

Justice Implications of Adaptation to Climate Change and its Governance

Elena Maggioni
School of Policy, Planning and Development
University of Southern California

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ABSTRACT

This paper analyzes the different notions of justice that have informed the debate about adaptation to climate change in the international arena and examines current adaptation funding mechanisms in order to understand whether they embody the equity criteria that inspire them. At first it underlines that the concept of justice has been attributed multiple connotations and that non industrialized and industrialized countries adopt different rationales when discussing climate change. In addition, it describes how justice and equity are at the center of the debate about adaptation. Since vulnerability to climate change effects is function of local wealth distribution and of the local degree of social resilience, the paper emphasizes that adaptation governance is concerned with the equitable distribution of benefits and burdens of the effects of climate change and with the obligations of industrialized countries toward non industrialized nations, but also, at the same time with matters of procedural justice. After analyzing how current international financial mechanisms in support of adaptation embody different notions of equity, it points out that there are doubts that the current funding methods reflect the justice concerns that inspire global adaptation policies and suggests that they should be deeply reformed.

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INTRODUCTION

During the 15th reunion of the Conference of Parties (COP) of the United Nations Framework Convention for Climate Change (UNFCCC), adaptation has become one of the centers of the debate. With the accord signed in December 2009, industrialized nations have pledged to make available USD 30 billion by 2012 and USD 100 billion by 2020 to provide for non industrialized countries (UNFCCC, 2009). These funds will be allocated to support both mitigation and adaptation and when they will be assigned, will constitute a relevant increment to the current funding for adaptation. How these resources will be allocated and who will allocate them has not been clearly defined yet and it is a matter of distributional and procedural equity.

Adaptation to climate change at global scale has been a part of the Kyoto Protocol and of the debate on its implementation since the protocol was signed. Its urgency has been reinforced by the International Panel on Climate Change's (IPCC) fourth assessment of climate change, which has confirmed that in the next 20 to 50 years, no matter whether green house gases (GHG) emissions will be reduced, due to the gases emitted in the past and to the inertia of the climate system, many areas on the planet will experience the consequences of the increased concentration of GHG in the atmosphere (Archer et al., 1997; Parry et al., 2007, Moser et al. 2009). The fourth assessment has also confirmed that the effects of climate change are already current events and that, in the future, more countries will experience extended droughts, related water shortages and increased fires; more areas will be hit by violent floods or experience rising sea level, while the number of extreme weather occurrences such as hurricanes and typhoons will increase. Although climate models are still not as precise as expected it is evident that many

developing countries will suffer from climate change more than industrialized nations (Parry et al., 2007; Rosenweig et al. 2007).

Adaptation, as much as GHG mitigation, have been framed as a problem of distributional equity since the '80s. In fact, the geographical distribution of the effects of climate change does not have any relation with the geographical distribution of its causes. Historic emissions come mainly from industrialized countries that enjoy the benefits of a development based on ample supply of energy derived from burning fossil fuel. These countries are also able to invent the technologies, processes, and behavioral changes that will reduce their emissions. Countries that are vulnerable to the consequences of climate change, on the other hand, are not those responsible for historic greenhouse gases (GHG) emissions, are not likely to enjoy the benefits of fossil fuel based energy resources and are the least equipped to deal with them (Adger et al. 2006; Grasso, 2007, 2010; Ikeme, 2003; Jagers & Duus-Otterstrom, 2008; Paavola & Adger 2006; Tol et al. 2004). Furthermore, in the climate negotiations, poor countries are not likely to be able to be heard by more powerful competitors and to be able to assess the implication of any proposal on their interest (Ashton & Wang, 2003).

Financial support to climate change adaptation partially reflects equity concerns, but at the same time it is the result of a lengthy negotiation process between powerful donors and less powerful recipients that have different approaches and are inspired by different ethical principles. This paper's objective is to understand which equity principles are embedded in the operative structure of existing climate change adaptation funds. In doing so it analyzes different equity rationales that underpin developed and developing countries' approaches, it looks at the structure of the current climate change adaptation funds and examines in depth the Least Developed Countries Fund (LCDF) and the Pilot Project for Climate Resilience (PPCR).

