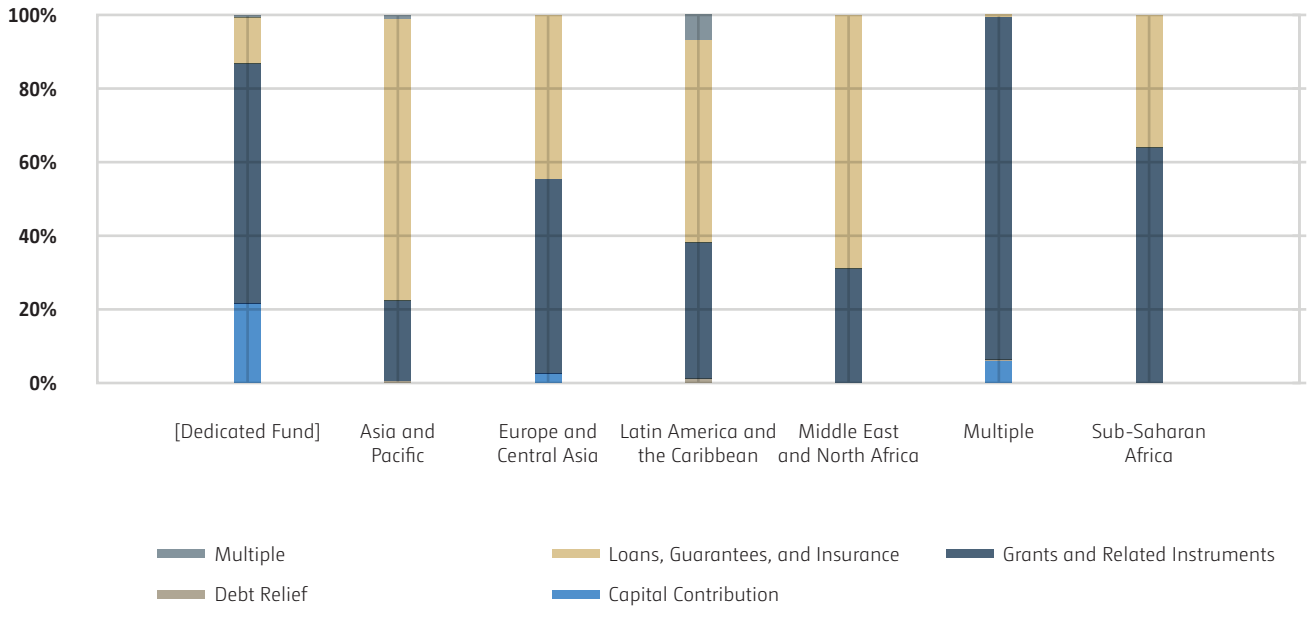
	ODA Grants	ODA loans	OOF	Other[62]~	Total
FSF (2010 – 2012)	44%	26%	16%	15%	30435.1
Multilateral Climate Funds* (2008 – 2014)	51%	33%	-	16%	10514.0
OECD CRS (2007-12)	44%	51%	3% (partial data)	1%	6
BRs (2011-2012)	51%		6%	13%	

Note: All figures are in current USD Million
* based on approved figures;
~ partly equity investment

165. The use of instruments, appropriately, varies across purpose (mitigation and adaptation), and region or recipient country, reflecting differing financial requirements. A wider range of instruments appears to be used for mitigation, although there is a strong reliance on loans as well as, to a lesser degree, grants. Adaptation activities are largely financed through grants and concessional loans so far. Loan finance is concentrated in larger countries in Asia while Sub-Saharan African countries have largely received grants (Figure III-5).

Figure III-5.

Climate finance instruments across regions during the FSF period (2010-12)



Data source: UNFCCC (2012)

62) For example debt relief, equity contributions, capital contributions.

3.3 Policy considerations

166. We have drawn on the data presented in the overview of current climate finance chapter to compile the thematic objectives of different flows of funds from developed to developing countries i.e. dedicated climate funds[63], FSF[64], OECD-DAC data on climate-related ODA,[65] and MDB finance. This represents a very narrow subset of the global total climate finance flows presented in this report. We have also been able to analyse the geographic distribution of these sources of finance, although country-level data on the distribution of MDB finance was not yet available.

3.3.1 Thematic distribution of climate finance

167. Table III-4 below, summarises the results of the compilation of distribution of mitigation, adaptation, REDD-plus and multiple benefits. 48 to 80% of the finance reviewed supported mitigation activities, 11 to 23% supported adaptation activities, and 10 to 41% was labelled as other/multiple objectives. A large share of climate finance reported in BRs appears to contribute to multiple objectives, potentially including REDD-plus. This has the effect of reducing the share of finance that appears to be expressly focused on mitigation. The data on FSF is based on a more in-depth analysis of project level detail on the objectives of finance delivered, and suggests that a substantial share of finance delivered during the same period was largely focused on mitigation. Although adaptation receives a relatively small share of the international climate finance delivered, the share has been growing over time.[66] There is some evidence that adaptation finance has been increasing, though it remains a small share of the current estimates.

Tuolumne River © Jim Bahn / Flickr

63) Using data from <http://www. climatefundsupdate.org >.

64) Using a dataset compiled by ODI, WRI, IGES, Germanwatch, Cicero, and Climate Advisers available online at <http://www.climatefundsupdate.org/faststart>.

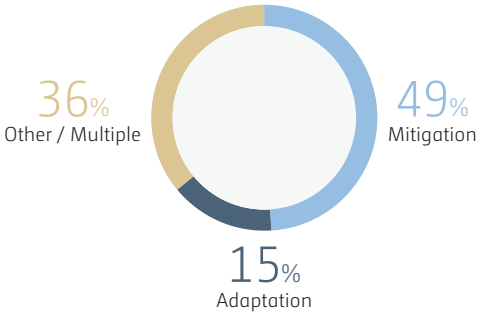
65) Using data from the OECD CRS.

66) See for example ODI and HBF 2013 10 Things to Know About Climate Finance and ODI and HBF Climate Finance Fundamentals: Adaptation Finance.

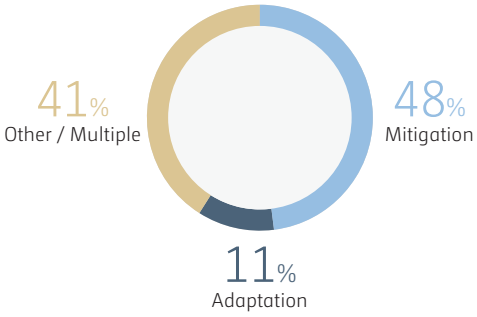
Table III-4.

Thematic Distribution of Climate Finance

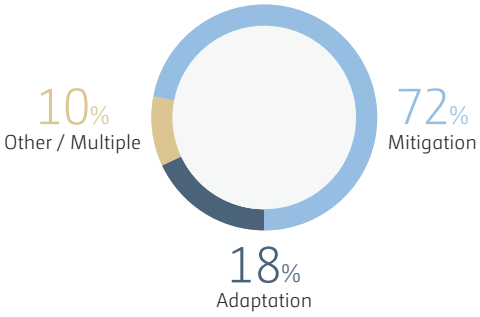
Biennial Reports: 2011



Biennial Reports: 2012

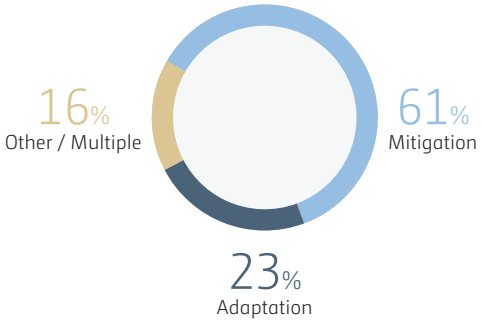


Fast Start Finance (2010 – 2012)



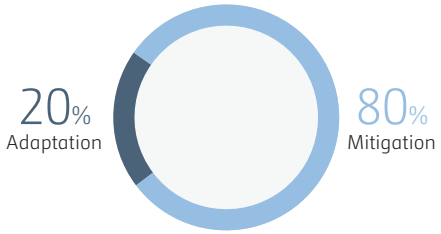
Data source: WRI ODI IGES

Multilateral Climate Funds (2006 – 2014)



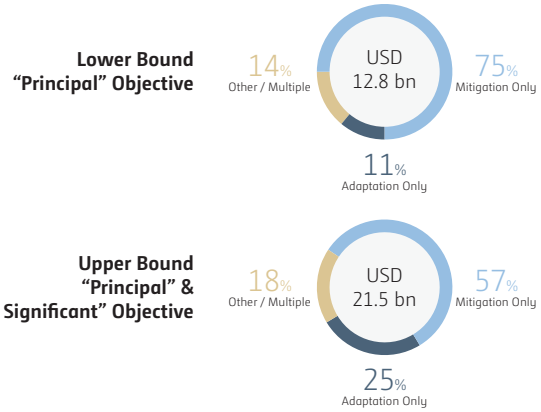
Data source: CFU, 2014

MDBs 2012



Data source: MDB Report 2012

OECD CRS (2010-2012)



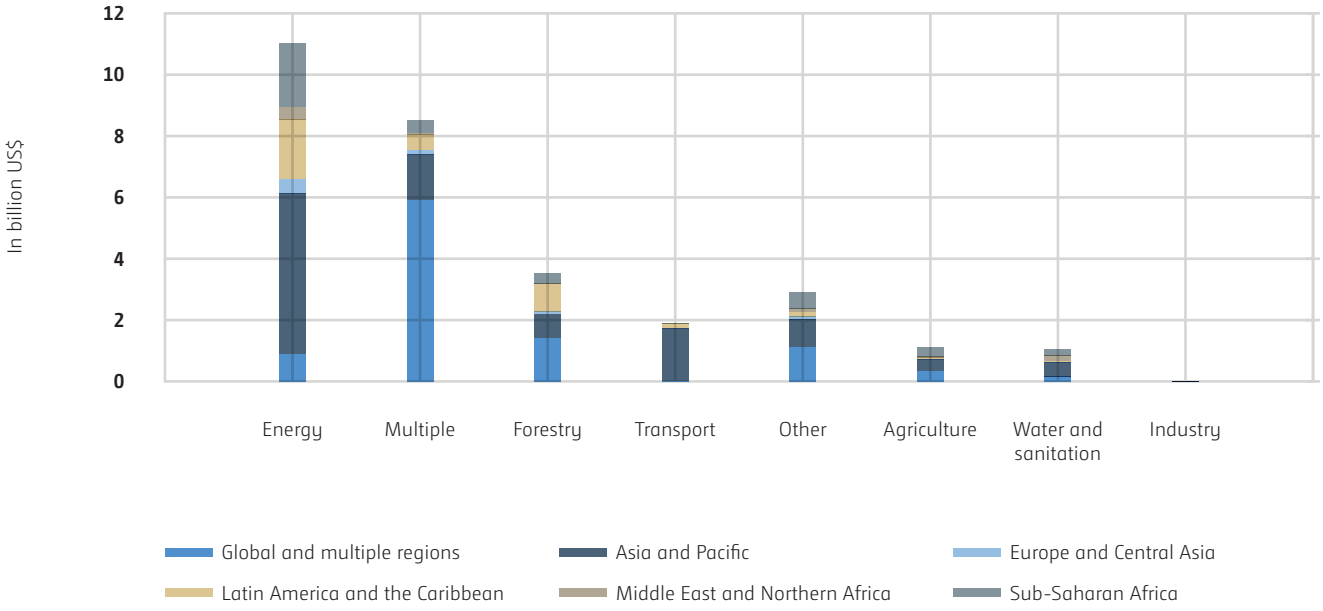
Data source: OECD CRS (2014)

168. Across all datasets, the largest share of climate finance has supported mitigation. But underlying data suggests that finance has, appropriately, supported different objectives in different regions and priority countries. Categorisation affects outcomes: datasets on the FSF period counted REDD-plus finance as mitigation finance. In contrast, many countries have reported REDD+ as contributing to multiple objectives in their BRs, which results in an increase in the share of finance with cross-cutting objectives, and a reduction in mitigation finance. Much REDD-plus finance is directed to Latin America as part of efforts to protect its tropical forest, particularly in the Amazon region. Countries in the Middle East and North Africa and Sub-Saharan African regions have received more adaptation finance, reflecting their vulnerabilities.

