



Key Findings

- Total global climate finance flows were approximately USD \$364 billion in 2011 (Buchner et al., 2012) and \$359 billion in 2012. However the vast majority of these flows - 76%, or \$275 billion - was finance generated and spent within a country's own borders (domestic finance) (Buchner et al., 2013).
- Private sector investment comprised 62% of total global finance flows in 2012, primarily in the form of investments in renewable energy projects in OECD and middle-income countries (Buchner et al., 2013; IPCC, 2014).
- Worldwide in 2013 94% of climate finance was for mitigation, and only 6% was for adaptation (Buchner et al., 2013).
- Approximately \$182 billion in climate finance was deployed each year in developing countries in 2011 and 2012, but most was domestic spending or South-South flows. Between \$39 billion and \$62 billion were comprised of North-South flows each year, and most (80-90%) was public sector finance committed by OECD governments (Buchner et al., 2013).
- Total bilateral climate-related ODA to developing countries averaged \$21.5 billion per year in 2010-2012. \$16.1 billion targeted mitigation and \$9.3 billion targeted adaptation, with \$4.2 billion addressing both (OECD, 2014).
- Roughly 13% of mitigation-related ODA goes to least developed countries (LDCs) and small island developing states (SIDS). LDCs and other low-income countries receive 25% of adaptation-related aid, with two thirds directed to LDCs in Sub-Saharan Africa (OECD, 2014a; 2014b; MDB, 2013).
- The "Fast-Start Finance" period from 2010-2012 saw \$35 billion in new aid mobilized for climate finance in developing countries. Developed countries have recently committed to mobilize an additional \$100 billion per year by 2020.

Introduction to Climate Finance

Climate finance refers to the array of domestic, national and international financial resources that can be used to help countries mitigate greenhouse gas emissions and adapt to the impacts of climate change (Nakhooda et al., 2013). The term "climate finance" remains broad (Clapp et al., 2012) and can refer to any finance - from public aid to private investment to financial instruments such as debt finance or loan guarantees - for a variety of mitigation or adaptation initiatives. Owing to the lack of international consensus over what constitutes climate finance there is debate surrounding the accounting of climate-related financial flows.¹ But by any metric, global climate finance has grown dramatically in recent years.

Climate finance flows to developing countries in particular have increased greatly since 2010, in part due to new climate-related aid commitments made by developed countries. As part of the 2009 Copenhagen Accord under the

United Nations Framework Convention on Climate Change (UNFCCC) developed countries pledged to commit \$10 billion per year in new climate finance to developing countries from 2010 to 2012 as part of a "Fast-Start Finance" period. These new commitments were to have a balanced allocation between adaptation and mitigation, prioritizing adaptation funding for least developed countries (LDCs), small island developing states (SIDS), and Africa (UNFCCC, 2010). Country self-reports now suggest these Fast-Start Finance targets were exceeded, with developed countries reporting \$35 billion mobilized over the three-year period (Nakhooda et al., 2013). As part of the Cancun Agreements signed in 2010, developed countries have now committed to mobilize an additional \$100 billion per year by 2020 to support low-emission climate-resilient development in developing countries (UNFCCC, 2010).

This brief draws on recent reports by the OECD, the World Bank, the Overseas Development Institute (ODI), the Climate Policy Initiative (CPI) and others to provide an overview of climate finance in developing countries. The brief is divided into three sections: (i) sources of global climate finance; (ii) country-level flows of climate finance; and (iii) applications

¹For example, organizations such as the OECD struggle to distinguish between "climate-specific" finance (with the principal objective of promoting low-carbon climate-resilient development) and "climate-relevant" finance (that may directly or indirectly influence emissions and climate vulnerability) (Corfee-Morlot et al., 2009; OECD, 2014).

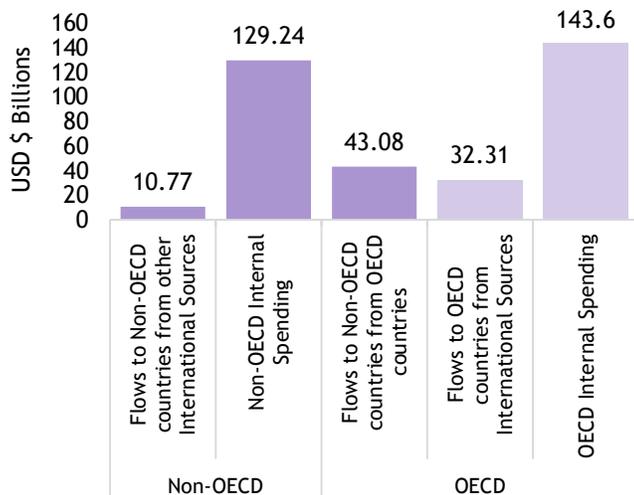
of climate finance in developing countries. The brief is designed to give a concise overview of financial flows directed at climate change mitigation and adaptation globally and in developing countries, with an introduction to climate finance accounting such that climate financial flow volumes can be compared to aid volumes in other sectors.

