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TemaNord 2014:506

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ISBN 978-92-893-2702-2
http://dx.doi.org/10.6027/TN2014-506
ISBN 978-92-893-2704-6 (EPUB)

TemaNord 2014:506
ISSN 0908-6692

Layout: Hanne Lebech
Cover photo: ImageSelect

This publication has been published with financial support by the Nordic Council of Ministers. However, the contents of this publication do not necessarily reflect the views, policies or recommendations of the Nordic Council of Ministers.

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Content

Preface

There are ample opportunities to reduce greenhouse gas emissions at a relatively low cost and with co-benefits, such as improved air quality. In order to tap into this potential in many developing countries, various forms of support are needed, including financing. Developed countries have committed to mobilize large-scale flows of climate finance to developing countries for mitigation and adaptation. It is important that the available funds are spent effectively and to the extent possible leverage private sector capital, which currently constitutes a major part of global climate finance. In particular for mitigation, leveraging private capital is an important means to scale up climate finance flows.

This report identifies practical methods that could be used for assessing mobilized private climate finance, with a focus on the direct use of public finance instruments. The methods are tested on three case studies, where Nordic co-financing was used for climate purposes in developing countries. This allows the study to highlight different implications of approaches for assessing mobilized private climate finance. Through the further refinement of methodologies, public actors should be in a position to develop systems for monitoring and evaluation of finance. This would improve the understanding of the finance landscape, and the effectiveness of interventions for mobilizing private investment. I hope that the findings of this study will contribute to the development of systems for tracking mobilized private climate finance that balance transparency and resource efficiency and contribute to the overall effectiveness of climate finance.

The study has been carried out by Gaia Consulting Ltd and Overseas Development Institute (ODI) for NOAK, a working group under the Nordic Council of Ministers. The aim of NOAK is to contribute to a global and comprehensive agreement on climate change with ambitious emission reduction commitments. To this end, the group prepares reports and studies, conducts meetings and organizes conferences supporting the Nordic negotiators in the UN climate negotiations.

Our report is also part of OECD's Research Collaborative on Tracking Private Climate Finance and the first piece published in that context. I hope the report will complement other studies, and that the Collaborative can help the UN climate talks navigate through this complex, but highly important, topic.

Helsinki February 2014

Harri Laurikka
Chair of the Nordic Working Group for
Global Climate Negotiations

Summary

In accordance with decisions under the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) in Copenhagen and Cancun, developed country Parties are committed to "mobilising jointly USD 100 billion per year by 2020 to address the needs of developing countries...from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources" (UNFCCC, 2009; UNFCCC, 2010a; UNFCCC, 2012a).

In spite of this "climate finance" commitment, there is not yet a clear agreement on the types of funds that might "count" as mobilised by developed countries. In particular, it remains unclear what private finance flows could be considered under the UNFCCC agreements as having been mobilised for climate-related mitigation and adaptation action in developing countries.

To address the gaps in data, methodologies and knowledge on private climate finance flows, under the auspices of the Organization for Economic Co-operation and Development (OECD), a group of governments and researchers have established a Research Collaborative on Tracking Private Climate Finance (RC). The goal of the RC is to contribute to the development of more comprehensive methodologies and systems both for measuring private climate finance flows to, between and in developing counties, and for determining those private flows mobilised by developed countries" public interventions (OECD, 2013).

This study seeks to develop an example methodology for estimating private finance flows mobilised "directly" by developed countries through their use of public financial instruments. This represents only one aspect of the role that public finance and support may play in mobilising private investment in climate change, and a relatively narrow emphasis. It is nevertheless a critical aspect, to which actors have taken widely divergent approaches that warrant scrutiny and analysis.

Our research will be complemented through the work program of the RC which will include a broader review of approaches for measuring mobilised private climate finance arising from public support, including through the use of these direct instruments alongside "indirect" interventions, such as support for institutional strengthening, policy, and underly-

ing market conditions, to be developed by the other partners within the RC including the World Resources Institute (WRI) and the OECD.

We began with an extensive literature review to identify approaches used by bilateral and multilateral institutions to assess mobilised private climate finance flows (see Chapter 2). The literature review concluded that while a number of organisations 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 assumptions. This prohibits replication of these approaches, and comparison or aggregation of different estimates. However, the literature review did identify examples of where private finance mobilised was estimated in a more transparent manner, in the case of estimated private co-financing. Through the review, we identified an initial typology of "direct" public finance instruments that could be reviewed in the context of estimating private co-financing. These included: grants, debt, equity, guarantees and insurance.

The literature review also identified ten methodological considerations (see Chapter 3) that are likely to be integral to estimating mobilised private climate finance. We then proposed an example methodology that could be adapted to track directly mobilised private investment in developing countries based on these ten considerations and the typology of interventions. The example methodology contains a relatively simple calculation,[1] taking into account a range of options for the 10 considerations:

- Definition of private finance (3 options).
- Definition of public finance (1 option).
- Additionality (1 option).
- Attribution (2 options).
- Timing (1 option).
- Definition of recipient (2 options).
- Climate specificity (1 option).
- Project sub-components (1 option).
- Currency (1 option).
- Calculation (3 options).

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[1] Mobilised private climate finance = Private finance identified * (Nordic[a] government finance identified/Total finance identified, net of private finance identified).

[a] It should be noted, that whilst this study was conducted to apply in the Nordic context, the results as well as the tested methodology can be applied more widely (e.g. by replacing "Nordic" with "developed country" in the presented formula).

The example methodology was then tested against three Nordic case studies to understand the impact of the different considerations and assumptions on outcomes (see Chapter 4). The outcomes will differ depending on which options are used, and in some instances, differences can be significant. The three case studies resulted in the following ranges of estimated mobilised private climate finance:

- Addax Bioenergy (Sierra Leone): 0 – 14.45 million USD.
- Nordic Climate Facility (NCF) Portfolio: 0.10 – 0.21 million USD.
- Nyamwamba run-of-river hydro (Uganda): 0 – 0.01 million USD.

The differences in results for the case studies are driven by a subset of more conservative options for a range of considerations that can lead to a calculation of zero or of significantly lower levels of mobilised private climate finance. These include:

- Consideration 1: Definition of private finance –when only Nordic private finance is considered;
- Consideration: 3: Additionality – where information is often not available to show that private finance would not have been mobilised in absence of public intervention;
- Consideration 4: Attribution – where only the private finance mobilised by the "lead actor" is counted; and
- Consideration 6: Definition of recipient – when the recipient is determined by the location of headquarters of major shareholders.

This study highlights the complexity of estimating mobilised private climate finance, and a number of issues that are integral for on-going research on this topic, for the multilateral negotiations under the UNFCCC, and for the internal processes of organizations providing climate finance through multilateral and bilateral channels.

The primary methodological issues for consideration include:

- the importance of being transparent about the methodology applied, data used (qualitative and quantitative), and assumptions applied, in any estimation of mobilised private climate finance.
- recognition of the relative importance of a sub-set of four methodological considerations (definition of private finance, additionality, attribution, and definition of recipient), and implications for the resulting calculation.

- implications that the choice of methodology can have on donors' investment decision processes.
- opportunities for Nordic government collaboration, particularly in terms of joint approaches.

Over the longer term, through the refinement and sharing of these methodologies (including through the OECD Research Collaborative), public actors should be in a position to develop common systems and incentives for monitoring and evaluation (M&E) of finance, thereby enabling a clearer understanding of the landscape of finance within a given project or programme, and the effectiveness of these interventions in mobilising private investment.

List of abbreviations

AAU	Assigned Amount Unit
ADB	Asian Development Bank
AfDB	African Development Bank
AGF	UN Secretary-General's Advisory Group on Finance
AMC	Advanced Market Commitments
AI	Annex I countries (to the UNFCCC)
CCD	Climate Compatible Development
CCXG	Climate Change Expert Group
CDC	UK's Development Finance Institution (CDC Group)
CIF	Climate Investment Funds
CMCI	UK's Capital Markets Climate Initiative
CPI	Climate Policy Initiative
COP	Conference of the Parties
CP3	Climate Public Private Partnership
CTF	CIF-Clean Technology Fund – or- common tabular format
CTI	IEA's Climate Technology Initiative
DAC	OECD's Development Assistance Committee
DECC	UK Department for Energy and Climate Change
DFI	Development Finance Institution
DFID	UK Department for International Development
EAIF	Emerging Africa Infrastructure Fund
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EUR	Euros
Finnfund	Finnish Fund for Industrial Cooperation Ltd
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse gas
GIZ	German Agency for International Cooperation
HQ	Headquarters
IBRD	WBG's International Bank for Reconstruction and Development
IaDB	Inter-American Development Bank
IFC	International Finance Corporation
IFI	International Financial Institution
JBIC	Japanese Bank for International Cooperation
JICA	Japan International Cooperation Agency
KfW	KfW Group, a German development bank
MDB	Multilateral Development Bank

M&E	Monitoring and Evaluation
MFI	Micro-Finance Institution
MRV	Measurement, Reporting, and Verification
NAI	non-Annex I countries (to the UNFCCC)
NAMA	Nationally Appropriate Mitigation Action
NAPA	National Adaptation Programmes of Action
NDB	National Development Bank
NCF	Nordic Climate Facility
NDF	Nordic Development Fund
NEFCO	Nordic Environment Finance Corporation
Norad	The Norwegian Agency for Development Cooperation
Norfund	The Norwegian Investment Fund for Developing Countries
ODA	Official Development Assistance
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
OFC	Offshore Financial Centre
OPIC	Overseas Private Investment Corporation
OOF	Other Official Flows
PE	Private Equity
PCF	Private Climate Finance
PPP	Public Private Partnership
RC	(OECD) Research Collaborative on Tracking Private Climate Finance
RDB	Regional Development Bank
RE	Renewable Energy
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SCF	Standing Committee on Finance
SEI	EBRD's Sustainable Energy Initiative
SIDA	Swedish International Development Cooperation Agency
SOE	State-Owned Enterprise
Swedfund	Swedish Development Finance Institution
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	US Agency for International Development
USD	United States Dollars
WBG	World Bank Group
WRI	World Resources Institute

1 Introduction

1.1 Background and objectives

In accordance with decisions under the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP) in Copenhagen and Cancun, developed country Parties are committed to "mobilising jointly USD 100 billion per year by 2020 to address the needs of developing countries...from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources" (UNFCCC, 2009; UNFCCC, 2010a; UNFCCC, 2012a).

In spite of this "climate finance" commitment, there is not yet a clear agreement on the types of funds that can be defined as mobilised by developed countries under this commitment. In particular, it remains unclear what private finance flows could be considered under the UNFCCC agreements as having been mobilised for climate-related mitigation and adaptation action in developing countries.

Also, while there is widespread acceptance that the role of the private sector will be crucial in achieving the goal of mobilising 100 billion USD per year (AGF, 2010; Mabey, 2012; UNFCCC, 2012a), and in driving a more systematic transformation of societies to low/no-carbon development pathways, it remains unclear what private finance flows could be considered under the UNFCCC agreements as having been mobilised by developed country parties for climate-related mitigation and adaptation action in developing countries.

This study by Gaia Consulting Ltd (Gaia) and the Overseas Development Institute (ODI) explores this question of mobilised private climate finance under the UNFCCC, and within the wider goal of contributing to an improved understanding of the role of public finance, actions and measures in mobilising private investment.

The tradition of Nordic countries in the area of development cooperation, characterised particularly by high ambition for transparency and effectiveness in the use and reporting of public funding, serves as a useful background for this study commissioned by the Nordic Working Group for Global Climate Negotiations (NOAK) under the Nordic Council of Ministers. The challenge of identifying and quantifying private flows, in this case private climate finance, is significant. Therefore, while the primary audience of the study are the Nordic countries, the findings are also expected to serve parties to the UNFCCC more broadly.

The overall objective of this study is to *identify and apply practical methods that could be used for assessing mobilised private climate finance, with a focus on the direct use of public finance instruments.* Our approach to achieve the project goal has been constructed taking careful note of recent, on-going and planned initiatives within this rapidly evolving area.

1.1 Scope and methodology

1.1.1 Approach and scope

This work has been completed through a desk-based review and analysis complemented by interviews with Nordic stakeholders[2] in the area of climate finance, development cooperation and business development in developing countries.

Our work builds on efforts that have already been completed on this topic, and is conducted in active collaboration with existing research initiatives in this space. This work also forms an integral part of the Organization for Economic Co-operation and Development (OECD) led *Research Collaborative on Tracking Private Climate Finance (RC),* in which ODI and Gaia are participating *research organisations* and the Nordic Council of Ministers is a *government partner*.[3]

As the instruments used by governments to mobilise private climate finance are applied across a wide range of sectors, this review could apply to tools that seek to support private investment in mitigation of greenhouse gas emissions, carbon sequestration, adaptation to specific impacts of climate change as well as to building societal and ecosystem resilience.

We also acknowledge that there is a wide range of interventions and financial instruments, and the interventions are undertaken by different actors (including bilateral and multilateral donor agencies and development banks), and under varying local conditions in developing (recipient) countries.

This study seeks to develop an example methodology for estimating private flows mobilised by developed countries through their use of public financial instruments. In the context of the wider work of the RC, this review focuses in particular on instruments that could be considered "direct" instruments of public finance, i.e. grants, debt, equity, guar-

[2] See Annex 1: Nordic stakeholder interviews.
[3] For further information on research collaborative www.oecd.org/env/researchcollaborative

antees and insurance.[4] Furthermore, our approach is based on information on finance provided at a "retail" or project/programme level. This is highlighted in the case study analysis, which presents bottom-up assessments of mobilised private climate finance. This represents only one aspect of the role that public finance and support may play in mobilising private investment in climate change, and a relatively narrow emphasis. It is nevertheless a critical aspect, to which actors have taken widely divergent approaches that warrant scrutiny and analysis.

Our research will be complemented through the work program of the RC, which will include a broader review of approaches for measuring mobilised private climate finance arising from public support, including through the use of these direct instruments alongside "indirect" interventions, such as support for institutional strengthening, policy, and underlying market conditions, to be developed by the other partners within the RC including the World Resources Institute (WRI) and the OECD.

1.1.2 Methodology and research steps

First, as part of the literature review we have examined all major publications and case studies on definitions and methodologies used for assessing private, climate-specific financial flows mobilised by developed countries.[5] The task included a review of interventions that have been attributed to developed country governments, and also published by governments and by multilateral and bilateral financial institutions. This review also explored relevant concepts and issues, related to leveraging and mobilisation, focusing on considerations of attribution, double counting, additionality, tracking and data availability.

Second, based on the review of existing research, we have developed an initial typology of "direct" public interventions and presented a list of methodological consideration in tracking mobilised private investment in developing countries. This included a review of the corresponding calculation-based approaches and methods currently being used to determine the level of private investment mobilised through these public interventions. We also examined the strengths and weaknesses of the different approaches in the context of application against government

[4] The other types of broader indirect public interventions (including policy and regulatory measures) will be addressed by other partners in the OECD Research Collaborative, in particular World Resources Institute (WRI) and OECD.

[5] See References and Annex 2: Literature reviewed.

interventions. These will be further explored by other research partners within the RC.

Third, a range of interviews with Nordic stakeholders (see Annex 1) served to gain further insights into existing methods to track climate relevant interventions and climate finance and the potential applicability and limitations of various methodologies. The interviews also contributed to a better understanding of methodological gaps and challenges of implementation in terms of data availability, resource requirements as well as the costs and benefits of different methodological choices (e.g. related to applying leverage ratios, requirements of source and recipient definitions, and the risks of double counting).

Fourth, taking note of the previous steps, we designed an example methodology with different options that could be applied for assessment of private, climate-specific financial flows mobilised by developed countries.

Finally, case study analysis, using Nordic country interventions as examples, allowed for testing the applicability of the example methodology and identifying implications of various methodological choices. By clearly setting out all data and resource requirements, assumptions made and definitions used, we believe the findings will serve not only Nordic stakeholders but also other parties to the UNFCCC more broadly.

1.1.3 Structure and content of this report

Following this introductory section, Chapter 2 presents the background as to why tracking mobilised private climate finance is an important consideration under the UNFCCC. It also outlines key concepts and definitions, laying the foundations for our analysis of mobilised private climate finance flows. Chapter 3 presents an inventory of assessment methodologies to measure mobilised climate finance. The literature review highlights key considerations for determining mobilised private climate finance, presenting methodologies and considerations applied in practice as well as potential limitations and trade-offs. Chapter 4 presents selected case studies from the Nordic countries, showcasing specific opportunities to measure mobilised private climate finance, making use of the example methodology outlined in the previous sections. These cases studies also highlight challenges related to various aspects of the methodology pointing out areas of further research. The findings and conclusions are presented in Chapter 5. Additional information is provided in Annexes.

The work was carried out during June–December 2013, in close cooperation with representatives from the Nordic Working Group for Global Climate Negotiations (NOAK)[6] to ensure that the focus and recommendations serve NOAK in its further deliberations. While the authors assume full responsibility for the analysis and views expressed, we would like to warmly thank people consulted (see Annex 1) for their time and views expressed during interviews. In addition, the cooperation with the OECD Research Collaborative and its participants has been fruitful and mutually beneficial, we believe, for further efforts in this area.

Finally, we would like to thank the following experts that have peer reviewed this study:

- Martin Stadelmann, Jane Wilkinson, Barbara Buchner, and Morgan Herve-Mignucci at CPI.
- Raphael Jachnik, Ivan Hascic, Jane Ellis, Randy Caruso, Cécile Sangaré, Mariana Mirabile, and Stephanie Ockenden at OECD.
- Shally Venugopal and Aman Srivastava at WRI.
- Smita Nakhooda at ODI.

[6] Working Group members include: Outi Leskelä (Nordic Council of Ministers), Tuija Talsi (Finnish Ministry of the Environment), Outi Honkatukia (Finnish Ministry of Finance), Erlend Grøner Krogstad (Norwegian Ministry of the Environment), Emilia Högquist (Swedish Environmental Protection Agency), Marianne Tegman (Swedish Environmental Protection Agency) and Henrik Jepsen (Danish Ministry of Climate, Energy and Building).

2. Tracking mobilised private climate finance

2.1 Tracking under UNFCCC

Developed countries have committed to mobilise 100 billion USD annually in long-term climate finance to address the needs of developing countries by 2020. However, recent studies show that the commitments made under the UNFCCC, and the current scale of finance, are not enough to address the mitigation and adaptation needs of developing countries. While estimates of the scale of climate financing needs vary substantially, depending upon the assumptions and methodologies used, current estimates of the costs of addressing climate change in developing countries alone range from 0.6 to 1.5 trillion USD per year (Nakhooda, 2012; Montes, 2012). These estimates are 5–10 times higher than the prospective annual flows from developed and developing countries under the UNFCCC agreements, and 3–5 times higher than estimates by the Climate Policy Initiative (CPI) of the current global climate-finance flow in 2010/11 of 364 billion USD, of which two-thirds is coming from the private sector (Buchner, et al., 2012a).