169. A related consideration is the sectoral distribution of finance. Figure III-6 presents the sectors that FSF has targeted to the extent that present reporting allows. It confirms that energy has been a priority sector for spending in most regions. Transport, a sector with many co-benefits but where causal links to climate change impacts can be harder to prove definitively, received relatively modest funding. Substantial adaptation finance targets water and sanitation. Many programmes target multiple sectors.

Figure III-6.

Sectorial climate finance by regions during FSF (2010-12)



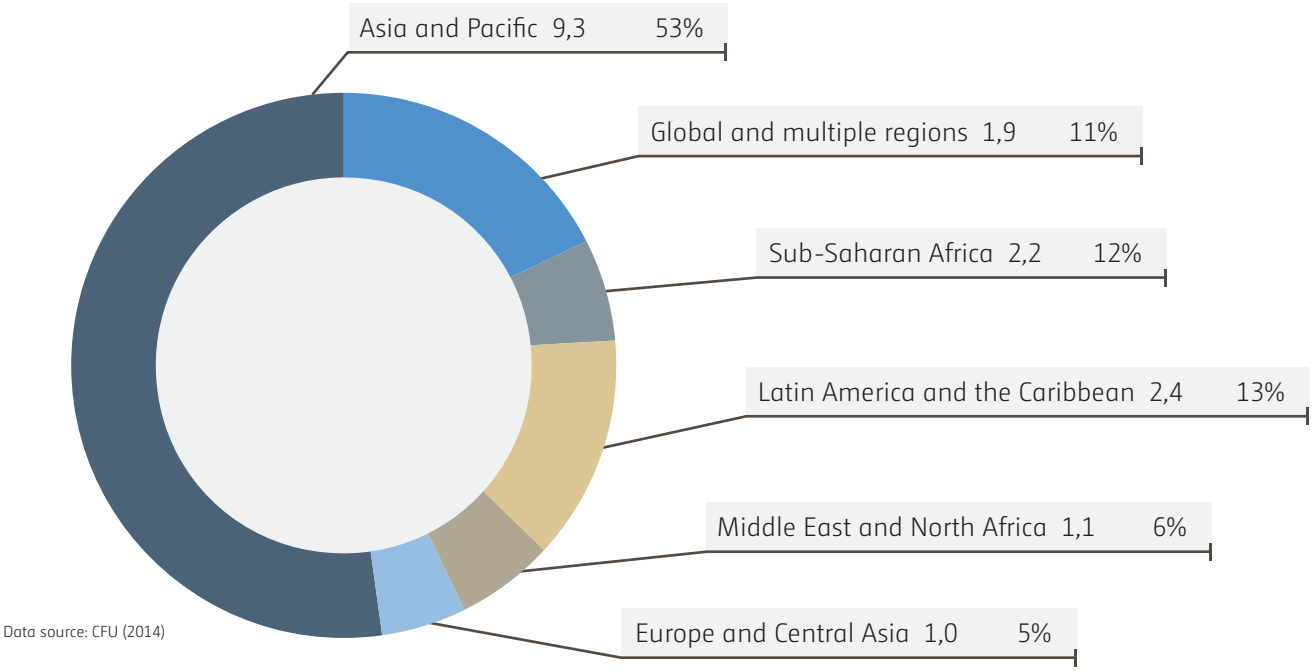
Data source: UNFCCC (2012)

3.3.2 Geographic distribution of climate finance

170. Figures III-7 to III-9 analyse the geographic distribution of different sources of climate finance. They suggest that in general, the largest share of funding from dedicated climate funds, FSF, and climate-related development assistance appears to have been directed to the countries of the Asia and Pacific region (38–53%). A significant share (11–13%) of funding has been directed to global programmes that target multiple regions. The countries of Latin America and the Caribbean and Sub-Saharan Africa appear to receive broadly comparable shares of the finance delivered (12–13%) through multilateral climate funds and FSF. In the case of climate-related ODA, African countries appear to receive more than 25% of the funding reported.

Figure III-7.

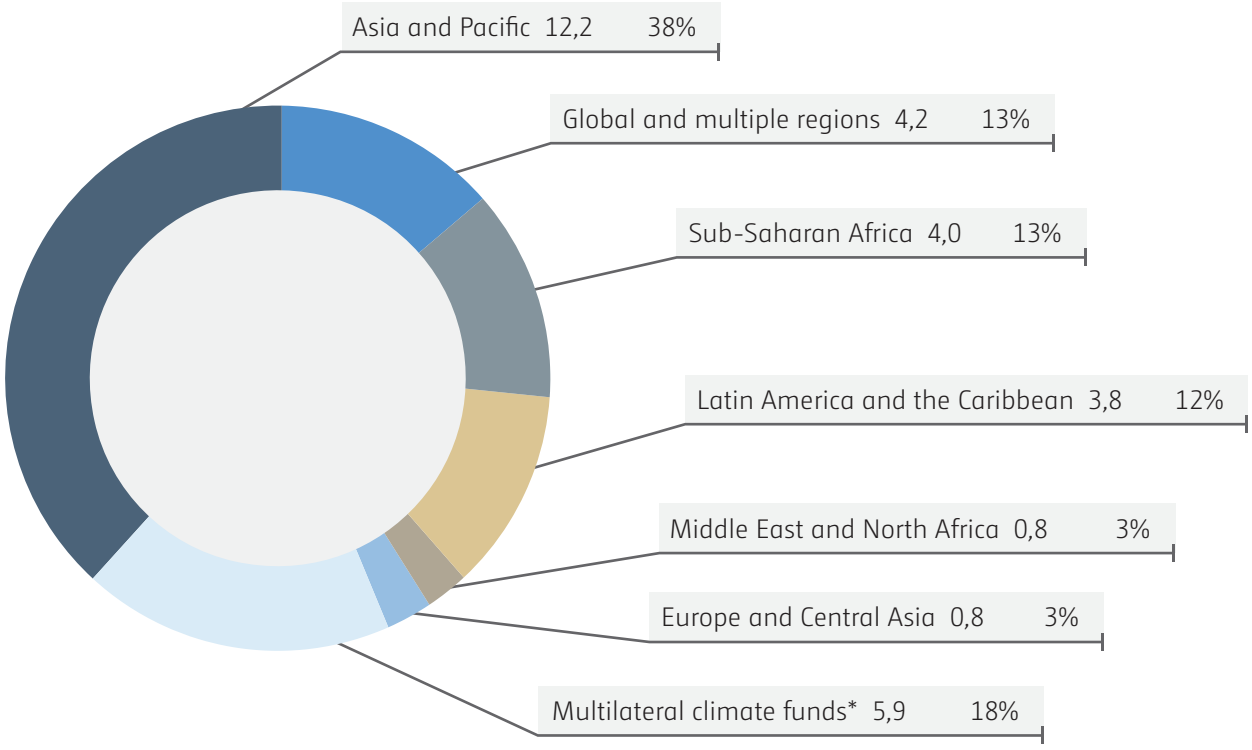
Dedicated Climate Funds (including the GEF, LDCF, SCCF, AF, CIFs) 2010 – 2012 US$ billion



Data source: CFU (2014)

Figure III-8.

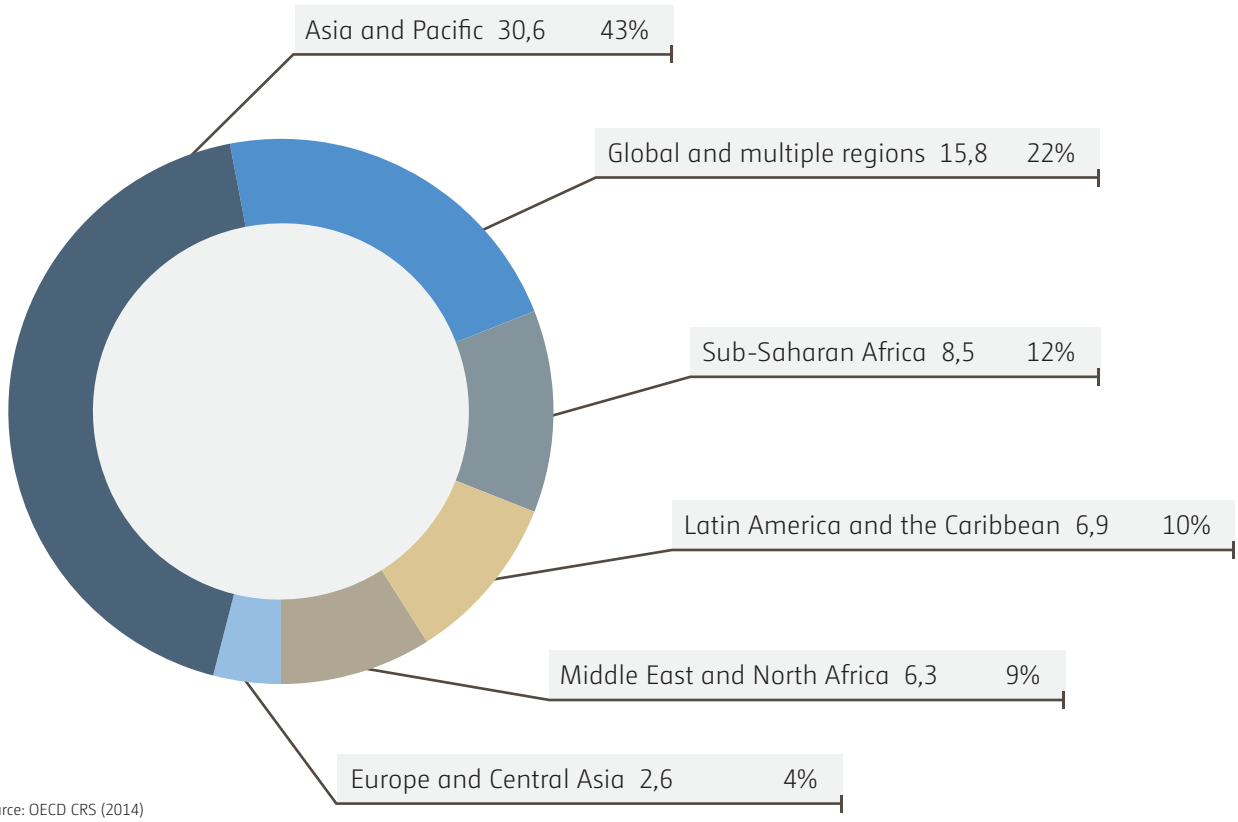
Fast Start Finance (2010 - 2012) US$ billion



Data source: UNFCCC (2012) ODI WRI IGES

Figure III-9.