EQUITY AND ADAPTATION

The debate about adaptation has brought to bear a number of equity questions at different levels such as the global distribution of vulnerability and adaptive potential (Baer, 2009; Satterthweite et al. 2009) and the distribution of positive and negative consequences of climate change among countries (Tol et al. 2004). One of the important themes of the equity debate is the principles that should inform adaptation funding policies (Adger, 2001, Adger et al. 2006; Grasso 2007, 2010; Ikeme, 2003, LeGoulven, 2008; Müller, 2010; Paavola & Adger, 2006, Tompkins & Hultman, 2007).

The IPCC defines adaptation as the “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities” (Parry et al., 2007, p.569). The capacity of a system to adapt to the consequences of climate change and to control its potential damages, largely depends on its vulnerability. The debate about vulnerability and how to measure it is rich and diverse (Adger, 2006; Brooks et al. 2005; Fussel, 2007, 2009, Fussel & Klein, 2006, Patt et al. 2009), but there is wide agreement over the fact that vulnerability is determined both by natural and social factors that can be reduced to three fundamental elements: a) the degree to which a site’s features are likely to be affected by climate change; b) the magnitude of the climate event, and c) the degree at which the local social and administrative infrastructure is able to react to negative or positive climate occurrences.

Patterns of vulnerability coexist at different scales, among and within countries. Countries whose economy largely depends on agriculture and on natural resources and countries that have unstable social and political arrangements are more vulnerable than industrial and post industrial countries where social and political institutions are stronger (Anthoff et al. 2009; Tol et

al. 2004). On top of existing unequal vulnerabilities, the distribution of climate impacts is likely to be uneven and is going to create new unjust conditions (Paavola & Adger, 2006).

Industrialized countries and developing countries have different perspectives on how to address unequal responsibilities and unequal vulnerabilities (Grasso, 2007, 2010; Ikeme 2003). Both points of view are inspired by kaleidoscopic notions of justice, rather than by a single paradigm and have informed the current climate change regime (Grasso, 2010; Ikeme, 2003; Paavola & Adger, 2006) while contributing to keep the debate about possible the international balance of adaptation commitments still open.

Developing countries are inspired by principles of distributive justice (Rawls, 1971; Sen, 1992) and tend to emphasize the importance of correcting the injustice of past emissions. They argue that industrialized countries have used up all the absorptive capacity of the atmosphere and should compensate developing countries for this use (Gardiner, 2004).

On the other side of the debate, industrialized nations are moved by a utilitarian justice principle, justified by their intent to reach the maximum adaptation in the most economically efficient way. They act upon the assumption that if compensation is needed it does not imply responsibility for GHG emissions that precede the common understanding of the causes of climate change and that their ability to pay sets the limit to the amount of resources invested in adaptation, rather than the vulnerability of the interested parties (Grasso, 2007, 2010).

All in all, from an equity perspective, there are four main questions connected with adaptation policies (Adger et al. 2006; Baer, 2009; Grasso, 2007, 2010, Ikeme, 2003, Jagers & Duus-Otterstrom, 2009; Paavola 2005, Paavola & Adger, 2006) Are the industrialized countries at all responsible for climate change impacts caused by their GHG emissions? 2) Should developed countries provide assistance to developing countries and share with them the burden

of adaptation? 3) How should assistance be distributed? And 4) How should adaptation decisions be made at different governance level?

Equity in adaptation financing

Although the debate about equity and adaptation is not as deeply developed as the debate on equity in GHG mitigation (Grasso, 2007, 2010, Paavola & Adger, 2006), some common threads help to frame the possible answers to these questions.