This brief should not be seen as an exhaustive review of global climate finance to date, and we note several caveats to published estimates of climate finance volumes owing to inconsistent definitions and relatively new monitoring systems. Climate finance flow estimates provided here are intended to give an initial sense of magnitudes of climate finance to low-income countries, and to prompt further questions about the climate finance sector.

(i) Sources of Climate Finance

Like other forms of development support, climate finance can be classified by contributor and recipient countries (OECD, 2012; Nafo et al., 2012). Commonly reported pathways are North-North flows (among developed countries), North-South flows (from developed to developing countries), South-South flows (among developing countries), and domestic finance originating within a country. Figure 1 summarizes climate finance flows to and from OECD and non-OECD countries.²

Figure 1: Climate finance to and from OECD and non-OECD sources in 2012 (Buchner et al., 2013; IDFC, 2013).



Counting all public and private funding sources and all delivery channels global climate finance flows were \$364 billion in 2011 and \$359 billion in 2012 (Buchner et al., 2012; 2013). However, nearly half of this finance was in developed countries (\$177 billion per year), most often in the form of domestic private and public investment in green energy infrastructure within OECD states. There have also been large

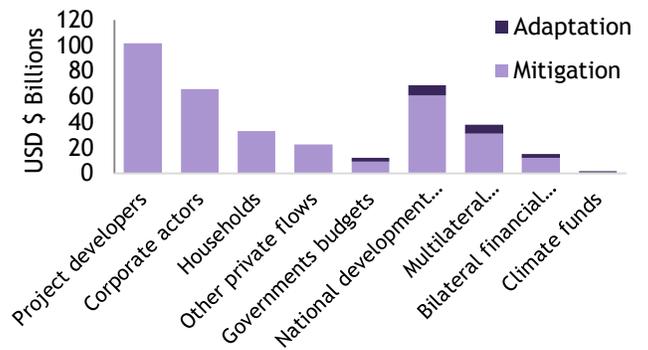
² Extensive annual reports by the Climate Policy Initiative provide detailed information on global climate finance flows (Buchner et al., 2012; 2013). These reports provide much of the data summarized in this section.

climate finance flows to and within low-income countries in recent years - over \$183 billion was mobilized in developing countries in 2012. However as with the OECD the bulk of this finance was sourced domestically (\$129 billion of 2012 developing country climate finance originated in the country where it was spent) (Buchner et al., 2013).

Only \$53.85 billion of developing country climate finance in 2012 was transferred between countries. Roughly \$43 billion was in the form of North-South flows, most originating within the public sector. The remaining \$10.77 billion in developing country climate finance was non-OECD funding from other non-OECD sources (South-South flows) (Buchner et al., 2013).

In addition to region of origin and recipient, climate finance can also be usefully classified in terms of finance providers, including public, private and public-private (Bird et al., 2013). Another classification is funding mechanism, including finance through development banks, multilateral financial institutions, or bilateral financial institutions (Atteridge, 2009; Smallridge et al., 2013), or dedicated climate funds such as those managed under the UNFCCC (Buchner et al., 2013, Nakhoda et al, 2013). Figure 2 summarizes domestic, national and international sources of global climate finance in 2012, including the climate-related objective of the finance (mitigation or adaptation) provided by the various sources.

Figure 2: Private and public sources of global climate finance in 2012 (Buchner et al., 2013).



Of the total climate finance flows worldwide in 2012 (\$364 billion), private finance made up 62%, averaging \$224 billion per year (Buchner et al., 2013; IPCC, 2014). Renewable energy project developers were the single largest investor in global climate finance in 2012, contributing \$102 billion, or 28% of the global total (Buchner et al., 2013). These were followed by corporate investors, households, and other private intermediaries contributing in total \$122 billion per year. Public flows from national, bilateral, and multilateral development banks and climate funds made up the remaining \$135 billion (Buchner et al., 2013).

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Figure 3. Allocation of global climate finance flows among mitigation activities in developed and developing countries in 2012 (adapted from Buchner et al., 2013 Annex B).

