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## Foreign aid for capacity-building to address climate change: Insights and applications

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## WIDER Working Paper No. 2013/084

# Foreign aid for capacity-building to address climate change

## Insights and applications

David Victor\*

September 2013

### Abstract

The paper examines the role of foreign aid in building capacity to address climate change. While the experience with this topic is relatively recent and not yet extensive, analogous questions have arisen in many other areas of foreign aid. It is likely that climate change aid programmes work best in countries with well-functioning systems of public administration, sound management of public finances, and independent media that hold government accountable for performance—all factors widely known to make other aid programmes more effective and adaptive. As countries try to expand climate aid quickly, historical patterns suggest bilateral aid—which is easier for donors and recipients to control—is likely to expand much more than multilateral aid. A shift is also likely from an emphasis on mitigation of emissions to a growing role for adaptation. Expanding climate aid must confront what I call the ‘aid paradox’, which is that the conditions of national capacity under which aid is most likely to be effective are least likely to be present in the countries that are most in need of foreign aid because they cannot raise needed funds on their own.

**Keywords:** climate change impacts, agriculture, sea level, climate impacts assessment, development aid

**JEL classification:** A12, D02, O19, Q54

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## Acronyms

ACCCRN	Asian Cities Climate Change Resilience Network
CDM	clean development mechanism
CPA	country programmable aid
CER	certified emissions reduction
DAC	Development Assistance Committee
GHG	greenhouse gas
IEA	International Energy Agency
MACC	mainstreaming adaptation to climate change
MRV	measurable, reportable and verifiable
NAMAs	nationally appropriate mitigation actions
OA	official assistance
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development

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## 1 Introduction

For twenty years the diplomatic community has been engaged on the problem of global climate change (Victor 2011). In part, their efforts have involved the creation of special multilateral funds to pay for many activities, including capacity building in the least developed countries. These efforts build on a long history of including foreign assistance programmes in international environmental agreements (Keohane and Levy 1996; Gutner 2002). At the same time, many governments have devoted substantial bilateral assistance for the same purposes.

This paper examines whether and how those multilateral and bilateral funds—what, together, I call ‘foreign aid’—have actually worked. While significant sums of money have been devoted for these purposes over the last two decades, ever since the 2009 Copenhagen Accord governments have promised much larger expenditures by public agencies as well as private firms on climate change in the future. While those new funds will be used for many purposes, it is widely known that capacity building is an essential function. As this expansion occurs, which lessons should guide the effort? To explore that issue, I review and assess the existing literature, focusing on four questions:

- What has worked and why?
- What kinds of reforms could improve effectiveness, and what are the best models for implementing them?
- What kinds of programmes could be scaled—such as the manyfold increase in aid envisioned under the Copenhagen Accord? A large part of the answer here hinges on which programmes have been able to leverage other sources of funding, such as from private industry.
- What lessons are transferrable?

My aim is to answer these four questions for one area of foreign assistance in particular: capacity building. Capacity building is important because it helps to create the right conditions for much larger public and private funding that will be crucial to long-term solutions to the climate change problem. My focus in this paper is climate change, but any serious assessment of foreign aid in this area, along with guidance for the future, must recognize that these questions have been the subject of extensive analysis more generally in the field of foreign aid, and this essay includes some attention to this broader field of foreign aid research.

This paper will make two broad arguments. One is that the planned rapid expansion of climate change aid requires careful attention to lessons about how to make aid ‘work’. The other main argument is that much of what has been learned, so far, has concentrated on building capacity for mitigation of emissions, but diplomacy around foreign aid for climate change—especially regarding the countries that are least developed and thus also most likely to need foreign aid—is shifting quickly to focus on adaptation. These least developed countries generally have low emissions (and thus little role in mitigation) but are highly vulnerable to climate change. For them, capacity building is centrally about the capacity to analyse and respond to the changing climate.

This essay begins with key definitions and concepts, as well as fundamental trends in foreign aid generally as well as capacity building in particular. Then I turn to the fundamental patterns in the subset of foreign aid that is directly related to climate change, including capacity building for climate change. With that foundation in place I then focus on the four analytical questions that organize this essay, starting with the question of what actually works.

## **2 Setting the scene: key definitions, concepts and fundamental spending patterns**

We begin with some definitions because those help to chart the landscape.

Foreign aid (or the equivalent term, ‘foreign assistance’) can be classified into different types according to the main objective, including development aid, humanitarian aid, military aid, and food aid. Development aid, the focus of this review essay, is defined by the Development Assistance Committee (DAC)<sup>1</sup> of the Organisation for Economic Co-operation and Development (OECD) as ‘flows of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective and which are concessional in character with a grant element of at least 25 per cent’ (OECD 2003). Aid money is not always free, but it is always concessional and often is fully granted. Most environmental aid, including that related to climate change, falls into the broad category of ‘development aid’. However, in the future some portion of climate change assistance might also involve military or humanitarian assistance if, for example, climate change creates large numbers of refugees.

The DAC further separates development aid (which consists of project aid, programme aid, and technical assistance) into three categories. *Official development assistance* (ODA) is aid provided by donor governments to low- and middle-income countries, which accounts for 80-85 per cent of the total development aid<sup>2</sup> and is also the one that most people have in mind. *Official assistance* (OA) is aid provided by governments to richer countries with per capita incomes higher than approximately US\$9,000 and to countries that were formerly part of the Soviet Union or its satellites. *Private voluntary assistance* includes grants from non-government organizations, religious groups, charities, foundations, and private companies. This latter category is rising both in quantities and in importance as some foundations, such as the Bill and Melinda Gates Foundation, take on particular aid-related topics in strategic ways. The Gates Foundation, for example, disbursed US\$1.8 billion in grants in 2009 alone to improve health in developing countries, marking it as the third largest international donor of aid to health only after the United States and the Global Fund to Fight AIDS, Tuberculosis and Malaria (OECD 2011a). However, most of the statistics about foreign aid, the best of which come from DAC, do a better job of tracking government-based expenditures.

Global ODA increased steadily from the 1960s until it reached a peak of US\$68.7 billion (in 2010 US dollars) in 1992, just after the end of the cold war, and then declined sharply to just under US\$55.4 billion in 1997. It began to rebound in the late 1990s and had a sharp increase

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<sup>1</sup> The OECD’s DAC is a forum for selected OECD member states to discuss issues surrounding aid, development and poverty reduction in developing countries. There are 24 members of DAC, including the European Union, which acts as a full member of the committee.

<sup>2</sup> OECD/ODA database.

in 2005 when the heads of state of the Group of 8 industrialized countries ('G8') pledged to double aid to Africa by 2010 and triple it by 2015 (VandeHei and Blustein 2005). The practical effect of these pledges has been modest; while global ODA measured as a share of donor income fell sharply during the 1990s it has rebounded only slightly since 2005. Total global ODA reached around US\$149 billion in 2011.