Global distribution of principal and significant climate relevant ODA (2007 – 2012) US$ billion



Data source: OECD CRS (2014)

3.3.3 Assessing the allocation of climate finance with respect to mitigation and adaptation objectives

171. The geographic distribution of CDM projects has been analysed by several researchers. Much of the literature on regional distribution of CDM has argued that national GHG emissions (and often, more specifically, CO_2 emissions from fossil fuels or fossil fuel intensity in the economy), are one of the main drivers of project flow, in that they represent a proxy for mitigation potential (Flues, 2010; Lütken, 2011; Winkelman and Moore, 2011). In addition, studies of barriers to investment in Africa and LDCs have cited low national emissions as a key factor (Castro and Michaelowa, 2011; Ellis and Kamel, 2007; Gillenwater and Seres, 2011; Okubo and Michaelowa, 2010). Statistical analysis of CDM project distribution has suggested that Gross Domestic Product (GDP), trade, population and political freedom influence the number of projects a country will host (Flues, 2010).

172. Similar analyses for climate finance are more difficult because climate finance covers both mitigation (with a significant REDD-plus component) and adaptation. A lack of common methodologies results in poorer quality impact data for general climate finance programmes than for CDM projects. One paper uses the DAC data for bilateral support for mitigation finance to 180 developing countries for the period 1998–2010 (Halimanjaya, 2014). The results show that developing countries with higher CO_2 intensity, larger carbon sinks, and lower per capita GDP tend to receive more mitigation finance. The results must be interpreted with caution because use of the Rio Markers was voluntary until 2007; coverage became progressively more comprehensive from 1998 through 2007. An analysis of FSF for adaptation finds that funding has not been highly correlated with the vulnerability of recipient countries as measured by the GAIN and DARA indices (Nakhooda et al. 2013).

3.4 Areas for future work: Understanding the impact and effectiveness of climate finance, and its contribution to keeping climate change within two degrees centigrade

173. An important question posed at the outset of the BA was whether it was possible to assess whether climate finance is helping to achieve the overarching goal of the Convention of keeping climate change within 2 degrees. This is a global goal, which must be understood in the context of a sound understanding of global total climate finance flows. As the overview of current climate finance flows and preceding assessment of the scale of climate finance makes clear, we lack the information to make a precise assessment in part because of a limited understanding of finance for climate change responses in both developed as well as developing countries. For both developed and developing countries, finance can be both a driver of climate action, as well as a result of climate action. Private finance, in particular, responds to policy and regulatory signals and institutional factors which in turn shape risks and returns associated with investment choices. In turn, action is a result of national priorities in all countries. There is strong evidence that global emission trajectories are growing, and that the impacts and costs of climate change are increasing, which suggests that global finance for climate action is presently inadequate to achieve this goal.

174. These questions reflect the interest that all countries have in understanding the impact and effectiveness of finance. This section presents insights into these three linked questions of ownership, adaptation impact, and mitigation impact based on insights from practice to date and related literature. It then considers current approaches to assessing mitigation impact, adaptation impact, and leverage of additional finance, particularly from the private sector. It concludes with reflections on the ownership of climate finance, a vital consideration for the effectiveness of climate finance. It considers in particular the alignment of public international climate finance with developing country needs, informed by selected case studies. Future BAs will need to advance the assessment of these critical issues.

3.4.1 Effectiveness, impact and ownership: insights from the literature

175. Effectiveness is defined in many different ways by various stakeholders. A review of the literature (Chaum et al 2011; Buchner et al 2011; Sierra et al 2013; Nakhooda 2013; Ellis et al 2013) and current debates highlights the following issues:

(a) Ownership is a paramount consideration, and includes alignment with national priorities, the use of, or close links to, national systems for spending and tracking finance, and the engagement of stakeholders across and beyond government (including private sector and civil society);
(b) The scale of the finance influences the outcomes that can be achieved;
(c) The capacity and readiness of institutions to make strategic choices about how to use finance, and in turn to oversee the implementation of programmes in alignment with national priorities;
(d) Finance interacts with policy, regulations and institutions, and can to help strengthen enabling environments for low carbon and climate resilient development;
(e) Results management is important. Most mitigation funds seek to reduce GHG emissions while most adaptation funds seek to increase the number of people with improved resilience to the impact of climate change. However, methods for accounting for impact and frameworks for reporting vary substantially across institutions and actors;
(f) Engagement of the private sector is a priority for several funds, and impact is measured in terms of leverage;
(g) Cost effectiveness is also a significant consideration, though difficult to measure.

176. In 2011 at the Busan High level forum on Aid Effectiveness, several countries signed on to the Busan Building Block on Climate Finance and Development Effectiveness. The building block builds on the Paris Principles of aid effectiveness, and proposed that to ensure effectiveness of climate finance its "use needs to be led and owned by recipient countries. This means that recipient country should be able to use the finance in line with its strategic priorities. Furthermore, climate change should not only be addressed in stand-alone climate change reports but also fully integrated into national and sectoral development plans." The Busan Building block on climate finance also proposes that finance needs to be channelled into [the] recipient country's existing systems... including "public financial management systems and national and sectoral development plans. Climate finance should not create parallel processes in isolation from the country's existing systems." Finally the building block suggests that Funders should ensure coherence in provision of finance among themselves, noting that *"as twenty "climate funds"*

Royd Moor Wind Turbines © Adrian S Jones / Flickr

and even more bilateral and multilateral donors provide climate finance, funders need to pursue a common approach in order to reduce transaction cost and excessive administrative burdens in recipient countries" (OECD 2011).[67]

177. Methodologies for assessing the impact of interventions on resilience and in supporting effective adaptation are much less developed. There is a recognition of the need for further improvement and refinement of these approaches, and specific activities are underway to address gaps related to monitoring and evaluation of adaptation. A related consideration is the need for capacity within developing countries to undertake monitoring and reporting of adaptation activities. The report briefly reviews existing practice in this regard.

3.4.2 The impact of mitigation finance: selected experiences

178. A growing number of intermediaries have begun to account for the GHG emissions associated with their investments. For many mitigation-focused funds, accounting for the GHG emission reductions that result from interventions is central to their results frameworks. GHG accounting is far from simple, as the parameters and assumptions that underpin accounting frameworks can result in widely different conclusions on emission reductions. Over the years the GEF has developed guidance and standardised tools to help its mitigation project implementers monitor emission reductions that result from its programmes. As of November 2012, IFIs including the ADB, AFD, EBRD, EIB, IDB, KfW Development Bank, IFC, NEFCO, the WB, have adopted the basic elements of a common framework for accounting for GHG emissions associated with their direct investments. This involves an "ex ante" estimate of the gross (or absolute) expected GHG emissions on an annual basis for a representative year, using an accepted international standard such as the WRI-WBCSD GHG Protocol, which includes all activities, facilities or infrastructure that the IFI is financing. These emission accounts seek to strengthen accountability for the climate footprint of their lending activities. Nevertheless, despite this emerging guidance, the use of these tools varies significantly. A recent review of GEF experience with mitigation projects, for example, noted that the inclusion of indirect emission reductions could increase the impact of a project by as much as ten-fold. Furthermore the objectives of a project affect whether such emissions count, for example, a project that expressly seeks to support replication could justifiably count these indirect emissions.[68] Processes to improve methodologies are being put in place, including through working groups created by the GEF with guidance from its Scientific and Technical Advisory Panel, but there is a need for coordination and harmonisation.

179. GHG emission accounts are often complemented with reporting on outputs, for example, MW of clean energy installed (see Table III-5). Many existing climate funds have focused on maximising the cost effectiveness of interventions in terms of the cost of a unit of emission reduction, often expressed as the cost of reducing a ton of carbon dioxide equivalent (Chaum et al 2011, Wagner 2012). Many MDBs and IFIs, for example, are now reporting on the volume of low carbon energy they are supporting as a share of their overall portfolios in the context of commitments to increase their support for clean energy.

67) <http://www.oecd.org/greengrowth/green-development/50145480.pdf>.

68) GEF 2013. GEF Support to Market Change in China, India, Mexico and the Russian Federation.

Table III-5.

Results frameworks of mitigation funds

CTF	SREP	GEF
Under the CTF Revised Results Framework countries are required to report against the following outcomes: (1) tons of GHG emissions reduced or avoided, (2) volume of direct finance leveraged through CTF, (3) installed capacity (MW) as a result of CTF interventions, (4) number of additional passengers using low carbon public transport as a result of CIF intervention, (5) annual energy savings as a result of CTF interventions (GWh). Investment plan guidelines require evidence of poverty reduction and co-benefits by prioritizing activities that: (i) help reduce poverty, by enhancing economic growth or by improving services to the poor, and/or (ii) provide local or regional environmental benefits, such as improved air or water quality, or biodiversity benefits" (CIF 2012).	The SREP Revised Results Framework is structured around: A) Transformative impact level: 1) A national measure of 'energy poverty', such as the Multi-dimensional Energy Poverty Index (MEPI) or an equivalent, 2) Annual electricity output from renewable energy, in GWh, 3) Increased public and private investments in targeted subsector(s) per country per year (USD). B) Increase the supply of renewable energy and increase access to modern energy services: 1) Annual electricity output from renewable energy as a result of SREP interventions (GWh), 2) Number of women and men, business and community services benefitting from improved access to electricity and fuels as a result of SREP interventions.	The GEF 5 Climate Focal Area Framework is structured around expected objectives, outcomes and associated indicators for the fund as a whole. All projects are not required to address all objectives. Goal: To support developing countries and economies in transition toward a low-carbon development path. Impacts: Slower growth in GHG emissions and contribution to the stabilization of GHG concentrations in the atmosphere. Key Indicator: Tons of CO_2 equivalent avoided (both direct and indirect) over the investment or impact period of the projects. Key Target: 500 million tons under the USD4 billion scenario and 600 million tons under the USD 4.5 billion scenario.

3.4.3 The Impact of Adaptation Finance: Selected Experience

180. The ambiguity of adaptation as a concept complicates understanding of how to finance it most effectively. In practice, adaptation and resilience building activities within countries may be difficult to distinguish from activities which contribute to "good" development (Jones et al 2012, Fankhauser and Burton 2011). Conventional development interventions, such as those that support sustainable livelihoods, social protection, or disaster risk reduction programmes, can strengthen resilience and adaptive capacity, often without explicitly recognising it (Levine et al. 2011).