There is widespread acceptance that significant increases in financial resources are needed to help countries undertake climate compatible development (CCD). Many stakeholders have expressed the view that the majority of investment needed for CCD will need to come from the private sector (AGF, 2010; Mabey, 2012; UNFCCC, 2012a). This is because the private sector is seen to have significant resources and capacity for investment, as well as high levels of efficiency, managerial capability and operational power that can be harnessed to achieve certain goals, including those for CCD. Expectations around the potential for private climate finance (PCF) have also arisen as a result of limited public funds in the wake of the financial crisis and parallel decline in Official Development Assistance (ODA). These expectations have placed a high premium on value for money in foreign assistance and an increasing focus on leveraging private sector financing (Sierra, et al., 2013).

Though public sector resources are small when compared to those from the private sector, they are acknowledged to play an essential role

in catalysing private sector investment and activity (Whitley & Ellis, 2012). This has also highlighted the need for greater understanding on how public finance is used to mobilise private finance towards climate change action. In particular, developed countries are interested in identifying approaches for tracking their contribution to mobilising PCF as part of their contribution to the 100 billion USD target, and efforts to address the larger financing gap. Tracking climate finance has at least the four following goals: to build trust by ensuring the delivery of financing promises; to show the feasibility and concrete benefits of CCD; to increase understanding of what it takes to use climate finance effectively; and to provide governments and investors with the tools and knowledge required to replicate and scale-up the most effective models (Mabey, 2012; Buchner, et al., 2012).

2.2 Key concepts and definitions

2.2.1 Climate finance and private climate finance

The current lack of transparency in climate finance data is the result of both technical and political barriers, which are manifested most obviously through the absence of an agreed definition of "climate finance," and of a lack in harmonised methodologies and templates for reporting and tracking (Clapp, et al., 2012) .

Past research from ODI and Climate Strategies (Whitley, et al., 2012a; Whitley & Mohanty, 2012b; Whitley, 2012c; Whitley & Mohanty, 2013; Stadelmann, et al., 2011) have suggested five characteristics of long term climate finance under the UNFCCC, based on the guidance from the Copenhagen Accord and the subsequent Cancun Agreements (UNFCCC, 2009; UNFCCC, 2010a):

- mobilised by developed countries parties,
- provided to developing country parties, taking into account the urgent and immediate needs of those that are particularly vulnerable to the adverse effects of climate change,
- balanced in allocation between adaptation and mitigation,
- committed in the context of transparency on implementation, and
- scaled up, new and additional, predictable and adequate.

The precise roles that different forms of finance will play in meeting commitments remain to be agreed by UNFCCC Parties. But there is agreement that climate finance may also include private finance, and therefore private finance that is counted towards meeting these commitments should reflect these characteristics to some extent. Several other organizations and academic institutions have attempted to define private climate finance in the context of the agreements (see Box 1).

Box 1: Example definitions for identifying mobilised private finance as part of the 100 billion USD goal under the UNFCCC

1. Originates from non-public sources (Ockenden, et al., 2012).
2. Private finance that originates from the private sector, which is not controlled by the state (Venugopal, et al., 2012).
3. The private sector includes: corporate actors, institutional investors, project developers, households, commercial financial institutions, venture capital, private equity and infrastructure funds (Buchner, et al., 2012).
4. Mobilised as a result of public intervention (Buchner, et al., 2011; Clapp, et al., 2012; Venugopal, et al., 2012; Stadelmann & Michaelowa, 2013).
5. Supported through the financing of incremental costs (Stadelmann, et al., 2011; Venugopal, et al., 2012; Stadelmann & Michaelowa, 2013).
6. North-South private flows (Stadelmann & Michaelowa, 2013).
7. Flow from developed to developing countries where there is no double counting of emission reductions. Developing countries being defined as the ones not part of the OECD. (Stadelmann & Michaelowa, 2013).
8. Supporting objectives of adaptation and mitigation in the case of the Rio Markers which are used for tagging Official Development Assistance (ODA) (OECD, 2011); or through a specific positive list of project types for mitigation and adaptation, such in the case of the Joint MDB Reports (MDB, 2012a; MDB, 2012b).

The UNFCCC Work Programme on Long Term Finance has acknowledged the need for more accurate (and comparable) information on how developed countries channel their climate finance, and for simple and manageable systems to monitor, report on and verify climate finance at the international and national levels (UNFCCC, 2012a).

Although there is strong interest in tracking mobilised private climate finance, there is a chronic lack of consistent and comprehensive data to track climate finance more generally. This is a significant barrier to understanding the effectiveness of existing public sector initiatives to support CCD. Due to issues of commercial confidentiality, this barrier to

accessing information applies to a greater degree to private finance. As a result, a number of recent initiatives have tried to address the pervasive concerns on the transparency of both public and private climate finance.

- OECD Development Assistance Committee (DAC) has been collecting statistics and monitoring aid targeting the objectives of the Rio Conventions on Climate Change since 1998 through the "Creditor Reporting System" using the so-called "Rio Markers." The DAC secretariat is working to improve the quality and use of DAC statistics on development finance and environment, including collaborating closely with MDBs and IFIs to increasingly record multilateral climate funds within the DAC statistical framework and harmonise methodological approaches. Going forward, Rio Markers are to be applied to non-export credit Other Official Flows (OOF), and the DAC is also working on improving statistics on other categories of flows such as guarantees, export credits, and public interventions that leverage private finance, including possibly identifying their relevance to climate change (OECD, 2011).
- Climate Policy Initiative (CPI) has published annual reports on the Landscape of Climate Finance in 2011, 2012 and 2013 which include both public and private flows. Through its San Giorgio Group (SGG), CPI has published a series of in-depth case studies to provide observations on how the public sector is already mobilising private investment in CCD (Buchner, et al., 2011a; Buchner, et al., 2012; Buchner, et al., 2013). Within the global landscape of climate finance to date 38% (135 billion USD on average of 359 billion USD) has been identified as originating from the public sector in 2012 with the explicit goal of catalysing PCF (Buchner, et al., 2013).
- The Overseas Development Institute (ODI) in partnership with the Heinrich Boell Foundation has established the Climate Funds Update, which tracks the activities of 22 dedicated climate funds, and has completed extensive reviews of climate finance directed from donors to both the public and private sector in developing countries during the Fast Start Finance period (2010 to 2012) (CFU, 2013).
- ODI has also established a database of private climate finance support from Germany, Japan, the UK and US to developing countries. This resource provides details of 73 interventions undertaken with the explicit goal of mobilising private climate finance that, taken together, represent 8.5 billion USD in combined public and mobilised private investment (Whitley, 2013). Of the total of 8.5 billion USD across the 73 investments reviewed, only 20% came from the private

sector, and details of private actors and specific private finance mobilised could only be identified for 16 interventions. This may be an under-estimate: there may be more investment from the private sector, but details on transaction structures and participants are not readily available in the public domain (Whitley, 2013). This early research suggests that issues of commercial confidentiality and regulatory restrictions may make tracking mobilised private climate finance even more challenging than tracking flows of public finance.

In addition, several international climate mechanisms like the Global Environment Facility, the Climate Investment Funds, and the proposed Green Climate Fund seek to deepen and strengthen or develop their engagement with the private sector. The programming of these funds provides a further opportunity to understand how public and private finance interact for climate related purposes, and apply relevant lessons to the development of existing and new mechanisms and instruments for mobilising private climate finance.

In addition to those identified above, there may be other additional public funds that are being used to mobilise PCF, but without agreement on what counts as public climate finance it is challenging to assess the effectiveness of existing initiatives by the public sector to mobilise PCF.

2.2.2 Mobilise and leverage

Though referenced in the context of the 100 billion USD UNFCCC commitment, the term "mobilise" also remains undefined, and in the context of climate finance, is often used interchangeably with the term leverage.

A report by ODI, CPI, EDF and Brookings (Brown, et al., 2011) identified the range of definitions for the term "leverage," and established that governments and financial institutions often measure mobilisation through the use of leverage ratios:

- Leverage – narrow definition: Is used in generic financial terminology to refer to the ratio of debt to equity financing for an investment: the debt which can be raised against a given equity contribution. This applies across projects and companies, but the same terminology applies to how financial institutions (such as development banks) raise money.
- Leverage – broad definition (in the context of mobilising public finance): Financial institutions apply leveraging terminology to understand how their core contributions (for example, money

provided by donor governments to a multilateral development bank (MDB)) can be invested in capital markets to create an internal multiplier effect. Similar to leveraging equity to raise debt for a project, a financial institution has the ability to leverage its own capital base against outstanding borrowings and guarantees. So an institution's leverage ratio can be seen as the ratio of outstanding borrowings and guarantees to its capital base.

- Leverage – broad definition (in the context of mobilising private finance): The term is often more broadly applied to a set of instruments provided by a financial institution that encourage and catalyse private investment by reducing investment risk or increasing project returns enough to attract private investors.

The OECD (Caruso & Ellis, 2013) has also sought to differentiate "mobilise" from "leverage" whereby "leveraging" is a term to be used in the context of discrete financial instruments, whereas "mobilising" is the provision of climate finance for developing countries through the use of finance and other interventions by developed countries.

In spite of the multiple definitions for leverage and the distinctions outlined above, the concepts of leverage and mobilisation are regularly used interchangeably, and in the context of literature on climate finance, often implicitly refer to private co-financing (Clapp, et al., 2012; Ockenden, et al., 2012; Venugopal, et al., 2012).

Also, the IFC has found that there are very few sources of reliable and consistent data on leverage in private sector climate finance (Maheshwari, et al., forthcoming). This is echoed in our research: though a number of reports within our literature review referenced leverage ratios achieved by organisations, there are a number of cases where there is no background information on how these ratios are derived or calculated, and/or there is no distinction made between private and public finance contributions (see Box 2).

Box 2: Limitations in presentation of leverage ratios (See Annex 4 for additional details and sources)

- Cases where there is no information on how leverage ratios are derived or calculated:
  - UN Secretary-General's High-level Advisory Group on Climate Change Financing (AGF) – non-concessional or partially concessional debt, grants, equity and guarantees (from MDBs).
  - Global Environment Facility (GEF).
- Cases where leverage calculation methodology is provided, but no distinction is made between private and public finance mobilised:
  - ADB – Clean Energy Financing Partnership Facility.
  - Clean Technology Fund (CTF) of the Climate Investment Funds.
  - IFC investments in forestry sector and in CHUEE (China Utility EE).
  - EBRD – leverage discussed in the context of "private sector projects' – for some project examples private sector contributions are shown, though both public and private finance are included in calculation.
  - OECD DAC – mobilised finance by guarantees

Governments are seeking a more methodical approach to assess leveraging in order to understand and compare the impacts of different public interventions that would identify mobilised finance according to some basic principles including: no double counting, demonstration of the counterfactual, evidence of financial risk mitigation and/or buying down the incremental cost, and evidence of (Brown, et al., 2011). This is what we have attempted in this paper, and our proposed approach is outlined in section 3.3, and tested against a series of case studies in Chapter 4.

2.3 Instruments – typology and definitions

Within the broad definition of mobilise or leverage, as it applies to private finance, there are a range of interventions that are used by the public sector to mobilise private investment. These include direct interventions through financial instruments such as grants, debt, equity, guarantees and insurance along with indirect regulatory, economic or information instruments. As this study is part of the broader OECD RC, this analysis will focus on direct interventions, while WRI and OECD will look at both direct and indirect interventions (See Box 3).

Box 3: Research scope – instrument types and data sets

In Scope

- Financial instruments used in direct interventions including grants, debt, equity, guarantees and insurance. (see Table 1).
- Use of financial instruments by the public sector.
- Bottom up "retail level' approaches for measuring mobilised private climate finance (using project / programmatic level data sources).

Out Of Scope (to be covered by balance of OECD RC):

- Indirect policy based interventions.
- Top down "wholesale level" approaches for measuring mobilised private climate finance (using international data sources).

Table 1: Direct financial instrument typology[7]

Financial instrument	Definition
Grants and in-kind contributions	Resources channelled without the expectation that the money be repaid. Such resources are often used to cover technical assistance and capacity building or feasibility studies. They are also often offered to complement other instruments, including concessional loans.
Debt and concessional lending	Debt refers to resources transferred with the agreement that the money will be repaid. In the case of concessional lending, this refers to debt provided on conditions more favourable than market terms. This lowers the cost of capital to all participants through low or no interest rates, longer repayment and/or grace periods, or a combination of these features. Intrinsically, concessional lending includes a grant component. Debt from the public sector and concessional lending is used when financing at market terms is not available from the private sector or would make the investment unviable.
Guarantees	Commitments in which a guarantor undertakes to fulfil the obligations of a borrower to a lender in the event of non-performance or default of its obligations by the borrower, in exchange for a fee. Guarantees can cover the entire investment or just a portion of it. Risk mitigation instruments such as guarantees focus on reducing key default risks (technology, political etc.) at various points in the financing cycle.
Equity investments	Investment into a project or asset to leverage debt and achieve better returns. Equity investors own part of the company or assets and therefore depend on the results of the project to secure a financial return on their investments; they do not have any guarantee of repayment or return. In the case of failure of a project, the debt holders involved in the project have priority on any available returns over the equity investors.

Source: Adapted from (GCF, 2013).

[7] Though they are often confused with one another – it is important to distinguish "instruments" from the "modalities' through which they can be deployed including: programme and policy loans, credit lines, swaps, performance based payments, advanced market commitments (AMCs), public private partnerships (PPPs) etc. (GCF, 2013).

3. Inventory of assessment methodologies

3.1 Key considerations for determining mobilised private climate finance

As outlined above, there has been a call for a more methodical approach to understand and compare the impacts of different public interventions in the mobilisation of private finance towards the 100 billion USD per year for climate change. To that end we have completed a literature review of over 50 sources, and worked to build on the existing analysis of ODI, OECD, CPI, EDF and Brookings and propose an example methodology to estimate mobilised private co-financing for climate specific projects and programmes.

Building on the range of considerations identified in existing discussions of the definitions of climate finance and private climate finance (see section 2.2.1 and Annex 3), this study outlines a set of ten considerations to be applied when estimating mobilised private climate finance. With the goal of developing an example methodology this review has also collected evidence for how these considerations are taken into account in existing approaches (see Table 2). Opportunities and challenges in such approaches are presented in the following sections and form the base of the proposed calculation methodology.

Table 2: Considerations for determining mobilised private co-financing for climate specific projects and programmes (see also Annex 4)

Provisions for private climate finance	Considerations	Explanation for consideration	Approaches identified (no.)	Example approaches identified[8]
Determine the nature and source of private finance and the country of origin of public finance.	1. Definition of private finance	How do you determine the source of private finance – specific private actor(s)?	7	EBRD, CPI, OECD, WRI, ODI, Climate Strategies, Univ. Zurich
	2. Definition of public finance	How do you determine the source of public finance – specific country government(s)?	4	OECD, CPI, WRI and Univ. Zurich
Demonstrate causality of the additional private funding to public finance from a developed country	3. Additionality	How do you determine if a public intervention (of any kind) was necessary in mobilising private finance? What is the counterfactual without public intervention?	8	OECD, ODI, AGF, Climate Strategies, Univ. of Zurich, WRI, GEF, UK
	4. Attribution	How can do you attribute mobilisation among specific actors in the case where multiple actors are involved in a given intervention? Thereby avoiding double counting.	5	OECD, UK, WRI, ODI, Univ. Zurich
	5. Timing	When (temporally) in the financing chain is mobilisation estimated and reported (project and financing stages, ex ante or ex post) and how are subsequent rounds of financing addressed?	3	Univ. Zurich, CPI, OECD
Determine that the recipient of the funding is a developing country party	6. Definition of recipient	How to define the final recipient of funding?	4	OECD, ODI, WRI, Univ. Zurich
Demonstrate support to climate change activities for mitigation and adaptation	7. Climate specificity	What approaches or definitions are used to determine climate specificity of an intervention?	10	OECD, CPI, EBRD, MDBs, Ecofys, IFC, WRI, Univ. Zurich, Climate Strategies, ODI.
Identify the proportion of support to each category (adaptation and mitigation)	8. Project sub-components	Do you count all or only part of an intervention's value – and if part, how is climate relevance of the sub-components valued? (as it applies to projects within programmes, or sub-components of project)	2	Ecofys, OECD
Other practical considerations	9. Currency	How are different currencies treated, that are provided over different time frames?	3	Univ. Zurich, ODI, WRI
	10. Calculation	What formula is used to determine the value of mobilised private co-financing?	10	WB, OECD, Univ. Zurich, UNEP, WEF, UK, WRI, CPI, ODI, ERBD

[8] See Annex 4 for full descriptions and sources.

3.2 Challenges for each consideration[9]

3.2.1 Definition of private finance

Tracking private climate finance is focused on being able to monitor financial flows from the private sector. However distinguishing public from private sources is not as straight forward as might be expected (Stadelmann, et al., 2011; Whitley & Mohanty, 2013). The OECD have highlighted that private and public streams are often feeding into the same climate actions, but are not always easy to separate, especially if they are transferred through funds, joint ventures, and investors in the bond and stock markets (Caruso & Ellis, 2013). Research by CPI has further highlighted that even when reviewing ownership structures the challenge remains, as a large portion of seemingly private investments could be classified as governments' direct or indirect shareholdings, as they are the main lender of private investment structures (Buchner, et al., 2012). As investment takes place at a global level, it can become difficult to determine if raised capital is attributable to developed or developing countries (Clapp, et al., 2012; Ellis & Reagan, 2012; Caruso & Ellis, 2013). This process is also challenging in the case of multinationals and when funds are channelled through intermediaries (Clapp, et al., 2012; Ellis & Reagan, 2012). Funding from "third sector" actors, for example, NGOs, are also difficult to categorise as they are neither fully public nor private funded.[10]

Recent research initiatives have also sought to classify private and public finance on the basis of the types of institutions providing finance, assigning a "default" private sector tag to these institutions. Lists of "private" funding providers include commercial banks, international financial institutions, institutional investors, private operators and developers, corporate actors, households and individuals. Other "default" private finance proxies that have been used to look at flows from a top-down "wholesale" data perspective includes Foreign Direct Investment (FDI) and Clean Development Mechanism (CDM) investment and emissions

[9] For approaches reviewed, see also Annex 3.

[10] The more conservative interpretation would be that since NGOs often rely on funding from public organisations, their funding would be considered 100% public finance. Another alternative would be to examine the funding structures of NGOs in more detail to gain insight on what is the share of public and private and make the categorisation based on which funding share is the largest. This approach would be feasible on the project level, particularly for cases involving a more limited number of actors.

reduction certificates (Buchner, et al., 2011a; Buchner, et al., 2012; Clapp, et al., 2012; Tanaka, 2012; Venugopal, et al., 2012; Buchner, et al., 2013).

In addition to the identification of the type of contributor, there have also been efforts to determine the country of origin of the private funds, to distinguish between developed and developing country sources. Considering the UNFCCC commitment for providing funding towards developing countries the origin of private sector finance might be expected to be from developed countries. However, there has been discussion within the UNFCCC negotiations for tracking also mobilised developing country private finance. As a third option, some institutions have taken a "nationalist" approach to accounting for mobilised private finance, and only include private finance from their own country. As an example JBIC only includes private sector loans from Japanese commercial banks in its estimation of mobilised funds (Caruso & Ellis, 2013).