Aid is devoted to many different purposes. In 2010, about 25 per cent of total ODA was devoted to 'economic infrastructure' and to 'production', which include agriculture, energy and transport systems that are likely to be vulnerable to changes in climate. Another 13 per cent was devoted to multi-sector programmes, many of which address activities that could be affected by climate.

Looking over time, there are two striking trends relevant to climate change. First, since the mid-1980s, aid to agriculture has fallen by almost half, although since 2005 there have been some modest increases partly due to the renewed emphasis on aid to Africa led by the G8 countries.<sup>3</sup> The other trend is a similar steep decline in aid for energy, which also fell by half since the middle 1980s and is now rising modestly.<sup>4</sup> Within the field of energy the most striking trend has been a steep reduction in fossil fuel spending as donors shifted their resources to renewable energy and from production side of the energy sector (e.g., large infrastructure projects) to capacity development and energy efficiency. Electricity dominates energy-related spending; electrical transmission/distribution and the energy policy subsectors both account for more than half of the resources allocated by donors in recent years (OECD 2010a). This large role for electricity is consistent with the role of electricity more generally in the world's energy system—the most recent projections from the International Energy Agency (IEA) see almost a half of world investment in energy anchored in the power sector (IEA 2011).

About half of ODA takes the form of country programmable aid (CPA), which is a measure of the aid that donors and multilateral development banks can reasonably influence.<sup>5</sup> CPA is an important number (and experience) when thinking about aid for climate change because it is this portion that might be redirected to climate change purposes in the coming years and it is precisely the prospect of such a redirection that leads many diplomats to demand that climate change assistance be 'new and additional'.

Our focus in this paper is 'capacity building'. Also referred to as 'capacity development' this is the long-term continual process of development that involves all stakeholders, including ministries, local authorities, non-governmental organizations, professionals, community

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<sup>3</sup> On one hand, the rise and fall in the aid to agriculture during this period followed broadly the same pattern as that in total aid to all sectors; on the other hand, it reflects that fact that the emphasis of worldwide development strategy shifted from the narrow concepts of food security in terms of adequate and stable food supplies to the broader human and social development. In 2007-08, total annual average aid commitments to agriculture amounted to US\$7.2 billion; the largest donors (among DAC members) were the United States, Japan, and France. The largest recipients are primarily sub-Saharan Africa and South and Central Asia. For statistics, see OECD (2010b).

<sup>4</sup> The decline is considered as a consequence of the 'Helsinki package', an agreement that came into force in 1992 and prohibits (with some exceptions) the provision of tied aid loans to high-income countries (based on World Bank per capita income), and for commercially viable projects.

<sup>5</sup> CPA excludes non-programmable items such as humanitarian aid, debt relief, and in-donor costs like administration costs and refugees in donor countries. Over the past five years, CPA has corresponded to roughly half of DAC donors' gross bilateral ODA. For more details on CPA, see [www.oecd.org/dac/cpa](http://www.oecd.org/dac/cpa)

members, academics and more (UN 2006). The term ‘capacity building’ has evolved from past terms such as ‘institutional building’ and ‘organizational development’ and emerged as a leading developmental concept in the 1990s.

As a practical matter, capacity building could take place on three levels. First, on an individual level, capacity building requires the development of conditions that allow individuals to build and enhance existing knowledge and skills and to engage in the process of learning and adapting to change. Programmes of this type include, for example, training of government officials. Second, on an institutional level, programmes could modernize existing institutions (or build new ones) and support the formation of sound policies, organizational structures, and effective methods of management and revenue control. Third, on a societal level, capacity building can help create a more informed and engaged society—one that better holds government institutions accountable and is more fully aware and engaged of how those institutions operate.<sup>6</sup>

The standard systems for accounting do not include a category for ‘capacity building’ that covers the whole range of activities covered by that concept. However, DAC statistics suggest that the broad category of social and administrative infrastructure accounts for more than one-third of all aid expenditures. Those same data show that 11.9 per cent of all aid is spent on capacity building in the government sector. These fractions are a benchmark for what to expect as the field of climate change finance matures; perhaps about one-third of resources will be devoted to capacity building broadly, and one third of that fraction will be focused on the government.

## **2.1 Foreign aid for climate change and capacity building**

Now that we have set the scene generally about foreign aid we can focus specifically on the numbers related to climate change and explore, in particular, the interactions between capacity building and the overall effectiveness of foreign aid.

The developed countries that signed the three Rio Conventions in 1992 committed themselves to assist developing countries in the implementation of these Conventions. Over time, those commitments have come to include mitigation and adaptation, and within those broad categories capacity building is a component.<sup>7</sup> Total bilateral climate change-related aid

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<sup>6</sup> This three-part definition is based on United Nations (2006).

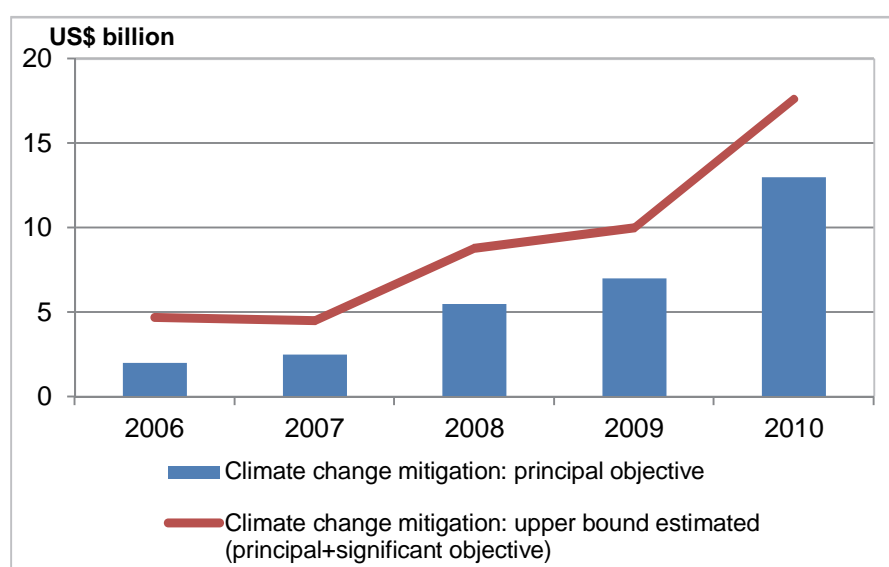
<sup>7</sup> Climate change mitigation-related aid is defined as activities that contribute ‘to the objective of stabilization of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system by promoting efforts to reduce or limit GHG emissions or to enhance GHG sequestration’. Climate change adaptation-related aid is defined as activities that aim ‘to reduce the vulnerability of human or natural systems to the impacts of climate change and climate-related risks, by maintaining or increasing adaptive capacity and resilience’. See OECD (2010c). In detail, mitigation activities include those that contribute to ‘(i) the mitigation of climate change by limiting anthropogenic emissions of GHGs, including gases regulated by the Montreal Protocol; or (ii) the protection and/or enhancement of GHG sinks and reservoirs; or (iii) the integration of climate change concerns with the recipient countries’ development objectives through institution building, capacity development, strengthening the regulatory and policy framework, or research; or (iv) developing countries’ efforts to meet their obligations under the Convention’. The third category is directly related to capacity building, while the others may. By contrast, adaptation activities may all directly relate to capacity building, which encompasses ‘a range of activities from information and knowledge generation, to capacity development, planning and the implementation of climate change adaptation actions’. See OECD (2012).

by members of the OECD's DAC was US\$22.6 billion in 2010, representing about 15 per cent of total ODA. Of this total, roughly two-thirds was for mitigation, and one-third for adaptation.