181. The GEF-managed LDCF and the SCCF frame their adaptation interventions in terms of seeking to "support developing countries to become climate resilient by promoting both immediate and longer-term adaptation measures in development policies, plans, programmes, projects and actions." While there are three objectives against which LDCF and SCCF results are assessed, there are heterogeneous sub-criteria that constitute these objectives, with a relatively lengthy and diverse list of indicators of impact against which funded programmes may report. The AF tracks progress against both outcomes and outputs against seven core results areas. Each corresponds with a more detailed set of indicators. PPCR has narrowed its results framework down to five core results areas, and developed a central score card based system to assess progress against these indicators (see Table III-6).

Table III-6.

Monitoring and evaluation frameworks of major adaptation funds

PPCR	LDCF/ SCCF	AF
1.Degree of integration of climate change in national, including sector, planning. 2. Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience. 3. Quality and extent to which climate responsive instruments/investment models are developed and tested. 4. Extent to which vulnerable households, communities, businesses, and public sector services use improved PPCR supported tools, instruments, strategies, and activities to respond to climate variability or climate change. 5.Number of people supported by the PPCR to cope with the effects of climate change. Tables for reporting and scorecards have been developed. The full framework is included in the Annex.	1. Reduce vulnerability to address the adverse impacts of climate change, including variability. 2. Increase adaptive capacity to climate change, including variability. 3. Technology Transfer: Promote transfer and adoption of adaptation technology. Each outcome area includes indicators addressing outcomes and outputs. The full results framework is included in the annex.	Outcome 1: Reduced exposure at national level to climate-related hazards and threats. Outcome 2: Strengthened institutional capacity to reduce climate risks and losses. Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level. Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors. Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress. Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas. Outcome 7: Improved policies and regulations that promote and enforce resilience measures. These outcome areas are accompanied with output areas, and specific indicators. The full framework is included in the annex below.

3.4.4 Leverage

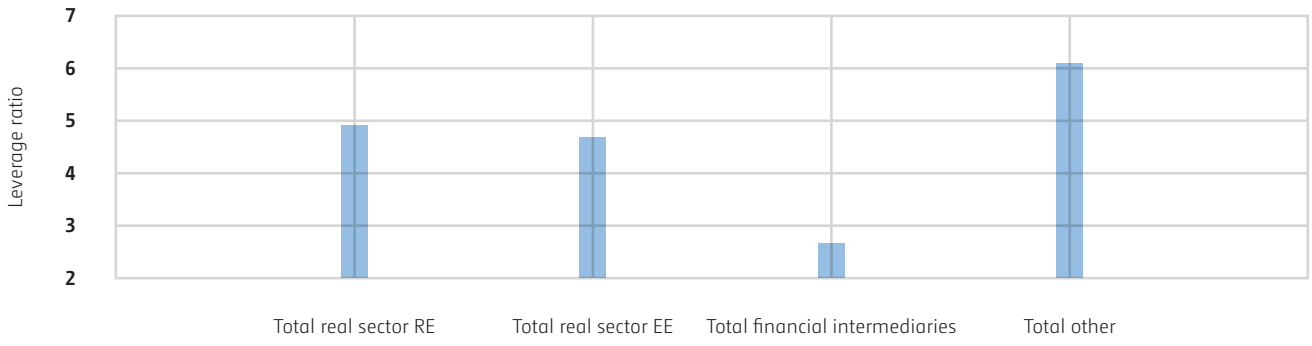
182. There is interest in understanding how to attract private investment in low carbon and climate resilient approaches. International public climate finance can fill gaps that other forms of finance (particularly private finance) would not address on their own, and mobilise additional investment by making investments viable for private actors (Buchner, Heller and Wilkinson 2012). A range of instruments may be used to address diverse risks that keep highly heterogeneous private sector actors from making low carbon and climate resilient investments. The role that the private sector can play varies across countries, however, and is shaped by the overarching investment climate. The availability of additional finance from various sources may also vary across countries, and in places where these are weak, leverage may be more difficult to achieve.

183. A few existing climate funds, such as the CIF and GEF, have placed a significant emphasis on directly leveraging private finance and mobilising co-finance. In practice, it can be difficult to ensure that climate finance does not crowd out or compete with other forms of available finance. A singular focus on leveraging private investment may have problematic outcomes. First, leverage values are rarely calculated consistently (Brown 2011). Second, it is only one indicator of effectiveness (IFC 2013, Brown 2011, Whitley et al 2014). Third, high leverage ratios may not always indicate an effective use of public finance: indeed, it may be easiest to achieve high leverage ratios where public finance is least needed. A recent review of current practice commissioned by the Nordic working group for global climate negotiations (NOAK) in collaboration with the OECD RC on private climate finance, stressed the fact that "while a number of organizations reference leverage ratios as a proxy for mobilised finance, there is a low level of disclosure on how these ratios have been derived, with limited transparency in terms of data sources and as-

sumptions. This prohibits replication of these approaches, and comparison or aggregation of different estimates."[69] However, other approaches to understanding the amount of finance actually mobilised are possible, including qualitative methods. The work of the OECD RC on private climate finance is exploring some of these options.

184. Leverage potential varies greatly across interventions, depending on a multitude of factors including technology, instrument, and country context (Brown 2011). While acknowledging these limitations, a November 2013 IFC report reviewed experience with leveraging climate finance since 2005, and concluded that "one dollar of IFC climate-related investment brings in close to 3 additional dollars from other investors on average; and that one dollar of IFC investment has itself been leveraged on the strength of IFC's shareholder capital."[70] The report further posits that these ratios may be indicative of the likely leverage that can be expected of MDB investment as a whole. Ratios vary greatly across projects, and these aggregate ratios hide as much as they reveal. Figure III-10 is taken from an IFC review of experience with leverage, and demonstrates how widely the range of potential leverage ratios may vary – from 1 to as high as 7.

Figure III-10.
Simple climate leverage ratios across IFC's climate related investments[71]



Source: Leverage in IFC's Climate-Related Investments: A review of 9 Years of Investment Activity (Fiscal Years 2005-2013)

Nature's Blend © James Marvin Phelps / Flickr

185. Key elements of the current draft GCF results framework are presented in Table III-9 below. The overarching paradigm shift objective for GCF funded mitigation activities will be to support the shift to low-emission sustainable development pathways. The core indicators for mitigation will include (i) tonnes of carbon dioxide equivalent (tCO_2eq) reduced as a result of Fund-funded projects/programmes; 2) Cost per tCO_2eq decreased for all Fund-funded mitigation projects/programmes; 3) Volume of finance leveraged by the Fund, disaggregated by public and private sources. For adaptation, the paradigm shift objective is to increase climate-resilient sustainable development (see Table III-7). The core indicator specified is the total number of direct and indirect beneficiaries; number of beneficiaries relative to total population. It is embarking on a process to elaborate methodologies and systems to this end, which may present an opportunity to set new standards and norms that may be adopted by other implementing entities and climate funds.

69) Julia Illman and Mikko Halonen, Shelagh Whitley and Nella Canales Trujillo, Practical Methods for Assessing Private Climate Finance Flows, NOAK 2014.
70) IFC 2013. Leverage in IFC's Climate-Related Investments: A review of 9 Years of Investment Activity (Fiscal Years 2005-2013).
71) Other includes carbon finance guarantees, forestry, and other "green" projects.

Table III-7.

The GCF Results Framework

	Mitigation	Adaptation
Fund Level	1. Reduced emissions through increased low-emission energy access and power generation. 2. Reduced emissions through increased access to low-emission transport. 3. Reduced emissions from buildings, cities, industries and appliances. 4. Reduced emissions from land use, deforestation, forest degradation, and through sustainable forest management and conservation and enhancement of forest carbon stocks.	1. Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions. 2. Increased resilience of health and well-being, and food and water security. 3. Increased resilience of infrastructure and the built environment to climate change threats. 4. Improved resilience of ecosystems and ecosystem services.
Project / Programme Level	5. Strengthened institutional and regulatory systems for low-emission planning and development. 6. Increased number of small, medium and large low-emission power suppliers. 7. Lower energy intensity of buildings, cities, industries, and appliances. 8. Increased use of low-carbon transport. 9. Improved management of land or forest areas contributing to emissions reductions.	5. Strengthened institutional and regulatory systems for climate-responsive planning and development. 6. Increased generation and use of climate information in decision-making. 7. Strengthened adaptive capacity and reduced exposure to climate risks. 8. Strengthened awareness of climate threats and risk-reduction processes.

3.4.5 Country ownership

186. National ownership increases the effectiveness of climate finance (Ballesteros et al 2010, OECD 2012, CIF 2012, Chaum et al 2011; Kaur et al 2013; Rogerson 2011, Glennie 2011).[72] For governments, this means articulating the national development agenda and establishing authoritative policies and strategies (OECD 2010). There is an important role for parliaments, civil society, and the private sector in efforts to develop such strategies. It was beyond the scope of this report to complete a comprehensive assessment of ownership of climate finance. However we have sought to consider the extent to which the international finance that is being directed to countries reflects and is aligned with their needs.

187. One issue of increasing interest has been devolution of management to national systems (Bird et al 2013; UNDP 2013). Questions have been raised about whether this can be consistent with the need to ensure accountable financial management and delivery of results. A growing body of research suggests that under the right circumstances, appropriate balances between such devolution and the need for accountability can be struck (Mueller et al 2014; Brown et al 2013). The following questions are important considerations in assessing ownership of climate finance (Nakhooda 2013): Have national institutions played a central role in conceptualising programmes and engaging with the fund? How closely are supported programmes aligned with national climate-related initiatives and strategies? Have key influential institutions (both within and beyond government) been engaged? The use of national level stakeholder engagement and decision-making processes to prioritise how climate finance is programmed can help increase coherence with national priorities. It can also help tailor instruments and approaches to fit national needs (Persson et al. 2009).

188. Measurement of ownership is challenging. One proxy indicator that has been proposed is to consider how much finance is channelled through national systems, or recorded in national systems (Roberts et al 2012; Bird et al 2012; UNDP 2013). This could entail a comparison of reports of international finance delivered, for example through the BRs, with reports of international finance received (e.g. forthcoming updates to NCs of developing countries). As discussed in the previous section, the BRs do not yet provide adequate detail on where finance has been spent, and in turn developing country update reports have not yet been received. Another potential

72) The Paris Declaration on Aid Effectiveness define national ownership as Partner countries exercise effective leadership over their development policies, and strategies and co-ordinate development action.

