Financing Climate Change Adaptation in Latin America and the Caribbean

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Introduction

Climate change encompasses two components: *mitigation* and *adaptation*. Yet, since the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 the dominant focus of the international community has been placed on mitigation: designing policies to stabilize GHG concentrations, investing in technology and research development on low-carbon and emission free energy, and developing carbon markets aimed at reducing GHG emissions (Stadelmann et. al, 2011). On the other hand, adaptation has garnered less attention, as even the concept itself still remains ill-defined and underdeveloped, resulting in uncertainties on how to best identify and implement solutions to address it (Sand, 2012). In recent years as the impacts from climate change are becoming more apparent, the need to act and direct more attention, and in particular finances, to adaptation has grown in urgency. Although climate change has created a multi-billion dollar industry, only a small portion of it has been dedicated to adaptation activities (UNEP, 2010; Nakhooda et al, 2011; Persson, 2011).

The climate finance structure is composed of several actors, organizations, rules and regulations. Understanding the system may assist developing countries in designing strong project proposals and targeting them to the appropriate areas of support. This report examines the current status of the climate finance system, with an emphasis on adaptation funds. The review shows that climate funds have been clearly unequally distributed, first, between mitigation and adaptation, and secondly between regions, with Latin America and the Caribbean (LAC) often being the most overlooked.

The Costs of Climate Change Adaptation

Questions surrounding climate change adaptation financing include: *How much will it cost? Who should pay for it? And, how should funds be distributed?* Addressing the first question, the cost for adaptation in developing countries has been estimated by the UNFCCC secretariat to be between USD 28-67 billion (Nakhooda et. al, 2011), whereas the World Bank (2010) has calculated a much higher sum of USD 70-100 billion a year. The cost of adaptation will likely differ by region; East Asia and the Pacific are identified as bearing the highest costs, followed by the LAC, Sub-Saharan Africa, the Middle East and North Africa (World Bank, 2010).

Addressing the second question, *who should pay for it?* It is widely agreed that developing countries are most vulnerable to the impacts of climate change, and that they should not bear the full costs of having to adapt to it. In 2009, under the Copenhagen Accord, the Parties agreed that:

"developed countries shall provide adequate, predictable and sustainable financial resources, technology and capacity-building to support the implementation of adaptation action in developing countries" (paragraph 3).

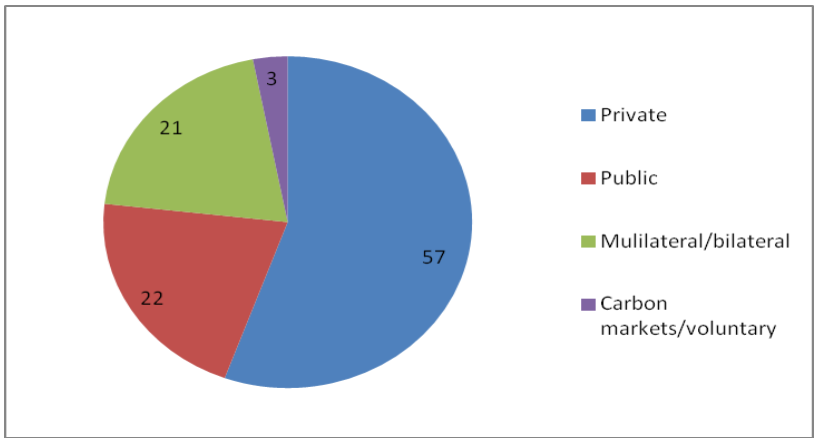
Finally, and perhaps the most contentious issue, is the third question, *how should funds be distributed?* Although it is widely agreed that the most "vulnerable" countries should receive assistance, there is no clear definition on exactly who is vulnerable or how this can be measured (Klein, 2010). Some guidance is provided by the Parties under the Copenhagen Accord that explicitly signals out the least developed countries (LDCs), Small Island developing States (SIDS) and Africa as stated below:

"Enhanced action and international cooperation on adaptation is urgently required to ensure the implementation of the Convention by enabling and supporting the implementation of adaptation actions aimed at reducing vulnerability and building resilience in developing countries, especially in those that are particularly vulnerable, especially least developed countries, small island developing States and Africa" (paragraph 3)

Climate Finance: Mitigation Vs Adaptation

Determining the actual value of the climate financial system and the distribution of funds is faced with two key challenges: the lack of a clear definition of "climate finance" and variations in donor's criteria and classifications between activities financed for mitigation and those for adaptation (UNEP, 2010; Climate Policy Initiative (CPI), 2011). Although the few studies that have attempted to quantify the climate financial system often differ in methodological approaches, data used and the presentation of the results, some general trends may be observed (UNEP, 2010, CPI, 2011, Climate Fund Update, 2012). For example, the CPI (2011) estimates that the climate change industry generates USD 97 billion a year. Their study shows that the private sector contributes to more than half of the global climate funding, with the remainder provided by public, multilateral and bilateral institutions, and a very small portion from carbon markets and voluntary contributions (Figure 1). Generally, most public financing is not distributed directly from governments to end-users but rather through multilateral or bilateral institutions and their dedicated climate funds (CPI, 2011)

Figure 1. Sources of Climate Finance (%)



Source: Adapted from the CPI (2011).

The distribution of climate finance between mitigation and adaptation is even more difficult to determine. Estimates for how much is directed to adaptation range from a low 5% (CPI, 2011) to a high 30% (UNEP, 2011[1]). Regardless, it is clear that the majority of funds have been directed to mitigation measures a likely outcome from the involvement of the private sector, which has invested up to USD 55 billion (out of the USD 97 billion estimated by CPI) a year in areas such as renewable energy. Contrastingly, the source of funding for adaptation tends to be derived from bilateral and multilateral institutions as it is not seen as an investment opportunity. Yet, even these agencies have tended to favor financing mitigation actions, as Table 1 shows of the 19 main dedicated climate funds only four are strictly related to adaptation activities (Nakhooda et. al, 2011).

Table 1. Bilateral and Multilateral Dedicated Climate Funds[2]

Fund	Total Approved Funding (USD, mn)
Indonesia Climate Change Trust Fund	$4.63
Congo Basin Forest Fund	$18.51
Forest Carbon Partnership Facility	$20.82
Scaling-Up Renewable Energy Program for Low Income Countries	$29.10
International Forest Carbon Initiative	$31.70
Forest Investment Program	$47.25

[1] The UNEP (2011) study was based only on the assessment of climate finance from bilateral financial institutions.
[2] Funds in Table 1 represent a portion of the international public climate finance and do not include official development assistance (ODA).

Global Energy Efficiency and Renewable Energy Fund	$64.07
MDG Achievement Fund – Environment and Climate Change thematic window	$89.52
Norway's International Climate and Forest Initiative	$90.80
UN-REDD Programme	$108.13
Adaptation Fund	**$109. 22**
Pilot Program for Climate Resilience	**$118.27**
GEF Trust Fund - Climate Change focal area (GEF 5)	$129.77
Special Climate Change Fund	**$134.74**
Amazon Fund (Fundo Amazônia)	$139.07
Least Developed Countries Fund	**$171.62**
Global Climate Change Alliance	$191.92
International Climate Initiative	$583.84
GEF Trust Fund - Climate Change focal area (GEF 4)	$1,048.26
Clean Technology Fund	$1,915.50
Total	5095.24
Total for Adaptation	533.85
% of funds strictly for adaptation	**10.47%**

Source: Adapted from Climate Funds Update (2012).

As Table 1 highlights just 10% of the approved climate finance from bilateral and multilateral institutions has been directed to adaptation activities.