Climate change-related aid is increasing rapidly. The 'upper bound' estimate of mitigation-related aid, for example, exceeded US\$17.6 billion in 2010, an increase of 76 per cent over 2009 (see Figure 1). In terms of rate of growth, climate change is now one of the fastest growing major areas of foreign aid, although precise comparisons to other issue-areas are not possible since climate change (and other aid-related topics) typically cover several categories and there is lots of double counting in the statistics. In addition to bilateral assistance, total multilateral climate change-related aid including DAC members' contributions to specific climate funds (except Climate Investment Funds) plus the climate-related share of DAC members' core contributions to multilateral organizations was US\$727 million in 2010. *That is, bilateral climate change assistance is more than twenty times larger than multilateral funds.* Other studies that have compared multilateral and bilateral sources see much less of a disparity—with bilateral funding accounting for a smaller multiple of the multilateral source (Buchner et al. 2011).<sup>8</sup> No study has carefully assessed the portions of multilateral and bilateral assistance programmes that are strictly devoted to capacity building, but it is likely that the proportions of total spending between these multilateral and bilateral assistance also apply to capacity building.

It is important to note that many large donors have started to move away from project based toward programmatic financing, with funds being allocated more for budget support and supporting national development plans thus making it more difficult to track the sector of destination (Corfee-Morlot, Guay and Larsen 2009). Figure 2 shows the sectoral breakdown

Figure 1: Bilateral climate change mitigation-related aid, 2006-10



Source: OECD (2012).

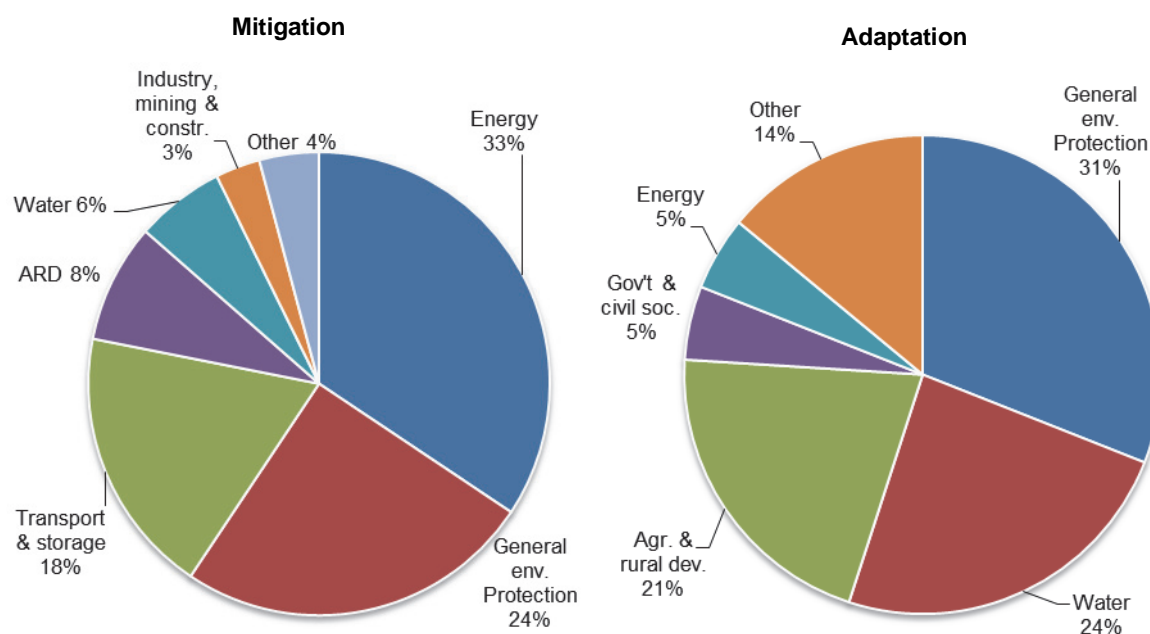
of aid activities targeting climate change mitigation and adaptation, respectively. In value terms, more than three-quarters of aid targeting climate change mitigation concerns energy

<sup>8</sup> Buchner et al. (2011) find that bilateral institutions are distributing US\$24 billion per year while multilateral agencies distribute US\$15 billion.



supplies, transportation and general environmental protection. For adaptation, three quarters of aid was reported in the sectors of general environment protection, water, and agriculture and rural development (OECD 2012). Geographically, most climate change ODA is allocated to Asia (51 per cent). The shift to programmatic support probably has increased the fraction of aid that is devoted to capacity building, including long-term capacity programmes that are likely to be more effective than one-off projects.

Figure 2: Sectoral breakdown of climate change-related aid (2010 commitments)



Source: OECD (2012).

### 3 Question No. 1: what works in foreign aid for capacity building on climate change?

Surprisingly, there is almost no research that addresses this question systematically. That problem arises for two reasons. First, the field of climate change assistance is relatively young. Second, one of the chief challenges that has confronted scholars who have assessed foreign aid in other areas—agreeing on the goals that can be used as a yardstick (Radelet 2006)—is not settled.

Some efforts, such as the Bali Action Plan in 2007, try to standardize efforts. The Plan introduced the phrase ‘measurable, reportable and verifiable’ (MRV) in the context of both ‘nationally appropriate mitigation actions’ (NAMAs) and finance, technology, and capacity building to support mitigation actions. The concept of NAMAs recognizes the need to tailor financial support to implement actions that align with constraints in scale and institutional capacity for each locale. In practice, though, the language of the Bali Action Plan does not address important questions such as what is the relationship between mitigation action and mitigation support or how to measure, report and verify mitigation support and action (Corfee-Morlot, Guay and Larsen 2009).<sup>9</sup>

<sup>9</sup> In addition, see a study by Neuhoff et al. (2009) on financing options for NAMAs.

However, it is possible to triangulate some answers to this question by looking, initially, at what has been learned studying aid in other settings—in particular, aid related to capacity building. Then we evaluate which of those lessons might apply to climate change while focusing on the fewer studies that have looked directly at climate change.