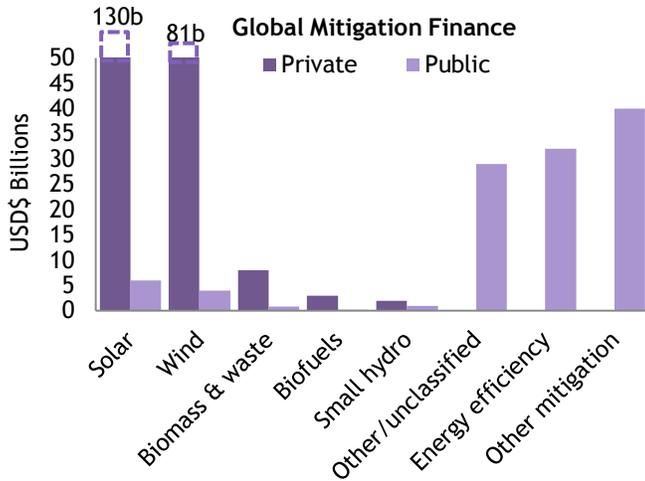
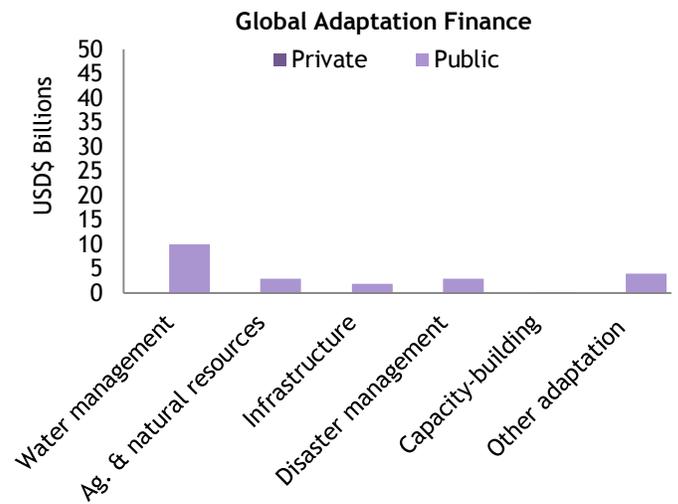


Figure 4. Allocation of global climate finance flows among adaptation activities in developed and developing countries in 2012 (adapted from Buchner et al., 2013 Annex B).



Figures 3 and 4 show the allocation of total global climate financial flows across different activities worldwide (including all developed and developing countries). Overall financial support for mitigation activities far outstrips support for adaptation activities at the global level: in 2012, 94% of total global climate finance from all sources was for mitigation, and only 6% was used for adaptation (Buchner et al., 2013). Note that solar and wind investments, at \$130 billion and \$81 billion, exceed the scale of the figure - largely owing to significant private sector climate finance investments in both developed and developing countries.

because of their dual role as public funding institutions and catalysts for private investment (Smallridge et al., 2013).

Globally, the public sector contributes \$132 - \$139 billion per year to climate finance, or 38% of worldwide climate finance flows in 2011-2012 (Buchner et al., 2013). But public sector climate finance has remained disproportionately important to climate finance in developing countries (Buchner et al., 2013). Further, as highlighted in Figures 3 and 4 the public sector has also been responsible for virtually all of the \$24 billion in global investments in climate change adaptation in recent years (as opposed to mitigation where the private sector concentrates its efforts).

Multilateral development banks (MDBs) also play a substantial role in global climate finance: the *Joint Report on Multilateral Development Bank Climate Finance 2012* which represents five regional MDBs as well as the World Bank and International Finance Committee estimates MDBs provided \$26.8 billion in climate finance in 2012. Roughly \$21 billion of this amount was dedicated to mitigation, and \$6 billion to adaptation (MDB, 2013). This number does not include funds hosted by the Global Environment Facility (GEF) (CFU, 2013), or U.S. funding through multilateral intermediaries (MDB, 2011), which leads Buchner et al. (2013) to an even higher estimate of total multilateral climate financing at \$38 billion.

Among public actors, national development banks (NDBs) accounted for roughly \$69 billion in global climate finance flows in 2012, \$61 billion (88.4%) of which was used for mitigation and \$8 billion (11.6%) for adaptation. Finance flows from NDBs represented 19% of climate finance in developing countries, or \$34 billion of the estimated \$182 billion in total climate finance in developing countries in 2012 (Buchner et al., 2013). Notably, a significant share of these resources were raised domestically and invested in pursuit of national development mandates, including public investments in renewable energy. NDBs are seen as especially important

Bilateral financial institutions (BFIs) contributed between \$12.8 and \$21.5 billion (excluding the U.S.) in the form of climate-related aid to developing countries in 2012 (OECD, 2014; Buchner et al., 2013). The largest BFI contributors were Japan (\$6.5 billion), France (\$3.7 billion), Germany (\$3.4 billion) and Norway (\$2.3 billion) (OECD, 2014). The U.S. contributed \$7.5 billion in bilateral climate finance from 2010-2012 including \$2.7 billion in 2012 as part of its commitment to the Fast-Start Finance agreement (the \$10 billion per year commitment under the Copenhagen Accords). The 2012 amount included \$1.2 billion in bilateral and multilateral aid, \$722 million in development finance, and \$301 million in export credits (US State Department, 2012).