There is consensus over the fact that a responsibility principle should guide the international community in addressing the problem of adaptation (Grasso, 2007, 2010; Paavola, 2005; Paavola & Adger, 2006, Posner & Sunstein, 2010). Based on this principle, industrialized countries, that have overused the absorptive capacity of the atmosphere, should assist developing countries that are more likely to suffer from the effects of climate change (Baer, 2009; Grasso, 2007, 2010). As a matter of fact the Kyoto Protocol commits industrialized countries to technology transfer and provision of insurance on behalf of developing countries; additionally it requires them to cover the costs of developing countries' national GHG inventories, of the assessment of their vulnerability and of the measures needed for adaptation. The Marrakesh accord, signed in 2001, has also set up a number of mechanisms to finance the adaptation process in developing countries supported by developed countries (UNFCCC, 2002).

However, there is not clear agreement on corollaries of this agreed principle, such as in which measure each developed country should contribute to adaptation funds and whether countries that have developed in the last 20 years should actively participate in supporting adaptation processes of least developed countries (Dellink et al. 2009, Mattoo & Subramanian 2010; Müller et al., 2009). One of the main concerns of developing countries is also the additionality of climate change adaptation funding and the fear that adaptation will simply

substitute for the current financial support to economic development. Also, the features of the funding process are still controversial. It is not clear whether the countries that will carry the heaviest burden of climate change are guaranteed access to a consistent stream of resources that allows them to plan for adaptation with a long term perspective. Finally, the nature of the disbursements is still divisive, with developing countries that expect grants and international institutions that push for granting repayable loans instead (Tan, 2008).

The allocation of international funds that support adaptation in developing country is also under scrutiny from an equity perspective. It is not clear how the resources earmarked for adaptation should be distributed to the countries that are impacted by climate change (Grasso, 2010). In practice, there is uncertainty on how severe the effects of climate change will be in different parts of the globe (Parry et al., 2007) and there is not agreement over how vulnerability can be measured and ranked (Brooks, 2005; Füssel, 2009; Patt et al. 2009). In this perspective, the main concerns of those who advocate for developing countries are that the allocation process is based on technical feasibility and competency in financial management instead that on vulnerability and that the strict requirements for the funds are specifically aimed at a narrow range of adaptation measures and hamper the effectiveness of the projects (Tompkins & Ultman 2007, Tan, 2008).

The equitable allocation of adaptation resources is also strictly related to issues of procedural justice (Grasso, 2010; Paavola & Adger, 2006). In practice, the equity concerns are related to the inclusion of every country in the decision making process with equal power to influence decision and to specify their terms of participation (Grasso, 2010; Paavola & Adger, 2006, Posner & Sunstein, 2010). The contentious issue is whether representatives of developing countries participate in the decision making process of resource distribution, but also whether

decision making processes at local level involve the communities that are more marginalized and that are likely to be more severely affected by the consequences of climate change. Satterthwaite et al. (2009), advocating for the need of involving marginalized communities in the decision making processes of climate change adaptation, point out that adaptation policies will very likely be designed and carried out by city government and that the inequalities that have characterized economic growth in non industrialized countries will determine both local vulnerability to climate change and the allocation of the benefits of adaptation to different stakeholders.

Tab. 1 Dimensions of justice and equity concerns for adaptation financing

Dimension of justice	Ethical Principles	Shared assumptions	Corollaries
Distributive justice	Responsibility Vulnerability	Industrialized countries should fully support adaptation in non industrialized countries Actions to adapt to climate change can have justice implications	<ul style="list-style-type: none"> • How costs should be allocated among developed countries. • Tools to guarantee consistent, adequate and predictable flow of resources • Nature of disbursements • How resources should be allocated among developing countries • Who will benefit from adaptation in developing countries
Procedural justice	Fair involvement	Each country should be represented in the decision making process	<ul style="list-style-type: none"> • How is the governance of financial institutions

The discussion about how equity principles are embedded in the current climate change adaptation financing instruments has influenced the characteristics of the current regime (Müller & Gomez-Etcheverry, 2010; Tan, 2008) and is likely to influence how new funding schemes will

be established. In the following paragraphs this research analyzes how distributive justice and procedural justice are embodied in the existing financial mechanisms that support adaptation. At first the analysis focuses on a short description of the existing funding opportunities, then the attention shifts to the in depth study of two different funding mechanisms: the Least Developed Countries Fund (LDCF), instituted by the UNFCCC's Marrakesh Accord (UNFCCC, 2002), and the Pilot Program for Climate Resilience (PPCR) established in 2008 by the World Bank. The two financial arrangements reflect two different approaches. The LDCF is based on the assumption that specific mechanisms should exist to fund the additional burden that climate change imposes on developing countries, while the PPCR has been established to explore how climate change adaptation funding can be mainstreamed in the more general effort to support economic development.