There is a voluminous empirical literature on the effectiveness of foreign aid in other fields, notably the role of foreign aid in promoting economic development.<sup>10</sup> This field of research blossomed first in the 1990s and has evolved into two camps. Some scholars (I call them ‘aid pessimists’) have disparaged most aid as unproductive and perhaps even counter-productive; it squanders resources on projects that are inappropriate for the context and rewards bad behaviour by governments (Bauer 1972; Moyo 2009). While much of this work is polemical, some is rooted in careful econometric work that finds only very narrow conditions under which aid works (Easterly 2003, 2007, 2009; Rajan and Subramanian 2008). Others find a closer relationship between aid and growth, such as through allowing for diminishing returns or by testing for conditional relationships.<sup>11</sup> Put differently, this more pragmatic scholarship sees a role for making aid effective when it is applied in the right circumstances with the right managers.<sup>12</sup> One lesson from this strand of the literature is that aid should be made conditional upon the presence of circumstances that lead to more effective aid. Exactly how conditionality should be designed and applied is a hotly debated topic (Stokke 1995; Crawford 1997; Scholl 2009). One of the few areas where pessimists and pragmatists often agree is that aid generally has been successful in some countries where that aid has helped improve health by supplying essential medicines; better health, especially for people reaching or in their economic prime, leads to the accumulation of human capital in ways that can sustain economic growth (Levine and What Works Working Group with Molly Kinder 2004). Healthiness helps increase the overall capacity of a society to address a range of challenges although health assistance is normally not called ‘capacity building’—a term that is devoted more narrowly to creating administrative systems and infrastructures that improve the ability of societies to govern themselves.

Developing countries that are Parties to the UNFCCC have, themselves, identified several priority areas where they see the greatest need in funding for capacity building. On mitigation, many reported a need to develop human and institutional capabilities to prepare mitigation project proposals for funding, to facilitate data collection and analysis, to prepare national communications, and to manage climate change programmes. For adaptation, in addition to the need for greater human and institutional capabilities, many Parties also saw a need to improve scientific research, particularly in modelling and for training in planning and implementing adaptation activities (UNFCCC 2007).

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<sup>10</sup> In addition to Radelet (2006) see also Tsikata (1998); Clemens, Radelet and Bhavnani (2004); Riddell (2008); Rajan and Subramanian (2008); Doucouliagos and Paldam (2009); and Krasner (2011).

<sup>11</sup> Some examples include Hadjimichael et al. (1995); Hansen and Tarp (2000); Lensink and White (2001); Dalgaard, Hansen and Tarp (2004); Clemens, Radelet and Bhavnani (2004); Doucouliagos and Paldam (2008); Clemens et al. (2012); and Clausen and Schürenberg-Frosch (2012).

<sup>12</sup> In the non-technical literature, see Collier (2008) and Sachs (2006).

#### **4 Question No. 2: what kinds of reforms could improve the effectiveness of climate change aid?**

A clear answer to ‘what works’ helps set the agenda for reforms that might improve the effectiveness of climate change aid. But since we have comparatively little research looking at what works in the area of climate change, here too we must look to the broader literature on foreign aid. Fortunately, however, these questions have been given extensive analytical attention and there has also been extensive political attention to this question. Of particular note—because it involved most major donors and is recent—are the Paris Principles adopted in 2005.<sup>13</sup> In February 2005, the international community came together at the Paris High Level Forum on Aid Effectiveness, hosted by the French government and organized by the OECD. The event led to endorsement of the Paris Declaration on Aid Effectiveness. Looking at the Paris principles, the larger analytical studies on aid effectiveness, and applying some logic to how these topics might be relevant to climate change leads to five major suggestions on how to improve aid effectiveness. All five apply to climate change although very few of these, so far, have been actively considered in that context—although there are a few exceptions, such as Thornton and colleagues’ analysis of 11 case studies of climate change finance at the national level, assessed with an eye to the Paris Principles (Thornton 2010; Norrington-Davies 2011; Cameron 2011; Norrington-Davies and Thornton 2011a; Grant 2011; Norrington-Davies and Thornton 2011b), and a few others (Brown and Peskett 2011; Bird 2011; Hedger 2011).

First is the idea that aid should be provided to countries with good policies and good institutions. The analytical work, starting with the World Bank’s *Assessing Aid* study in the middle 1990s that is probably the most influential study of aid impacts ever done, shows that aid has a big effect on growth and poverty reduction in recipient countries which have a good policy environment (World Bank 1998). For economic growth, that good policy environment includes a balanced public budget (so that aid money is truly additional), low levels of corruption, and institutions such as a free press that can hold government accountable. Applied to climate change, the basic logic of ‘good policy environment’ probably also includes accountable and transparent government, prices on fossil energy and other activities linked to climate change that are representative of real scarcity in the economy, and a clear relationship between climate policy and the other functions of government. The idea of ‘good institutions’ is centrally about a society’s own abilities to govern itself in a fair and accountable manner.

Second, country ownership is emphasized by many analysts in achieving aid effectiveness (Radelet 2006). (This idea is a prominent part of the Paris Principles but has not been measured systematically in the analytical literature.) Donor countries used to dominate in setting aid priorities, designing programmes, and implementing projects. The call for recipient countries to take a lead or joint-lead position in agenda setting is to help eliminate some of the problems in the long chain of principal-agent relationships that earlier studies had shown led to failure (Martens 2002). Applied to climate change this insight affects both mitigation and adaptation. For example, research on the Clean Development Mechanism (CDM) has tried to explain the relatively low level of technology transfer in some countries (e.g., India) and the high level in others (notably China, which accounts for more CDM

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<sup>13</sup> In the 2005 Paris Declaration on Aid Effectiveness, developed and developing country governments pledged joint supports to five key commitments to improve aid effectiveness.

projects than any other country) and finds that one of the major explanatory factors is involvement by the central government (Dechezleprêtre, Glachant and Ménière 2009; Popp 2011). Looking beyond the statistical associations, such research finds that ‘ownership’ by the central government has steered investment into particular kinds of CDM projects, helped to reduce regulatory barriers, allocated the benefits from projects to favoured technologies and regions, and created a coherent policy that channels benefits broadly into sustainable development—all functions that result in various forms of government capacity. Examples include efforts to reduce emissions from deforestation and forest degradation, which has spawned programmes to build capacity to design and analyse forestry and land use projects as well as build capacity in monitoring methodologies and identification of best practices.<sup>14</sup> Through UN-based efforts on deforestation and forest degradation, for example, Germany provided US\$105.1 million to Brazil to build local capacity in monitoring climate-relevant biodiversity and recording bush fires, improve management of nature reserves, and strengthen forest monitoring systems, among other things.<sup>15</sup>