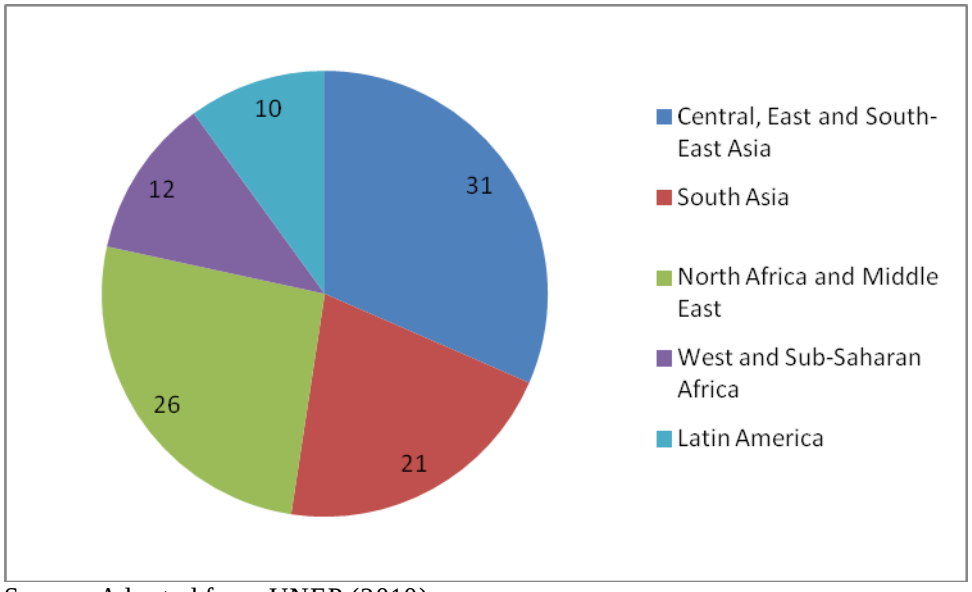
Tracking the geographical distribution of climate finances, whether between mitigation or adaptation, presents a second challenge since many studies, and often the funds themselves, differ in the categorization of countries into regions. For instance, in some cases Caribbean countries are included in the region of Latin America, and in others they are categorized as SIDS. Nonetheless, the general trend observed is: Asia receiving the majority, followed by Africa, and lastly the LAC as presented in Table 2 and Figure 2 (UNEP, 2010, CFU, 2012).

Table 2. Regional Distribution of Bilateral Funds (2009)[3],[4]

Region	Mitigation(USD mm)	Adaptation (USD mm)	Total Climate Finance (USD mm)	Total Climate Finance (%)	Mitigation (%)	Adaptation(%)
Central, East and South-East Asia	2986	1027	4013	31	34	26
South Asia	1986	672	2658	21	22	17
North Africa and Middle East	1981	1328	3309	26	22	34
West and Sub-Saharan Africa	729	747	1476	12	8	19
Latin America	1100	172	1272	10	12	4
Total	**8855**	**3964**	**12819**	**100**	**100**	**100**

Source: Adapted from UNEP (2010).

Figure 2. Regional Distribution of Bilateral Climate Funds (%)



Source: Adapted from UNEP (2010).

The data and information reported by the CFU shows a similar trend (Table 3), in their study, a distinction is made between 3 types of funding categories:

[3] Oceania and trans-regional have been omitted due to their limited significance in receiving funding.

[4]The UNEP (2010) study only accounted for financial institutions from France, Germany, the EU and Japan.

Mitigation; Reduce Emissions from Deforestation and Forest Degradation plus Conservation (REDD+)"; and Adaptation.

Table 3. Regional Distribution of Bilateral and Multilateral Climate Funds

Region	Mitigation (%)	Adaptation (%)	REDD (%)	Total Climate Finance (%)
Asia-Pacific	38	28	27	34
Sub-Saharan Africa	11	35	14	18
Middle East and North Africa	16	8	0	11
Latin America	12	20	29	17

Source: Climate Funds Update (2012). Note: Does not add to 100% due to "unknowns". The data is based on funds that have been "received" rather than "approved".