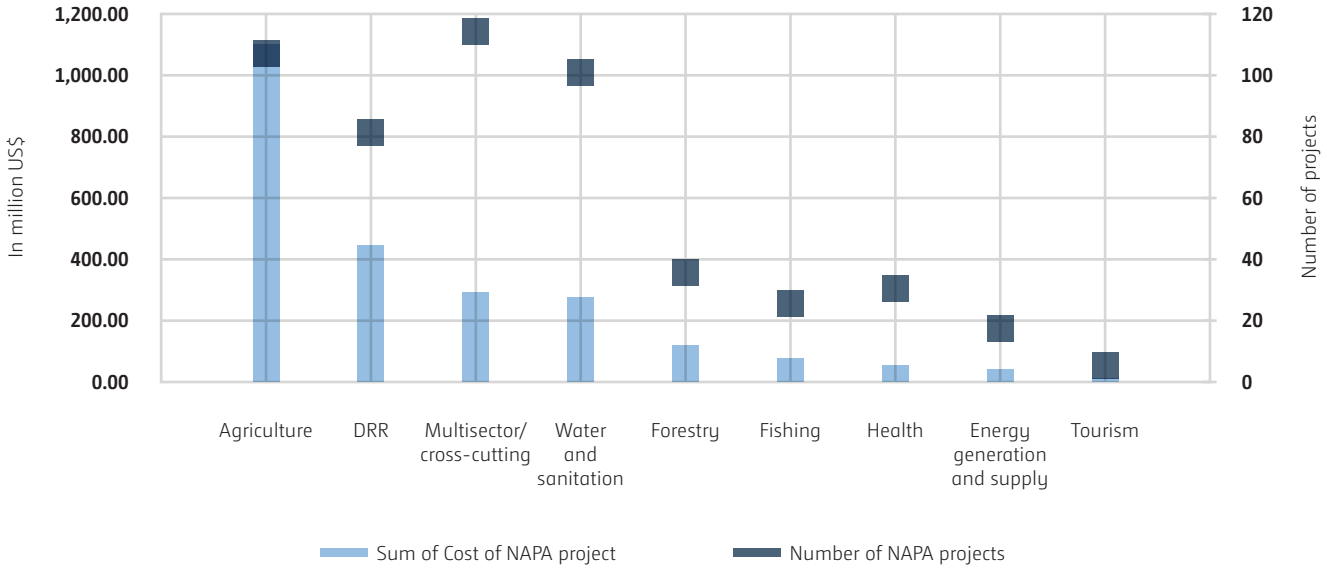
indicator of ownership is the extent to which international climate finance is aligned with recipient countries national climate change priorities. Presumably, information on national strategies and finance received if included in these NCs could present a basis for such analysis.[73]

189. Another potential proxy indicator is how much of funding is directly channelled to recipient country institutions. Data on climate-related ODA from the OECD-DAC SCR suggests that about 38% of mitigation finance and 37% of adaptation finance is channelled directly through recipient country governments. Future BAs may be better able to analyse this relationship. This is an inadequate indicator of ownership, for many reasons, including the recognition that ownership involves more stakeholders than government, and the fact that many other actors at national level including NGOs and the private sector may have an important role to play in managing finance to support a national response to climate change. However, as country experience confirms, putting in place good systems to monitor finance received through a variety of recipient institutions may help strengthen accountability and ownership within countries.

3.4.6 Alignment with needs

190. Least developed countries sought to identify their immediate and urgent needs for finance by developing NAPAs. Total adaptation urgent needs complied from NAPA's project database[74] in the first half of 2014 were roughly USD 2.4 billion. Most of the projects are adaptation measures in natural resources based sectors (see Figure III-11 , as Agriculture (46% of the total activities), mainly around food security issues; water and sanitation (12%), promoting more integrated water management; forestry (5%) mainly about forestation and reforestation, and fishing (3%).The total portfolio totals 514 projects, with an average estimated cost of USD 4.64 million. The scope of NAPAs is diverse, and the extent to which they have all reflected a practical focus on implementation varies. Some have included proposed projects where causal links with adaptation may be difficult to establish, for example 'support to eye, medical and surgical care', 'development of healthcare centres and posts', 'monitoring HIV/AIDS prevalence', or 'capacity-building for improved mental health in rural areas'. Figure III-11 below summarises NAPA financing priorities. The LDCF has supported programmes aligned with NAPAs in all LDCs. The case studies in this section provide further insight on this issue.

Figure III-11.
NAPA Projects and Costs by Sector



Source: Compilation of NAPAs completed for this report by June 2014

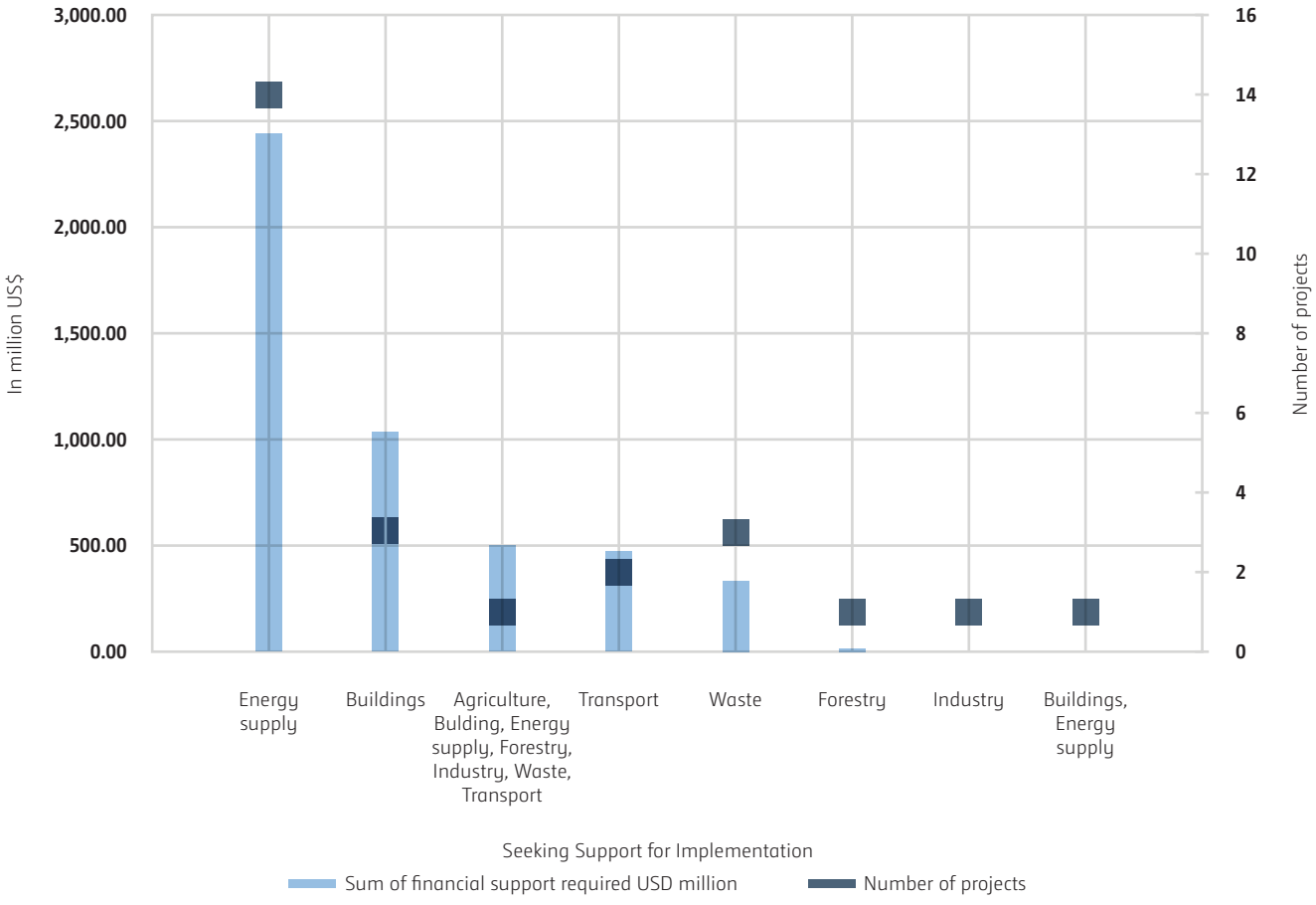
73) Forthcoming work from research collaborators such as ODI will analyse the alignment of funding from international climate funds with the national climate change priorities of the 12 largest recipients of adaptation and mitigation finance.

74) NAPA priorities database, <http://unfccc.int/4583>.

191. Developing countries have also been invited to submit Nationally Appropriate Mitigation Actions (NAMAs) for support. As of May 2014, a total of 26 NAMA registered projects were seeking for financial support for implementation (see Figure III-12) , totalling almost USD 5 billion. Energy supply (50% of the total funding request) dominates mainly with requests for energy efficiency (USD 1,527 million). Renewable energy is also present with USD 700 million requested (6 projects). Energy efficiency in building represents also the 21% of the total requested (3 projects). The levels of support that have been requested for NAMAs as of May 2014 seem to be within the range of the scale of public mitigation finance presently going to developing countries, although there may be a greater focus on access to grant finance.

Figure III-12.

NAMAs seeking financial support for implementation by sector (May 2014)



Source: UNFCCC NAMA registry June 2014

192. A macro comparison of estimated needs with finance delivered to individual countries is of relatively limited utility. To offer deeper insights into this question, we selected a sub set of the countries that have participated in either the UNFCCC supported NEEDS assessment process, or the UNDP supported Climate Change Investment and Financial Flows analysis. (See Boxes III-1, 2, and 3) The selected countries – Niger, the Maldives, Peru and Indonesia – represented a reasonable mix of income ranges (least developed, low middle income, upper mid-

dle income) and geographic distribution (Latin America, Africa, Asia, and Small-Island Developing States.) Furthermore, there was adequate literature and desk research on these countries experiences with climate finance available to allow us to do some analysis. Through these case studies, the assessment sought to understand how the needs assessments that countries are completing are informing how international finance is delivered. This analysis seeks to complement the overview of domestic spending on climate change action in developing countries presented in section 2.2.4.

Box III-1. Niger's experience with climate finance needs assessments

Experience with needs assessments:
The UNDP supported Investment and Financial Flows assessment concluded that USD 2.17 billion is needed to reduce GHG emissions in the forestry sector through reforestation (USD 266 million) and fuel wood substitution (USD 1.9 billion) by 2030. The effort built on the Niger's NAPA developed between 2005 and 2006 by the LDCF through UNDP.

Process and impact on investment:
Ownership of the NAPA beyond the Ministry of Environment has been questioned, although stakeholder consultation was documented. Questions were also raised about the analytical basis for the NAPA, that it did not reflect available livelihood security data. It identified 14 wide ranging measures related to agriculture, income generation and water management, and hydro meteorological systems, but costs were not estimated. Since 2009 Niger has also been a pilot country of the Pilot Programme for Climate Resilient (PPCR) of the CIFs. The Strategic Program on Climate Resilience (SPCR) developed for Niger identified investments of USD 125.17 million. Niger is accessing 110 million,[75] focused on water management, early warning systems, and a community action project.[76]
A lack of alignment between assessments and investment: Although the SPCR and the UNDP Needs Assessment were developed at the same time, they do not reference each other, notwithstanding that they target different sectors. Similarly the LDCF is now supporting programmes to build resilience in the agriculture sector, including for pastoral production and food security, as well as disaster risk management, suggesting limited linkages with the analytical work completed in the needs assessment. This suggests a mismatch between the needs assessment processes and actual investment decisions by some key actors in practice.

Sources: Kurz et al. 2009. Making National Adaptation Plans Work for the Poor. CARE
Gousmane and UNDP. 2011. Assessment of investment and financial flows for mitigation in the forestry, and adaptation in agriculture in Niger.