Finally smaller but significant funding sources, particularly for least developed countries (LDCs), are dedicated climate funds. Climate funds include funds managed by the Global Environment Facility (GEF) under the UNFCCC, funds managed by other multilateral organizations, and national

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and bilateral dedicated climate funds (Buchner et al., 2013; CFU, 2014; Nakhooda et al., 2013). Climate funds provided \$1.4 billion in climate finance in 2011, and \$1.6 billion in 2012 (Buchner et al., 2013). Some of these funds explicitly target LDCs in their mandates (IFC, 2013; Foster et al., 2013), for example the Least Developed Country Fund managed by the GEF supports the implementation of national adaptation programs in 49 LDCs (Nakhooda, 2013). The Green Climate Fund, created through the Copenhagen Accord (UNFCCC, 2010), is also expected to play a key role in low-income country climate finance once fully operational in 2017 (GCF, 2014; Buchner, 2013; IPCC, 2014). However Nakhooda et al. (2013) note that significant expansion of the Green Climate Fund to channel climate finance to LDCs would require a shift for countries like the U.S. and Japan, who currently channel most of their climate finance through bilateral institutions.³

Whether climate finance comes in the form of Official Development Assistance (ODA), such as grants or low-cost loans, or as other official flows also depends on the source of the funding and the nature of projects. Buchner et al. (2013) estimate that between \$8 and \$14 billion of total global climate finance in 2012 was made in the form of grants and \$69 billion took the form of low-cost debt including concessional loans. In North-South climate finance the OECD (2014) estimates that of the average \$16.1 billion per year of mitigation-related ODA, 58% was comprised of low-interest loans. In contrast, of the \$9.3 billion in adaptation-related ODA, 69% was comprised of grants (OECD, 2014a; 2014b).

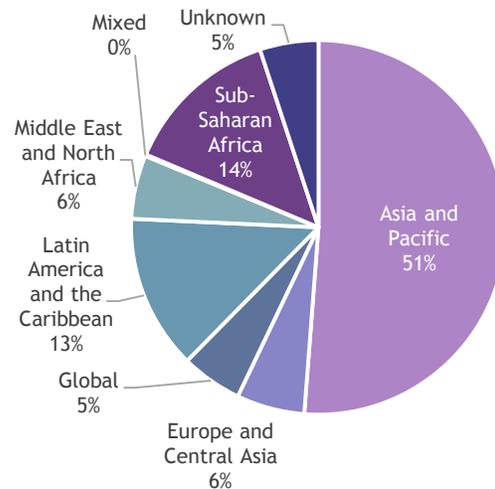
(ii) Climate Finance Flows to Developing Countries

Of the approximately \$182 billion in climate finance deployed each year in developing countries in 2012 and 2013, between \$39 billion and \$62 billion was comprised of North-South flows (i.e., excluding domestic sources of finance or aid from other developing countries) (Buchner et al., 2013). The range is wide due to challenges classifying climate finance versus general aid that has climate implications (Clapp et al., 2012) a challenge discussed further below.

The Climate Funds Update (CFU) tracked 24 multilateral and bilateral climate funds from 2010-2013 (CFU, 2014). As shown in Figure 5, CFU estimated that 51% of climate finance flows were directed to the Asia and Pacific Region, 14% to Sub-Saharan Africa, and 13% to Latin America and the Caribbean. India received the highest amount in 2010-2013 from CFU-monitored funds at \$3.6 billion, followed by Indonesia at \$3.2 billion and Brazil at \$1.1 billion (CFU, 2014). Japan, the U.K., Germany, the U.S., and Norway were the largest originators of these funds, with Japan and the U.S. largely concentrating their resources in Asia.

³ As of March 2014 the Green Climate Fund reports only \$54.89 million in pledges received, and deposits of \$36.38 million, two-thirds of which (\$24.33 million) came from Germany (GCF, 2014).

Figure 5. Bilateral and multilateral climate flows to developing countries in 2010-2013 by region (CFU, 2014).