It is also important to note that even within the various subregions there are certain countries that attract the bulk of the finance. For instance, Mexico and Brazil dominate in the LAC region, Indonesia in the Asia and Pacific region, and the Congo in African region (Nakhooda et al, 2011).

Adaptation Funds

The global climate adaptation finance structure is composed of a diverse number of funding opportunities each with their own objectives and eligibility requirements. Understanding the system, and in particular the funds that are available may help countries quickly develop project proposals, and target them to the most suitable and relevant fund.

The four main operational adaptation funds include:

- Least Developed Countries Fund (LDCF) (established in 2001 under the UNFCCC);
- Special Climate Change Fund (SCCF) (established in 2001 under the UNFCCC);
- Adaptation Fund (AF) (created in 2007 under the Kyoto Protocol);
- World Bank's Pilot Program for Climate Resilience (PPCR).

Although not yet operational, the Green Climate Fund under the UNFCCC may be a significant source of adaptation financing as it promises to allocate funds equally between mitigation and adaptation activities.

Previous funding opportunities were available under the Strategic Priority Adaptation Fund and the MDG Achievement Fund (environment and climate

change thematic window), both of which are no longer operational. The Global Environmental Facility (GEF) has also limited their adaptation financing since under the GEF Trust Fund 5 (2011-2015) all funds will be allocated solely to mitigation activities.

Finally, two bilateral initiatives that are becoming increasingly important for funding adaptation activities include the International Climate Initiative (ICI) and the Global Climate Change Alliance (GCCA).

The Special Climate Change Fund

The GEF administers and oversees the SCCF, which was established to support adaptation measures that increase the resiliency of national development sectors. The activities funded should be country-driven, cost-effective, integrated into national sustainable development and poverty-reduction strategies and should take into account the National Communication Reports and National Adaptation Programs of Action. Funding is available to all developing countries that are parties to the UNFCCC (GEF, 2011a).

The fund has identified the following priority areas for adaptation financing:

- Water resource management
- Land management
- Agriculture
- Health
- Infrastructure development
- Fragile ecosystems (including mountain ecosystems)
- Integrated coastal zone management
- Climate disaster and risk management

The fund does not provide financing for vulnerability and adaptation assessments since these activities can be funded from other sources, including the GEF Trust Fund. The SCCF places a strong emphasis on funding "concrete" adaptation activities and requires proponents to provide a clear distinction between what may be considered traditional development activities and the adaptation actions. Consequently, other sources of funding are often needed to cover the full cost of the project (GEF, 2011a).

The fund has dispersed USD 80 million to 39 adaptation projects distributed as follows: 33% in Africa, 30% in Asia, and 21% in the LAC (16% are unaccounted for). The main thematic area of the projects are focused on water and coastal zone management and strengthening the local capacity to cope with drought events (Nakhooda et. al, 2011).

Least Developed Countries Fund

The LDCF is also administered by the GEF. Eligibility to the fund is restricted to the 49 least developing countries (LDCs) as defined by the United Nations. The main objective of the fund is to support LDCs in the preparation and implementation of their National Adaptation Programs of Action (NAPAs) (GEF, 2011b). The LDCF tends to finance activities that aim to reduce the vulnerability of the sectors and resources that are central to development and livelihoods of the country, such as in the water, agriculture and health sectors, disaster risk management and prevention, and fragile ecosystems.