Several approaches for determining the country of origin of private funds have been discussed including through the (a) location of the corporate headquarters, (b) location of incorporation/registration, (c) location of primary stock exchange listing (Whitley, et al., 2012a; Whitley & Mohanty, 2012b; Whitley, 2012c; Whitley & Mohanty, 2013).

3.2.2 Definition of public finance

As highlighted above, the UNFCCC agreements emphasise that climate finance (both public and private) should be "mobilised by developed countries". Climate Strategies has therefore emphasised that private actions not influenced by governments cannot be seriously considered as "mobilised," with a further clarification that only investments leveraged by bilateral and multilateral agencies (and the currently limited carbon market) can be considered as "mobilised" because they emerge as a result of public climate interventions (Stadelmann, et al., 2011). They have also suggested excluding voluntary funds, FDI and other investments unless a clear link to public policy (e.g. tax incentives, information campaign) can be made, as climate specific investments may be attractive to the private sector in the absence of developed country government support (Stadelmann, et al., 2011).

World Resources Institute (WRI) also highlights the role of public financing institutions in leveraging private capital, and includes as source of public funding the donor government; export credit and aid agencies; multilateral, bilateral and national development banks; and international entities (Venugopal, et al., 2012). In the case of multilateral funding,

the country of origin is determined by the participation or contribution of each of the involved entities (Stadelmann & Michaelowa, 2013).

In terms of public finance this study reviews: grants, debt, and equity. The value of these instruments is estimated on the basis of the face value of the instrument. There are a wider range of options discussed for measuring guarantees and insurance provided by the public sector. Some argue that these should be accounted for in terms of the financial cost to governments of providing guarantees and insurance (set-aside requirements), while other state that the full face value of the underlying instrument (or project) being guaranteed or insured (Mirabile, et al., 2013).

3.2.3 Additionality

Many organisations highlight the importance that mobilised private climate finance should only be accounted for if it is additional, i.e. only includes private finance that would have been brought into the climate change project as a result of developed country governments action, funding or measures (Ockenden, et al., 2012). This has been raised because it is often observed that the higher the levels of mobilised private finance, the less "additional" an intervention may be. High levels of private finance may indicate that investment could have happened without public intervention (Brown, et al., 2011). Lower levels of mobilised private finance may in contrast indicate the need for a public finance role, such as in the cases of introduction of new technology (Maheshwari, et al., forthcoming).

Determining the additionality of an intervention requires the estimation of a baseline scenario and/or incremental project costs, both of which can be resource and time intensive, and involve significant uncertainties. This can be further complicated (as has been seen in the context of the CDM) as these baseline scenarios and costs can vary over time as the mitigation or adaptation activity (and/or policy framework in which it takes place) evolves (Stadelmann, et al., 2011).

This review has indicated that the majority of institutions and organizations involved in providing public climate finance do not have an approach for determining baseline or incremental costs, and rarely provide an explicit rationale or the information necessary for demonstrating how their intervention has mobilised climate finance (Clapp, et al., 2012; Ellis & Reagan, 2012; Venugopal, et al., 2012; Caruso & Ellis, 2013).

Three different approaches have been identified to assess additionality of mobilised private climate finance – each of which has caveats in terms of time and resource requirements. However, none of

these present a straightforward method to determine the additionality of a given intervention.

Evidence used to demonstrate CDM additionality:

- Specific additionality assessment tools, including approaches for determining the baseline scenario, have been developed under the CDM. It has been suggested that these could be used for determining the additionality of climate finance interventions, using CDM documentation for particular project types in a particular country or region. However, due to their time and resource requirements, the CDM tools may be too onerous to be applied for tracking mobilised private climate finance (Stadelmann & Michaelowa, 2013). Nonetheless, information contained in CDM documentation may be useful for determining the additionality of public interventions.

Calculation of incremental costs:

- The GEF only considers project co-financing "when the co-financier pays for part of the incremental cost (additionality) or, more commonly, pays for part of the non-incremental cost of an activity that is a substitute for the baseline activity" (Brown, et al., 2011). The non-incremental (baseline) cost cannot be said to be additional because the baseline (with respect to which incremental costs and global environmental benefits are estimated) is by definition financially feasible (Brown, et al., 2011). However, there is limited documentation available from the GEF to demonstrate how the determination of incremental costs is made in practice.

UK approach for private equity funds:

- The UK has also suggested a bespoke approach, which it is using for its International Climate Fund, including the Climate Public Private Partnership (CP3) programme. This integrates the concept of additionality into the process of assessing how much financing its intervention has mobilised. As an example, the UK forecasts what percentage of sub-funds and direct investments would have reached financial close without intervention by the CP3. This can vary substantially according to sub-fund. For instance, DFID reported that for the CP3 Asia Fund, 60% of sub-funds and 80% of direct investments would have reached closing, and therefore that only 40%

of sub-funds and 20% of direct investment were additional (Ockenden, et al., 2012). It is still to be determined if such an approach would be applicable beyond private equity funds.

3.2.4 Attribution

Attribution of mobilised private climate finance, or avoiding double counting, is one of the most significant issues to address in the consideration of a proposed tracking methodology. It is essential that enough information is provided by each public sector actor to avoid double counting and that in case of disagreement all providers of public finance can clearly account for the flows provided and mobilised (Stadelmann & Michaelowa, 2013).

To address these concerns, the UK has suggested that where one donor may be acting and co-financing alongside a group of other public donors, the individual donor should only claim mobilisation of that particular proportion of funding. A simple pro rata attribution rule based on share of total project donor finance is proposed in first instance, applied constantly overtime (Ockenden, et al., 2012; Whitley, et al., 2012a; Whitley & Mohanty, 2012b; Whitley, 2012c; Whitley & Mohanty, 2013).

In addition to avoiding double counting, there have also been considerations that private finance should only be attributed to the leading public actor in a given transaction (Caruso & Ellis, 2013; Stadelmann & Michaelowa, 2013). As an example, the Asian Development Bank (ADB) only accounts for co-financing by private actors where the ADB acts as a general partner, excluding those where the ADB acts only as a limited investment partner (Caruso & Ellis, 2013).

3.2.5 Timing

A number of different approaches have been suggested to determine at what point in an intervention mobilised finance should be tracked, and each of these can significantly impact the amount of finance reported as mobilised (Caruso & Ellis, 2013). For example, using forecasting models to estimate mobilisation ex ante can be a relatively less costly option compared to ex post verification by a separate monitoring and evaluations team, and for sampled projects the OPIC reports a minimal amount of variation between ex ante and ex post assessments of mobilised co-financing (Caruso & Ellis, 2013). However, as ownership for both public and private can change over time, this also impacts ex ante estimates of mobilised private finance (Caruso & Ellis, 2013). Also, data on a given

intervention is often only made publicly available before or at the time of commitment, limiting ex ante assessment to the provider of funds.

For its Landscape analyses, CPI uses ex post data for the year before the publication or an average of the recent years, depending on how representative the figure is, and only the committed amounts, due to lack of disclosure in disbursed data (Buchner, et al., 2013). This has implications for finance estimates, as commitments may be disbursed over several years, which could lead to overestimating funding by double counting across years (Buchner, et al., 2013).

Finally, another approach used by the CDC excludes any investment in equity funds that predates its own investment, and applies a tapering factor that allows 100% of non-pre-existing funds to be counted for first round funds, but then discounts this by 25% for every subsequent round of funding. For example, if the CDC enters into a fund already in its third round, it will only count 50% of co-financing as having been mobilised (Caruso & Ellis, 2013).

3.2.6 Definition – recipient

The UNFCCC agreements also state that climate finance should be "provided to developing country parties, taking into account the urgent and immediate needs of those that are particularly vulnerable to the adverse effects of climate change" (UNFCCC, 2009; UNFCCC, 2010a; UNFCCC, 2012a). Developing country Parties are often defined as those not included in the Annex II of the UNFCCC, or excluding members of the OECD (Stadelmann & Michaelowa, 2013; Venugopal, et al., 2012).

As highlighted by the OECD and ODI (among others), tracking public and private flows to the final destination is not always straightforward because of commercial confidentiality, and as some finance may flow indirectly to their final destination, via public or private intermediaries or for tax reasons (Clapp, et al., 2012; Ellis & Reagan, 2012; Whitley & Mohanty, 2013).

As an example, ODI reviewed over 70 interventions by the UK, US, Germany and Japan to mobilise private climate finance between 2010 and 2012 (adding up to 8.5 billion USD including identified private finance) (Whitley, et al., 2012a; Whitley & Mohanty, 2012b; Whitley, 2012f; Whitley & Mohanty, 2013d). Through this work 17 private intermediaries were identified as playing a role in channelling funds to end recipients, projects and programmes. These fund managers may offer some benefits in terms of investment track record, regional and sector expertise, and ability to crowd in co-financing by other public sector

actors. However, the extent to which investments through private intermediaries are attracting additional private sector finance and participation is unclear – the result, in part, of a lack of information and transparency (Whitley, 2013).

Also, ODI has identified that though the recipient of climate finance may be located in a developing country, the owner of the recipient may be headquartered in a developed country, and often the country of ownership of the company is the same as the public provider of climate finance, leading to a type of "tied-aid" in the form of climate finance (Whitley, 2013). The distinction between country of location of the recipient and country of ownership is one important consideration when tracking private and public climate finance.

3.2.7 Climate specific

Two main approaches are primarily discussed for determining if an intervention is "climate specific" when data is available on a project by project basis.

The OECD's DAC tracks climate related ODA using a set of so-called "Rio Markers" (OECD, 2011). However, many actors have questioned the applicability of the Rio Markers to private finance. This is because the Rio Markers do not allow exact quantification of amounts allocated within projects specifically to address climate concerns but instead provide an indication of the extent to which donors address the objectives of the Rio Conventions in their aid programmes (Brown, et al., 2011; Clapp, et al., 2012; Ellis & Reagan, 2012; Ockenden, et al., 2012; Stadelmann & Michaelowa, 2013). There are concerns that the Rio Markers leave significant room for interpretation and also opportunity for error, do not allow for assessment of project sub-components, and are not in line with sector/project categories used by the private sector, who are often unfamiliar with terms such as mitigation and adaptation.

An alternative suggestion has been to use an agreed list of eligible technologies/project types instead (Stadelmann & Michaelowa, 2013). Fortunately such lists have been agreed and have been put into practice by a group of MDBs to review their climate specific investments in 2011 (MDB, 2012a; MDB, 2012b). This includes a positive list for mitigation activities, and a list of example project types for adaptation.

However, it is important to note that both the Rio Marker and MDB approaches only take a "climate specific" – climate positive – as opposed to "climate relevant" view of finance which would include both climate positive and negative finance (Corfee-Morlot, et al., 2009). To assess

progress toward climate compatible development, governments should seek to track all climate relevant finance. This includes both finance that is climate compatible and incompatible (green or brown), and will provide a broader data set on which to assess the effectiveness of interventions to mobilise private finance (Whitley, 2013).

3.2.8 Project sub-component

Even if an approach for determining the climate specificity is agreed, not all components of a project are necessarily climate-related (Caruso & Ellis, 2013). As a result, the IFC has developed an approach that isolates the climate component of the project for tracking and reporting purposes, determines the share of climate-specific activities within a given project, and then calculates the mobilised finance based on a pro rata share of the financing provided. For example, if the total project cost is 100, the climate component is 50, and IFC has financed 20 overall, the finance accounted for will be 10 (Höhne, et al., 2012). It should be noted that the approach for determining the share of the project that is climate specific may be subjective, and is highly dependent on project data availability.

3.2.9 Currency

Though the issue of different currencies is discussed in the literature, our review did not identify any proposed approaches for addressing currency considerations, and therefore we have developed a proposal presented below (see section 3.3).

3.2.10 Calculation

There are two significant barriers to calculating mobilised private climate finance (Whitley, 2013):

- Information on transactions involving private investment is often kept confidential.
- Many initiatives were started in the Fast Start Finance (FSF) period (2010–2012) so there is little data to draw on.

3.3 Example methodology

Based on the options and challenges described in previous sections (and Annex 3), and with the goal of providing a reasonably simple approach which takes into account resource constraints, the following example methodology (covering the ten considerations) has been outlined in order to estimate mobilised private co-financing for climate specific projects and programmes (in this case for Nordic governments).

3.3.1 Private Finance – 3 options (A in calculation below)

Identify the "private" aspect of finance provided using the following definitions:

- "Private sector capital" or "private capital": capital provided by the private sector (versus the public sector) (Venugopal, et al., 2012).
- Private sector: Sector of the economy that is not controlled by the state and comprises of a wide range of actors (Venugopal, et al., 2012). Examples include: Corporate actors, institutional investors, project developers, households, commercial financial institutions, venture capital, private equity & infrastructure funds (Buchner, et al., 2012).

Option 1
All mobilised private finance, from developed and developing countries should be included in the calculation.

Option 2
Only developed country private finance should be included in the calculation using the following guidance:

- The location of private sector is defined by location of primary headquarters (Whitley, et al., 2012a; Whitley & Mohanty, 2012b; Whitley, 2012c; Whitley & Mohanty, 2013).
- Developed country = Annex II, or OECD member countries, required under the UNFCCC to provide financial resources to assist developing countries mitigate and adapt to climate change (Venugopal, et al., 2012).

Option 3
Only Nordic country private finance should be included in the calculation using the following guidance:

- (Adapted from JBIC approach in OECD, (Caruso & Ellis, 2013)).
- The location of private sector is defined by the location of primary headquarters (Whitley, et al., 2012a; Whitley & Mohanty, 2012b; Whitley, 2012c; Whitley & Mohanty, 2013).
- Nordic country = Denmark, Finland, Iceland, Norway and Sweden.
- If there is no Nordic private finance, identified mobilised private finance = 0.

3.3.2 Public Finance – 1 option (B in calculation below)

Developed country (in this case Nordic) bilateral finance or specific developed country (or Nordic) finance provided through a multilateral agency – as source for public finance (Stadelmann, et al., 2011).

Developed country = Annex II, or OECD member countries, required under the UNFCCC to provide financial resources to assist developing countries mitigate and adapt to climate change (Venugopal, et al., 2012).

Note
For grants, debt, and equity – the total value of Nordic government finance (B) identified would be included in the calculation.

For guarantees and insurance – the total value of Nordic government finance (B) would be the face value of the instrument being guaranteed or insured (Mirabile, et al., 2013).

3.3.3 Additionality (or causality) – 1 option

Evidence provided to demonstrate that public finance is playing a role in (Brown, et al., 2011):

- Financial risk mitigation to encourage investment, lower interest rates, or increase debt provision.
- Lowering the incremental cost of the investment.

This information may be contained in business plans or through financial or barrier information within CDM documentation if the project/programme has also sought registration through UNFCCC processes. In the case studies compiled for this research, CDM additionality has

been used as a proxy to determine climate finance additionality, due to lack of better information. However, it is recognised that a more thorough review would be needed to assess additionality and this information should be directly disclosed by the provider of public funding.

3.3.4 Attribution – 2 options

Option 1
Where one donor may be acting and co-financing alongside a group of other public donors, the individual donor should only claim mobilisation of that particular proportion of funding. A simple pro rata attribution rule based on share of total project donor finance is proposed in first instance, applied constantly overtime.

See calculation for more details.

Option 2
The calculation is only completed where a Nordic government is the lead actor. Otherwise mobilised private finance = 0 (Adapted from ADB approach (Caruso & Ellis, 2013)).

3.3.5 Recipient – 2 options

Developing countries = Non-Annex I countries as defined by the UNFCCC. Broadly, this definition excludes members of the OECD countries (Annex II) and economies in transition (Venugopal, et al., 2012).

Option 1
Developing country project or programme is defined by project or programme location.

Option 2
Developing country project or programme is defined by the location of recipient primary headquarters. If the primary headquarters is not in a Nordic country, mobilised private finance = 0.

3.3.6 Timing – 1 option

Nordic government finance is identified at the point of commitment.

Exclude private finance that predates Nordic government finance, and use a tapering factor for subsequent financing rounds (1st round

100%, 2nd 75%, 3rd 50%, 4th 25% – 5th and beyond 0%) (Adapted from CDC approach (Caruso & Ellis, 2013)).

3.3.7 Climate "Specific" Definition – 1 option

Determined on the basis of the positive lists of projects using joint MDB typologies for mitigation and adaptation (MDB, 2012a; MDB, 2012b).

3.3.8 Project Sub-Components – 1 option

Determined on the basis of MDB positive lists (see consideration 8).

If the project/programme finance can be sub-divided into sub-components that are climate "specific", only the public and private finance for the subcomponent is considered.

3.3.9 Currency – 1 option

Conversion: This should be done using IMF data (IMF, 2013) – using an average weekly rate for the week of the private finance and/or public finance commitment (this can normally be determined through news releases).

Addressing inflation: If values are to be summed, these can be adjusted to reflect a single year (i.e. 2011) using Consumer Price Index data (The World Bank, 2013).

3.3.10 Calculation – 3 options (based on 3 options for private finance – see consideration 1)

Mobilised private co-financing = Private finance identified * (Nordic government finance identified/Total finance identified, net of private finance identified).

(Adapted from Ockenden, et al., 2012):

M = A*(B/C)

M = Mobilised private co-financing

A = Private finance identified

B = Nordic government finance identified

C = Total finance identified, net of private finance identified

Option 1: A = Total private finance identified (developed and developing)

Option 2: A = Developed country private finance identified

Option 3: A = Nordic country private finance identified

4. Case studies from the Nordic countries

4.1 Interviews with Nordic stakeholders

Based on interviews completed as part of this study, it can be seen that the importance of tracking climate finance is increasingly recognized across the Nordic countries. The tracking approaches and the level of systematisation still vary considerably between countries and organisations, as well as in some cases within organisations that provide and channel public climate finance to developing countries.[11] Also, if tracking of mobilised climate finance is undertaken, it rarely distinguishes between public and private funding – in some cases it is not within the mandate or of immediate interest of the respective organisation, or there are no resources or capacities for tracking.

Many institutions recognise the OEAD DAC guidelines and Rio Markers as the general guidance for tracking finance to climate specific interventions. However, while a growing body of experience exists in applying the Rio Markers, the interpretation and usage of the Markers is only beginning to be mainstreamed, and the tracking of public climate finance is standard practice in only a few Nordic organisations. There is currently limited to no tracking of mobilised private finance. Few Nordic stakeholders seem to be aware of the positive list of projects under the joint MDB typologies for tracking climate specific investments.

In order to better understand the applicability of the methodological options, we analysed three Nordic cases in-depth. Based on a number of potential cases, as suggested by the interviewees, the final selection was made with the objective to i) cover each type of instrument (equity, grants, loans, guarantee, insurance) within the scope of this study; ii) cover cases with funding for mitigation as well as adaptation; iii) include cases with funding from all Nordic countries; and iv) include one co-Nordic case. Finally, the access to publicly available and sufficiently de-

[11] For list of people consulted for this study, see Annex 1.

tailed data, served as a final criteria in the case study selection. The three case studies are presented in section 4.2 below, with key findings summarised in section 4.3.