2009 World Water Day: Effects of Water Scarcity © United Nations Photo

193. The review of country experiences with needs assessments analysed as part of this technical report suggests that in many cases there is a general link between the opportunity areas that needs assessments have identified and finance received. The processes by which these needs assessments have been developed, including methodologies and approaches used, vary greatly, however, and have had a significant influence on uptake. A strong role for technically competent local institutions in the development of these assessments can strengthen the grounding and ownership of processes, for example, through strengthening interagency collaboration. The UNFCCC needs assessment in Indonesia, for example, reflects an intensive and iterative process between key stakeholders as a result of its grounding in the National Council on Climate Change (DNPI), hence following a bottom-up approach. The analysis appears to have helped inform national climate policy priorities. Subsequently the Ministry of Finance has engaged in a number of follow on efforts

75) USD 50 million in grants and USD 60 million in concessional loans.

76) The Ministries of Economy and Finance served as PPCR focal point, and development of the Strategic Program on Climate Resilience for Niger engaged Ministries of Agriculture; Environment; Water; Territorial Administration; Population; the National Environment Council for Sustainable Development as well as representatives of NGOs and private sector through public sector consultation and engagement.

Box III-2. Raising finance to meet the needs in Peru

Planning for climate finance needs:

Peru's Central Reserve Bank estimates that an increase of 2°C in temperature and 20% maximum variability in rainfall by 2050 would generate a loss of 6% compared to potential GDP in 2030, whereas in 2050 these losses would be greater than 20%. This and other studies have illustrated the need to plan for climate change at a national level. Climate change has been considered in the Ministry of Environment's process of developing policies and instruments, as well as in national economic planning. As part of efforts to estimate the needs to address climate change, in 2011 the Ministries of Environment, Economy and Finance, Production and Agriculture, estimated the investment and financial flows (I&FF) needed for climate change adaptation and mitigation, specifically in the agriculture, water and fishery sectors. The Plan estimates finance needs for short and medium term action at USD 2.44 billion.

Peru's main planning instrument for climate change is the National Strategy for Climate Change, which was approved in 2003 and is under revision. A National Strategy for Green Growth is also under development, seeking to strengthen and harmonize the country's climate change, biodiversity, and desertification strategies. These strategies result from a mix of top-down and bottom-up processes, building on from existing initiatives at national and subnational levels. Peru has developed NAMAs in several sectors (transport, solid waste, energy and industry). It has also been developing regional adaptation strategies and priorities at a subnational level, as well as national adaptation plans for the agriculture, health and production sectors. In addition, it is developing a National Strategy for Forest and Climate Change, as forests and land use change are the country's largest sources of emissions. A mechanism to coordinate the planning and management of its climate change portfolio within the National Strategy for Climate Change is under consideration. This would help to improve the monitoring, accountability and impact of the resources used, and better identify gaps.

Success in accessing finance for plans:

Several results-based budget programmes within the Peruvian National System of Public Budget are directly and/or indirectly linked to climate change. Peru is currently working on a strategy to implement some of its NAMAs through these results-based budget programmes, which would increase the efficiency in resource allocation, enable expenditure tracking, and results measurement. NAMAs are being supported by donors such as Canada, Germany, Nordic countries and the UK, as well as the GEF, UNDP, MDBs and Foundations. Some of Peru's climate strategies have been developed with national budget spending, and the support of Switzerland, Germany and UNDP. The country's national adaptation plans have also been developed with public budget (and the FAO has supported the adaptation plan for the agriculture sector). These investments are already resulting in project pipelines. Peru also accesses the Forest Investment Programme, the UN-REDD, and the Forest Carbon Partnership Facility, as well as diverse bilateral financial and technical support to address emissions from land use change and forests.

Yet while access to start up finance to design NAMAs and adaptation actions seems to have been relatively successful, raising the finance to deliver and execute these actions remains a challenge. A broader need to incorporate climate change considerations into wider financing decisions, particularly as liquidity increases in the domestic finance sector, and harness national IFIs in this effort has also been recognised.

Sources:
UNDP and Ministry of Environment Peru. 2011. Peru Investment and Financial Flows Assessment.
Gastelumendi, J. et al. 2012. Climate Finance Readiness.
Naidoo, C, et al. 2014. Strategic National Approaches to Climate Finance. E3G.
Vargas, Paola. 2009. El Cambio Climático y sus Efectos en el Perú. BCRP

to understand its domestic climate finance landscape, and options for financing its climate change policy aspirations.

194. Similarly in Peru (see Box III-2), a steering committee that included representatives of key Ministries including Finance and Agriculture oversaw the UNDP supported climate change investment and financial flows analysis, which focused on adaptation in the agriculture and fisheries sectors (particularly in coastal zones). Peru has now submitted a concept for a project to strengthen coastal ecosystem and fishery resilience in partnership with the IDB. If funded, this would seem to align well with the priority areas of the UNDP supported I&FF assessment.

195. In some cases, however, the linkages seem much less clear. In Niger, for example, the priorities identified in the

UNDP supported investment and financial flows analysis do not appear to be reflected in the investment priorities that have been identified in the Pilot Program on Climate Resilience, the largest source of adaptation finance for the country. NAPA programming has of course informed the priorities of the LDCF supported programmes in the country. The engagement of stakeholders beyond the Ministry of Environment, particularly from civil society and the finance and investment communities appears to have been relatively weak.

Box III-3. Climate Finance for SIDS: The Experience of the Maldives

Assessing needs:

The Maldives was a least developed country until 2011, when it graduated to middle income status. In 2004, the Maldives was therefore eligible to access USD 200,000 from the LDCF to develop a NAPA in partnership with UNDP. A multi-disciplinary team was established to manage the process, anchored in the Ministry of Environment, Energy and Water, but including the Ministries of Tourism, Fisheries, Transport, Economy, and engaging national and subnational stakeholders. The NAPA was developed in the context of an integrated climate change strategy, and identified 12 priority projects for urgent and immediate action, requiring an estimated USD 180.3 million. In 2010, the Maldives participated in the UNFCCC supported NEEDS project; the assessment of finance needs was directly managed by the Ministry of Housing and the Environment. It built on the NAPA, to identify USD 441 million in adaptation related investment needs. The study was initiated at the same time as the Maldives announced its intent to achieve carbon neutrality by 2020 in 2009 through a zero carbon energy sector.

The links between the needs assessments and the funding that the Maldives has attracted from the international community are not always clear. But the Maldives has been relatively effective in raising international public finance. While the Maldives has not yet submitted any NAMAs to the UNFCCC registry, it is one of the 6 pilot countries for the Scaling-up Renewable Energy Programme (SREP) of the CIFs. Its SREP investment plan builds on its 2010 National Energy Policy and Strategy and proposes a portfolio of USD 138 million to which the SREP will provide USD 30 million to support grid connected PV, renewable energy (and system rehabilitation) in outer islands. The programme is led by the Ministry of Environment and Energy (MEE), with guidance from the Maldives Climate Change and Advisory Council. In addition, the Maldives has raised finance from the AF and the Global Climate Change Alliance (GCCA). Some civil society stakeholders have made the case for strengthening transparency about how funding is being used across islands at national level, and monitoring programme progress.

Sources:
Maldives UNFCCC. 2010. National Economic and Environment and Development Studies (NEEDS) Assessment.
CIF. 2013. Maldives Scaling Renewable Energy Programme Investment Plan
Transparency International Mauritius. 2012. An Assessment of Climate Finance Governance in the Maldives. <http://transparency.mv/en/climate/downloads/an-assessment-of-climate-finance-governance-in-maldives-3988c7f88ebcb58c6ce932b957b6f332>

196. Nevertheless the case studies suggest that in many countries there has been enormous effort invested in understanding the role that finance can play in enabling adaptation and mitigation. Where these processes have been robust and nationally owned, they have often supported efforts to engage with and raise funding from the international community. There is a growing acknowledgement of the need to look at how to bring international and domestic sources of finance together to enable transitions to low carbon and climate resilient development trajectories. Several countries are investing in increasingly sophisticated analysis of their options in this regard.

197. These findings resonate broadly with findings on what makes for good practice in needs assessment (UNEP Risoe 2012, GIZ 2013, Hedger et al forthcoming). They are most useful when they align with a national policy process, and engage key stakeholders in that process – including from the finance community – in a strategic and iterative manner. A recent Ecofys analysis for the European Commission highlighted the fact that there is generally very little information on the actual costs of implementation in many of the needs assessments (Roser et al 2014). Few have been completed from the perspective of an investor, and only loosely address the key issues that a potential funder would need to see addressed in order to assess whether they could support the intervention.

Box III-4. Finance for Policy Implementation in Indonesia

Understanding the climate finance landscape:

Indonesia has invested substantial efforts in developing the financial systems to help it realise its international climate change response aspirations in recent years. In 2010, Indonesia's National Council on Climate Change (DNPI) partnered with the UNFCCC to complete a first National Economic Environmental Development Study (NEEDS) in Indonesia. The study included an intensive and iterative process between key stakeholders. It estimated a need for IDR 83 trillion to implement Indonesia's mitigation goal to reduce emissions by 26% by 2020 under a business-as-usual scenario and it identified a number of existing and potential sources for climate change mitigation financing, both public and private. The Needs Assessment also highlighted the potential role of the Indonesian Climate Change Trust Fund in both coordinating flows of international finance, as well as developing innovative new approaches including through its revolving fund for low emission finance. It was prepared at the same time as several other analyses of the costs of climate change action in Indonesia, which prompted debate about underlying assumptions and methods. The analysis as a whole appears to have helped inform national climate policy dialogue.

A fiscal framework for climate finance:

The establishment of the Center for Climate Change Financing and Multilateral Policy within the Fiscal Policy Office of the Indonesia Ministry of Finance (MOF) has propelled more initiatives, including the development of a mitigation fiscal framework using the CPEIR methodology in cooperation with UNDP. The review assessed current public expenditure in the context of GHG emissions reduction targets, and considered the cost effectiveness of different mitigation actions with a focus on forestry, peat lands, energy, and transport. It concluded that current expenditures will only meet 20% of the national targets, and therefore further action and an increase in financing is likely required. It further highlighted the recognized need to make progress on fiscal reforms that will reduce subsidies for fossil fuels. A recent study by the MOF and CPI on the *Landscape of Public Climate Finance in Indonesia (Indonesian Landscape)* identified at least IDR 8,377 billion (USD 951 million) of climate finance from public sources in 2011. It found that the majority of finance came from domestic sources (66%), with international finance playing an important supplementary role, contributing an estimated IDR 2,851 billion (USD 324 million). It echoed the finding that expenditure falls below estimates of the level of annual finance required by 2020 to meet emission reduction targets. The MOF in collaboration with UNEP then developed a Low Emission Budget Tagging system focusing on mitigation expenditures to ensure future public priority spending and alignment.

Strengthening ownership:

Overall, above studies suggest that both domestic and international public finance resources have been driven to meet Indonesia's future policy needs and address priority sectors. However, spending appears to have focused on strengthening enabling environments given continuing issues with regulatory frameworks and institutional capacity. Moreover, the *Indonesian Landscape* shows that very little international finance has been channelled through national systems. This suggests a need for greater coordination between international partners and national institutions to ensure better effectiveness of international climate finance. There is often a lack of appropriate reporting of international support to national systems, meaning that Indonesia's oversight of international support was therefore sometimes limited. The MOF has now begun to establish a climate change budget tagging and performance based budgeting system to help it better monitor climate-related expenditure and associated impacts in partnership with the national development planning agency, BAPPENAS. Domestic inter-agency efforts are also underway to enhance regulations and policy to enable national financing institutions—government and non-governmental—to coordinate access and management of international climate finance.