INTERNATIONAL FINANCING INSTRUMENTS FOR ADAPTATION TO CLIMATE CHANGE

On its website, the UNFCCC lists 23 funding sources for adaptation projects and plans. Ten are financial facilities that pre-exist the Kyoto protocol but, while supporting activities that are consistent with climate change adaptation such as water or forest management, are not conceived specifically to address the issues of climate change adaptation and will not be analyzed. The programs discussed in this analysis are summarized in Appendix 1.

The world of adaptation finance is small but fractioned and is characterized by different financing formats and institutions that sometime overlap, but have the potential to be integrated.

In Appendix 2 the list of donor countries to the different funds highlights that only industrialized countries included in the Annex I of the Kyoto Protocol that have signed the protocol contribute to the funds. The US contributes only to the PPCR and does not participate to the funding effort under the purview of the UNFCCC. Most funding mechanisms are based on

donations from industrialized countries to funds managed by multilateral institutions such as the Global Environment Facility, which manages the funds established by the Kyoto Protocol, and the World Bank and other Multilateral Development Banks (MDB). A smaller number stems from the commitment of individual industrialized countries to support bilateral initiatives.

Eight adaptation funding opportunities, the wide majority, are financial facilities created specifically to pursue the objectives of the Kyoto Protocol and are likely to finance the additional burden that climate change imposes on the development process. Of these, four have been created under the authority of the UNFCCC and are being managed by the Global Environment Facility (GEF), while four are bilateral operations initiated by individual developed countries. The remaining five, instead, support mechanisms based on existing funding processes created by existing institutions such as the World Bank, the Inter-American Development Bank and the Asian Development Bank and are more likely to integrate climate change adaptation with development strategies, potentially replacing development funds with adaptation funds.

To assess the economic relevance of these programs it is important to take into consideration the size of the financial instrument, but also whether it depends on periodic replenishments by donor countries, whether it has a regular source of financial input that guarantees sustainability over time and whether it is additional to the existing international aid support. Nevertheless, the lack of financial weight of these initiatives, compared with the estimated needs for climate change adaptation is humbling. Different estimates place the total funding requirements for adaptation between USD 20 and USD 195 billion a year (Ghosh, 2010; World Bank, 2010), while the current funding effort consist of 14 funds that have a capacity that ranges from USD 0.13 to USD 2 billion for a period of time that is not well defined (Tab. 2), but

that does not exceed five years. In addition, these funds do not offer consistency and certainty in time, because all but two of them depend from periodic replenishment from donor countries.

The most relevant in terms of resources are the Cool Earth Initiative of the Japanese government, that provides 2 billion dollars in adaptation and renewable energy grants to developing countries and the Pilot Program for Climate Resilience (PPCR), a World Bank fund that gives developing countries of USD 945 million in grants and loans to combine climate change adaptation and economic development strategies. Their size is not small, but their consistency in time is not guaranteed. Once the funds have been committed to some use, donor countries have to reconvene and replenish the endowment, a process that is never easy and smooth. Only two funds, the Adaptation Fund and the German International Climate Change Initiative are more likely to guarantee a flow of resources consistent in time. They are small, but they are tied to the proceeds of carbon emission allowances. The first relies on revenues from the sales of the Carbon Emission Reductions (CER) achieved through the Clean Development Mechanism (CDM), while the second will be fuelled by the sale of emission allowances of the EU-ETS. If the carbon market grows the financial support for these initiatives is likely to increase.

Most of the funds are intended as a compensation of developed countries to the developing world for the depletion of the absorptive capacity of the atmosphere and will disburse grants. Only two will be paid out as loans.