Third, beyond ‘ownership’ is the need to engage local participation in beneficiary countries, particularly non-government stakeholders such as development organizations, charities, churches and the private sector (World Bank 1998; Radelet 2006). Multilateral donors have recognized this need. For example, in 2011 the World Bank implemented a study to test the application of the Adaptation Coalition Framework in Latin America and the Caribbean. The aim of the Coalition was to provide local communities with the knowledge, organizational tools, and strategies to mobilize the essential resources to adapt. By the end of the study, the majority of the communities showed greater awareness of climate change and its risks, increased ability to form coalitions with other groups and, it appears, a greater ability to gain access to resources to adapt to climate change (Ashwill, Flora and Flora 2011). Evidence shows that beneficiary participation could achieve better aid effectiveness. An evaluation of 121 rural water supply projects financed by donors and non-governmental organizations in 49 countries shows that among projects with a high level of beneficiary participation, 68 per cent were highly successful, while only 12 per cent of those projects in which there was little beneficiary involvement, were highly effective (Narayan 1995). The insight that engagement with local stakeholders is important resonates with the central finding in aid effectiveness, which is that accountable and responsive government is essential. For example, one study found that investment projects have been more effective in countries where citizens enjoy civil liberties, where people have great freedom to express their views including free press, freedom of association and assembly, and freedom to petition governments.<sup>16</sup> One study has examined this issue applied to climate change in some detail and found, looking at eleven countries across Asia and Africa, that ‘none of them had a dedicated forum for dialogue where funding partners, recipient government, and other stakeholders such as civil society could meet around climate change assistance and financing’ (Thornton 2010). This third point suggests that capacity building activities are best pursued when they build not just governmental capacity—the traditional focus—but also the ability of government to interact with other stakeholders.

Fourth, the Paris Principles focus on the need for harmonization and coordination among donors. Managing aid flows from many different donors is a huge challenge for recipient

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<sup>14</sup> On the UN-REDD Programme, see [www.un-redd.org/](http://www.un-redd.org/).

<sup>15</sup> On Voluntary REDD+Database, see [www.reddplusdatabase.org/](http://www.reddplusdatabase.org/).

<sup>16</sup> On civil liberties, see Isham, Kaufmann and Pritchett (1997).

countries, since different donors may insist on using their own unique processes for initiating, implementing, and monitoring projects. Recipients can be overwhelmed by requirements for multiple project audits, environmental assessments, procurement reports, financial statements, and project updates. In Tanzania, for instance, health workers in some districts spent almost 25 per cent of their working days writing reports for different donors (Deutscher and Fyson 2008). Aid fragmentation and uncoordinated aids have led to numerous suggestions for donors to more closely coordinate their activities—to build the capacity to harmonize their systems and ‘pool’ their funds (Kanbur and Sandler 1999; Deutscher and Fyson 2008; OECD 2011b). My assessment of the literature is that the need for coordination has been a conclusion popular among aid workers and some bureaucrats in aid agencies (who often seek bureaucratic solutions to more fundamental problems). In one study that looked at donors and recipients of climate-change finance side-by-side, the author surveyed the experiences in eleven recipient countries and found there are ‘specific institutional requirements of the external funds from donors, which may be out of step with the roles and responsibilities of institutions in recipient countries.’ To some degree this conclusion may reflect the fact that most climate change assistance has historically been driven by interest in mitigation, and the goal of mitigation has been driven by donors rather than recipients. However, serious scholarly research on coordination is notably scarce, and in the area of climate change there has been no systematic research on this issue. Indeed, scholarship on the international institutions related to climate change suggests that competition among donors and institutions might actually lead to more effectiveness.<sup>17</sup>

Fifth is results-based management with stronger monitoring and evaluation (Deutscher and Fyson 2008). The Paris Declaration on Aid Effectiveness designs an indicator to track to which extent partner countries have established transparent and monitorable performance assessment frameworks. The indicator looks at three dimensions, including the quality of information generated, stakeholder access to the information, and coordinated country-level monitoring and evaluation systems. The results of the 2011 survey indicate that partner countries are making important progress in developing results-oriented frameworks, but still only one fifth of the countries surveyed are considered to have relatively strong results-oriented frameworks (OECD 2011b). Exactly the same logic applies to climate change, although in this area relatively little progress has been made perhaps for two reasons. One is that it has been difficult to agree on goals for climate change aid generally and thus results-based monitoring is essentially impossible. The other is that the major decisions about levels of aid and strategy are made through an intergovernmental process that is steeped in suspicions about the unwillingness of donors to live up to aid commitments, which leads most diplomacy to focus on demands for new and additional resources rather than building the institutions needed for performance-based monitoring and evaluation. This point applies to all climate-related aid projects but is perhaps especially relevant for climate change capacity-building programmes since those programmes are particularly likely to be tied to the intergovernmental process.

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<sup>17</sup> For example, see Keohane and Victor (2011) on how competition and fragmentation can lead to more effective climate change coordination and policies.

## 5 Question No. 3: what scales?

Earlier in this essay we reviewed the total size of ODA and the fraction of ODA that is related to climate and more purely devoted to climate change purposes. If one assumes that total ODA represents an expression of the will by donors to transfer resources internationally for all purposes, then it is clear that reaching goals of US\$100 billion/yr in new climate finance will require massive scaling and also leverage on private sector funds. To date, the most systematic analysis of all forms of climate finance is reported in two studies by Buchner et al. and the Climate Policy Initiative (Buchner et al. 2011; Buchner, Brown and Corfee-Morlot 2011). Their research suggests that in 2009/10 at least US\$97 billion per year is provided to support ‘low carbon, climate-resilient development activities’. (These studies do not carefully distinguish the smaller portion of that total that is devoted to capacity building.) By their estimate, private finance already equals US\$55 billion/yr, much larger than the US\$21 billion that comes from public sources. Of the total US\$97 billion per year of climate change finance, so far only US\$4 billion flows to climate change adaptation (Buchner et al. 2011). This very small fraction of the total probably reflects that adaptation is a relatively new topic and mainly reflects that serious adaptation efforts are largely within countries. There have been particular projects that are funded internationally—for example, an advanced weather and flood forecasting system that has helped communities in Pakistan and Bangladesh get early warning about floods, which in turn has helped radically reduce the cost of flood-related damage—but most adaptation is an internal matter and not well captured in international statistics on climate funding (Webster 2013). Their research is also a reminder that measuring climate finance is extremely sensitive to method and their published estimates for climate finance just one year later put the total at US\$350 billion/yr (with all but US\$14 billion going to mitigation)—a huge increase, due partly to the scaling up of climate finance and mainly to a broader scope of analysis (Buchner et al. 2012).

A smaller subset of the US\$100 billion/yr pledged in Copenhagen would be dedicated to capacity building, but the same logic applies to these activities, perhaps with even greater difficulty. Capacity-building activities must be tailored to individual countries and thus are difficult to scale quickly. And the private sector, for the most part, devotes funds to incentive-compatible investments rather than broad-based capacity building whose benefits are hard for any particular firm to appropriate.

The importance of scaling through the private sector is evident when looking in detail at most sectors of the economy that might be affected by climate change mitigation, impacts or adaptation. For example, consider the insurance industry. It has seen weather- and climate-related losses that have more than doubled each decade since the 1980s, today averaging US\$50 billion a year and have long realized an incentive to make greater efforts at managing climate change-related risks. There is much literature offering suggestions on how the industry can integrate mitigation and adaption measures while bolstering its own profitability (Mills 2005; Hecht 2008; Bals et al. 2005; The Geneva Association 2009). Capacity building in the private sector includes building a vibrant and adaptive insurance industry.