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Chapter IV

Insights on methodologies for measurement, reporting and verification of climate finance

4.1 Introduction: Characteristics for assessing measurement, reporting and verification

198. This section provides insights on the methodological issues relating to measurement, reporting and verification of climate finance (Chapter I) based on the discussions on the different approaches used by institutions engaged in climate finance and the methodologies adopted by the COP for use by Parties when reporting climate finance to the Convention.

199. Reporting information has been a cornerstone of the Convention since its entry into force, initially in the form of GHG emissions and policies and measures, more recently with regard to data on finance. In the case of emissions there now exists a record that stretches back nearly 20 years which provides a consistent record of emissions from Annex I Parties. No record of similar length and comprehensiveness exists for finance, except for the GEF, and more recently for bilateral support as reported through the OECD-DAC and renewable energy finance as collected by BNEF. The report looks into the completeness, transparency and consistency in analyzing the data that were generated for this report. These notional suggestions are generally taken to signify that:

(a) *Completeness* means that a report should cover all relevant sources, instruments, and uses of funds (types and locations of projects). It refers to finance provided by governments and the private sector;
(b) *Transparency* means that the methodologies, processes and procedures to estimate financing should be clearly explained and that the sources of information are identified to facilitate the checking of information;
(c) *Consistency* means that a report should be internally consistent with reports of other years. A report is consistent if the same methodologies are used for all years. Under certain circumstances a report using different methodologies for different years can be considered to be consistent if it has been re-calculated in a transparent manner.

200. The overview of current climate finance flows (Chapter II) suggests that while concerted efforts are being made to collect data that meets the above characteristics, there is room for significant improvements by enhancing transparency on the definitions used in the reporting of climate finance which could increase the accuracy of combining and comparing these individual datasets as well as facilitate harmonization over time. The remainder of this subsection assesses how well the information available for this initial biennial report meets these characteristics.

4.1.1 Completeness

201. Using the distinction between global total climate finance flows and climate finance flows from developed to developing countries used in Chapter II, *completeness* may be taken to mean, in the case of global total climate finance flows, that information should be available on all important major sources, instruments, sectors and countries. And in the case of public finance flows from developed to developing countries, completeness may be taken to mean that information reported by developed country Parties should address all the elements required by guidelines adopted by the COP. In the case of global total climate finance flows, Chapter II indicates that finance data is either missing, limited or possibly overlapping when it comes to sources emitting non-CO_2 gases, adaptation, and energy efficiency. Information on investments made by emerging economies in other countries is also limited as is information on domestic public investments. It is therefore safe to say that the information relied on for this report is incomplete and therefore the global numbers reported are likely to be conservative.

202. In the case of reporting of climate finance flows from developed to developing countries, information in the fifth NCs indicates that Annex II Parties reported different details and levels of aggregation, and some did not provide the three tables on identifying contributions to the GEF and multilateral and bilateral contributions. Some Annex II Parties acknowledged that they had difficulties in identifying the share of their contributions made to multilateral organizations targeting the implementation of the Convention (UNFCCC2011). In the case of the MDBs and IDFC, reporting may not be complete as these institutions continue to wrestle with how to report investments not initially listed on their positive lists. (See Chapter I) The MDBs have addressed this issue by providing flexibility to the institutions to report in two different ways. The reporting on energy efficiency is less complete than reporting by Parties and IFIs.

4.1.2 Transparency

203. Parties and IFIs are scrutinized and urged by civil society to provide increased details about which countries, intermediaries and institutions receive finance, but also what is public finance and how effectively finance is being used at the local level. Some MDBs face an additional burden of revealing information that private companies would prefer to keep confidential. Transparency can also extend to the process involved in assembling data, components of public finance, transparency in implementation, consultations and in developing safeguards to reduce environmental and social risks to projects. Transparency therefore can encompass a range of activities.

204. There is considerable variation in the level of detailed information available from the MDBs, IDFC, OECD-DAC and UNFCCC. For example, MDBs and the OECD-DAC members have reported on finance for adaptation, but not all have disaggregated information on the activities that are covered. OECD -DAC make publicly available climate-related ODA data at the activity level, including over 50 fields of descriptive information, and publish statistical overviews on key patterns and trends. The MDBs have broken down into investment loans and technical assistance (TA), and also policy based loans to governments. Also for 2012 and 2013 there is a sector breakdown with defined subsectors. In the case of the UNFCCC, Annex II Parties generally provide aggregate data using different definitions for categories such as 'climate-specific', 'other' and other reporting category listed in the guidelines for reporting in the BRs provided in 2014, In other cases, 'other' is reported for up to 20% of the reported finance. In some cases Annex II Parties do not include sufficient detail on components of 'funding sources' and 'financial instruments'. There are probably different reasons for why Parties approach this issue differently including the cost of assembling data, institutional traditions and political and economic interests. Overall there are improvements that can be made to encourage transparency among all institutions.

4.1.3 Consistency

205. With the exception of the OECD-DAC and the BNEF, all the institutions identified in this chapter have only reported climate finance data for a few years.[77] Reporting on climate finance is therefore in the embryonic stage and likely to remain so as institutions slowly improve their methods in the coming years. Consequently it is difficult to assess the consistency of reporting by these institutions or by OECD members.

206. Information synthesized by the UNFCCC secretariat indicates that Parties apply different approaches and methodologies for reporting, for example, different sectoral categories, and that the reporting periods/years and currency used by Annex II Parties often differ. In some cases, Parties also use categories not listed in the guidelines for Annex II Parties.[78] These differences make it difficult to compile and synthesis information reported by Annex II Parties. It is anticipated that the experience gained using the CTF will lead to improved transparency in BRs, particularly if improvements are made to the CTF.

207. The relatively limited efforts and varying methods to collect private sector data (e.g. BNEF which mainly collects data on mitigation investments) provide few opportunities to compare data for estimating global investments in a consistent manner. This is compounded by limited access to and/or lack of publicly available data, for example, due to fees required to accessing private sector data. Another example is the IEA's method of surveying commercial organizations to estimate investments in energy efficiency products which is not replicated by any other institutions. Its success in receiving information from companies all over the world cannot easily be assessed. Similarly, the BNEF data which has been used extensively by UNEP and private clients has no competition when it comes to data on renewable energy investments. These sources are used because they are the only ones of their type.

77) The OECD-DAC has tracked some information relevant to mitigation since 1998. Tracking mitigation was made mandatory in 2007 and reporting on adaptation became mandatory for 2010. Since 2009, the ODI HBF Climate Funds Update has been reporting on finance channelled through dedicated climate funds. Since 2008, BNEF has been compiling data on private investments in renewable energy, and an increasing range of low carbon technologies and approaches. The MDBs have been reporting on their spending on adaptation since 2011 and on mitigation since 2012 IDFC members (some of which include developing country banks) have also begun to report on climate-related spending. Since 2011 the CPI has sought to aggregate information on international climate finance from an increasing number of sources.

78) FCCC/SBI/2014/INF.20/Add.1.

4.2 Efforts of public institutions[79]

4.2.1 Reporting by OECD-DAC

208. A major advantage of the DAC approach is that countries have been providing finance data on ODA activities since the 1970s (with a comprehensive coverage since 1995). It has gained wide spread acceptance among countries. The institutional arrangements and data-handling procedures are well established. In recent years it has also opened up participation to non-OECD countries and therefore has the potential to collect data from a broader set of countries.

209. There is scope for interpretation in how the markers are applied. This provides flexibility, but can lead to non-comparable data submissions from donors. In a recent independent analysis of documentation on projects in four countries, there was a difference of 8.3% in commitments between what the OECD approach indicated and what an independent review found (Caravani 2014).

210. Descriptions of Rio-marked projects that are made publically available within the OECD-DAC Creditor Reporting Sytem, are not necessarily detailed enough and do not necessarily make explicit references to the climate policy objectives of the projects. Consequently some researchers have concluded that this leads to coding errors (Michaelowa A. 2011).

211. Many countries do not report cancelled projects and the exact amount is not known. This means that the system may not be capturing 'delivered' support, but instead only committed support. The OECD- DAC receives some Rio-marked disbursement data and their coverage is improving but is currently incomplete.

212. Development partners and donors often differ on what constitutes adaptation, largely as a result of projects being marked centrally without consultation with in-country counter partners. This raises an issue of who determines what is relevant to adaptation[80] (Caravani et. al. 2014).

Blue Lake Sunrise © Charles Knowles / The Knowles Gallery

79) Information available from MDBs, the IDFC and OECD on public flows to developing countries has been developed to meet the institutional needs of those organizations and not necessarily to meet standard criteria adopted by the COP.

80) This same concern may be relevant to other IFIs.

213. OECD-DAC, the Network on Environment and Development Co-operation (ENVIRONET) and the Working Party on Development Finance Statistics (WP-STAT) have set up a Joint Task Team on the Rio Markers with the overarching goal to ensure that DAC methodologies and data remain the reference for the international community in measuring climate-related ODA and non-export credit, OOF related to climate change, and other environmental concerns. The purpose of the task team is to clarify what members, international partners and international institutions need from the Rio marker statistics, take stock of how members are reporting against the Rio Markers to the DAC, help to raise awareness and improve understanding and use of the DAC CRS, including its Rio marker data, identify necessary refinements to data collection, aggregation and disaggregation methods and propose ways to improve the quality, robustness and relevance of DAC Rio marker statistics (OECD 2013b).

4.2.2 Reporting by Multilateral Development Banks

214. The MDB reporting approach has only been in use for two years, hence it has not undergone a technical review as the UNFCCC and OECD-DAC approaches[81]. It is likely to undergo revisions once experience is gained with its use. The approach for mitigation projects is simple to use, i.e. a project either corresponds to one on the list or it does not, therefore the guess work is taken out of the classification process. This should prove easier for developing countries to use in identifying finance received and domestic finance. The challenge associated with classifying finance as "adaptation finance" is to distinguish the "adaptation" component from the wider development assistance impact of the intervention. The MDB approach therefore requires information to be included in the project document on the purpose, vulnerability and context for the intervention to justify "counting" it as adaptation finance. This promotes a level of rigor in classifying projects. The MDB's reporting faces a number of issues:

(a) MDBs provide figures for mitigation. They report on mitigation on the basis of a common list of projects. Ultimately, it is hoped that all MDBs will only use the defined list, however for regional or mandate reasons, a small volume can be reported but are allowed flexibility to report on a slightly altered list driven by their individual priorities. As this is only for less than 3% of the individual MDBs' mitigation figures, there is comparability on 97% of the activities. These "differences in published mitigation figures" are reported in the Joint Report only for transparency: for the Climate Finance figures reported in the MDB Report under the joint approach there is comparability of activities.