In terms of scope, the great majority has a wider span and a comprehensive approach, only a small number is aimed at a single problem, such as water management and disaster recovery. They differ also in terms of approach to countries' vulnerability. Only three are reserved to areas of the globe that are deemed more vulnerable due to social, economic and institutional factors

(least developed countries – LDC¹) and to areas that combine socio/institutional vulnerability and vulnerable geographic characteristics, the small islands developing states (SIDS). The remaining nine are directed to as many non Annex I countries as possible and make up most of the funding (Appendix 3).

CASE STUDIES

The analysis of the different adaptation funding mechanisms allows for some inferences about distributional equity. In order to examine questions related to procedural justice it is necessary to analyze in depth case studies. The Least Developed Countries Fund (LDCF) and the Pilot Program for Climate Resilience (PPCR) have been selected because they embody two different approaches. The first has been established under the jurisdiction of the UNFCCC to address additional costs to developing countries caused by the effects of climate change and the second has been created to test the possibility of integrating investments aimed at economic development with adaptation measures.

Least Developed Countries Fund (LDCF)

The LDCF is a voluntary trust fund based on the Marrakesh accord that was established by the Conference of Parties (COP) of the UNFCCC in 2001 to address the special needs of the 48 Least Developed Countries (LDCs) that are especially vulnerable to the negative impacts of climate change (UNFCCC, 2002). As of January 2010, the fund has 21 donors: (Appendix 2) and

¹ In its latest triennial review in 2009, the Committee for Development Policy used three criteria for to identify LCDs: 1) low-income, based on a three-year average estimate of the gross national income (GNI) per capita (between \$905 and \$ 1,086); 2) human capital status based on indicators of: (a) nutrition: percentage of population undernourished; (b) health: mortality rate for children aged five years or under; (c) education: the gross secondary school enrolment ratio; and (d) adult literacy rate; and 3) economic vulnerability, based on indicators of: (a) population size (not above 75 million); (b) remoteness; (c) merchandise export concentration; (d) share of agriculture, forestry and fisheries in gross domestic product; (e) homelessness owing to natural disasters; (f) instability of agricultural production; and (g) instability of exports of goods and services.

is operated by the Global Environment Facility (GEF) a funding institution created in 1994 by the UN to manage resources aimed at addressing environmental problems.

Since its inception, the LDCF had a rather narrow scope. It was not designed to address the complexity of adaptation to climate change in the poorest countries on earth, but rather to identify urgent and immediate needs of each LDC. The fund had two objectives: it is meant to fund the formulation of National Adaptation Programs of Action (NAPA) in the least developed countries and to fund actions and projects identified by NAPAs, with the mandate to support the additional burden that climate change related events would impose to each country (GEF, 2002).

Since 2001, the GEF has mobilized voluntary contributions to the LDCF of about USD 195 million (USD 164 million actually paid) (GEF, 2010a). The Fund's target in the next four years is to reach USD 500 million. However, donor countries have not yet agreed on a much needed four – year replenishment process.