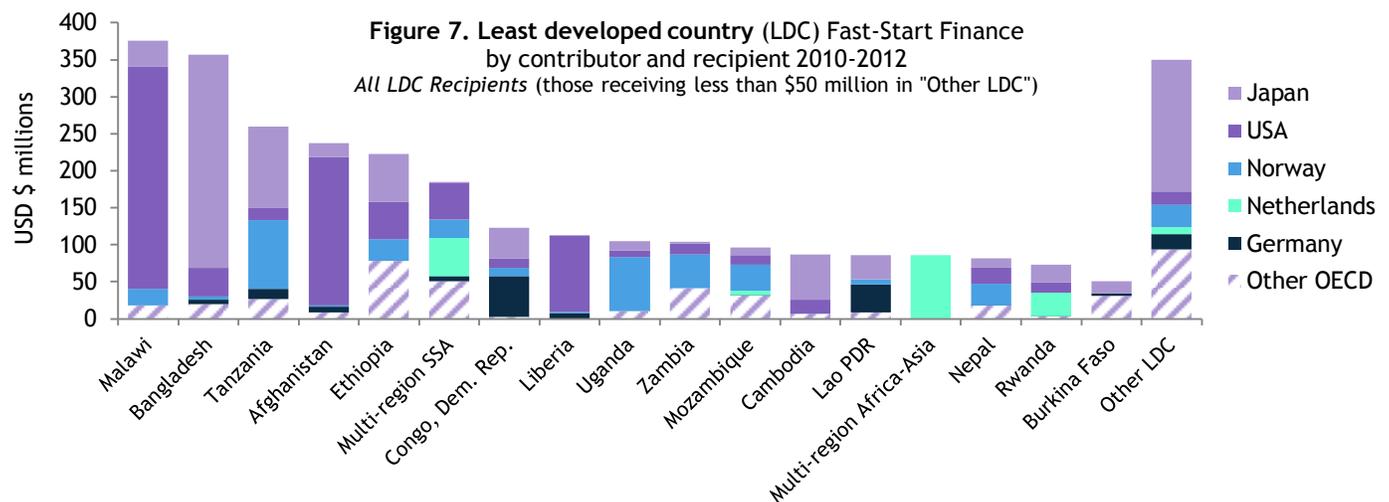
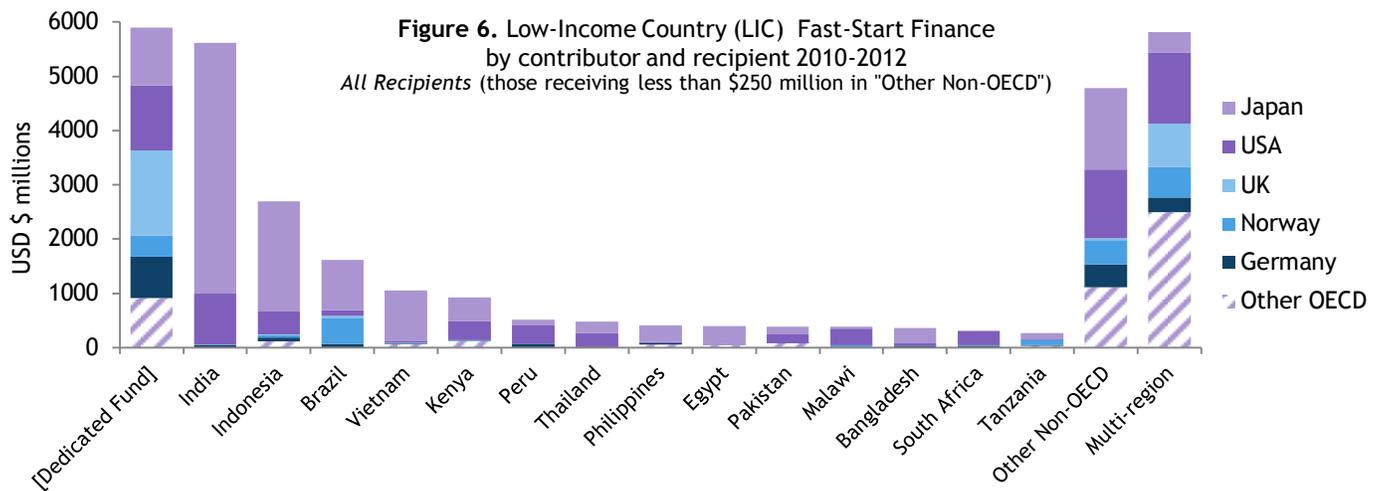
This allocation of resources is largely consistent with the allocation of climate-related aid through the recently completed Fast-Start Finance commitment period (WRI-ODI, 2014). As noted previously, Nakhooda et al. (2013) estimated that developed country parties to the UNFCCC mobilized roughly \$35 billion in additional climate finance between 2010 and 2012 for Fast-Start Finance. Most of this funding has been directed to Asia (OECD, 2014), with 43% of Fast-Start Finance directed to Asia and the Pacific, as compared to 18% to Sub-Saharan Africa, and 16% to Latin America.