4.2 Methodology testing: Nordic case studies

4.2.1 Addax Bioenergy (Sierra Leone)

The Addax & Oryx Group (AOG) is a privately owned investment group based in Malta. AOG initiated a bioenergy project in Makeni, Sierra Leone in 2008. The project is producing bioethanol from sugarcane for both export purposes and domestic use. In addition, renewable electricity will be generated from a biomass-fuelled plant that will power the ethanol refinery and supply electricity to the national grid in Sierra Leone. The project is expected to become operational in 2014. The project developer is a local energy company called Addax Bioenergy. This represents the largest private sector investment in Sierra Leone's agricultural sector.[12]

Table 3: Funding structure of the Addax Bioenergy project[13]

	AOG (Malta)	Swedfund	FMO (Holland)	AfDB	EAIF	DEG (Germany)	IDC (South Africa)	BIO (Belgium)	ICF (Cordiant)	Total
Type	Equity	Equity	Equity/ Loan	Loan	Loan[14]	Loan	Loan	Loan	Loan	
Amount (million EUR)	115	10	25	25	20	20	22	10	21	268

Sweden's development finance institution, Swedfund International AB, and Dutch FMO joined Addax as equity partners with a 21% equity hold-

[12] Sources: http://www.addaxbioenergy.com/en/about-us.php, http://www.aoginvest.com/en/group/vision.php, http://www.swedfund.se/en/?case=addax-bioenergy-sierra-leone

[13] Sources: http://www.addaxbioenergy.com/en/about-us.php, http://www.aoginvest.com/en/group/vision.php, http://www.swedfund.se/en/?case=addax-bioenergy-sierra-leone, http://www.afdb.org/en/topics-and-sectors/sectors/private-sector/areas-of-focus/industries-and-services/, http://www.bio-invest.be/en/portfolio/africa/details/93.html?mn=2

[14] The Emerging Africa Infrastructure Fund includes equity provided by the PIDG group, subordinated debt provided by DFIs and senior debt provided by commercial lenders and Development Finance Institutions. For more information, see: http://www.emergingafricafund.com/about-us/fund-structure.aspx

ing.[15] Other investors include the African Development Bank (AfDB), the UK Emerging Africa infrastructure Fund (EAIF), the Belgian Development Bank (BIO), the German Development Finance Institution (DEG), the South African Industrial Development Corporation (IDC) and the Cordiant managed ICF Debt Pool.

The exact sum of AOG funding was not indicated in publicly available information. There is also conflicting data on FMO funding, where sources indicate that it is part of the overall loan facility (totalling 142 million EUR) and at the same time state that FMO became an equity partner. It is known that total amount of equity is 107 million EUR and the total amount of project finance 268 million EUR.[16] AOG share has therefore been deducted by subtracting the share of the loan facility and Swedfund equity investment from the total project financing. It can therefore be seen that publicly available information is not flawless and this can raise particular challenges in applying the assessment methodology.

4.2.2 Definition – source: Private Finance (3 options)

Private actors:

- AOG (Addax & Oryx Group): corporate actor, international energy corporation, primary headquarters in Malta.
- Barclays Bank Plc: corporate actor, international bank (contribution through the EAIF), primary headquarters in the UK.
- Standard Bank of South Africa Ltd*:* corporate actor, international bank (contribution through the EAIF), primary headquarters in South Africa.

Option 1
The contributions of all three private actors are included.

Option 2
Only the contributions of developed country private actors are included, meaning that the funding provided by the Standard Bank of South Africa through the EAIF is excluded.

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[15] Source: http://www.addaxbioenergy.com/en/the-makeni-project/development-partners.php
[16] Source: http://www.cordiantcap.com/icf_debpt/addax-bioenergy/

Option 3
No Nordic private sources are identified, mobilised Nordic private finance = 0.

4.2.3 Definition – source: Public

Nordic country governments – as sources for public finance (see calculation approach):[17]

- Sweden through Swedfund (equity investment), SIDA as a contributor to the PIDG group and therefore indirectly to the EAIF and Swedish membership in AfDB (4.354% of ADF-XII).
- Finland through membership in AfDB (2.739% of ADF-XII).
- Denmark through membership in AfDB (1.891% of ADF-XII).
- Norway through membership in AfDB (4.396% of ADF-XII).

4.2.4 Additionality

An assessment of project additionality has been included as part of CDM documentation concluding that the project is additional.[18] As presented in the methodology, this has been used as a proxy.

4.2.5 Attribution

Option 1
Each donor to claim mobilisation for the share they contributed to the joint co-financing – this approach has been adopted in this case.

Option 2
One source claims FMO and the EAIF acted as co-lead arrangers for the debt financing (142 million EUR).[19] At the same time, Swedfund's case presentation states: "The Addax & Oryx Group (AOG), a leading player in

[17] Assumed that AfDB funding from this project has been taken from African Development Fund ADF-XII. Source: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB%20in%20Brief.pdf
[18] Source: TÜV Nord Certification Report No: 8000398672 – 11/418, available at: http://cdm.unfccc.int/Projects/DB/RWTUV1359583902.25/view
[19] http://www.fmo.nl/k/n114/news/view/877/538/dfis-announce-financial-close-of-pioneering-addax-bioenergy-project-in-sierra-leone.html

the energy industry in Africa, approached Swedfund to invest with them in an integrated bioenergy and agriculture project near the town of Makeni, Sierra Leone. AOG engaged Swedfund, and other DFIs, because we are willing to invest in Sierra Leone and provide the patient, long-term capital which commercial investors often are unwilling to provide, and because DFIs have a track record of encouraging sustainable business practices in developing countries." It is therefore not clear who is the lead actor.

4.2.6 Timing

AfDB funding was committed April 8th 2011[20] and ICF Debt Pool signing held on June 16th 2011.[21] Swedfund committed to equity on November 30th 2011.[22] Financial closing of the deal took place in December 2011 by which point all DFI commitments were secured. Specific dates for other DFI commitments were not available through publicly available information. However, there was only one funding round, so there is no need to apply any tapering factor to subsequent rounds.

4.2.7 Definition – recipient (2 options)

- Option 1: Defined by project/programme location: Sierra Leone.
- Option 2: Defined by ownership of recipient (location of headquarters): Addax Bioenergy 100% owned by AOG (HQ in Malta).

4.2.8 Climate specific

The project covers some 14,000 hectares of mostly unused land near Makeni, in Sierra Leone and includes the development of a Greenfield sugarcane plantation, the construction of an ethanol refinery and a biomass fuelled power plant. Sugarcane will be converted into bioethanol to principally meet demand in Europe, as well as domestic markets in Sierra Leone, helping replace dependence on fossil fuels and reduce greenhouse gas emissions. The project is expected to earn carbon credits under the United Nations Clean Development Mechanism. The project's

[20] Source: http://www.afdb.org/en/news-and-events/article/afdb-approves-eur-25-million-for-addax-bioenergy-project-in-sierra-leone-7894/
[21] Source: http://www.cordiantcap.com/icf_debpt/addax-bioenergy/
[22] Source: http://www.swedfund.se/en/?case=addax-bioenergy-sierra-leone

power plant will provide renewable electricity for the ethanol refinery and will supply energy for approximately 20% of Sierra Leone's national grid, developing and diversifying the country's energy base.[23]

MDB Typology: Biomass or biogas power that does not decrease biomass and soil carbon pools, Production of biofuels (including biodiesel and bioethanol).

4.2.9 *Project sub-components*

100% of the projects are counted (there are no details available about project sub-components).

4.2.10 *Currency*

Original data is reported in EUR. Conversion to USD is done using IMF data and the average for the week of the commitment (November 26, 2011 – November 30, 2011).[24]

Representative rates for the period November 26, 2011 - November 30, 2011				
Date	euro(EUR)	U.S. dollar(USD)		
28-Nov-2011	1,3348	1		
29-Nov-2011	1,3336	1		
30-Nov-2011	1,3418	1		
Average	1,3367			

Table 4: Currency conversion results

	AOG (Malta)	Swedfund	FMO (Holland)	AfDB	EAIF	DEG (Germany)	IDC (South Africa)	BIO (Belgium)	ICF (Cordiant)	Total
Amounts (million USD)	153.72	13.37	33.42	33.42	26.73	26.73	29.4	13.37	28,07	358.24

[23] http://www.fmo.nl/k/n114/news/view/877/538/dfis-announce-financial-close-of-pioneering-addax-bioenergy-project-in-sierra-leone.html
[24] http://www.imf.org/external/np/fin/ert/GUI/Pages/CountryDataBase.aspx

4.2.11 Calculation (3 options)

Option 1

Mobilised private co-financing = Global private finance identified in the project x (Nordic government finance identified / Total project finance net of private finance identified).

Global private finance identified in the project	AOG contribution in Project = 153.72 million USD EAIF contribution in Project = 26.73 million USD Private portion of the EAIF= 17% Barclays contribution in EAIF: 100 million USD Standard Bank contribution in EAIF: 20 million USD EAIF total : 753.2 million USD Private finance in project = 17% x 26.73 = 4.5 million USD Total private finance identified: 153.72+4.5= 158.22 million USD
Nordic government finance identified	Swedfund = 13.37 million USD *Breakdown of EAIF Nordic contribution* EAIF contribution in project: 26.73 million USD Total EAIF: 753.2 million USD[25] PIDG contribution in EAIF: 202.1 million USD =26.83% Total PIDG: 683.3 million USD[26] SIDA contribution in PIDG: 40.3 million USD = 5.9% SIDA contribution in EAIF: 5.9% x 26.83% = 1.58% SIDA contribution in project = 0.422 million USD *Breakdown of AfDB Nordic contribution* AfDB contribution in project: 33.42 million USD Total ADF-XII: 9.5 billion USD[27] Swedish contribution in AfDB: 4.354% x 33.42 million USD = 1.46 million USD Finnish contribution in AfDB: 2.739% x 33.42 million USD = 0.92 million USD Danish contribution in AfDB: 1.891% x 33.42 million USD = 0.63 million USD Norwegian contribution in AfDB: 4.396% x 33.42 million USD = 1.47 million USD Total Nordic AfDB contribution: 4.48 million USD Total Nordic government finance: 13.37+0.422+4.48 million USD = 18.27 million USD
Total project finance net of private finance identified	Total project finance = 358.24 million USD Private finance identified = 158.22 million USD = 358.24 – 158.22 = 200.02 million USD
Mobilised private co-financing	= 158.22 x (18.27/200.02) = 14.45 14.45 million USD

[25] Source: http://www.emergingafricafund.com/about-us/fund-structure.aspx

[26] Source: http://www.pidg.org/resource-library/key-documents/annual-reports/PIDG%20Annual%20Report%202012/at_download/file

[27] Assumed that AfDB funding from this project has been taken from African Development Fund ADF-XII. Source: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB%20in%20Brief.pdf

Option 2

Mobilised private co-financing = Developed country private finance identified in the project x (Nordic government finance identified / Total project finance net of private finance identified).

Developed country private finance identified in the project	AOG contribution in Project = 153.72 million USD EAIF contribution in Project = 26.73 million USD Private portion of the EAIF= 13% Barclays contribution in EAIF: 100 million USD EAIF total : 753.2 million USD Private finance in project = 13% * 26.73 = 3.5 million USD Total private finance identified: 153.72+3.5=USD 157.22 million USD
Nordic government finance identified	Same as in option 1 Total Nordic government finance = 18.27 million USD
Total project finance net of developed private finance identified	Total project finance = 358.24 million USD Private finance identified = 157.22 million USD = 358.24 – 157.22 = 201.02 million USD
Mobilised private co-financing	= 157.22 x (18.27/201.02) = 14.29 14.29 million USD

Option 3

Mobilised private co-financing = Nordic country private finance identified in the project x (Nordic government finance identified / Total project finance net of developed private finance identified).

- Would result in a value of 0 for Nordic private co-financing, as no Nordic country private finance was identified in the project.

4.2.12 Nordic Climate Facility 3rd Funding Round (International)

The Nordic Climate Facility (NCF) finances projects that have a potential to combat climate change and reduce poverty in low-income countries. The Facility is financed by the Nordic Development Fund (NDF) which is a joint development finance institution of the five Nordic countries and funding comes from the development cooperation budgets of these countries. The Facility is administrated by The Nordic Environment Finance Corporation (NEFCO). NCF issues grants for selected proposals that are received through calls for proposal. The third round gathered proposals under the theme "innovative low-cost climate solutions with focus on local business development". This round resulted in funding for

14 different projects. According to the funding requirements, each applicant must hold a registered place of operations in one of the Nordic countries, but in addition, the project can involve other partners and must have at least one local partner in the country[28] the project is implemented in.[29]

The third funding round resulted in a total budget of 11.11 million EUR for the above-mentioned 14 different projects in 12 different developing countries. Out of this, NCF's contribution was just under 5.7 million EUR and strictly private finance was 0.29 million EUR.

Table 5: Funding structure (totals for the 14 projects)[30]

	Public Sources				Private Sources			
	NCF	Developing Countries[31]	Ngos	Other Nordic[32]	Nordic	Developing Countries	Project Revenues[33]	Total
Type	GRANT	N/A[34]						
Amount (Million EUR)	5.65	4.01	0.42	0.32	0.14	0.15	0.41	11.11

It should be noted that NGOs are neither part of the public nor the private sector, but are often referred to as the "third sector". NGOs often rely on public sector funding e.g. Official Development Assistance. At the same time, they carry out fundraising activities gathering resources from households (e.g. WWF, where funding is gathered partly from households, provides funding for one of the projects in the funding

[28] Currently the requirements state the following countries as eligible: Benin, Burkina Faso, Cape Verde, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Rwanda, Senegal, Tanzania, Uganda, Zambia, Zimbabwe, Bangladesh, Cambodia, Kyrgyz Republic, Lao PDR, Maldives, Mongolia, Nepal, Pakistan, Sri Lanka, Vietnam, Bolivia, Honduras, and Nicaragua.

[29] Source: http://www.nefco.org/financing/nordic_climate_facility

[30] Data received from NEFCO/Kari Hämekoski 14.10.2013.

[31] Some of this financing may include developed country partner financing, however, the data available for this case study did not allow making a further distinction on the sources. For example, it is known that some public developed country finance is channelled to the projects through local, developing country organisations, but amounts are not known and this would require more in-depth research on individual projects. This amount also includes a loan that a local developing country partner had committed to apply for in their funding application.

[32] Other Nordic public funding includes research institutions, development cooperation organisations, associations and unspecified, non-governmental public funding sources. One project included contributions from the Royal Danish Embassy of Bangladesh.

[33] NCF requires that revenues accrued during the 2 year financing period need to be reported as part of budgeting.

[34] A breakdown of the types of financial instruments used was not available in the data used for this analysis.

round portfolio), companies and other organisations, some of which are considered private actors. It is not a straightforward task to include such financing in this study, which has a strong focus on public and private finance. However, for the purposes of this case study, it has been assumed that NGOs are considered public funders.

It should also be noted that in this funding round, there were four projects that had estimated the amount of project revenues generated during the 2-year financing period. While these have been considered as part of the project budget in NCF's calculations, in this application of the methodology, total project financing will exclude these revenues. Therefore, the total project funding amount used in this case study will be 10.70 million EUR.

4.3 Definition – source: Private finance

Private actors:

- Norwegian Geotechnical Institute (NGI) = private foundation, headquarters in Oslo, Norway.
- Nordic Agency for Development and Ecology (NORDECO) = private consultancy, headquarters in Copenhagen, Denmark.
- C. F. Nielsen A/S = manufacturer of mechanical briquetting presses, headquarters in Baelum, Denmark.
- Gaia Consulting Oy = private consultancy, headquarters in Helsinki, Finland.
- African Plantations for Sustainable Development (APSD) Ghana Ltd. = private company, headquarters in Ghana.

Option 1
The contributions of all private actors are included.

Option 2
Only the contributions of developed country private actors are included, meaning that the funding provided by APSD is excluded.

Option 3
Only the contributions of Nordic country private actors are included. In this case, the sources of private finance are the same as in Option 2.

4.4 Definition – source: Public finance

Nordic country governments – as source for public finance (see calculation approach):

- NCF (all Nordic countries contribute, see project description).
- Royal Danish Embassy of Bangladesh (Danish public funding).

4.4.1 Additionality

One of the main objectives of NDF financing (deployed through the NCF) is "to maximise additionality and complementarity in relation to other available financing."[35] However, it is not publicly stated how additionality is being defined in more detail.

4.4.2 Attribution (2 options)

Option 1
Given the data available, it is not feasible to use the proportional approach for claiming mobilisation, as there are so many partners involved in each project and the individual contributions of each are not easily identifiable.

Option 2
The second approach is taken where NCF has been identified as a lead actor in total project funding. This is based on the share of NCF funding, which has constituted >50% of total project funding in all but one of the 14 projects in the funding round.

4.4.3 Timing

This portfolio concerns one specified funding round, so there is no need to apply any tapering factor to subsequent rounds.

[35] NDF Climate Change Strategy 2012-2013, available at: http://www.ndf.fi/sites/ndf.fi/files/attach/climate_change_strategy_2012-2013.pdf

4.4.4 *Definition – Recipient (2 options)*

Option 1
Defined by project/programme location:

- Developing countries (see funding requirements): Tanzania, Ghana, Nepal, Cambodia, Bolivia, Ghana, Cambodia, Laos, Kenya, Burkina Faso, Kenya, Tanzania, Uganda, Rwanda, Bangladesh, Malawi and Tanzania.

Option 2
Defined by ownership of recipient (location of headquarters):

- All funding applicants hold a registered place of operations in one of the Nordic countries.

4.4.5 *Climate specific*

All projects correspond to the typologies for mitigation and/or adaptation. Overall mandate of NCF is to finance climate projects.

MDB Typology: Waste recycling projects that recover or reuse materials and waste as inputs into new products or as a resource, Provision of information on crop diversification options, with assessment of costs (adaptation), Education, training, capacity building and awareness raising on climate change mitigation, Research and development of renewable energy or energy efficiency technologies, Solid waste management that reduce methane emissions (e.g. incineration of waste, landfill gas capture, and landfill gas combustion), Engagement with local communities to limit the source, e.g. uncontrolled burning (adaptation), domestic rainwater harvesting equipment and storage, Solar water heating and other thermal applications of solar power in all sectors.

4.4.6 *Project sub-components*

100% of the projects are counted (there are no details available about the structure of each individual project).

4.4.7 Currency

Original data is reported in EUR. Conversion to USD is done using IMF data and the average for the week of the commitment. However, the agreement signings have taken place at different times with the first in December 2012 and the last in July 2013. It is not meaningful to convert the currencies separately for all projects in a portfolio and therefore the total funding amounts have been converted based on the date that the project descriptions were published by NCF/NDF on their website (September 23rd, 2013).[36]

Representative rates for the period September 23, 2013 - September 27, 2013					
Date	euro	U.S. dollar			
23-Sep-2013	1,3508	1			
24-Sep-2013	1,3473	1			
25-Sep-2013	1,3504	1			
26-Sep-2013	1,3499	1			
27-Sep-2013	1,3537	1			
Average	1,35042				

Table 6: Currency conversion results

	Public Sources			Private Sources				
	Ncf	Developing Country	Ngos	Other Nordic	Nordic	Developing Country	Project Revenues	Total
Amount (Million Usd)	7.63	5.41	0.57	0.44	0.19	0.20	0.56	15.00

Excluding project revenues, total project financing amounts to 14.45 million USD.

4.4.8 Calculation (3 options)

Option 1

Mobilised private co-financing = Global private finance identified in the project x (Nordic government finance identified/Total project finance net of private finance identified).