The governance system

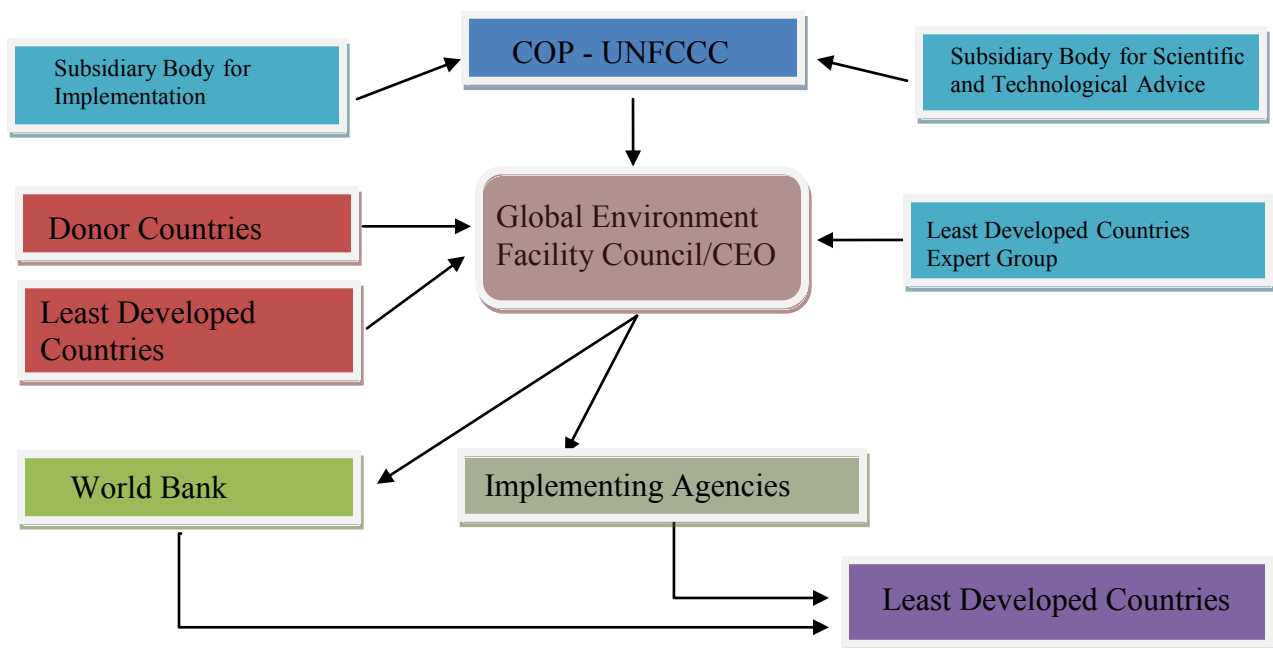
The LDCF is operated by the Global Environment Fund (GEF) and acts through the GEF implementing agencies². Its governance system is represented in fig. 1. The COP, which is supported by the Subsidiary Body for Scientific and Technological Advice (SBSTA) and by the Subsidiary Body for Implementation (SBI), is the strategic body that provides directions to the LDCF on policies, objectives, priorities and eligibility criteria. The operating entity of the COP is the GEF³. Its council has control over the organizational and administrative matters for the

² Currently the GEF implementing agencies are: the United Nations Development Program (UNDP), the United Nations Environmental Program (UNEP), the World Bank, the Asian Development Bank, The Africa Development Bank, The European Bank of Reconstruction, the Inter-American Development Bank, the Food and Agricultural Organization (FAO), the International Fund for Agricultural Development and the United Nations Industrial Development Organization.

³ The GEF also manages the GEF Trust Fund and provides grants to developing countries and countries with economies in transition for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants.

LDCF and manages procedures and capital replenishments. It is also in charge of endorsing NAPAs and to make relevant decisions about the eligibility of programs and projects related to NAPAs. The council reports annually to the COP, is formed by 32 members that represent its different constituencies: 16 from developing countries, 14 from developed countries, and two from countries with transitional economies. It also relies also on the collaboration of a worldwide network of NGOs and on its trustee, the World Bank.

Fig. 1 Governance system of the LDC Fund



The GEF council usually decides by consensus, but when consensus cannot be reached it decides through a formal vote by a double weight majority (60% of the voters and 60% of the total contribution to the fund). The GEF’s chief executive officer also is an important figure. Under LDCF approval procedures, the CEO is authorized to approve projects of up to USD 2 million in size, notifying Council of such approval on a “no objection” basis (GEF, 2006; Ministry of Foreign Affairs in Denmark, 2009, UNDP, 2009).

Since the inception of the LDCF, the council has been supported by the Least Developed Countries Experts Group (LEG) that has issued numerous technical papers on the preparation and implementation of NAPAs. The LEG is constituted by 12 experts: five from African LDCs, two from Asian LDCs, two from Small Islands Developing States (SIDS) and three from Annex II countries (industrialized nations).