Figure 6 shows the primary recipients of Fast-Start Finance in the 2010-2012 commitment period, highlighting the allocation of funds from the top five OECD donors (Figure 6). India and Indonesia were the largest single-country recipients of Fast-Start Finance in 2010-2012, and about 66%, or \$20.8 billion out of \$35 billion in Fast-Start Finance from 2010-2012, was directed to high- or middle-income developing countries including India, Indonesia, Vietnam, Brazil, China, and Colombia (WRI-ODI, 2014).

Japan, the US, the UK, Norway, and Germany contributed almost 80% of all Fast-Start Finance to developing countries from 2010-2012. Japan alone provided nearly \$13.5 billion (roughly 75% in loans) with resources heavily concentrated in Asia. The US (contributing \$7 billion), the UK (\$2.5 billion) and Norway (\$2.1 billion) funded more diverse geographies and multi-region projects, and also favored grants over loans. Norway directed a large proportion of its funds toward Latin America via the Amazon Fund and REDD+ investments⁴ (Nakhooda et al., 2013).

⁴Estimates of domestic, international, and private flows to REDD+ total roughly \$11.8 billion per year, however these flows are omitted from the total climate finance estimates by Buchner et al. (2012; 2013) as such estimates are characterized by high uncertainty and often piecemeal payments over periods of decades.

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As shown in Figure 7, Japan, the US, Norway and Germany were also key sources of Fast-Start Finance to least developed countries (LDCs). LDCs received \$4.7 billion out of the \$35 billion in Fast-Start Finance, concentrated in Malawi (376 million), Bangladesh (374 million) and Tanzania (263 million), with Afghanistan, Ethiopia, Democratic Republic of the Congo, Liberia, Uganda, Zambia and Mozambique each receiving \$100-\$245 million (WRI-ODI, 2014).

The Copenhagen Accords stipulated that adaptation financing would be prioritized for the most vulnerable developing countries, including LDCs and SIDS (UNFCCC, 2010). And indeed over \$5.7 billion, or 18%, of overall Fast-Start Finance from 2010-2012 was dedicated to adaptation-related activities, with approximately 38%, or \$2 billion, dedicated to adaptation in LDCs and SIDS (Nakhooda, 2013). Roughly \$500 million was dedicated exclusively to small island developing states (SIDS) such as Cape Verde, Guyana, and the Maldives, and \$200 million to countries that were considered both SIDS and LDCs, including Haiti and East Timor (Nakhooda, 2013).

Lastly, 20% of Fast-Start Finance (from \$6 to \$6.5 billion) went to dedicated climate funds, most prominently the

energy-related Clean Technology Fund (CTF) which was heavily funded by Japan (\$806 million), the US (\$715 million) and Germany (\$565 million) and remains the most widely used dedicated climate fund for mitigation activities (Nakhooda et al., 2013).

Although these data provide an indication of the country-level sources and destinations of climate finance flows, there are significant limitations related to both definitions (climate vs. non-climate finance) and reporting. For example, the OECD CRS database reports that climate-related bilateral aid in 2010 and 2011 ranged from USD \$12.8-21.1 billion per year, representing as much as 16% of total ODA in any given year. This volume of ODA-related climate finance reached \$21.5 billion per year between 2010 and 2012. However this figure includes \$12.5 billion in contributions where climate change mitigation or adaptation was a significant, but not principal, objective of the development activity (OECD 2014).

Such accounting questions are not trivial, since as previously mentioned developed countries have committed to increasing climate finance by USD \$100 billion per year from public and private sources by 2020 (UNFCCC, 2010). To count against this