Three global initiatives—United Nations Environment Programme Finance Initiative (1995), ClimateWise (2007), the Kyoto Statement (2009)—have pulled together 129 insurance firms from 29 countries to commit to activities such as supporting climate research, raising awareness on climate change, reducing in-house emissions, quantifying and disclosing climate risks, incorporating climate change into investment decisions, and engaging in public

policy. The industry has become a significant voice in world policy forums through its collaboration with scientists on the latest three IPCC assessments and participation in the international climate negotiation process. Additionally, they have invested at least US\$23 billion in emissions-reduction technologies, securities, and financing for specific projects. In the past decade, the industry has engaged in 1,148 initiatives in 51 countries, representing US\$2 trillion of industry revenue, focused on climate change adaptation and mitigation. These activities offer massive leverage on the actions of virtually every sector of the economy as firms and individuals make decisions related to investment and behaviour. Yet even in this industry that is already on the front lines of climate change policy discussions there has been no systematic documentation of how leveraged funds and activities affect capacity building versus the impact on actual mitigation and adaptation projects and the wide array of private sector activities implicated by climate change.

Here I investigate the logic of scaling from three perspectives. First, I look at the status of climate finance and the relationship between public and private funds. Most scaling will probably need to occur with private financing, and building the private capacity to raise and manage climate-related financing effectively is essential. Second, I look at the one area where already there has been some substantial scaling through private funds: the CDM. While the CDM is centrally about investment in mitigation—not capacity building—it helps to reveal what might be possible if a set of incentives were created to leverage private finance. Third, I very briefly look at the potentials for climate change ‘mainstreaming’, which in theory is another area of potential scaling. If climate change issues could be mainstreamed to a greater degree in capacity-building programmes linked to private and public finance then lots of scaling could occur. So far, however, most evidence of mainstreaming seems to be in the sphere of public financial transfers (ODA) and there has been little attention to mainstreaming in private finance.

### **5.1 Scaling from perspective No. 1: comparing aid sources: ODA, climate change-related aid, and climate finance**

ODA and climate change-related aid are both defined in earlier sections of the review essay. It is worthwhile, also, to define ‘climate finance’ in order to understand questions like how to evaluate and improve climate change-related aid and how to leverage other sources of funding, such as from private industry. While there is no widely accepted international definition at present, the term ‘climate finance’ broadly refers to the whole range of financial resources that catalyse low-carbon and climate-resilient development (World Bank 2011). One of the many areas of debate concerns whether those sources must be ‘new and additional’ or whether climate finance covers anything that relates to climate. The Copenhagen Accord calls for a collective commitment by developed countries to provide ‘new and additional resources’ with a goal of mobilizing jointly US\$100 billion dollars a year by 2020 to address the needs of developing countries (UNFCCC 2009).

Since it remains unclear how additionality is defined in the Copenhagen Accord when it promises ‘new and additional resources’ and how such large sums of money are going to be raised, at least four major definitions of climate finance have emerged (Brown, Bird and Schalatek 2010):

- Definition 1: Climate finance is classified as aid, but it is additional to (over and above) the 0.7 per cent ODA target;

- Definition 2: Climate finance is classified as aid. 2009 ODA disbursements on climate change should be set as the reference level. Any new ODA finance going to climate change measures above the reference level can be considered as additional;
- Definition 3: Climate finance is classified as part of traditional aid but limited to a certain portion (obviously, in addition to the target set, other non-ODA sources of finance will be needed to meet climate change needs);
- Definition 4: Climate finance should come from other sources of finance not categorized as ODA.

Three of these (all but #4) define climate finance as a form of aid. In my assessment, this debate seems unlikely to deliver a climate finance that allows for scalability since total aid is limited in size (see Figure 1) and thus hard to scale much beyond the already growing provision of climate aid. The most fruitful approach, thus, is to see climate finance as the sum of traditional climate-linked foreign aid and other non-aid sources of finance. None of these definitions is specifically tailored to aid for capacity building.

At present, all international climate funding instruments rely on ODA, with three exceptions:

- finance linked to certified emissions reduction (CER) credits issued by the clean development mechanism (CDM). The CDM, by far, is the largest non-ODA source of climate finance. Despite a recent sharp decline, the volume of primary CERs still reached approximately 91 million tons of carbon dioxide equivalent (tCO<sub>2</sub>e) in 2011, with a total value of US\$990 million (World Bank 2012);
- the Kyoto Protocol's Adaptation Fund, which is financed through a 2 per cent levy on CDM proceeds; and
- part of the German International Climate Initiative which is financed through national auction of emissions allowance units.

Table 1 compares similarities and differences among aid in general, climate change-related aid, and private-funded climate finance. Table 1 suggests that on one hand, the 2005 Paris principles of aid effectiveness might offer a useful framework to help steer climate change-related aid (and private-funded climate finance) to outcomes that are effective, efficient and equitable; on the other hand, any assessment of climate change-related aid (and private-funded climate finance) through the lens of aid effectiveness will deliver only a partial result and therefore should take account of the consensus within the UNFCCC negotiations on the principles appropriate for climate finance. At this writing, the literature has not settled on practical solutions for how climate aid and finance should be governed nor the right fractions of aid that should be devoted to capacity building. Absent that kind of governance it seems unlikely that private finance will scale except in areas where there is a clear signal to deploy resources and a direct reward back to private investors—so far, there is only one area where that has happened, the CDM.



Table 1: Aid, climate change-related aid, and private-funded climate finance compared

	Aid	Climate change-related aid	Private-funded climate finance
Paradigm	A voluntary paradigm	Yet to determined?	Yet to be determined?
Sources	Focus on budgetary contributions from donor governments	Focus on budgetary contributions from donor governments	Rely on private flows and innovative sources
Objective	Present imperative of poverty reduction	Dealing with an uncertain future	Dealing with an uncertain future
Leadership	OECD-DAC leadership	OECD-DAC leadership?	UNFCCC leadership
Partnership	Aid conditionality set by donor countries	Commitments expected from both contributor and recipient countries	Commitments expected from both contributor and recipient countries
Effectiveness	Aid effectiveness has been a retrospective exercise after many years of delivery	Delivery at scale has just begun?	Delivery at scale is yet to begin
Principle of effectiveness	The 2005 Paris principles <ul style="list-style-type: none"> <li>– National ownership</li> <li>– Alignment</li> <li>– Harmonization</li> <li>– Managing for results</li> <li>– Mutual accountability</li> </ul>	Both principles: Paris and UNFCCC?	The UNFCCC Convention principles <ul style="list-style-type: none"> <li>– Polluter pays</li> <li>– Additionally</li> <li>– Transparency</li> <li>– Accountability</li> <li>– Equitable representation</li> <li>– National ownership</li> <li>– Timeliness</li> <li>– Appropriate</li> <li>– Fair distribution</li> <li>– Complementarity</li> </ul>

Source: Adapted by author from Bird and Glennie (2011).