[36] http://www.imf.org/external/np/fin/ert/GUI/Pages/CountryDataBase.aspx

Global private finance identified in the project	Private finance identified = 0.39 million USD
Nordic government finance identified	NCF = 7.63 million USD Other public Nordic finance = 0.08 million USD (contribution of the Royal Danish Embassy of Bangladesh) Total Nordic government finance: 7.63+0.08 = 7.71 million USD
Total project finance net of private finance identified	Total project finance = 14.45 million USD Private finance identified = 0.39 million USD = 14.45 – 0.39 = 14.06 million USD
Mobilised private co-financing	= 0.39 x (7.71/14.06) = 0.21 million USD 0.21 million USD

Option 2

Mobilised private co-financing = Developed country private finance identified in the project x (Nordic government finance identified / Total project finance net of developed private finance identified).

Developed country private finance identified in the project	Developed country private finance identified = 0.19 million USD (excludes developing country private finance)
Nordic government finance identified	Same as in Option 1 Total Nordic government finance = 7.71 million USD
Total project finance net of developed private finance identified	Total project finance = 14.45 million USD Private finance identified = 0.19 million USD = 14.45 – 0.19 = 14.26 million USD
Mobilised private co-financing	= 0.19 x (7.71 /14.26) = 0.10 million USD 0.10 million USD

Option 3

Mobilised private co-financing = Nordic private finance identified in the project x (Nordic government finance identified / Total project finance net of private finance identified).

- Would result in the same outcome as Option 2, as only Nordic private finance from developed countries was identified in the project.

4.4.9 *Nyamwamba run-of-river hydro (Uganda)*

The 14 MW Nyamwamba run-of-the-river hydropower project is being developed by South Asia Energy Management Systems LLC ("SAEMS"), a renewable energy company engaged in the business of acquiring, developing and operating run-of-the-river hydropower projects in emerging markets. This financing follows on from an earlier financing round in 2009, when EAIF participated in a 55 million USD debt package for the development of 12 run-of-the-river hydropower projects totalling 58 MW located in Uganda and Sri Lanka. Following the successful implementation of the 18 MW Mpanga hydro power plant in Uganda, the additional 24 million USD loan facility is to be used for the development of the 14 MW Nyamwamba run-of-the-river hydropower.

The project, located in the village of Kilembe, in the Kasese district in Western Uganda, will provide reliable, clean and relatively low cost power to the country. This renewable project will also facilitate the substitution of diesel generators, which are used as emergency power, and will contribute to reducing Uganda's carbon footprint and emission of other pollutants. Of the 24 million USD loan, FMO will provide 12 million USD, the Emerging Africa Infrastructure Fund will provide 6 million USD, DEG 4 million USD and Finnfund 2 million USD.

Table 7: Funding structure of the project[37]

	FMO (Holland)	EAIF	DEG	Finnfund	TOTAL
Type	Loan	Loan	Loan	Loan	
Amount (million USD)	12	6	4	2	24

4.4.10 *Definition – source: Private finance*

Private actors:

- Barclays Bank Plc: corporate actor, international bank (contribution through the EAIF), primary headquarters in the UK.
- Standard Bank of South Africa Ltd*:* corporate actor, international bank (contribution through the EAIF), primary headquarters in South Africa.

[37] Sources: http://www.emergingafricafund.com/news/saems-ii.aspx

4.4.11 *Definition – source: Public finance*

Developed country governments – as source for public finance (see calculation approach):

- In PIDG Trust (in EAIF): United Kingdom, Netherlands, Switzerland, Sweden (SIDA).
- At Project Level: Finnfund.

4.4.12 *Additionality*

The project is carried out by a previous CDM project developer, SAEMS. They were in charge of the first run-of-a-river hydropower station in Uganda. However, as the CDM project additionality analysis was based on a financial argument (the project with CDM was more profitable – IRR 18.9% – than without it – IRR 16.5%), it is difficult to determine the additionality of the public intervention using public climate finance. For the purpose of this assessment we have assumed that public climate finance replaces absent investment through the carbon markets.

4.4.13 *Attribution*

Option 1
The data available showed that the project was co-financed by a group of different public donors, including Nordic bilateral agencies, SIDA and Finnfund. SIDA's contribution is considered as it is part (5.9%) of the PIDG Trust, a main actor (27%) within the EAIF structure. A proportion of 1.6% over the EAIF contribution to the project was considered as attributable to SIDA (5.9% x 27% = 1.6%). In the case of Finnfund who contributed directly to the project, 100% was considered. The total of the Nordic contribution to the project is then the sum of the proportional SIDA's contribution and the Finnfund contribution (See Nordic government finance in calculations).

Option 2
Determining leadership in this case is difficult. According to the information available, this project is a continuation of an earlier EAIF debt package in 2009 with the same company, SAEMS. However, EAIF is not the main contributor to the project, as 50% of the project funding is provided by FMO (Holland). It could also be argued that as the EAIF equity is provided by the PIDG Trust, the UK government could be considered

as a leader of the project. Leadership has not been determined a priori in this case, and it is therefore not possible to determine attribution using this option.

4.4.14 Timing

All commitments have been made in December 2012.

4.5 Definition – Recipient (2 options)

Option 1
Defined by project/programme location: Uganda.

Option 2
Defined by ownership of recipient (location of headquarters): South Asia Energy Management Systems LLC (SAEMS) – Uganda.

4.5.1 Climate specific

This run-of-the-river hydropower renewable project will also facilitate the substitution of diesel generators, which are used as emergency power, and will contribute to reducing Uganda's carbon footprint and emission of other pollutants.

MDB Typology: Hydropower plants only if net emission reductions can be demonstrated.

4.5.2 Project sub-components

We did not have sufficient data to analyse the sub-components and therefore considered 100% of the finance to be climate specific.

4.5.3 Currency

Data in the original sources was in USD, so there is no need for a currency conversion. The analysis is still in current prices, not in constant prices.

4.5.4 Calculation (3 options)

Option 1

Mobilised private co-financing = Global private finance identified in the project x (Nordic government finance identified / Total project finance net of private finance identified).

Global private finance identified in the project: Sources: Project financial structure EAIF structure PIDG structure	EAIF contribution in Project = 6 million USD Private portion of the EAIF= 17% Barclays contribution in EAIF: 100 million USD Standard Bank contribution in EAIF: 20 million USD EAIF total: 753.2 million USD Private finance in project = 17% x 6 = 1.02 million USD We are taking into account only EAIF, as it is the only financial source that includes private sources (Barclays and Standard Bank).
Nordic government finance identified	SIDA (Sweden) in PIDG Trust = 40.3 million USD Total PIDG Trust = 663 million USD SIDA contribution = 5.9% PIDG Trust in EAIF = 202.1 million USD Total EAIF = 753.2 million USD PIDG Trust proportion in EAIF = 27% SIDA proportion in EAIF = 5.9% x 27% = 1.6% SIDA finance in Project (through EAIF) = 1.6% x 6 = 0.09 million USD or 90,000 USD Finnfund finance in Project = 2 million USD Total Nordic finance in project = USD 2.09 million
Total project finance net of private finance identified	Total project finance = 24 million USD Private finance identified = 1.02 million USD = 24 – 1.02 = USD 22.98 million
Mobilised private co-financing	= 1.02 x (2.09/22.98) = 0.093 million USD or 93,000 USD

Option 2

Mobilised private co-financing = Developed country private finance identified in the project x (Nordic government finance identified / Total project finance net of private finance identified).

Developed country private finance identified in the project: Sources: Project financial structure EAIF structure PIDG structure	EAIF contribution in Project = 6 million USD Private portion of the EAIF= 13% Barclays Barclays contribution in EAIF: 100 million USD EAIF total: 753.2 million USD Private finance in project = 13% x 6 = 0.8 million USD (South Africa based Standard Bank is excluded)

Nordic government finance identified	SIDA (Sweden) in PIDG Trust = 40.3 million USD Total PIDG Trust = 663 million USD SIDA contribution = 5.9% PIDG Trust in EAIF = 202.1 million USD Total EAIF = 753.2 million USD PIDG Trust proportion in EAIF = 27% SIDA proportion in EAIF = 5.9% x 27% = 1.6% SIDA finance in Project (through EAIF) = 1.6% x (6) = 0.09 million USD or 90,000 USD Finnfund finance in Project = 2 million USD Total Nordic finance in project = 2.09 million USD
Total project finance net of developed private finance identified	Total project finance = Project = 24 million USD Private finance identified = 0.8 million USD = 24 – 0.8 = 23.22 million USD
Mobilised private co-financing	= 0.8 x (2.09/23.22) = 0.072 million USD or 72,000 USD

Option 3

Nordic private co-financing = Nordic private finance identified in the project x (Nordic government finance identified / Total project finance net of developed private finance identified).

- Would result in 0 mobilised private finance, as no Nordic private finance was identified in the project.

4.6 Key findings from the application of the example methodology[38]

4.6.1 Data availability

One of the most important barriers to applying the methodology was the lack of publicly available information (across all of the considerations) and limited information from interviews with Nordic stakeholders. In the majority of cases reviewed, the organisations involved do not collect the data and qualitative information required by the example methodology, as it is not currently relevant to their existing reporting processes (either internally or externally).

[38] See also footnotes in Chapter 3.

The study identified that there were certain considerations for which information was particularly limited:

- Value of private finance contribution(s).
- Types of direct financial instruments used (grant, debt, equity. guarantee or insurance).
- Evidence of additionality (qualitative or quantitative).
- Project sub-components.

In certain cases these information gaps required assumptions to be made to compensate for the absence of qualitative or quantitative data. Many of these assumptions are highlighted in the three case studies themselves (see above). For example, in the Addax Bioenergy case:

- There was no clear data on the exact amount of finance from one of the private partners Addax & Oryx Group (AOG) and therefore their share had to be deduced from the other data that was available (overall project value and the contributions of other organizations).
- There was contradictory information on the type of funding FMO had provided (share of equity and other instruments).
- Given the complexities of the funding structure of AfDB, an assumption had to be made on which particular funding programme was responsible for the AfDB loan (to determine the Nordic contribution).

The assumptions that must be made as a result of a lack of information can have a significant impact on the results from the example methodology. This is above and beyond those presented by applying the different consideration option in the example methodology.

The key findings from the application of each of the ten considerations are outlined in the following.

4.6.2 Definition of private finance – 3 options

- The suggested methodology was relatively easy to apply to identify private sector actors in all the cases.
- It is useful to be able to compare across the results of the 3 options as the results from using the three different approaches has significant implications for the resulting calculation of mobilised private climate finance (see Table 8).

- There is a significant difference in the resulting calculation if both developed and developing country private finance is accounted for (Option 1) as opposed to when only developed country private finance is considered (Option 2). This is best demonstrated in the NCF Portfolio case, where the difference is almost 2-fold between calculation results using Options 1 and Option 2.
- Option 3 also has a significant impact on the results as it will either result in zero mobilised private climate finance in cases where there is no Nordic private finance, or it will produce the same result as calculation Option 2 where Nordic countries are the only developed countries providing private finance.
- It can be seen that Option 3 is the most conservative approach, followed by Option 2 and then Option 1.

4.6.3 Definition of public finance – 1 option

- The main challenge here is how to include (or not to include) finance originating from organisations that are funded with both public and private resources or organisations that are non-governmental but still have public funding in their resource base.
- This is important to add to the caveat originally described, where seemingly private actors may include governments' direct and indirect shareholdings (e.g. research institutions that also offer consultancy services).
- One logical option would be to examine the shares of public and private finance more closely and then classify the actor according to which share is larger (e.g. if <50% of funding is private then the actor is considered to be public), however, this requires a significant amount of time to gather data on the funding structures of individual organisations.
- Using the agreed definitions, the source of public finance only includes government finance (bilateral or multilateral). In this case all NGO funding was given the same consideration as non-Nordic public finance, so the mobilised finance identified would only change if NGOs or research institutions were classified as private actors.

4.6.4 *Additionality – 1 option*

- Additionality of the public intervention was the one of the most difficult considerations to determine for the projects and programmes under assessment. While it is a clear objective for many of the funding organisations, none of the Nordic cases provided specific quantitative or qualitative information to demonstrate additionality.
- Of the suggested approaches within the methodology, the most applicable was using information within business cases and CDM documentation to provide justification. However, not all projects covered in our case studies provided or could be referenced in terms of such detailed information.
- Using the incremental costs approach alternative in the example methodology requires information on baseline activities, which was not available in any of the cases.
- Application of the additionality consideration can have a significant impact on the resulting calculation, which will be zero mobilised private climate finance if the public intervention is not determined to be additional.
- For the purpose of this case study review, all projects were determined to be additional, on the basis of some level of CDM additionality information (Addax and Nyamwamba) or statements by public funders (NCF portfolio).

4.6.5 *Attribution – 2 options*

- Option 1 was to attribute the portion of private finance equivalent to each public actor´s own funding share. This seemed to be the most practical way to avoid double counting, as by applying this option, total private finance mobilised cannot add up to more than 100%. Though this is a relatively time and resource intensive approach, it proved to be a robust approach for avoiding double counting in the case studies.
- Applying Option 2, where a calculation is only completed in the case that a Nordic government is a lead actor is more conservative than Option 1, as it is possible that the resulting calculation would be zero mobilised private climate finance, if a Nordic actor were not found to be the lead actor.

- In considering Option 2 there is a lot of room for interpretation on how the "lead actor" is defined. This is highlighted in the case of Addax Bioenergy, where claims for the lead role in arranging funding are difficult to determine based on publicly available information. It is understandable that all financers want to showcase successful examples and promote their own roles in climate finance, which makes the determination in Option 2 particularly challenging.

4.6.6 Timing – 1 option

- This consideration requires that each financing organisation provide sufficiently detailed information to determine the timing of commitment of funds. Where this data is available, this consideration is practical to apply.
- In particular, as all of the cases examined only involved one funding round this consideration was particularly simple to apply.
- However, in cases involving multiple donors, determining the accurate dates of commitment can be particularly complicated.

4.6.7 Recipient definition – 2 options

- The two options presented for identifying the climate finance recipient resulted in different outcomes in two of the three case studies.
- When the recipient is defined through the project or programme location (Option 1), all funding is considered, as all projects and programmes are located in developing countries (by virtue of their selection for this review).
- However, in the Addax and NCF cases, the primary headquarters of the major shareholder owner of the recipient are located in developed countries. So when Option 2 is applied, these cases result in zero mobilised private climate finance.

4.6.8 Climate specific – 1 option

- The MDB typology for mitigation was easy to apply and did not require subjective interpretation. However, the typology for adaptation is not as comprehensive and therefore less straightforward to apply as the documentation only provides examples of adaptation activities.

- For example, one project in the NCF portfolio involved providing technical assistance and training on sustainable land-use management, including agroforestry and water and soil conservation for the sole purpose of improving adaptive capacity of small Fairtrade tea producer organisations. This would appear to be climate specific and targeting adaptation, however, it does not match exactly to any of the examples in the MDB adaptation typology. This therefore can result in extremely conservative interpretations, where projects are considered climate specific, only if the exact description is listed in MDB typology.

4.6.9 Project sub-components – 1 option

- In many cases, there is not sufficient information to be able to evaluate project/programme sub-components, and none of the cases examined in this study provided adequate information to justify excluding any project sub-components.
- Based on these case examples, it could be concluded that this consideration was not significant, however, there may be cases where only a minor component of a project or programme is climate specific.
- To address this, an approach could be used which is similar to that used by some governments for the application of the Rio Markers in a proportional versus a binary manner. Using this proportional approach, governments are only counting a proportion of a project's financing in cases where it is clear that some sub-components are not climate specific.

4.6.10 Currency – 1 option

- The proposed methodology is fairly straightforward to apply in the case of assessing individual projects.
- However, this can be more complex for programmes. This was demonstrated in the analysis of the NCF portfolio, where financing has been committed at different points in time. It becomes very time and resource intensive to convert each project's finance separately according to the exact dates, with perhaps minimal impact when currency volatility is low.
- In a portfolio assessment, a simpler approach was taken using the date when the full portfolio sas been disclosed (in the NCF case). An alternative is to use the date of the last commitment made and use the average rate for the corresponding week to convert currencies.

These options are particularly applicable if the time between the first and last signing does not exceed one year, and there is minimal currency fluctuation across the year.

4.6.11 Calculation

- The calculation approach in the proposed methodology was relatively simple to apply once each of the other nine considerations had been addressed.
- The greatest complexity in completing the calculation is in the case of projects involving multiple donors that are channelling finance through a common vehicle.
  - For example, the Emerging Africa Infrastructure Fund involves actors at the PIDG trust fund level as providers of equity, bilateral DFIs as providers of subordinated debts and private sector lenders as providers of senior debt. As a result, deciphering the share of developed, not to mention Nordic, finance in these cases requires significant transparency of information about the role of each actor and significant amounts resources to conduct the calculation if this data is available.
- As outlined above, in terms of the estimated mobilised private climate finance, the three options for identifying private finance (consideration 1) had the most significant impacts. These findings are summarised in the table below.

Table 8: Results of testing example methodology

Case	Nordic governments involved	Result from private finance option 1 *(mil. USD)*	Result from private finance option 2 *(mil. USD)*	Result from private finance option 3 *(mil. USD)*
Addax Bioenergy	Sweden, Finland, Denmark and Norway	14.45	14.29	0
NCF Portfolio	Denmark, Finland, Iceland, Norway and Sweden	0.21	0.10 (or 100k)	0.10 (or 100k)
Uganda Hydro	Sweden and Finland	0.093 (or 93k)	0.072 (or 72k)	0

5. Conclusions

The overall objective of this review was to *identify and apply practical methods that could be used for assessing mobilised private climate finance, with a focus on the direct use of public finance instruments*. Our approach to achieve the project goal was constructed on the basis of a detailed literature review taking careful note of recent, on-going and planned initiatives within this rapidly evolving area, including the initiatives of the OECD Research Collaborative.

This study highlights the complexity of estimating mobilised private climate finance and focuses on a range of issues which are integral for on-going research on this topic, for the multilateral negotiations under the UNFCCC, and for the internal processes of organizations providing climate finance through multilateral and bilateral channels.

The primary methodological issues for consideration include:

- the value of transparency in terms of the methodology applied, data used (qualitative and quantitative), and assumptions applied, in any estimation of mobilised private climate finance;
- recognition of the relative importance of a sub-set of methodological considerations (definition of private finance, additionality, attribution, and definition of recipient), and implications for the resulting calculation;
- implications that the choice of methodology can have on underlying financing decisions made by donors; and
- opportunities for Nordic government collaboration.

Overall, we find that the complexity of tracking private climate finance must be acknowledged, in a manner that encourages the development of transparent approaches by organizations providing climate finance through bilateral and multilateral channels. Over the longer term, through the refinement and sharing of these methodologies (including through the OECD Research Collaborative), public actors should be in a position to develop common systems and incentives for M&E of finance, thereby enabling a clearer understanding of the landscape of finance within a given project or program, and the effectiveness of these interventions in mobilising private investment.