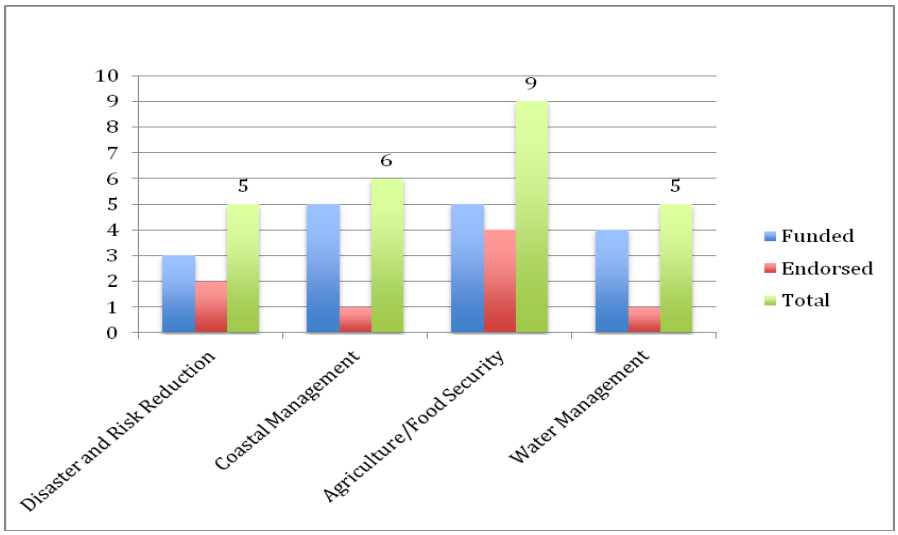
Each LDC has the potential to access up to USD 11-15 million for the NAPA preparation and project implementation. To-date 46 LDCs have completed their NAPA. The fund supports 52 projects and programs distributed across 42 of the LDCs, making it the largest portfolio of adaptation funded activities (GEF, 2011b).

The Adaptation Fund

The AF was established to support concrete adaptation projects in developing, and particularly, vulnerable countries. The AF receives financing from 2% of the emission credits (CER) sold under the Clean Development Mechanism (CDM). By the end of 2011, the AF had a market value of USD 170 million, and is expected to reach USD 250-350 million by the end 2012 (Stadelmann, 2011). All developing countries that are Parties to the Kyoto Protocol are eligible to apply for up to a maximum of USD 10 million.

The Adaptation Fund Board is responsible for reviewing and approving project proposals during each of its quarterly meetings. Since 2010, 48 proposals have been submitted, of which 25 have been endorsed, and of those, 17 accepted (as of January, 2012). The projects funded may be divided into the following sectors: disaster and risk reduction, coastal management, agriculture and food security, and water management. Figure 3 shows that the agriculture and/or food security sector has been the area to receive the most endorsement or funding. However, it is important to note that many adaptation projects have more than one component or address more than one sector, often creating difficulties in dividing projects into distinct categories. For instance, Paraguay's "Ecosystem-based Approaches for Reducing the Vulnerability of Food Production to the Impacts of Climate Change in the Eastern and Chaco Regions of Paraguay" includes activities that target agricultural practices as well as water management, especially to cope with drought events.

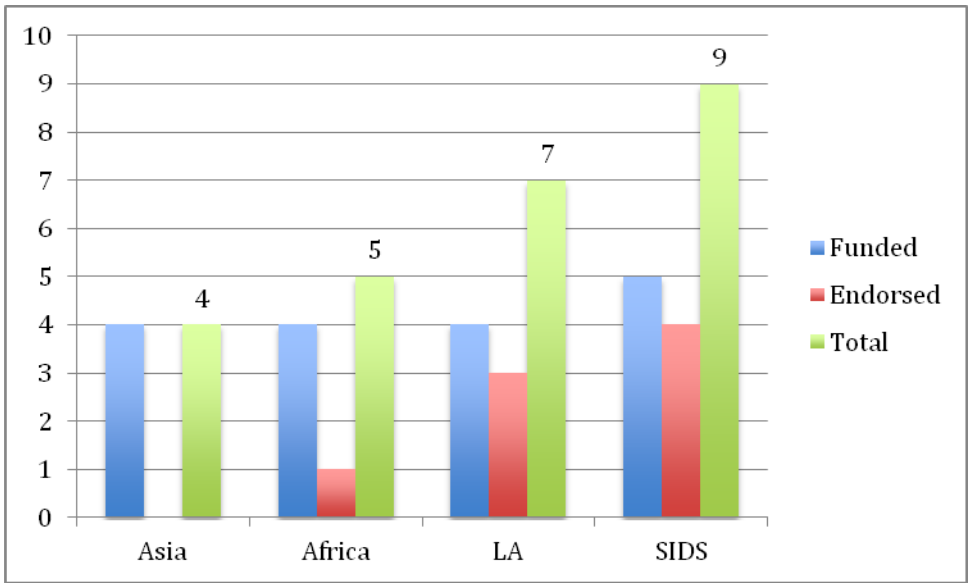
Figure 3. Adaptation Fund Projects Funded/Endorsed by Sector