## 5.2 Scaling from perspective No. 2: the CDM

A substantial literature has emerged to assess one area of climate change finance: the CDM. This, fortuitously, is also the area where the most scaling has been observed. Less fortuitously, the CDM is not centrally about capacity building, although it has had some effects on capacity. Governments have designated and invested in national authorities to manage the flow of CDM projects within their borders, and the flow of revenues from the CDM has encouraged private investors to build capacity while also generating streams of income for a variety of government purposes. These insights apply not just to national administrative capacity but also to variations in subnational administration, which are particularly striking in India (Benecke 2009).

So far, the research on the CDM has not looked much at capacity building, although this research has led to one major conclusion about national administrative capacity and strategy. They are important. As indicated earlier in this essay, countries that build strategic and competent national CDM policies and administrators attract more investment (and more technology transfer) than those that do not. The experiences of China and India are notable contrasts.<sup>18</sup>

<sup>18</sup> See above, and also Ganapati and Liu (2009).

There have been at least two major studies of CDM investment patterns (Dechezleprêtre, Glachant and Ménière 2008; Seres, Haites and Murphy 2009). Those studies lead to many conclusions; among them is the fact that investments are more efficient and lead to more technology transfer when projects are large in size. And in some sectors, transfers correlate with the degree of a country's technological advancement—outside of agriculture, technology transfer is more likely (and projects more numerous) when the host country's own technological skills are relatively large. These insights suggest that scaling is most likely in the countries that are probably least likely to need foreign assistance. They also suggest—although here I am speculating by extending the logic of this research to capacity building—that scaling depends critically on the pre-existing presence of 'capacity' in a country.<sup>19</sup> Perhaps because the CDM is so young we have not yet observed in the empirical studies of large numbers of CDM projects much actual transfer or investment in 'capacity.' Studies looking across the whole range of policy implications for the CDM find that national capacity is important and that the concept of 'capacity' is quite broad and must include not only administration but also clear local goals and guidance for CDM investors (Ockwell et al. 2007).

It is important to keep perspective on the size of the CDM relative to other financial flows, notably from the private sector. In the most recent Climate Policy Initiative tracking of carbon finance, which covers annual flows around 2010-11, offsets (dominated by the CDM) accounted for just 1 per cent of total climate finance worldwide (Buchner et al. 2012).

### **5.3 Scaling from perspective No. 3: mainstreaming climate**

At present, it is difficult to see how climate change capacity-building programmes scale easily. Capacity building is an activity tailored to individual governments and unlikely to be undertaken by the private sector on its own. Thus perhaps there is an opportunity to scale capacity building by mainstreaming climate change into other aspects of foreign assistance. Particularly notable has been the World Bank's efforts, since the middle 1990s, to mainstream climate change (and other international environmental missions) into its main lending and grant portfolios. Thus the Bank has shifted its lending policies on fossil fuel investments and forests, for example, with the goal in part of reducing the emission impacts of its activities. (Most major bilateral ODA programmes have done something similar.) This effort has focused mainly on mitigation, although mainstreaming as concerns adaptation will be discussed below. Mainstreaming around mitigation has mainly looked at the opportunities for low-cost (or even negative cost 'win win') opportunities for cutting emissions. For example, the Global Environment Facility has assessed investments related to urban infrastructure—focusing in particular on the World Bank's urban lending and grant programmes since 1995. That review has shown that efforts to mainstream climate change have been particularly successful in solid waste management and some progress in building climate change concerns into urban infrastructure planning—for example, Bus Rapid Transit. Less success has been achieved in water supply, buildings and other infrastructure where the potentials for climate change mitigation are more diffuse and difficult to administer. This effort by the Bank, which is typical of climate change mainstreaming, has mainly focused on projects rather than administrative capacity. However, one insight from this work is that main means of mainstreaming climate change mitigation into capacity building arises through

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<sup>19</sup> For a formal model that points to similar conclusions see Bayer and Urpelainen (2013).

building awareness of climate change issues among urban planners and other officials (GEF 2011).

A much larger literature has focused, almost since the late 1980s when climate change first came on the international agenda, on the potential benefits of mainstreaming climate change concerns into other important goals like protection of public health (Epstein 2005). Independent assessments have concluded that while the logic of mainstreaming is important, the actual extent of mainstreaming practice has been quite limited.<sup>20</sup> Essentially all of these efforts at systematic assessments have focused on the multilateral institutions; assessments of bilateral programmes are more scattered.

Perhaps even more important than mitigation will be the mainstreaming of climate change concerns related to adaptation. For the purposes of the present study, adaptation is particularly interesting because all countries will have a self-interest in adaptation investments and the scale of investments affected could be many trillions of dollars per year. Essentially all activities in agriculture and in mountainous areas and along coastal zones—among other places that are vulnerable to climate change—could be affected. No ODA programme will affect more than a tiny percentage of all these activities, and thus the greatest leverage may be through building national capacity. While this logic has been articulated in several places, so far actual implementation is quite limited.<sup>21</sup> One example is the Africa Adaptation Programme, launched by the United Nations Development Programme in partnership with other UN agencies with US\$92.1 million in funding support from Japan. The central goal of this programme is to mainstream adaptation efforts while focusing on poverty reduction. It is centrally concerned with capacity building, notably in data and information management, building institutions and leadership, and creating the capacity for improved analysis and implementation and management of adaptation projects.<sup>22</sup> Several detailed handbooks have been prepared to help local officials examine the implications of mainstreaming adaptation issues into development planning (UNDP-UNEP Poverty-Environment Initiative 2011; Lebel et al. 2012). Some regional development organizations have developed projects to mainstream climate adaptation, but these are mainly small and relatively recent in vintage—for example, the Mainstreaming Adaptation to Climate Change (MACC) project in the Caribbean region is based on a US\$5 million grant from GEF. Whereas mitigation studies emphasize the potential of direct action to control emissions, these handbooks that focus on adaptation are principally concerned with capacity building in the planning process. To my knowledge, there has been no systematic examination of whether these mainstreaming for adaptation efforts have actually been successful let alone the capacity-building elements of those programmes.

## **6 Question No. 4: what lessons are transferrable?**

Most of the lessons learned about foreign aid concern country programmes and individual projects. Indeed, most aid money is devoted to such activities, and a smaller portion (perhaps about one-third of total ODA) is used for the kinds of administrative infrastructure building

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<sup>20</sup> For example, see Nakhooda, Sohn and Baumert (2005).

<sup>21</sup> For an articulation, see Victor (2011).