5.1 Findings on the ten considerations assessed

This study outlined an example methodology for estimating mobilised private climate finance, and identified ten methodological considerations that need to be addressed in its application. A key finding has been that depending on how these considerations are treated, calculation outcomes will differ and in some instances these differences can be significant. This study concludes that not all considerations are equally significant i.e. in the sense of what magnitude impact different interpretations will have on the final result.

For example, there are a number of considerations (and options, as noted in Chapter 3) that can lead to a calculation of zero or of significantly lower levels of mobilised private climate finance. These include a number of the more conservative methodological approaches:

- Consideration 1: Definition of private finance – in the case of Option 3 when only Nordic private finance is considered.
- Consideration: 3: Additionality – where information is often not available to show that private finance would not have been mobilised in absence of public intervention.
- Consideration 4: Attribution – in the case of Option 2 where only the private finance mobilised by the "lead actor" is counted.
- Consideration 6: Definition of recipient – in the case of Option 2 when the recipient is determined by the location of headquarters of major shareholders.

Further findings around these key considerations include:

- *The definition of private finance* has major implications for assessment outcome. As our calculation results show, there are cases where developing countries are also important contributors of private climate finance alongside developed country actors, and also where no Nordic private finance was involved in a transaction. Data availability is also a key consideration in the definition of private finance as for certain case studies assumptions had to be made about the level of finance provided by certain private actors. There is also often a lack of a clear distinction between public and private actors, as highlighted in Chapters 3 and 4.
- *Additionality* has been the consideration that is the most challenging to address. Though it is widely agreed to be a defining principle or requirement for identifying mobilised private climate finance, few

governments provide the information necessary for robust analysis of this consideration. It might be added that the binary approach suggested in the example methodology may not be accurate, since a positive score implies that all financing is counted as additional, with a negative score counting no finance as additional. A more granular approach could be used for determining "proportional additionality," where only a sub-component of the public finance could be counted and deemed additional. However, significant resources and information would be needed to determine the specific proportion, or a default proportion, to be used across a portfolio.

- *The role of recipient* interpretation is decisive. It seems reasonable to apply an option that is based on the location of the project/place of investment (in a developing country) instead of excluding finance based on criteria related to location of headquarters of major shareholder owner. Determining ownership is not always an easy task due to complex funding structures of some organisations (e.g. NGOs, foundations, cooperatives).

The balance of considerations in terms of definition of public finance, timing, climate specificity, currency and project sub-components were less complex to address and were not as influential in the calculation. It is also clear that available time and resources are key determinants in application of the methodology, as developed and tested in this study. Being able to take all of the methodological considerations into account will more often than not require significant time and effort.

Some of the methodological considerations can be applied in a fairly straightforward manner, however, others involve significant additional data requirements and management, and would therefore require phased introduction if they were to be brought into the M&E system of financing organizations. This would need to be accompanied by various levels of guidance and capacity building, and be based on the development of organizational incentives reflecting a broad based consensus on the strategic importance of tracking mobilised private climate finance.

Nonetheless, the methodology development and testing provides useful lessons and important guidance for further methodology development priorities and application. The methodological options can serve to guide follow-up in developing a more streamlined approach, which focuses on identified priority considerations and could serve to outline more standardized approaches for key considerations.

5.2 Importance of transparency: methodology, inputs and assumptions

The literature review concluded that whilst a number of organisations reference leverage ratios as a proxy for mobilisation, disclosure on how these ratios have been derived is generally poor, not allowing informed comparison or aggregation of different estimates. The limited level of transparency in methodologies currently deployed by organizations for assessing mobilised or leveraged private finance has been a significant barrier to research in this space, which this study has sought to address. Estimating co-financing emerged as a model where there is most transparency and data on calculating mobilised climate finance. As a result our study focussed on the use of direct public finance instruments and the assessment of private finance from the perspective of co-financing.

A second point on transparency is that limitations in publicly available data, and of quantitative and qualitative information available through interviews, make it very difficult to assess a number of agreed considerations in the methodology. This is primarily because many government agencies (bilateral and multilateral) do not have a mandate to track public and private, developed and developing country finance separately. The organisations engaged in this study do not keep this data at hand, as they currently do not have needs and/or capacity to track or monitor private climate finance flows. Significant research and interviews are required in order to access the information needed, exemplified by the fact that each case study required a minimum of two days to complete.

Finally, as highlighted in section 4.3, it is likely that these information gaps will persist over the short to medium term, and that assumptions will need to be made in order to proceed with tracking and estimation of mobilised private climate finance. Organizations will need to be transparent in these assumptions as these can have a significant impact on the results of calculations.

This study emphasises the need for organizations providing climate finance through bilateral and multilateral channels to develop and incentivise transparent approaches for tracking mobilised private finance, with the longer term aim of lesson learning across organizations with a view toward harmonization.

5.3 Implications for tracking mobilised private climate finance

While systems are not currently in place for tracking and estimation of mobilised private climate finance, many of the organisations interviewed for the purposes of this study assume they are mobilising significant private climate finance flows. In applying the example methodology, the calculated level of private finance mobilised is lower than expected, and in applying certain options, mobilisation amounts to zero. This is not likely to be specific to the Nordic countries, even though this particular study has focused on Nordic climate funding. Possible reasons for this mismatch between perceptions and the results of this data are outlined above, and include:

- information gaps (due to confidentiality, lack of a mandate for tracking) whereby finance mobilised may be greater in reality than that identified through this research.
- subjectivity in definitions of private finance, whereby organizations may be determining that an actor identified as public in this study is considered to be private.
- difficulty in determining attribution, whereby an organization may take credit for all of private co-finance, whereas this study has apportioned mobilisation across the full range of actors involved in a given transaction.
- interventions are in their early stages and will mobilise additional private finance over the longer term.

This study has also found that a number of funding organisations do not have mandates and criteria requiring private sector funding (let alone tracking of private investment). For example, in the case of NCF, it is sufficient that a funding recipient provides some level of investment to a project, but there is no requirement for the recipient to be a private actor.

There appears to be a gap between global targets under the UNFCCC, which are actively acknowledging the need for private finance, and the specific targets and capacity of funding organisations that are key to delivering on the 100 billion USD target. As many of the organizations reviewed do not have specific mandates with regard to mobilising private climate finance, it will be important to understand how these objectives and incentives can be aligned, with the end goal of maximising the volume of finance dedicated to climate specific activities in developing countries.

The goal of this particular research was to determine private climate finance mobilised by developed countries under the UNFCCC. However, an additional goal of tracking finance will be to assess the effectiveness of investment provided. In addition to being straightforward and in line with resources and capacities available, ideally tracking approaches and methodologies should provide (at least contribute to) tracking and understanding of the effectiveness of developed country approaches for mobilising private climate finance.

It is possible that focusing on attributing the 100 billion USD target among developed countries under UNFCCC creates perverse incentives in terms of reaching what we know is a far greater requirement for investment globally to achieve transition to low carbon and resilient economies. It may be that the drive to attribute, distinguish public from private, and even distinguish developed from developing, is diverting focus from determining effectiveness of finance provided and a focus on the impacts achieved. Any organisations seeking to estimate mobilised private climate finance therefore need to review the costs and benefits of tracking, particularly in terms of the value added of public finance effectiveness assessments.

It is important to understand the implications that the choice of approach for estimating mobilised private climate finance can have on underlying financing decisions made by donors, which could influence the forms and channels through which they provide climate finance with the goal of mobilising private investment. Our initial analysis has shown that by using the example methodology it is easier to determine mitigation specific finance than adaptation specific finance, which could lead to an over-emphasis on mitigation activities. We have also found that the methodology is more straightforward to apply for projects involving bilateral finance as opposed to those where multiple actors are channelling funds through a single entity, which mean that a focus on attribution may lead to a decline in collaboration and cooperation across public actors. It may as well be that instruments such as loans, equity, guarantees and insurance are more effective in mobilising private finance, but at the expense of supporting activities that require grant funding.

5.4 Considerations for Nordic governments

In addition to the conclusions above, there are some particular areas that could be of interest for the Nordic countries and where NOAK could play a proactive role. Joint action could provide added value to the ac-

tions of each Nordic country. From a co-Nordic perspective some additional dimensions could be highlighted:

- Nordic actors could jointly leverage the key findings in this study to openly raise the issues of complexity in tracking mobilised private climate finance within international forums, and use these to develop systems for tracking which balance transparency and resource efficiency and that can contribute to the overall effectiveness of climate finance;
- Nordic actors could consider developing joint approaches for integrating the key information requirements for estimating mobilised private climate finance into the mandates and monitoring and evaluation systems of bilateral and multilateral funding organisations. These joint approaches could be piloted making use of existing co-Nordic actors, such as NEFCO, NDF, NIB etc; and
- Nordic actors could share lessons learned between Nordic countries and more broadly with the on-going OECD Research Collaborative, and other international forums – particularly the UNFCCC, in order to promote best practices and proactively suggest concrete ways forward in assessing private climate finance.

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7. Sammanfattning

I förhandlingarna under FNs klimatkonvention UNFCCC i Köpenhamn 2009 och Cancun 2010 åtog sig världens utvecklade länder att från 2020 mobilisera 100 miljarder dollar per år i klimatfinansiering av klimatåtgärder i fattiga länder (inkluderande offentliga samt privata källor).

Tillsvidare är det inte klart hurdana källor kan räknas som *mobiliserade av utvecklade länder*. Det är också oklart vilka privata finansieringsströmmar kan räknas som mobiliserade av utvecklade länder i enlighet med klimatkonventionens överenskommelser.

Avsikten med denna studie är att granska existerande definitioner för klimatfinansiering och framförallt undersöka metoder som kan hjälpa identifiera och uppskatta privata finansieringsströmmar, som har "direkt" mobiliserats med hjälp av utvecklade länders finansiella investeringar och instrument. Studien bidrar samtidigt till ett vidare forskningsinitiativ under OECD (*Research Collaborative on Tracking Private Climate Finance, RC)* med avsikten av utveckla mera omfattande metoder för uppskattning av privat klimatfinansiering – mellan rika och fattiga länder samt fattiga länder emellan, som har mobiliserats med hjälp av rika länders offentliga åtgärder (inkluderande mera indirekta åtgärder såsom stöd för institutioner och policy, utveckling av marknadsförhållanden).

Studien bygger på en omfattande analys av existerande litteratur samt metoder som utvecklats av olika bilaterala och multilaterala organisationer som jobbar med klimatfinansiering (kapitel 2). Totalt identifierades tio (10) aspekter med relevans för uppskattning av mobiliserad privat klimatfinansiering (kapitel 3). Dessa aspekter har bland annat att göra med hur privat och offentlig finansiering definieras, hur additionalitet beaktas eller hur attributionsfrågan behandlas.

Baserat på dessa aspekter, samt ett antal alternativa tolkningar för aspekterna, byggdes ett förslag till metod. Metoden testades med tre nordiska case-studier (kapitel 4). Beroende på hur olika aspekter tolkas, kan estimaten för den mobiliserade private klimatfinansieringen variera betydligt – i våra tre case-studier på följande sätt:

- Addax Bioenergy (Sierra Leone): 0 – 14.45 million USD.
- Nordic Climate Facility (NCF) Portfolio: 0.10 – 0.21 million USD.
- Nyamwamba vattenkraft (Uganda): 0 – 0.01 million USD.

Denna studie bekräftar att uppskattning av mobiliserad privat klimatfinansiering är en komplex fråga och framsteg i utvecklingen av metoder kommer att kräva ökad transparens om metoderna och data som använts och om olika hypoteser som gjorts i uppskattning av mobiliserad privat klimatfinansiering.

Likväl är det viktigt att stärka insikten för de mest kritiska metodologiska aspekterna och hur tolkning av dessa (bland annat hur privat finansiering definieras, hur mottagaren and finansiering definieras, hur additionalitet beaktas eller hur attributionsfrågan behandlas) påverkar den slutliga uppskattningen.

Fortgående utveckling av metoderna och aktivt samarbete mellan olika aktörer inom den offentliga sektorn bör öka vår förståelse för olika komponenter av klimatfinansiering och dess vektorer. Med tanke på de stora utmaningarna som bekräftats nyligen av klimatforskningen är det ytterst viktigt att förstå hur åtgärder inom den offentliga sektorn kan på ett effektivt sätt bidra till att mobilisera privata investeringar för utsläppsminskande åtgärder samt anpassningsåtgärder i utvecklingsländer.

8. Annex 1:
Nordic stakeholder interviews

- Einar Telnes/NORAD
- Ola Nafstad/Norfund
- Kristin Sjöblom /Swedfund
- Elisabeth Ekelund/SIDA
- Johanna Pietikäinen /Ministry for Foreign Affairs, Finland
- Folke Sundman/Ministry for Foreign Affairs, Finland
- Anu Hassinen/Ministry for Foreign Affairs, Finland
- Helena Arlander/Finnfund
- Niels Egerup/Ministry for Foreign Affairs , Denmark
- Leena Klossner/Nordic Development Fund
- Kari Hämekoski/The Nordic Environment Finance Corporation (NEFCO)

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10. Annex 3:

Provisions and considerations for private climate finance

The 10 considerations for tracking of private climate finance are derived from the climate finance definition and provisions (see section 2.2.1). Only the first three provisions are taken into account due to information availability. In addition, currency issues and calculation formulae have been added to the consideration as practical issues to take into account.

Provisions for long-term finance (UNFCCC, 2009; UNFCCC, 2010a)	Considerations
Mobilised by developed countries	Definition of private finance: How do you determine the source of private finance – specific private actor(s)? Definition of public finance: How do you determine the source of public finance – specific country government(s)? Additionality: How do you determine if public intervention (of any kind) was necessary in mobilizing private finance? What is the counterfactual without public intervention? Attribution: How can you attribute mobilisation among specific actors in the case where multiple actors are involved in a given intervention? Thereby avoiding double counting. Timing: When (temporally) in the financing chain is mobilisation estimated and reported (project and financing stages, ex-ante or ex-post) and how are subsequent rounds of financing addressed?
Provided to developing country parties, taking into account the urgent and immediate needs of those that are particularly vulnerable to the adverse effects of climate change	Definition of recipient: How to define final recipient of funding? Is the recipient a vulnerable country?*
Balanced in allocation between adaptation and mitigation	Climate specificity: What approaches or definitions do you use to determine climate specificity of an intervention? Project sub-components: Do you count all or only part of an intervention's value – and if part, how are sub-components valued which are climate relevant? (as it applies to projects within programmes, or sub-components of project)

*This provision was not included in the analysis.

11. Annex 4:

Review of considerations

Considerations for determining mobilised private climate finance

1. Definition – Source private finance	**How do you determine the source of private finance - specific private actor(s)?**	**EBRD, CPI, OECD, WRI, ODI, Climate Strategies, Univ. Zurich**
Source	*Discussion of potential approaches and challenges*	*Reference*
European Bank for Reconstruction and Development (EBRD) - Sustainable Energy Initiative (SEI)	The author references private sector financing by source, including : commercial banks, institutional investors, private operators, private developers, private corporate financing, and IFIs	(Tanaka, 2012)
Organization for Economic Cooperation and Development (OECD)	The authors link the source of the funding (private or public) to its objective, characterising private finance as profit seeking, but also recognize the impact of the complex institutional (ownership) structures. They recognize this in particular for climate actions supported by multiple sources, where public and private is difficult to separate, representing challenges for tracking. Data gaps for climate finance flows are particularly marked for the private sector. This is partly due to the lack of methodological underpinnings and confidentiality concerns as well as different incentives to report, especially when compared with public flows. The authors recognize the need of political decision as well as technical information on which types of private flows should count towards the USD 100 billion and to which type of activities. Current estimates of private climate finance includes mainly FDI and CDM flows, with limited data availability. For CDM information, current databases (Point carbon, BNEF, IFC) do not cover all relevant climate change projects (they are all focused on clean energy technology) or enough information relative to causality.	(Clapp, et al., 2012)
Climate Policy Initiative (CPI)	The authors reflect on the fact that ownership structures are not clear cut in terms of public and private, as what seems to be private investment commonly receive direct or indirect financial support from governments. In CPI's global landscape of climate finance for 2012, they identified that at least USD 51 billion of public money is sitting behind private investment, mostly in developing countries and in particular in China. They also identify a set of private actors, including: -Corporate actors -Institutional investors -Project developers -Households -Commercial financial institutions -Venture capital, private equity & infrastructure funds	(Buchner et al., 2011; Buchner et al., 2012)
World Resources Institute (WRI)	The authors include the following definitions: Private sector: Sector of the economy that is not controlled by the state; comprises a wide range of actors including individuals (consumers), corporations, and private associations (like philanthropies). This publication focuses on three types of private sector actors: capital providers (investors), project developers (including corporations, small and medium-sized enterprises, and contract project developers), and market facilitators (including banks, rating agencies, credit/ liquidity providers, and information/data providers). These private sector actors may be based in developed or developing countries, but this paper focuses on their activities in developing countries. Private sector capital or private capital: Capital provided by the "private sector" (versus the public sector), whether from foreign or domestic sources. Private sector participation: "Private sector" investment in, financing, execution, or maintenance of a project.	(Venugopal et al., 2012)
Overseas Development Institute (ODI)	The authors focus on private climate finance support (PCFS), defined as finance resulting from developed country interventions to mobilise private sector participation in climate compatible development. They highlight the requirement of an understanding of the ownership structures. "The distinction between private sector actors and flows as developed vs. developing is not straight forward, as the country of origin for a private sector actor could be determined by any number of factors including: country of incorporation/registration, location of headquarters, or primary stock exchange listing. For the purpose of the studies we have used the country of location of primary headquarters."	(Whitley & Mohanty, 2013d)

University of Zurich	For the purpose of this study we define "private climate finance" as "investments, donations or other financial means of the private sector that support climate change mitigation and adaptation in developing countries.	(Stadelmann and Michaelowa, 2013)
University of Zurich (Climate Strategies)	The authors are more focused in the conditions of the source, rather than in ownership. They suggest, for example, that for the investments in CDM a distinction between public and private investment is no needed as long as public investments take place at commercial terms and with assurance that double counting is avoided. They argue that in reality, as opposed to literature, the division between public and private is not clear cut, particularly in cases of public-partnerships.	(Stadelmann et al., 2011)