Source: Adapted from the AF (2012).

The geographical distribution of the endorsed/funded projects is presented in Figure 4. In this case, the LAC region has been particularly active in applying for funds and successful in receiving them, coming in second after the SIDS (which also includes countries from the LAC, such as Jamaica).

Figure 4. Geographical Distribution of Projects Funded/Endorsed by the AF



Source: Adapted by the AF (2012).

A study conducted by the Adaptation Fund Board analyzed the project proposals that had been submitted in order to identify weaknesses that caused delays or

rejection in project approvals. The most common issue identified was in relation to the "concreteness" of the project, which was mainly due to: *the limited demonstration of the project being an adaptation project versus a regular development project*".

One reason for this common weakness was the ambiguity of what a "concrete" adaptation project is. Consequently, in June, 2011 the Project and Programme Review Committee finally provided the following definition of what is considered a concrete adaptation initiative:

> "*A concrete adaptation project/program is defined as a set of activities aimed at addressing the adverse impacts of and risks posed by climate change. Adaptation projects can be implemented at the community, national, and transboundary level. Projects concern discrete activities with a collective objective and concrete outcomes and outputs that are more narrowly defined in scope, space and time" (Adaptation Fund Board, 2011).*

The definition is expected to improve the project proposals and to reduce delays in the review process.

Other important common issues that cause delays in the approval process included limited information on:

- The cost-effectiveness of the project due to:
    - unclear economic, social or environmental benefits;
    - limited description of alternative options;
    - poor assessment of the project's cost effectiveness.
- The consultative process:
    - limited information provided on the scope of the consultation process;
    - insufficient information on the role of each stakeholder involved;
    - lack of consultation with vulnerable communities.

Other areas of weaknesses included:

- Limited information on climate change scenarios;
- Poor linkages between the project and national plans;
- Lack of synergies with existing programs and/or initiatives;
- The long-term sustainability of the project is questioned.

Despite these weaknesses the Adaptation Fund Board found that the turnaround time for submitted proposals is rather fast, moving from a project concept to endorsement to final approval within 6.5 months (Adaptation Fund Board, 2011).

The Pilot Program for Climate Resilience (PPCR)

The World Bank administers the PPCR, which aims to build climate resiliency by mainstreaming climate change into national planning. The program is being piloted in: Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen and Zambia as well as two regional programs, one in the Caribbean(covering Dominica, Grenada, Haiti, Jamaica, Saint Lucia, Saint Vincent and the Grenadines) and the Pacific (including Papua New Guinea, Samoa and Tonga). Although the program has approved over USD 800 million for project preparation and implementation, just 2% has actually been disbursed (Climate Investment Funds, 2011).

The International Climate Initiative (ICI)

The ICI is a German bilateral initiative administered by the Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). The aim of ICI is to support climate protection projects in developing countries, newly industrialising countries and transitioning countries. The fund covers projects in three main areas: reducing greenhouse gas emissions, enhancing the adaptive capacity of nations, and protecting and using forests and other ecosystems for their carbon storage. Aside from climate related activities, ICI also attempts to fund activities that have strong synergies with protecting biological diversity (BMU, 2011).