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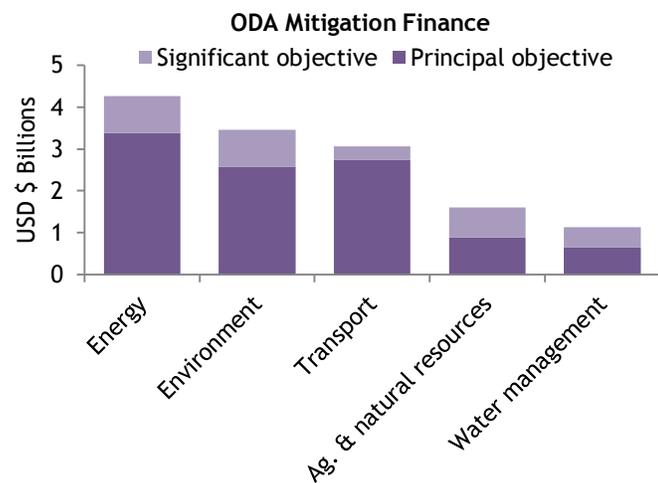
goal, however, new climate finance flows must be **additional** to existing assistance (that is, they cannot be funds already allocated to aid), and they must cover the **incremental costs** of responding to climate change (that is, climate finance includes costs incurred relative to the costs of development under business as usual) (UNFCCC, 2010). However, Nakhooa et al. (2013) observe that of the \$35 billion in “new” climate finance introduced during the Fast-Start Finance period, 80% (\$28 billion) was also classified as ODA, and the distribution of the climate funds closely mirrored that of non-climate-related ODA (and was not highly correlated with greenhouse gas emissions or climate vulnerability in recipient countries).

(iii) Applications of Low-Income Country Climate Finance

Targets of global climate financial flows include activities as varied as climate-specific aid for mitigation and adaptation to market-based carbon pricing (World Bank, 2013), to general finance for capacity building and R&D for transitioning developing economies towards low-carbon, climate-resilient development paths (Buchner et al., 2013; IFC, 2013). Mitigation-related finance consists largely of investments in energy infrastructure, waste management, energy efficiency, and other mitigation activities related to transportation, land-use and forestry. A somewhat newer category of international finance, adaptation-related climate finance includes environment-related capacity-building; water; agriculture, forestry, fishing and rural development; and disaster risk reduction and response, among others.

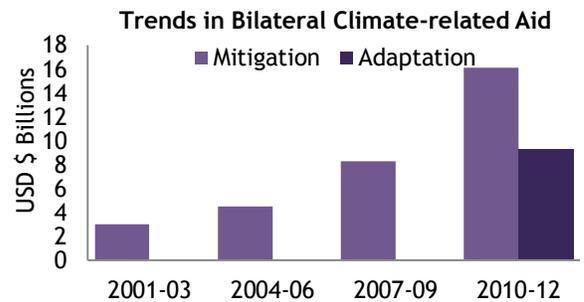
Since 1998, the OECD has collected annual data on mitigation-related bilateral climate finance to developing countries (in support of measuring progress against goals established at the 1992 Rio Conference). More recently the OECD has also reported on adaptation finance, though

Figure 8. Allocation of ODA climate finance flows among mitigation activities in developing countries, 2007-2012 average (adapted from OECD, 2014a).



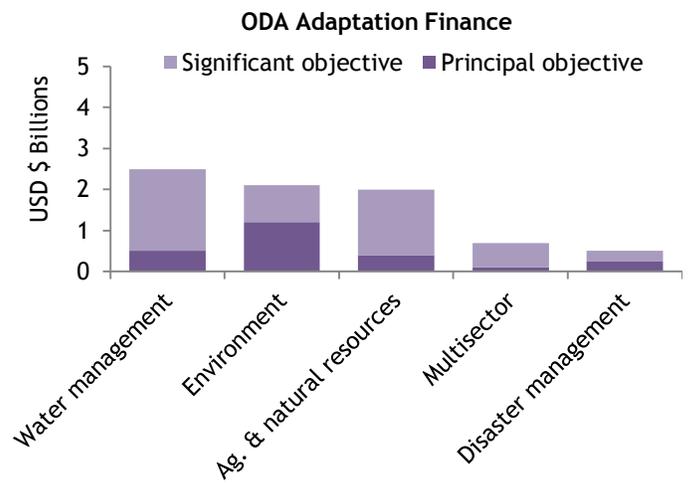
adaptation flows have only been monitored since 2010, following the new climate finance goals for adaptation support under the Copenhagen Accord. Funding trends in climate-related ODA since 2001 (for mitigation-related finance) or since 2010 (for adaptation-related finance) are summarized in Figure 7. In noteworthy contrast to global climate finance trends (with 94% of climate finance to mitigation and 6% to adaptation), in developing countries adaptation occupies a relatively large share of finance flows.

Figure 7. Expansion of bilateral climate finance in developing countries since 2001 (adapted from OECD, 2014a; 2014b; 2013; no OECD data on adaptation flows prior to 2010).