(b) Like the OECD, no corrections are issued in cases when a project's scope changes and when there is either an increase or decrease in climate financing,

(c) Reporting extends to economies in transition (EU13).[82] In an effort to be transparent, in 2012 the MDBs indicated that these countries received nearly USD 3 billion or about 11% of climate finance.

(d) The approach covers both the MDBs' own resources as well as external resources managed by the MDBs (such as funding from the CIF, or Carbon Funds). To prevent double counting, as external resources may already be covered in bilateral reporting, external resources managed by the MDBs are separated from MDBs' own resources.

(e) As noted above, the MDB adaptation approach is complicated, but more objective and granular compared to the OECD approach because more documentation/analysis is required before a project may be determined to address adaptation and because components, sub-components, elements or proportions of projects are required to be reported as appropriate, rather than the whole project. A more comprehensive comparison of the DAC and MDB approaches is found in OECD-DAC, 2013a, which concluded that the Rio Markers and Joint MDB approach have *"more similarities than differences"*.[83] MDBs work each year to improve their methodologies: the MDB expert groups on adaptation and mitigation finance tracking, assess the previous year's work, carry out reviews of challenging cases or sectors, and propose improvements or clarifications. The MDBs have also exchanged information on methodologies in 2013 and 2014 with the UNFCCC, OECD, CPI and IDFC climate finance tracking experts and this work continues to-date.

4.2.3 Reporting by the International Development

81) Recently, the appropriateness of projects classifications has been tested by representatives of different banks.

82) <http://www.ebrd.com/downloads/sector/sei/climate-finance-2012.pdf>.

83) It is possible to ask "Is harmonization between the DAC and the MDB approaches really necessary?" The answer is unknown. There have been few studies that attempted to address this question. One was reported upon at a meeting of the OECD Joint ENVIRONET and WP-STAT Working Session on Alternative Approaches to Track Climate Finance, held on 16 September 2013. Emerging findings of a comparison by the World Bank show an interesting contrast observed regarding the Rio marker approach, based on project objectives, vs. the WB approach based on activity lists and co-benefits. The WB system revealed a higher level of granularity, breaking projects down into sub-components but that a larger range of activities are captured under the WB approach than the Rio markers. There is year-to-year variability but in general one consistent finding was that a significantly larger number of projects were identified and "tagged" as being climate-relevant using the WB approach than with the Rio marker approach, and on a financial commitment basis, in both years financial commitments for mitigation are estimated to be higher using WB systems, whilst for adaptation 2011 estimates are slightly higher under the Rio marker approach, but 2013 estimates are slightly lower. These findings were also shared at an ENVIRONET-WP-STAT meeting in June 2014, (see meeting summary: <http://www.oecd.org/dac/environment-development/Second%20ENVIRONET-WP-Task%20Team%20Meeting%20-%20Main%20Points%20of%20Discussion_FINAL.pdf>.

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215. The relative newness of the IDFC effort makes it difficult to evaluate as no studies have been made of the IDFC methodology, including the quality of guidance provided to individual banks and training for project classifiers.

216. The IDFC notes in its most recent report that there is a need to better align future mapping studies with other common methodologies. Efforts towards aligning initiatives with similar institutions beyond IDFC members would help to produce more comparable numbers. A common set of mapping methodologies would help to align definitions of terminologies, sectors, regions, data validation processes etc.

217. The IDFC also recognizes the need to further improve data quality and consistency. The robustness of any given data collection and reporting process will depend on the quality of data being provided by participating institutions. Some issues encountered by the IDFC participants include insufficient reporting systems, lack of resources dedicated to collecting data, non-availability of data and confidentiality issues.

4.2.4 Reporting by Parties to the UNFCCC

218. In 2011 the UNFCCC secretariat reported that "although many Annex II Parties reported financial data, the detail and level of aggregation of these data vary significantly. The main challenges when comparing data across Parties included in Annex II to the Convention, in order to establish the overall trends, relate to the significant differences in the approaches and methodologies applied by the Parties. These refer to, inter alia, the sectoral categories used by Annex II Parties to aggregate their financial data, the reporting periods/years and currency used by Parties included in Annex II to the Convention, as well as the tabular and textual formats used, which are not always consistent with the format recommended in the UNFCCC reporting guidelines." Many of the issues affecting comparability in 2007 did not change in the 2011 reports (UNFCCC 2011).

219. The guidelines governing the submission of data in BRs in 2014 sought to rectify some of these problems, however preliminary information assembled in a recent compilation and synthesis document suggests that many of these reporting issues continue to be found in information reported by Annex II Parties.[84]

220. Information on financial assistance in NCs from developing countries also suffers from significant reporting issues. While the UNFCCC guidelines require non-Annex I Parties to provide information on their needs for financial resources and technical support provided by Annex II Parties, they do not request this information to be submitted in a common reporting format (UNFCCC 2007a). A look at NCs from non-Annex I Parties shows that this information, when provided, often lacks comprehensiveness and is scattered throughout NCs rather than compiled in an easy-to-find, comparable and detailed manner (UNFCCC 2002b).

4.3 Overall integrity of information

221. There is a need for more complete, consistent and transparent information on public and private expenditures in both developed and developing countries on climate change finance. Importantly, development and improvements in measurement, reporting and verification framework systems have characteristics that allow comparison of data produced using different tracking and reporting approaches (GIZ 2014). This will be highly relevant for the future BAs if they are to determine whether global investment in low carbon and climate resilient approaches is consistent with global goals, such as efforts to keep global temperature increases within 2 degrees Celsius.

222. There is arguably more granular data available on public finance related to climate change from developed to developing countries than for private data. Project level data on climate-related ODA is available for bilateral commitments from the OECD-DAC members and the OECD is increasing its coverage to capture climate-related OOF within the DAC statistical system. Similarly, MDBs and other IFIs are now compiling information on climate-related spending at the component level in developing member countries, and some independent initiatives compile information on spending through dedicated climate funds. Reporting using the CTF under the UNFCCC does not match the level of detail provided by the previously mentioned institutions as the number of sectors are more limited and in many cases project level data which serve as the basis for reports is not available. Reporting during the FSF period, however, saw many countries provide substantial details (often at the project level) on the finance they had delivered to meet their collective commitments. Over the course of the FSF period, the completeness of reporting increased significantly (Fallasch and DeMarez 2013, Nakhooda, Fransen and Kuramochi et al 2013).

223. None of the global institutions that aggregate or

84) FCCC/SBI/2014/INF.20/Add.1.

produce data used in this report provide an estimate of the level of accuracy associated with their data. At best, they provide a range and the underlying assumptions and methodologies to help the reader understand how they come up with their estimates. In summary, as in other cases, such as measuring technology transfer, there are no simple methods to obtain real time data on climate finance. There are no estimates of the number of transactions involved and there are no data to indicate the costs associated with a more accurate global system. Almost all available data relates to commitments rather than disbursements.

224. Improving the quality of financial data will require many steps over a number of years and require the cooperation of all public IFIs. The UNFCCC expert review process has just begun, but it can be expected that that process will identify a number of issues both relating to reporting and the review of financial data. It is anticipated that the SBI will assess the experience gained with the review process and be asked to recommend ways to improve the review process.

225. Given the lack of a comprehensive review process by the MDBs and the IDFC banks, a formal review of their data would enhance the confidence in their measurement and reporting of climate finance information. This could encompass a number of facets of a review including the provision of minimum guidance or principles to member banks, regarding topics such as: the comprehensiveness of the data, the classification of projects, and the approach to data handling. The OECD seems to be somewhat ahead of others when it comes to a review process, therefore they could serve as a model for other institutions. However, it should be kept in mind that reviews can be expensive and consequently the reason for the review and the extensiveness of a review process needs to be considered.

Wind Energy Project in Dewas, Madhya Pradesh (India) © Subodh Naatu / Flickr

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List of Acronyms and Abbreviations

AAU	Assigned amount unit
ADB	Asian Development Bank
ADF	African Development Fund
AF	Adaptation Fund
AFB	Adaptation Fund Board
AFD	Agence Française de Développement
AfDB	African Development Bank
AR	Assessment Report
BNEF	Bloomberg New Energy Finance
BRICS	BRICS (Brazil, Russia, India, China and South Africa) countries
BR	Biennial report
BUR	Biennial update report
CAF	Corporación andina de fomento
CDM	Clean Development Mechanism
CER	Certified emission reduction
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
COP	Conference of the Parties
CPEIR	Climate Public Expenditure and Institutional Review
CPI	Climate Policy Initiative
CRS	Creditor Reporting System
CTF	Clean Technology Fund
DAC	Development Assistance Committee
DARA-HRI	Development Assistance Research Associates - Humanitarian Response Index
DFI	Development finance institution
DNPI	Dewan Nasional Perubahan Iklim (National Council on Climate Change)
DTU	Danmarks Tekniske Universitet (Technical University of Denmark)
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
ENVIRONET	WP-STAT Network on Environment and Development Co-operation Working Party on Development Finance Statistics
ERT	Expert review teams
ERU	Emission reduction unit
ETS	Emissions trading scheme
EU	European Union
FCPF	Forest Carbon Partnership Facility
FM	Financial Mechanism
FSF	Fast-start Finance
GCCA	Global Climate Change Alliance
GCF	Green Climate Fund
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse gas
GTREI	Global Trends in Renewable Energy Investment
HBF	Heinrich Böll Foundation
HIV/AIDS	Human immunodeficiency virus infection and acquired immune deficiency syndrome
HSBC	Hongkong and Shanghai Banking Corporation
IDB	Inter-American Development Bank
IAR	Independent Assessment Report
IBRD	International Bank for Reconstruction and Development
ICF	International Climate Fund
IDFC	International Development Finance Club
IEA	International Energy Agency
IFC	International Finance Corporation
IFI	International financial institution
IPCC	Intergovernmental Panel on Climate Change
IO	International Organization
JICA	Japan International Cooperation Agency
KfW	Kreditanstalt für Wiederaufbau
KoFC	Korea Finance Corporation
LAC	Latin American Countries
LDCF	Least Developed Countries Fund
LEG	Least Developed Countries Expert Group
MDB	Multilateral development bank
NAPA	National Adaptation Programmes of Action
NC	National communication
NEFCO	Nordic Environment Finance Corporation
NGO	Non-governmental organization
NOAK	Nordic working group for global climate negotiations
ODA	Official Development Assistance
ODI	Overseas Development Institution (ODI)
OECD	Organisation for Economic Co-operation and Development
OECD-RC	OECD Research Collaborative
OECD-DAC	OECD - Development Assistance Committee
OOF	Other official flows
OPIC	Overseas Private Investment Corporation

PPCR	Pilot Program for Climate Resilience
PV	Photovoltaic
REDD-plus	Reducing emissions from deforestation and forest degradation including conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks
RMU	Removal unit
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCCF	Special Climate Change Fund
SCF	Standing Committee on Finance
SEIA	Solar Energy Industries Association
SIDS	Small-Island Developing States
SIDBI	Small Industries Development Bank of India
SPCR	Strategic Program on Climate Resilience
SREP	Scaling-up Renewable Energy Programme
tCO_2eq	Tonnes of carbon dioxide equivalent
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank
WBG	World Bank Group
WRI	World Resources Institute


United Nations
Framework Convention on
Climate Change