In 2012, the projects supported in the adaptation stream of ICI included elements of:

- Ecosystem-based adaptation;
- Development of financing systems and the mobilization of private sector capital;
- Optimization of land use and water management;
- Development of mechanisms and instruments for better informed policy making;
- Improvement of data management systems;
- Management of climate risks i.e. insurance projects and credit systems.

The BMU outlines several criteria for evaluating project proposals, among these are:

1. The relevancy of the project to one of the BMUs focal areas;
2. The innovative character of the activity;
3. The suitability of the country to the focal area, as defined by the BMU (Table 4).

Table 4. BMU's Focal Areas and Country of Focus

Focal Area	Category	Country Focus
Area 1	Mitigation	Small to medium sized newly industrializing countries with a high greenhouse gas reduction potential.
Area 2	Adaptation	Particularly vulnerable countries are preferred (no definition is provided for what constitutes as vulnerable).
Area 3	REDD	Countries that have a high carbon storage and biodiversity presence.
Area 4	Biodiversity	Countries with a high level of biodiversity.

Source: BMU (2012)

To-date the majority of ICI financing has been directed towards climate mitigation activities including: 58% to mitigation projects, 28% to REDD, and just 14% (or 44 projects) to adaptation measures. Of the 44 adaptation projects, 6 are located in the LAC, including one in Brazil, two in Peru and three spanning the region (Caribbean and Mesoamerica) (BMU, 2011).

The Global Climate Change Alliance (GCCA)

Initiated in 2008, the GCCA is a bilateral initiative of the EU that has funded and implemented 18 adaptation projects across Africa, Asia and the Caribbean. The GCCA tends to support activities in flood prevention, disaster risk reduction, and the water and agriculture sectors, and focuses its resources in LDC, the SIDS, and African countries in accordance with the Copenhagen Accord and adopted by the EU States (Nakhooda et. al, 2011; GCCA, 2012).

The Funding Gap in Latin America and the Caribbean

Latin America and the Caribbean region have attracted the least amount of the available carbon finance from bilateral and multilateral instruments (see Table 2; Table 3 and Figure 2). Also, of the approved USD 930 million from the funds listed in Table 1, just USD333 million has actually been disbursed, and mostly to just five countries (with the largest economies), including:

- Brazil $94 million;
- Mexico $54 million;
- Peru $32 million;

- Colombia $25 million;
- Chile $18 million.

The bulk of this funding has been directed to mitigation activities, especially in the area of emission reductions from avoided deforestation (REDD) and the development of low-carbon energy and transportation sectors (Caravani, 2011).

On the adaptation side, funding in the LAC region has been much weaker, which may partly be due to the general perception that the region is less vulnerable than Africa or Asia. Several global climate change vulnerability assessments have concluded that the LAC region generally has a low-medium level of vulnerability, whereas Africa and Asia tend to score a med-high level (see Sullivan and Huntingford; Barr et. al, 2010; Ericksen et. al., 2011). This perception has been reinforced by the Parties of the UNFCCC under the Copenhagen Accord, which signaled out the LDCs, SIDS and Africa as being particularly vulnerable to climate change. This implies that only Haiti (listed as an LDC), and some Caribbean States are considered to be "particularly vulnerable". As a result, the LAC is often neglected, and even omitted from funding opportunities as some funds only finance LDCs, SIDS or African states (GCCA and the LDCF).

Overlooking the LAC's vulnerability to climate change is not only unethical, but may also pose potential danger to the global economy and peace and stability in the region. Climate change impacts have already been experienced including:

- Temperature increased by 1°C during the 20th century;
- Sea level rose 2-3 mm/yr since the 1980s;
- The number of inhabitants affected by extreme temperatures, forest fires, droughts, storms and floods grew from 5 million in the 1970s to more than 40 million in the last decade;
- Adverse weather events and conditions have cost the region more than US$40 billion in the period 2000-2009.