<sup>22</sup> African Adaptation Programme available at [www.undp-aap.org/about-us](http://www.undp-aap.org/about-us).

that might be called ‘capacity building’. The lessons from aid programmes and projects to the particular task of capacity building are difficult to transfer directly because capacity building, by design, is intended to create the very conditions that allow for effective use of foreign assistance. In climate change, in particular, this role for capacity building is particularly apparent since much (perhaps most) such funds are devoted to tasks such as building the national administrative authorities needed to participate in international talks, the IPCC process, manage funding linked to climate change from multilateral and bilateral donors, participate in the CDM and other such activities. Capacity building should be an inward-looking activity since even in the poorest countries most of the funds for development usually come from internal sources; as a practical matter, especially in areas like climate change where aid is targeted for a particular purpose, capacity building tends to be an outward-oriented (often aid oriented) endeavour. In theory, it should be possible to transfer lessons from projects to capacity building by making funds for capacity building contingent upon host countries credibly putting into place the conditions needed to make effective use of foreign assistance. Where that is done, capacity-building programmes can help create the conditions that, in turn, would allow foreign funds to be used effectively for projects. To my knowledge, no major donor programme related to climate change has followed this strategy.

## **7 Analysis and conclusions**

It is hard to answer the question of aid effectiveness by looking to climate change development assistance alone. The history is too short, and careful analytical studies are too few. But answers to the question of ‘what works?’ do exist by looking at the experience with foreign assistance more generally. The central lessons from that experience are embodied in the Paris Principles. At present, very little of the discussion about foreign assistance and climate change is rooted in application of these principles, perhaps because they imply making aid conditional not just on the need for assistance (a key aspiration of recipient countries, especially the least developed countries) but also the ability to spend funds wisely. One of the central lessons from the CDM experience is that the countries that are most able to utilize foreign funds are generally those that least need it.

Making foreign assistance more effective requires identifying the conditions that favour effectiveness and then targeting funds to countries and markets that meet those conditions. On this front, the Paris Principles are not that helpful because they are broad and do not automatically lead to an actionable programme. However, the string of studies starting with the World Bank’s *Assessing Aid* programme are helpful guides. When aid is delivered to countries that have ‘good governance’ the money tends to be devoted to activities that promote public welfare, notably sustainable economic growth. For example, in countries with low levels of corruption, accountable systems of government, and good management of public budgets the injection of new aid money tends to be reinvested in the country for productive activities. While no study has looked in detail at whether exactly those conditions must also hold for climate change programmes, it is likely that is true. Climate change spending is likely to be most effective when it is devoted to activities that yield broad-based public benefits rather than narrower supply of rents to particular elites. Delivering on all the elements of the Paris Principles and on the basic insights of the *Assessing Aid* study requires a central focus on capacity building.

Donors and recipients, alike, are thus faced with what might be called an ‘aid paradox’. The countries that have the conditions in place needed to make aid effective are probably able to

address many of the same challenges that aid is supposed to address on their own. Thus, for example, when the US government created the Millennium Challenge Corporation under the George W. Bush administration with the aim of putting ‘effective aid’ into practice, it faced the problem that very few countries met the rigorous standards for making good use of aid and also needed large amounts of aid. The same is probably true for most climate change aid.

Overcoming the ‘aid paradox’ could prove to be a particularly great problem as more countries focus on capacity building for climate change adaptation. Funds actually dedicated to adaptation—such as hardening of transport infrastructures or investing in more resilient forms of agriculture—are probably many thousands of times smaller than total spending on those same activities.<sup>23</sup> Thus adaptation, in particular, requires that foreign assistance leverage other sources of investment. Transferring the lessons from foreign-funded mitigation projects to climate change adaptation, thus, is likely to lead to many errors since the role of self-funded investments is greater in adaptation. Put differently, most effective adaptation is likely to come from mainstreaming climate change concerns into the normal process of investing in climate-sensitive infrastructures rather than in particular, discrete adaptation projects. By contrast, most mitigation funding for projects has been devoted to discrete projects, with the extreme example of that mode being the CDM where projects are funded only if they are discrete.

Looking to the future, what kinds of programmes could be scaled? The Copenhagen Accord envisioned a manyfold increase in aid; overall, diplomacy has also shifted from emphasizing mitigation to a larger role for adaptation. My assessment of the literature is that it will be slow and difficult to scale the lessons that have been learned, especially where it concerns capacity building. If the central goal of capacity building is to rework (and build) local institutions so that countries are better able to manage their own affairs and also better able to use foreign aid, then the relevant guides must be tailored to each local circumstance and must be credibly sustained over a long period of time. The history of aid shows that many countries (including the largest donors, such as the US) have a hard time making credible long-term commitments and the local tailoring process is time-consuming. This basic insight is now evident as a number of localities explore, for example, ways to adapt to rising sea levels—one of the most likely (and possibly most dangerous) effects of climate change. In Asia, a consortium of cities known as the Asian Cities Climate Change Resilience Network (ACCCRN) is trying to use foreign funds (in this case, mainly from foundations—notably the

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<sup>23</sup> While such data are not collected, a rough order of magnitude calculation is possible. In a typical year, a typical country will spend at least about 2 to 3 per cent of GDP on infrastructure investments that are plausibly sensitive to changes in climate—for example, roads, river diversions, agriculture, etc. Many countries spend more. World GDP is about US\$70 trillion, suggesting that climate-sensitive investments total about US\$200 billion. While there is no comprehensive source of information on adaptation funding, total cash transfers per year under the ‘Adaptation Fund’ have been around US\$30 million/yr for the last two years (see Financial Status of the Adaptation Fund Trust Fund as of 31 December 2011). The Adaptation Fund is managed by the Global Environment Facility and oversees spending of the 2 per cent tax that is levied on CDM transactions. (See Adaptation Fund official website at [www.adaptation-fund.org](http://www.adaptation-fund.org).) For this funding source—so far the only credible multilateral adaptation programme created under the UNFCCC—is thus 0.02 per cent of total world spending on infrastructure. Of course, the Adaptation Fund focuses its disbursements on least developed countries (LDCs), and looking just at that subset of countries (which has more than 12 per cent of the world population but accounts for less than 1 per cent of world GDP) the fractions are still miniscule: 0.4 per cent. By contrast, the net ODA disbursement to these countries, together with the net debt relief, has continued to increase and reached a record level of US\$40 billion in 2009, the equivalent of about 8 per cent of their GDP (see *The Least Developed Countries Report 2012* at [www.unctad.org/en/pages/PublicationArchive.aspx?publicationid=188](http://www.unctad.org/en/pages/PublicationArchive.aspx?publicationid=188)).

Rockefeller Foundation) to help vulnerable cities in four Asian countries adapt to sea level and other climate impacts. Their work, so far, has underscored that every locality is different and tailoring is perhaps even more important than directly transferring lessons from one setting to another (ACCCRN 2009). These challenges are hardly unique to the least developed countries. California, for example, faces a wide array of likely impacts of climate change and is still in the early stages of planning comprehensive adaptation responses because each must be tailored to the particular effect and local institutions.<sup>24</sup>

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