Accessing the funds

The countries eligible for financial support by the LDCF do not have direct access to the fund. In order to use it, they need to work with one of the implementing agencies and go through a complex process. Their first step is to formulate a NAPA. The LDCF council had originally decided to fully support the NAPA process and has assigned each country USD 200,000 for the design process. The programs are expected to be designed through a comprehensive process that involves the wide majority of the countries ministries, private stakeholders and local governments, according to specific guidelines. Once the NAPA is finalized, it is published on the UNFCCC's website. As of July 2010, 44 out of the 49 LDCs, have developed and submitted their NAPA (GEF, 2010b), most of them with the support of the UNDP. The total financial need for urgent and immediate actions adds up to USD 1.674 billion.

Table 2. Projects identified in National Adaptation Programs of Action, by sector

Sector	Total cost (USD)	Percent
Water resources	841,204,099	50.3
Agriculture/livestock/fisheries	357,840,182	21.4
Coastal management/marine ecosystems	150,823,182	9.0
Terrestrial ecosystems/biodiversity	132,574,526	7.9
Early warning and forecasting	89,531,263	5.3
Health	46,688,000	2.8
Energy	23,514,120	1.4
Education	21,729,734	1.3
Insurance	8,225,000	0.5
Tourism	1,850,000	0.1
Total	1,673,980,106	100.0

Source: GEF 2010a

To finance specific projects, countries need to invite one of the ten implementing agencies to support them in preparing a Project Identification Format (PIF) that includes the key elements of the project that will be proposed for financing. The PIF is examined and cleared by the implementing agency headquarter (UNDP, 2009) and sent to the LDC administrative staff. It is then posted on the GEF website for four weeks for review by the council on a “non objection” basis (Ministry of Foreign Affairs of Denmark, 2009). Once the PIF has been finalized the proposing country requests the GEF CEO for a Project Preparation Grant to support the design phase that will be conducted by the beneficiary country and the implementing agency. When a full project is ready, it is submitted to the GEF’s CEO on a rolling basis. The CEO can endorse the project or send it back to the implementing agency for revision. Small projects (< USD 2,000,000) are approved directly by the CEO, while larger projects are endorsed by the CEO, but approved by the Council. The project is posted on the GEF website for four weeks and approved on a “non objection basis” (GEF, 2006; Ministry of Foreign Affairs in Denmark, 2009, UNDP, 2009).

As of April 30, 2010, thirty-eight countries have officially submitted their NAPA implementation projects to the GEF through the Project Identification Form (PIF) for NAPA implementation under the LDCF. Among these PIFs, thirty-six have already been approved as consistent with the LDCF eligibility criteria. The total number of LDCF projects under implementation or initiating implementation is five. By the end of 2009, additional eleven projects (Benin, Cape Verde, Democratic Republic of the Congo, Eritrea, Guinea, Mali, Niger, Rwanda, Sudan, Tuvalu, and Zambia) are expected to move to the implementation phase (GEF, 2010b).

The total financial burden of the approved projects on LDCF is about USD 122.57 million, less than 10% of the total financial need ascertained by the NAPAs and has been assigned on a “first come first serve” basis, because the Council has not yet come out with a fund allocation system that takes into account different local needs and different levels of vulnerability.

The LDCF council has gone a great length to specify that adaptation measures should integrate with national development and poverty reduction strategies and has stated that LDCF funds would finance the additional cost that adaptation to climate change imposes to traditional development project. It has also suggested how to gage the additional burden of adaptation and a sliding scale to simplify such estimation (Tab. 3).