2. Definition - Source public finance	**How do you determine the source of public finance - specific country government(s)?**	**OECD, CPI, WRI and Univ. Zurich**
Source	*Discussion of potential approaches and challenges*	*Reference*
OECD	The location of the actor does not necessarily reflect the source of the climate finance. Primary transactions of CERs from CDM projects could be tracked and valued at market prices and attributed to the purchasing country (see Box 3 on CDM below and Table 2). The true source of international financial flows is not always apparent. On the private side, intermediaries include commercial banks, investment banks and other financial asset managers. Attribution to a single country of origin can be challenging for multinational companies, and for subsidiaries and/or affiliates based in other countries. Finance can also flow through intermediaries in other countries (e.g. tax havens)	(Clapp, et al., 2012; Ellis & Reagan, 2012)
OECD	There are different ways of identifying country of origin for private investment, i.e. i) the location of the corporate headquarters, ii) the headquarters of the involved subsidiary or local branch, or iii) apportionment according to ownership shares held. Which definition(s) are chosen has significant implications with regard to the USD 100 billion commitment. However, agreeing on a single definition could impact the attractiveness of different financing options for climate responses in developing countries. The first option (using the location of the corporate headquarters) could result in increasingly important South-South flows raised on local private capital markets being counted as North-South flows for multinational enterprises (MNEs) based in developed countries. The second option (HQ of subsidiary) may ignore the important catalytic effect provided by globally recognised and established financial institutions and backers. The third option (apportionment by shareholder), may be difficult to apply universally due to a lack of information on ownership and the amount of time required. However, it may be especially important for multilateral development banks (MDBs) and regional development banks (RDBs)."	(Caruso & Ellis, 2013)
CPI	As there is a specific mandate for providing funding towards developing countries is over developed countries. The authors have identified the need for further provide geographical evidence also for South-South flows. For the top-down approach, the information from UNCTAD on FDI provides 'minimal information on the geographical breakdown of private finance'. UNCTAD information is catalogued under developed and developing countries or under regional or sub-regional scopes as South East Europe, with no further possibility of identifying individual countries or companies within those countries. The information for the bottom-up approach, obtained from BNEF, does track detailed information, but investors and lenders generally 'prefer to remain unidentified for various reasons', adding difficulty to tracking the source of the private (and public) finance. Public bilateral funding is easier to track, as the information is available through the OECD CRS database. Identification of the financial source from multilateral financing has not been identified, except for a UNFCCC database. The role of Development Financial Institutions (DFI) is considered to be pivotal, particularly in regards with linking public and private finance. And most of DFI's ownership structures benefit from government's direct and indirect shareholdings.	(Buchner et al., 2011; Buchner et al., 2012)
WRI	The authors take into account only transactions delivered through multilateral organisations, highlighting the role of public financial institutions in leveraging private funding.	(Venugopal et al., 2012)
University of Zurich	For allocating investment through contributors which funding is channelized by multilateral institutions the authors apply the share of paid-in capital for development banks, and share of contribution for trust funds and multilateral agencies to assess the Swiss share of private investment. There are challenges regarding shares subject to call and by the type of instrument (i.e. loans and grants). The authors cite Loozekoot (2012) for defining mobilisation from developed countries if they are through 'developed country public interventions in the form of fiscal instruments and program including fiscal measures, the carbon market, ODA and OOF'	(Stadelmann and Michaelowa, 2013)

3. Additionality	**How do you determine if public intervention (of any kind) was necessary in mobilizing private finance? What is the counterfactual without public intervention?**	**OECD, ODI, AGF, Climate Strategies, Univ. of Zurich, WRI, GEF, UK**
Source	*Discussion of potential approaches and challenges*	*Reference*
ODI	Additionality is a relative concept, as it is defined with reference to a "baseline" estimate of what would have happened without the intervention. The baseline is a hypothetical projection of the future, and is also referred to as a business-as-usual (BAU) future scenario. Additionality is central to UNFCCC and Kyoto Protocol provisions on mitigation action, and on international finance for climate change. The concept of additionality has been applied at an operational level through the Clean Development Mechanism (CDM) of the Kyoto Protocol, wherein projects that generate emission reductions must demonstrate that these reductions are additional, relative to a hypothetical estimate of likely action without access to such finance (also known as a BAU baseline). Baselines are difficult to construct accurately, and can always be subject to debate. A technical interpretation of additionality can be complex and cumbersome. When used in the context of evaluating activities relevant for climate change mitigation, attention to the principle of additionality should focus on the net emission reductions associated with such activities, relative to the BAU scenario. Causality is difficult to establish conclusively, and is not the topic of this paper. However the intent of expenditure is certainly an important consideration in assessing whether it counts in contributing to climate change mitigation. The principle may best be used as guidance in considering the nature of expenditure – particularly expenditures whose climate benefits may be subject to some dispute - and its relevance for climate change. At its heart, the additionality principle recognises that a response to the challenge of climate change requires effort additional to what would have happened anyway. Additionality is fundamentally about assessing whether one, or a combination of, policy interventions is changing behaviour. The entire concept of climate change mitigation activity must therefore be built upon a careful understanding of the policy interventions, and of underlying assumptions about how behaviour is affected by these interventions.	(Nakhooda et al, 2012)
OECD	Most institutions examined do not provide explicit rationale for demonstrating how their intervention has mobilised climate finance The Clean Development Mechanism's requirement for the demonstration of additionality is one example where such requirements have been implemented. However, it would likely prove challenging and time consuming to determine if a project with multiple public and private actors would have gone forward in the absence of any one single instrument that could be attributed to specific countries or country groupings.	(Caruso & Ellis, 2013)
High Level Advisory Group on Climate Financing (AGF)	Additionality: Additionality refers to the extent to which new resources add to the existing level of resources (instead of replacing any of them) and result in a greater aggregate level of resources. Operationalization of additionality, including through defining a reference case against which "greater" can be determined, is politically and analytically very difficult. Given likely pressures on existing sources and the difficulty of specifying a 2020 reference case against which additionality could be measured, a potential perspective is to treat the newness of a source as a useful, if partial, proxy for additionality. There are also other interpretations, however, such as taking the view that the US$100 billion target should be measured in a way that would be additional to a 2020 official development assistance (ODA) reference case.	(AGF, 2010)
University of Zurich (Climate Strategies)	Private finance has to be mobilized by industrialized countries who have committed to the $100 billion target private actions not influenced by governments cannot be seriously considered as "mobilized" Therefore, voluntary funds are not to be seen as "mobilized", unless a clear link to public policy (e.g. tax incentives, information campaign) can be made. Similarly to voluntary actions, many low-carbon FDI and other investments will also happen without any public intervention, as low-carbon investments may be profitable anyway. In contrast, investments leveraged by bilateral and multilateral agencies as well as through the carbon market can be considered as "mobilized" because they only emerge as a result of public climate interventions. Potentially, some investments have to be deducted, as some leveraging would have happened without international climate policy (see baseline discussion above). Finally, payments through the carbon market are most clearly "mobilized", as the carbon market has only emerged as consequence of (international) climate policy. It is difficult to determine "cause" and "effect or what is "mobilised" in complicated financial transactions. Further, this may vary over time as the mitigation or adaptation activity (and/or policy framework in which it takes place) evolves	(Stadelmann et al., 2011)

	Mobilized by governments in industrialized countries: This definition is the one proposed by the Dutch government, who refers to finance "mobilized through developed country public interventions in the form of fiscal instruments and program including fiscal measures, the carbon market, ODA and OOF" (Loozekoot, 2012). It also corresponds to the criteria "additionality – state action needed", set up by Griesshaber (2012). The idea behind this definition is that only governments negotiating in UNFCCC negotiations can be hold responsible for their actions. In such a definition, North-South private flows on which industrialized governments have no influence (far right arrow in Figure 3) would not be counted towards the USD 100 billion goal. What is the "business-as usual," non-climate-policy baseline of public funding, above which funding can be considered as "new and additional."? In case of public finance, at least eight possible definitions of such baselines exist (e.g. past, current or planned climate or development funds) and none of them is internationally accepted (Brown et al., 2010; Stadelmann et al., forthcoming). As no baseline has been agreed for public finance, we can also not judge on the additionality of private finance, and will therefore, not include this criterion in the further analysis. Clearly, if there is international agreement on a public climate finance baseline, this would have to apply to private finance as well. Additionality: It is not clear how much of the public financing for these climate-relevant investments was diverted from Official Development Assistance, and how much private financing was additional to business-as-usual scenarios.	
University of Zurich (Switzerland)	While the CDM has established procedures for assessing "additionality" of investments, the CDM tools may be too onerous. Therefore, simpler decision criteria for "mobilization" may be used (e.g. timing of investment decision, financing the same project parts as public finance). Private finance beyond the existing level is "new and additional:" this interpretation assumes that additional efforts are to be taken by the private sector beyond the level of 2009 / pre COP15, when the USD 100 billion were pledged (Nafo, 2012). The CDM tools may be too onerous. One problem with this definition is that the private sector may substantially increase its financing from 2009 to 2020, even without any international or national climate policy efforts. There, one may ask whether "new and additional of private finance is better to be understood as "beyond the business-as-usual" level.	(Stadelmann and Michaelowa, 2013)
WRI	Causality: To date, the institutions analyzed have not released information that would enable an assessment of whether the private sector financing was a direct outcome of public finance. Additionality: It is not clear how much of the public financing for these climate-relevant investments was diverted from Official Development Assistance, and how much private financing was additional to business-as-usual scenarios.	(Venugopal, et al., 2012b)
GEF	GEF leverage occurs in two ways: additionality, when additional resources are mobilized for the objective or substitution, when existing resources are channelled to activities consistent with that objective rather than to other activities. GEF therefore considers that project co-financing is evidence of leverage 'only when the co-financier pays for part of the incremental cost (additionality) or, more commonly, pays for part of the non-incremental cost of an activity that is a substitute for the baseline activity' (GEF, 1996). For example, by providing incremental cost financing for a substitute, rather than the full cost of just an add-on component, GEF can effectively re-direct the non-incremental cost financing and create leverage. The non-incremental (baseline) cost cannot be said to be additional because the baseline (with respect to which incremental costs and global environmental benefits are estimated) is by definition financially feasible. So co-financing of baseline costs can only be leverage when the GEF supported activity substitutes for a baseline activity, rather than just adds to it.	(Brown, et al., 2011)
UK	Equity - UK's Climate Public Private Partnership (CP3) programme, which integrates the concept of additionality into the process of assessing how much financing its intervention has mobilised. To do this, the UK forecasts what percentage of sub-funds and direct investments would have reached financial close without intervention by the CP3. This can vary substantially according to sub-fund. For instance, DFID reported that for the CP3 Asia Fund, 60% of sub-funds and 80% of direct investments would have reached closing, and therefore that only 40% of sub-funds and 20% of direct investment were additional. For the CP3's investment in the IFC's Catalyst Fund, it was estimated that only 40% of sub-funds would have reached closing. It is important to assess the additional level of finance that would not have been brought into the climate change project if donors had not taken action, funded or put in place measures to mobilise the finance. This is also referred to as additionality and is key to ensuring impact and value for money from our actions. In some cases an intervention may only be accelerating private markets and so some private climate finance would have happened in the absence of the intervention. This is often referred to as the baseline and this needs to be considered in order to calculate the additional finance to report. Estimating baselines and additionality can be difficult and we have not yet developed a fixed approach.	(Ockenden, et al., 2012)

4. Attribution	**How can do you attribute mobilisation among specific actors in the case where multiple actors are involved in a given intervention? Thereby avoiding double counting**	**OECD, UK, WRI, ODI, Univ. Zurich**
Source	*Discussion of potential approaches and challenges*	*Reference*
OECD	Authors present a revision of different methodologies used by a set of institutions. For attribution, the suggest a more conservative and a less conservative approach. For the first one, they suggest to 'estimate a pro rata share of the mobilised finance based on the level of involvement of an actor in relation to other public financiers or only counting mobilised private sector finance that originates from Annex II public institution's home country'. The latter, suggest to take into account private finance mobilised from all geographic sources. The authors found that the current reporting does not record the attribution to specific countries or regions of origin. When analysing specific instruments by organisation, the authors found that there are 3 approaches for attribution in the case of debt instruments. The first, when institutions assume that all the external capital mobilised via debt instruments are attributable to their interventions (this is the case of the CTF, CIFs, EBRD - SEI, GEF and OPIC). The second approach is applied by the ADB, which requires that their intervention to prove to be instrumental in mobilising external debt, which needs to be proven through MoUs or other formal agreements between the ADB and the co-financers. The third approach is the one used by JICA, which does not track private co-financing mobilised. Debt – (OPIC, CIF, EBRD, GEF) - When reporting the amount of money mobilised via debt instruments, each of these institutions assumes that its interventions have mobilised all external capital being invested in the project. Debt - (ADB) If the ADB joins a non project-specific initiative that is administered by another institution, it does not consider the co-financing provided by others as being mobilized. In general, ADB requires that its intervention was "instrumental" in mobilising external debt. For ADB, instrumentality can be demonstrated by formal agreements between the ADB and co-financiers, such as memoranda of understanding (MoU). Debt – (JBIC) only included private sector loans from Japanese commercial banks (typically comprising 40% in a B tranche of the overall Japanese loan) in its estimation of mobilised funds. Equity - The ADB's definition of DVA co-financing as it relates to equity investments only includes investments made by private actors in funds where the ADB acts as a general partner, excluding those where the ADB acts only as a limited investment partner	(Caruso & Ellis, 2013)
UK	In many instances one donor may be acting and co-financing alongside a group of other public donors. In this instance the individual donor should only claim mobilization of that particular proportion of funding. A simple pro rata attribution rule based on share of total project donor finance is proposed in first instance, applied constantly overtime. Preventing double counting with other donors, so UK cannot attribute to itself all the benefits from a co-funded project Share to UK (%) = HMG fund (£) / total donor funds (£). Identify other public finance sources involved e.g. MDBs, other donors and calculate your donor share based on an attribution rule.	(Ockenden, et al., 2012)
WRI	The authors define recipients of climate finance as developing countries. Even if they do make an analysis of two types of multilateral institutions (climate funds and development banks), they do not cover attribution to specific contributor countries (focus of the analysis is on the financial instruments used).	(Venugopal et al., 2012; Venugopal et al., 2012a)
ODI	The authors use for attribution the ownership share corresponding to the contributor country under analysis and apply it to the mobilised amount from the private sector.	(Whitley, 2012f; Whitley & Mohanty, 2012b; Whitley, et al., 2012a; Whitley & Mohanty, 2013d)
University of Zurich (Switzerland)	How are investments allocated to contributor countries made through multilateral institutions? In the section before, we simply used the share of paid-in capital (development banks) and share of contribution (to trust funds, multilateral agencies) to assess the Swiss share of private investments. While this may a feasible solution in most cases, detailed procedures may need to consider the relevance of "shares subject to call" (development banks) and the difference between contributions through loans and grants in case of trust funds (e.g. Clean Technology Fund). Two potential criteria for attributing flows (to Switzerland) would be the following:	(Stadelmann & Michaelowa, 2013)

	Mobilized by Switzerland: All private finance mobilized by Swiss entities (either the Swiss government or private organizations and companies) would be attributed to Switzerland. The advantages of this definition are its closeness to the wording in UNFCCC documents and the attribution to the country where the effort has been taken place. The disadvantage is that "mobilized finance" is difficult to measure and double counting may occur: two "mobilizing countries" may claim to mobilize the same private (or public) flows. Therefore, enough detail has to be provided to avoid double counting, and in case of disagreement, the owner of "mobilized finance" may report by which country his flows have been triggered. "Outflow" from Switzerland: this second definition would mean that all finance flowing from Switzerland to developing countries would be attributed to Switzerland. The advantage is that the measurement is straightforward but the disadvantage is that the country to which the flow is attributed, may not be the same as the country that has undertaken an effort (e.g. a headquarter may decide to invest in low-carbon technologies but the actual outflow happens in a country where a subsidiary is based). Furthermore, transaction costs are not covered under this definition.	
5. Timing	**When (temporally) in the financing chain is mobilisation estimated and reported (project and financing stages, ex-ante or ex-post) and how are subsequent rounds of financing addressed?**	**Univ. Zurich, CPI, OECD**
Source	*Discussion of potential approaches and challenges*	*Reference*
OECD	Some institutions verify estimations ex post (through both random and targeted processes), while others provide only ex ante forecasts; assumed time-horizons for mobilisation effects and selected point of estimation along finance chain vary widely. For debt - While nearly all institutions examined assess mobilisation on an ex ante basis at the point of commitment, OPIC takes an innovative approach by verifying a randomised sample of projects ex post. Under this approach, The EBRD also verifies some of its SEI projects on an ex post basis, choosing to focus on its largest investments. On the issue of fund hierarchy, the Global Energy Efficiency and Renewable Energy Fund (GEEREF) estimates and reports two separate numbers for the amount raised at the intermediary fund level (where it uses the term "leverage") and the amount raised at the downstream beneficiary and project level (where it uses the term "multiplier"). The ADB, Swedfund, and JBIC estimate mobilisation only at the first fund level, whereas the CP3 and GEEREF for instance estimate mobilisation at the final beneficiary level. Equity - (CDC) which excludes any investment in equity funds that predates its own investment. CDC applies a tapering factor that allows 100% of non-pre-existing funds to be counted for first round funds, but then discounts this by 25% for every subsequent round of funding. For example, if the CDC enters into a fund already in its third round, it will only count 50% of co-financing as having been mobilised. For example, using forecasting models to estimate mobilisation ex ante can be a relatively less costly option compared to ex post verification by a separate monitoring and evaluations team. OPIC reports a minimal amount of variation between ex ante and ex post assessments of mobilised co-financing for sampled projects. These differences in where and when mobilisation is estimated can significantly impact the amount of finance reported as mobilised, due to the inherent multiplier-effect of the FoF model. Since ownership (private / public) can change over time, this also impacts ex ante leveraging estimates.	(Caruso & Ellis, 2013)
CPI	Following the taxonomy laid out in the previous section, we provide estimated climate finance flows for most of the entries in the diagram. To make things relevant and comparable, we used the most recent year (2009/2010) or an average of the most recent years (depending on which was the most representative), and all figures are stated in USD billion. We use three major sources of information: 1) existing databases, tracking initiatives, and studies compiled by various organizations; 2) third-party expertise, when official numbers were lacking or did not appropriately portray the related flow; 3) our own estimates, when no satisfactory official / third-party numbers were available. The resulting set of estimates of the climate finance landscape includes existing databases, tracking initiatives, and studies compiled by the various organizations working on certain elements of climate finance. Nevertheless, we acknowledge that there remains ample room for improvement, often due to the lack of readily available, consistent data sources. In particular, the following caveats need to be highlighted: first, the figures presented in this study are predominantly based on climate finance commitments, given that data on disbursements is lacking at various stages. This aspect needs to	(Buchner et al., 2011)

	be kept in mind as it potentially gives rise to a distorted picture of average annual climate finance flows. Commitments are likely to be considerably higher than annual disbursements, particularly because committed amounts often spread over a number of years (e.g. climate funds). In addition, commitment data are usually not adjusted ex-post for cancellations or amendments to the actual value of support provided, leading to potential overestimates of financial amounts.	
University of Zurich (Switzerland)	Does the system measure the sources of private finance, the outflows from developed countries or the inflows to developing countries? In case of "mobilized investments", where is it measured?	(Stadelmann and Michaelowa, 2013)
6. Definition – Recipient	**How to define final recipient of funding?**	**OECD, ODI, WRI, Univ. Zurich**
Source	*Discussion of potential approaches and challenges*	*Reference*
OECD	Tracking private flows should ideally give a picture of the final destination, which is not always straightforward because some finance may flow indirectly to their final destination (e.g. for tax reasons).	(Clapp, et al., 2012)
ODI	The authors identify both, the location of the intervention (project or programme), and also take into account the ownership of the recipient.	(Whitley, 2012f; Whitley & Mohanty, 2012b; Whitley, et al., 2012a; Whitley & Mohanty, 2013d)
University of Zurich (Switzerland)	The authors take into account only 'investments, donations or other financial means of the private sector that support climate change mitigation and adaptation in developing countries'. Developing countries are defined as countries that are not part of the OECD.	(Stadelmann & Michaelowa, 2013)
WRI	The authors indicate that the intended recipients of international climate finance include the rapidly growing economies (Brazil, India and China) as well as the world's poorest economies (Rwanda, Bangladesh and Haiti). They define developing countries as "Non-Annex I countries as defined by the United Nations Framework Convention on Climate Change (UNFCCC). Broadly, this definition excludes members of the Organisation for Economic Co-operation and Development (OECD) countries (Annex II) and economies in transition."	(Venugopal, et al., 2012a)
7. Climate specific	**What approaches or definitions do you use to determine climate specificity of an intervention?**	**OECD, CPI, EBRD, MDBs, Ecofys, IFC, WRI, Univ. Zurich, Climate Strategies, ODI.**
Source	*Discussion of potential approaches and challenges*	*Reference*
OECD	The Rio Markers do not allow exact quantification of amounts allocated within projects specifically to address climate concerns but instead provide an indication of the extent to which donors address the objectives of the Rio Conventions in their aid programmes. There is thus significant room for interpretation and also opportunity for error. The OECD's DAC-CRS database tracks climate-related ODA. However, none of the systems currently in place give a complete picture of climate finance flows. Information on private sector finance flows is particularly patchy.	(Buchner et al., 2011)
CPI	For ODA classification, the authors used the OECD CRS Rio Marker system for the identification of adaptation and mitigation financing. They also identify the inconsistencies existing in the labelling and definition of climate finance, particularly around what means climate relevant and climate specific. For the purposes of this study, finance flows are limited to 'climate-specific finance,' referring specifically to capital flows targeting low-carbon and climate-resilient development. It can have direct or indirect greenhouse gas mitigation or adaptation objectives/outcomes (excluding climate relevant finance - investment that may influence emissions or vulnerability).	(Buchner et al., 2011; Buchner et al., 2012)
EBRD -SEI	SEI support activities that correspond to specific climate change mitigation actions, including: - Sustainable Energy Finance Facilities, Energy Efficiency (Building, Industrial, Transport and Agribusiness), Natural Resources, Steam/District Heating, Municipal Services/Waste/Water and Sewage, Renewable Energy, Electric Power Distribution, Generation and Transmission.	(Tanaka, 2012)