(Torre et. al., 2009; UNEP, ECLAC and GRID Arenal, 2010).

Some of the future climate change impacts in the may LAC include:

- Rising temperatures between 2°C-6°C under the IPCC A2[5] scenario;
- Precipitation changes in quantity and distribution;

[5] Scenario A2 projects a less dynamic economy, less globalization and high population growth.

- Increase in intensity and frequency of extreme events including drought, floods, and hurricanes;
- Water stress for 77 million people by 2020 due to the retreat in glaciers;
- Caribbean states exposed to sea-level rise effecting economic activities including tourism and agriculture.

(Torre et. al., 2009; UNEP, ECLAC and GRID Arenal, 2010).

Finally, the costs of climate change adaptation in the LAC is estimated by the World Bank (2011) to be USD 21.3 billion a year, falling second regionally after East Asia and the Pacific (USD 25.7 billion). Consequently, there is a clear need to step up and attract more funding into the region for adaptation activities.

Recommendations for Latin America and the Caribbean Region

Climate change poses a real environmental and socio-economic threat to the countries of the LAC and accessing the required finances for adaptation is essential. Table 5 lists each adaptation fund and provides information on its relevancy to the LAC.

Table 5. Relevant Adaptation Funds for the LAC

Fund	Relevancy to the LAC
LDCF	Only Haiti is eligible for applying to the LDCF. The country has prepared their NAPA and should therefore develop and submit project proposals to facilitate its implementation.
SCCF	All the countries in the region can access funds from the SCCF. To-date the fund has approved projects in Mexico (wetlands), Nicaragua (water management) and the tropical Andes (impacts from the retreat of glaciers). Projects that have a focus on ecosystems and land management tend to be favored.
AF	All the countries in the region are eligible to apply to the AF. In fact, this is the one fund where the LAC has performed significantly well. Projects that address agriculture/food security and water resources tend to receive funding.
PPCR	Countries have already been selected for the first round of funds, which includes Bolivia and parts of the Caribbean.
ICI	This fund may hold significant promise for

	LAC. Project proponents should design proposals that fall into more than one of the BMUs Focal Areas (i.e. adaptation + biodiversity protection). Since the LAC is rich in biodiversity and has substantial carbon storage (Amazon) project proposals should reflect the risks posed by climate change to these environments. As such, EbA project proposals may be favored for funding for their multiple benefits to adaptation, biodiversity protection and even mitigation (reforestation).
GCCA	This fund has very limited opportunities for the LAC as only Haiti and the Caribbean countries qualify.

Conclusion

Globally, funding for adaptation has fallen significantly short of the estimated costs of USD 28-67 billion to USD 70-100 billion a year needed to address the problem (World Bank, 2010; Nakhooda et. al, 2011). To make up for the shortfall adaptation project developers need to be creative and seek alternative sources of funding. Looking to the mitigation sector there may be some opportunities and lessons learn. The mitigation sector presents some opportunities and lessons learned. Firstly, many adaptation projects may also be "disguised" as mitigation activities, such as the reforestation of coastal areas to cope with sea-level rise (which is simultaneously a mitigation activity as it captures and reduces CO2 in the atmosphere). Secondly, the success of mitigation financing appears to be largely attributed to the strong role that the private sector has played in investing in this area. Recognizing the potential opportunity of the private sector in the field of adaptation is growing, even among funding institutions such as ICI which specifically finance "innovative" adaptation projects that facilitate the mobilization of private sector capital. There are several key areas where the private sector can play a role in adaptation financing:

- Climate proof investments;
- Design, manufacture and distribute goods and services that can help reduce the vulnerability of individuals and communities to climate change, such as water catchment tanks;
- Provide microfinancing for adaptation activities;
- Provide risk management tools, including insurance.

(Atteridge, 2011).

Project developers in the LAC region can benefit from these alternative financing opportunities and should develop project proposals accordingly.

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