Figures 8 and 9 further summarize the sectoral breakdown of climate-related bilateral aid including Fast-Start Finance for climate change mitigation and adaptation in developing countries. Since 2007 roughly 27% of mitigation-related ODA has been for green energy, with general environmental goals, transportation, and agriculture, forestry and water management constituting the remainder (OECD, 2014a). Adaptation-related aid is concentrated in the areas of water management and sanitation, general environmental sustainability, agriculture, forestry, fishing and rural development, and disaster risk reduction (OECD, 2014b).

Figure 9. Allocation of ODA climate finance flows among adaptation activities in developing countries, 2010-2012 average (adapted from OECD, 2014b).



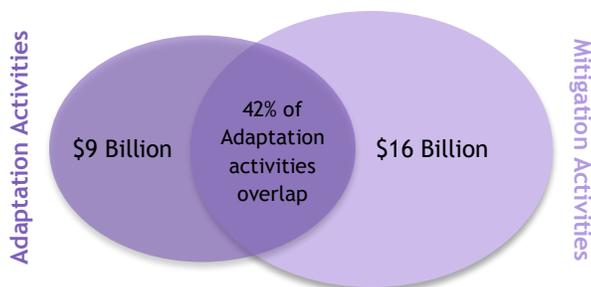
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There are clear differences in the allocation of ODA climate finance (Figures 8-9) as compared to the allocation of overall global climate finance (Figures 5-6). Most notably, adaptation occupies a relatively larger share of ODA climate finance.

Yet as highlighted in Figures 8 and 9, mitigation still attracts a greater absolute share of climate finance even within ODA flows. Moreover, while 69% of mitigation-related aid in 2010-2012 went to activities where mitigation was the principal objective, among adaptation-related aid commitments only 29% (\$2.7 billion) explicitly targeted adaptation as a principal objective. In other words, over 71% of adaptation-related ODA targeted adaptation as a “significant objective” alongside a non-climate principal objective. This suggests adaptation is increasingly being integrated into ODA activities primarily motivated by other development objectives (OECD, 2014b). However this also suggests that while mitigation-related finance appears to be attracting new climate-specific funding, most ODA classified as adaptation-related is for projects with primarily non-climate-related goals.

The allocation of ODA climate finance also illustrates the challenges of mitigation versus adaptation classifications of climate finance flows. Of the USD \$21.5 billion in total climate-related aid per year reported to the OECD from 2010-2012, roughly \$16.1 billion targeted mitigation and roughly \$9.3 billion targeted adaptation. But \$4.2 billion targeted mitigation and adaptation together (OECD, 2013), meaning that, as summarized in Figure 10, fully 42% of adaptation activities were also classified as mitigation activities.

Figure 10. Overlap in mitigation and adaptation-related climate finance in 2010-2012 (adapted from OECD, 2013).



This apparent “mitigation bias” in climate-related ODA, combined with the overwhelming mitigation bias in global climate finance flows (with 94% of all global climate finance for mitigation and only 6% for adaptation) may have particularly significant implications for the poorest countries. Least developed countries (LDCs) and other low-income countries receive 25% of total adaptation-related ODA, two-thirds of which goes to LDCs in Sub-Saharan Africa. In contrast only 13% of mitigation aid goes to LDCs and other low-income countries (OECD, 2014b).

Key Resources and Areas for Further Research

Owing to the very broad nature of climate finance, evaluations of the performance of the sector as a whole are difficult to undertake. However a small number of recent reports summarize lessons learned from climate finance implementation periods to date (Ellis et al., 2013; Nakhooda et al., 2013) or propose new evaluation criteria for evaluating performance across climate finance investments (Sierra et al., 2013). Bird et al. (2013) provide a concise review of governmental and nongovernmental sources of climate finance data and performance assessments.

A key resource for this brief, the Climate Policy Initiative’s annual *Global Landscape of Climate Finance* series (Buchner et al., 2012; 2013) is now widely regarded as the most comprehensive source of information on global climate finance to date.

The OECD also provides concise overviews of the sources, destinations, and applications of climate finance-related ODA, broken down into two summary reports:

Climate Mitigation ODA:

<http://www.oecd.org/dac/environment-development/Mitigation-related%20Aid%20Flyer%20-%20May%202014.pdf>

Climate Adaptation ODA:

<http://www.oecd.org/dac/environment-development/Adaptation-related%20Aid%20Flyer%20-%20May%202014.pdf>

Currently available data on gross financial flows are a rough proxy for climate finance activity. But they may be an exceedingly rough proxy in the future, particularly as key types of public and private sector climate finance (consisting largely of investments and loans) continue to expand. Non-governmental organizations and the private sector also increasingly play roles in the climate finance sector (World Economic Forum, 2013; Buchner et al., 2012).

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