	- SEI also supports activities related to climate change adaptation, carbon market development and sustainable energy policy dialogue supporting transformational change. They also propose a typology of projects: - set of private sector clients/counterparts often operating within a specific sector - size of investment and in many cases financing plan structure - technical features - carbon emissions reduction patterns and volume - need and rational for concessional climate finance - policy issues and parameters for example in terms of low carbon policy or cost recovery	
Joint MDB Group	The MDBs have come out with a list of activities for mitigation. For adaptation, the MDBs have proposed a set of three principles in order to report a project activity as an adaptation project: (a) to be set out in a context of climate vulnerability, (b) include a statement of purpose or intent to address or improve climate resilience, and (c) links to the context of climate vulnerability. They also establish a series of categories to comply (including: addressing current drivers of vulnerability, building resilience to current and future climate risks, incorporating climate risks into investments and incorporating management of climate risk into plans, institutions and policies.	(MDB, 2012a; MDB, 2012b)
Ecofys	Mitigation and adaptation finance is specifically related to climate change related activities: mitigation financial flows refer to investments in projects and programs that contribute to reducing or avoiding greenhouse gas emissions (GHGs) whereas adaptation financial flows refer to investments that contribute to reducing the vulnerability of goods and persons to the effects of climate change. For the purposes of this report, green finance is split into three separate themes: Green energy and mitigation of greenhouse gas emissions, Adaptation to climate change impacts, and „Other" environmental objectives. A key challenge of this mapping study is to overcome the varying definitions for green finance themes, and to distinguish between the „other" environmental, green energy and mitigation of GHGs, and adaptation categories for which data was collected. In order to distinguish between these categories, a framework was created for International Development Finance Club (IDFC) members. Much of this guidance is based on the understanding of IDFC members of the three categories and was determined in close coordination with representatives of IDFC	(Höhne et al., 2012)
International Finance Corporation (IFC)	IFC uses three broad categories to define climate-related investment: - Renewable energy (RE): Energy obtained from natural resources such as sunlight and wind. IFC includes hydroelectric power projects in its accounting for climate-related investment; most hydro tends to be greater than 10MW. Within RE, IFC's activities span the spectrum from direct RE generation projects to support for equipment manufacturing and investing via FIs through credit lines and funds. - Energy efficiency (EE): Efforts to reduce the amount of energy required to provide products and services. There is potential for greater EE in practically all aspects of IFC investment activity - industrial applications, and the buildings, transport, and power sectors. EE component manufacturing and monies channelled through FIs are also included. - Other climate-related activity: Including IFC's Carbon Finance transactions, investments in sustainable forestry, and any other activity that results in carbon reduction or provides other "green" benefits.	(Patel, 2011)
OECD	Climate relevance has been identified a list of receiving sectors, depending on the recipient. Funds from multilateral, bilateral banks and United Nations agencies were received in the Infrastructure (energy and transport); agriculture, forestry, livestock and fisheries; and environmental and natural resources sectors were taken into account. For Foreign Direct Investment (FDI), private corporations, venture capitalists, merchant banks For the climate finance from the private sector, the data available is not enough to show climate relevance or climate objectives. The author identified sectors with the highest relevance to climate change and took into account the FDI flows directed to those sectors with significant relevance to climate change (although arguably): agriculture, forest, fisheries and energy. Similar approach was taken with philanthropic flows (through NGOs), taking into account those fund directed to water and sanitation projects and the distribution of agriculture inputs in drought and flooded area of Zambia.	(Mulenga, 2013)

WRI	Climate-relevant projects: Projects in renewable energy, energy efficiency, agriculture, transportation, water infrastructure and treatment, adaptation activities, and other sectors that promote greenhouse gas emissions reductions or assist in adaptation to climate change impacts. The authors used an ad hoc approach, depending on the fund they were analysing. The included projects classified with "climate change" focal area, as defined by the GEF (for GEF projects); all CTF projects; projects with at least 10% of focus on the theme of climate change (for IBRD/IDA projects); those with climate change as key words and with specific climate benefits listed (IFC); all full size projects MIGA).	(Venugopal et al., 2012; Venugopal et al., 2012b)
University of Zurich (Switzerland)	Which investments are to be considered as "climate-friendly"? A practical solution would be to count investments in projects marked with a "climate change" mitigation or adaptation Rio Marker (climate change as principal or significant goal) as "climate-friendly". In the period under review, there were no activities undertaken that could be classified as "adaptation." This is largely due to the fact that there are few commercial opportunities in adaptation at the present time. With regard to climate-proofing, in many cases, the incremental costs associated with building climate resiliency into a project are simply internalized by the project and not accounted for separately. However, the marking of ODA and OOF flows with Rio Markers has shortcomings and may have to be improved (Michaelowa and Michaelowa, 2011). Given the experience of Swiss development agencies (SECO and DEZA) with the current Rio Marker, it may be desirable to have not only a generic definition of "climate change mitigation and adaptation" as is currently the case for OECD Rio Markers but to agree on a list of eligible technologies/project types. Different fora could be envisaged to start technical discussions on the topic: inter alia informal group of interested countries, SBSTA or the Standing Committee.	(Stadelmann & Michaelowa, 2013)
University of Zurich (Climate Strategies)	The figure for "mitigation-specific" FDI will be closer to the numbers generated by UNCTAD (2010), who used investment-level data from the private website "FDIintelligence.com" to identify around $30-40 billion of FDI in three low-carbon sectors (renewable energy, recycling, environmental technology manufacturing) flowing to developing countries in the years 2008/2009.	(Stadelmann et al., 2011)
ODI	The authors looked into government entities in each of the countries analyzed (US, UK, Japan and Germany) that are active in supporting private sector in developing countries and with specific objectives on climate change. Most of the projects were mitigation related.	(Whitley, 2012f; Whitley & Mohanty, 2012b; Whitley, et al., 2012a; Whitley & Mohanty, 2013d)

8. Sub-components	**Do you count all or only part of an intervention's value – and if part, how are sub-components valued which are climate relevant? (as it applies to projects within programmes, or sub-components of project)**	**Ecofys, OECD**
Source	*Discussion of potential approaches and challenges*	*Reference*
OECD	Some institutions report the level of mobilisation by project component, whereas others do this at the level of an entire project. This can significantly affect results, as not all components of a project are necessarily climate-related.	(Carusso & Ellis, 2013)
Ecofys	IFC isolates the climate component of the project for tracking and reporting purposes, determines the share of climate-related activities within a given project, and then calculates the IFC "climate claim" based on a pro-rata share of the financing provided. For example, if total project cost is 100, the climate component is 50, and IFC has financed 20 overall, the "climate claim" will be 10.	Höhne et al., 2012

9. Currency	**How are different currencies treated, that are provided over different time frames?**	**Univ. Zurich, ODI, WRI**
Source	*Discussion of potential approaches and challenges*	*Reference*
University of Zurich (Switzerland)	For simplicity, we will assume in the following an exchange rate of 1 USD = 1 CHF for the years 2009-2011.	(Stadelmann & Michaelowa, 2013)
ODI	The authors use exchange rates (to US dollars) corresponding to the date of donor portfolio review. For each review, the rates used are included in the End notes.	(Whitley, 2012f; Whitley & Mohanty, 2012b; Whitley, et al., 2012a; Whitley & Mohanty, 2013d)

WRI	The authors identify that some of the multilateral sources and intermediaries of international climate finance offer currency related re-risking instruments, such as local currency loans (AfDB; EBRD), currency swaps (AfDB; IBRD; IDA, IFC,), local currency guarantees (IDB). And others, as the CIFs, generate institutional barriers as the currency risk is borne by the developer, adding to costs and risks for the private sector. Local currency loans are available as an option under the current CTF design, however MDBs are unable to lend in local currencies because of their institutional mandates.	(Venugopal, et al., 2012)

10. Calculation	**What formula is used to determine the value of mobilised private co-financing?**	**WB, OECD, Univ. Zurich, UNEP, WEF, UK, WRI, CPI, ODI, ERBD**
Source	*Discussion of potential approaches and challenges*	*Reference*
ODI	The World Bank calculates finance leverage on a project by project basis, for projects under the Clean Development Mechanism (CDM). Leverage ratio = Net present value of the primary transactions of certified emission reductions (CERs)/ Total capital investment needed to get the project off the ground. Data is ex-ante project investment and confidential, and is obtained from the Emissions Reduction Purchase Agreement (ERPA), which only the WB has access to. Capital investment data does not distinguish between private or public sources.	(Brown, et al., 2011)
OECD	The OECD proposes to calculate a leverage ratio of private funding as a proportion of the total funding. It identifies seven broad "buckets" as financial sources (See list from A to G below). Leverage ratio of private-sector funding from Annex I countries: E / (A+B+C+D) A. direct funding from the reporting entity, B. indirect funding from the reporting entity (e.g. in-kind support), C. public concessional funding from Annex I countries (some – but not all - entities distinguish concessional from non-concessional public flows), D. public non-concessional funding from Annex I countries, E. private-sector funding from companies located/domiciled in Annex I countries, F. private-sector funding from companies located/domiciled in non-Annex I countries and G. domestic public funding from the non-Annex I country in which the climate measure, action or project is occurring.	(Clapp, et al., 2012; Ellis & Reagan, 2012)
University of Zurich (Switzerland)	The authors intended to approach calculations both from a bottom up and a top down approach. The first one involved a questionnaire sent to 80 relevant companies, governmental agencies and organizations in Switzerland, to which only 35 where completed and returned to the authors. Calculations under this approach where limited as private finance has not yet being defined and is not included in the MRV systems of the Swiss agencies or in the ODA impact evaluation reports; and represented a high risk of double counting. The top-town approach looked into a set of 'instruments typology' and the results of the calculation are presented in ranges. Such instrument typology is assumed to be led by the private sector. Instruments typology and calculation methodology for the [lower] and the [upper range]: -Carbon market payments: [CER 2008-2012 x weighted price x approximate share of Swiss customers of non-US voluntary credits in 2010] [volume of voluntary offsets purchased by Swiss buyers in 2011]. Existing in literature. -Non-return oriented finance (with climate benefits): [US philanthropy donations for climate change x US and Swiss share in philanthropy donations for developing countries][Swiss private donations to development NGOs 2008-2009x %ODA with Rio Markers]. -FDI and other investment flows: [2008-2010 FDI outflows in the Electronics, energy and watches Sector x Swiss share in water and energy sectors insured by Swiss Export Risk insurance promoting mitigation and adaptation][Average 2008-2010 Swiss FDI x Swiss share of Annex 2 FDI outflows to developing countries during 2006-2010] -Investments mobilized by Swiss public agencies (bilateral and multilateral channels): [Swiss ODA Rio marked x ratio public finance and mobilized private investment] -Investments mobilized by Swiss export risk insurance: [Green export credits x ratio for mobilised finance x Swiss share of OECD cash flow results] The authors identified the challenges on identifying the climate relevance of FDI (See also Buchner et al., 2011; Stadelmann et al., 2011), and Swiss companies demands for detailed guidance.	(Stadelmann et al., 2011; Stadelmann & Michaelowa, 2013)

UNEP	The authors identify the guarantee structure and leveraging. Whereas they use the leverage ratio for public funding, this could possible apply to private sources: A. Public funding for guarantee reserves B. DFI Guarantee commitment C. Total guarantee capacity (maximum) : A + B D. Ratio DFI to public funding: B/A E. Average guarantee percentage F: Max. Loans CFI can offer with guarantee G. Total Max. project financing supported H. Ratio of public funding to total project investment	(Maclean, et al., 2008)
World Economic Forum (WEF)	The Clean Technology Fund (CTF) registers co-finance of the projects it supports through its different financial instruments (such as grants, highly concessional loans and risk-mitigation instruments). The CTF, and the other funds within the Climate Investment Funds (CIFs), consider all the co-financing as being mobilized by the CTF. It estimates that every dollar from public sources mobilized around 8 dollars (1:8 ratio), from both public and private sources. As of September 2012, US$ 1.9 billion were approved for 28 projects, with a total co-financing of US$ 16.4 billion, of which US$ 6.4 billion (40% of total co-financing) is from private sources (1: 3.3 ratio for private co-finance). Private co-finance ratio = Total co-finance - Private sourced co-finance / Total co-finance	(WEF, 2013)
UK	Methodology we have stated to employ across the UK's international Climate Fund. Working approach: 1. Identify donor support – being action, investment or measure 2. Identify private climate finance contribution mobilized from various sources a. Using technical definitions to ensure consistency i. What is private finance ii. What makes it climate finance? (assessing climate relevance) b. Having a clear theory of change for how and what finance has been mobilized. 3. Consider what level of private climate finance is additional a. It is important to consider and assess what funding to climate relevant investment would happen without donor support to then assess what is being additionally mobilized by donor actions – in order to ensure impact and value for money b. Isolating additional impacts is difficult – we have not developed a fixed approach but consider additionality on a project by project basis. 4. Isolate the level of private CF attributed to donor spend to avoid double counting across multiple donors a. Identify other public finance sources involved e.g. mobs, other donors and calculate your donor share based on an attribution rule, for example: Share to UK (%) = UK funds (£) / Total donor fund (£) b. Apply an attribution rule 5. Calculate the leverage ratio of public to private climate finance attributed to donor spend Leverage ratio = total additional private finance mobilized / total donor finance = attributable additional private finance mobilized / individual donor finance 6. Interpret –levels of mobilized private climate finance and leverage ratios across projects and countries are not comparable – a good leverage ratio is dependent on the context, in particular the expected project risk and reward. Evidence from similar projects and contexts can be used to interpret and benchmark 7. Establish a monitoring framework – the methodology above provides an approach to forecast mobilized climate finance flows. This provides targets and milestones for a project's success with regard to the finance it mobilises. However, it is important to establish robust monitoring and reporting arrangement to track actual finance flows realized for future reporting. This can be done through identifying private finance mobilized as performance indicator to monitor in a projects log frame or results framework and following a consistent methodology to that outline above. To avoid double counting, key approaches on attribution (i.e. how much is recorded against each country) for multi-donor projects would need to be agreed. One approach for multi donor projects could be that they are reported as a whole rather than donor level reporting and then a central institution such as the OECD to makes the apportionment.	(Ockenden, et al., 2012)

WRI	The authors defined leverage as the dollars of private sector capital that have been mobilized to co-finance a project for every dollar of public sector money. This is applied in a project by project basis to a set of climate relevant projects. Leverage private sector = co-finance mobilized from private sector capital / total public sector money i.e. GEF leverage private sector = co-finance from private sector / total GEF money The review included Funds were reviewed for the study: IBRD/IDA, IFC, MIGA, GEF and CTF. In addition, the instruments of the following institutions were also included (there was no enough information for further analysis): AfDB, IDB, EBRD, EIB, SCF and the Adaptation Fund.	(Venugopal et al., 2012)
CPI	In 2011 Private finance was presented as a total range flow, with a bottom up and a top down approach. The lower bound is an estimation on green FDI (FDI in renewable electricity generation, recycling and manufacturing of environmental technology products such as wind turbines, solar panels and biofuels) in developing countries from the UNCTAD FDI database. The upper bound is a bottom up estimate of renewable energy projects in developing countries based on Bloomberg BNEF database. Top down approach: FDI flows in specific sectors in 2009 x % to developed countries between 2003-2009 Bottom up approach: Total renewable energy investment in developing countries from developed countries, other developing countries and private investment from national investors - Data relative to public equity markets (what is available) In 2012, FDI data was also related to renewable generation (biomass, geothermal, hydroelectric, solar, tidal and wind energy); and waste management.	(Buchner et al., 2011; Buchner et al., 2012)
ODI	The authors identify Public Climate Finance Support (PCFS), as finance resulting from developed country interventions to mobilise private sector participation in climate compatible development (CCD). The PCFS is the total value of the public support and the private sector support that could be attributable to a specific developed country. PCFS = total public flow into an intervention + private flow from country i x % attributable to the country i	(Whitley, 2012f; Whitley & Mohanty, 2012b; Whitley, et al., 2012a; Whitley & Mohanty, 2013d)
EBRD	Leverage is computed in terms of ratio of total project value divided by EBRD financing. Typically, the EBRD private project financing share will be about one third with a resulting financial leverage around 3:1. As the SEI activity is often a component of a larger project the financial leverage of the SEI activity is assumed to be equal to the financial mobilisation at overall project level.	(Tanaka, 2012)

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Practical Methods for Assessing Private Climate Finance Flows

In spite of the climate finance commitment by the developed countries to mobilise jointly 100 billion USD per year by 2020 to address the needs of developing countries from a wide variety of sources, there is no clear agreement on the types of funds that might count as mobilised by developed countries and what private finance flows could be considered as mobilised for climate action in developing countries.

This study identifies ten considerations that are key to estimating mobilised private climate finance. An example methodology is proposed for tracking mobilised private investment and the methodology is tested on three Nordic case studies. Through the further refinement of methodologies, it should be possible to develop common systems for M&E of finance enabling a clearer understanding of the finance landscape and the effectiveness of interventions for mobilising private investment.

TemaNord 2014:506
ISBN 978-92-893-2702-2
ISBN 978-92-893-2704-6 (EPUB)
ISSN 0908-6692