Tab. 3 Sliding scale adopted by the GEF to estimate additionality

Type of project	Percentage of LDCF funding
USD 300,000	Up to 100%
USD 300,000 - USD500,000	Up to 75%
USD 500,000 - USD6,000,000	Up to 50%
USD 6,000,000 – USD 18,000,000	Up to 33%
>USD 18,000,000	Up to 25%

Source: GEF 2006

Pilot Program for Climate Resilience (PPCR)

In 2008, 10 countries (Australia, France, Germany, Japan, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States) pledged a total of more than USD 6.1 billion to build a “Climate Investment Funds” (CIF) to be managed by the World Bank to support low-carbon and climate-resilient development. CIF is made up of the Clean Technology Fund, which strictly finances carbon free technologies in developing countries and by the Strategic Climate Fund (SCF). The Pilot Program for Climate Resilience (PPCR), which supports adaptation programs and projects, is part of the SCF. Eight countries of the original 10

opted to pledge for it and promised USD 945 million, of which USD 173 have been actually paid to the World Bank (Tab. 4) (CIF, 2010b).

Tab. 4 Funds pledged and paid to the Pilot Program for Climate Research (million USD)

Donor	Pledged	Paid
Australia	37	24
Canada	96	96
Denmark	7	7
Germany	67	4
Japan	99	0
Norway	8	8
United Kingdom	341	34
United States	290	0
Total	945	173

Source: CIF (2010b)

The objective of the PPCR is quite different from the objectives of funds that have been conceived under the umbrella of the Kyoto Protocol. While projects funded through the UNFCCC mechanisms are strictly reserved for the additional costs that adaptation to climate change imposes to developing countries, with PPCR the World Bank and the donor countries intend to demonstrate ways to integrate resilience to climate risks in development planning and stress the relevance of complementarity rather than additionality (Tan, 2008).

According to the World Bank, the PPCR will support both country led programs, based on National Adaptation Programs of Action and other relevant country studies and strategies, and programs of the private sector, as long as they are identified in national or sectoral development plans or strategies addressing climate resilience. The selection will be based on several criteria, such their strategic alignment with other donor funded activities that are likely to provide pilot finance in the short term and their degree of generalizability to other contexts (CIF, 2009).

The governance system

The main governing organism of the PPCR is the PPCR Sub-Committee (SC) that approves programming priorities and operational criteria, selects the countries to be funded and

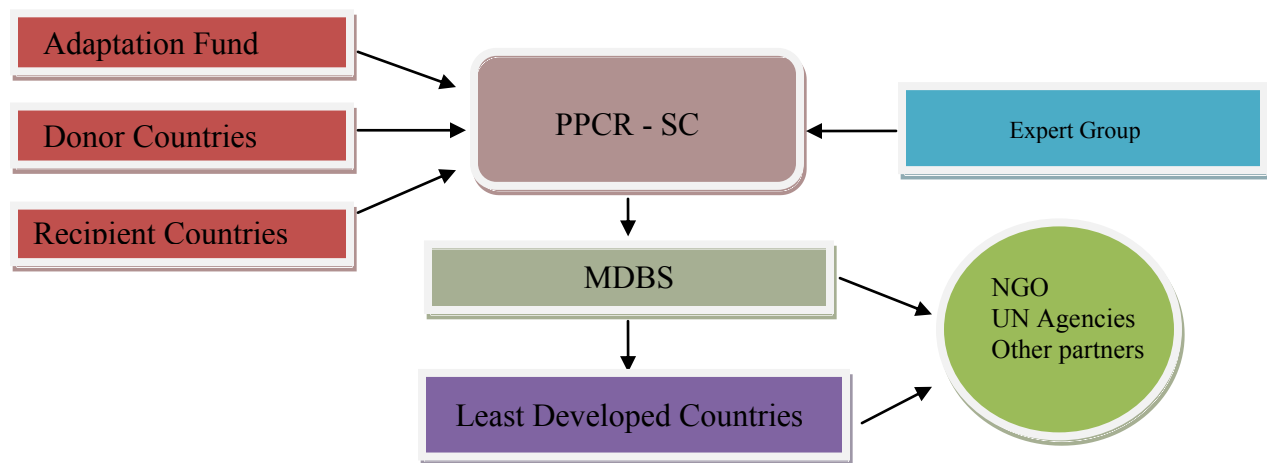
vets the programs submitted for funding to ensure complementarity with programs funded by the GEF and the UN (CIF, 2008) (Fig. 2).

The PPCR- SC consists of six representatives from donor countries, a matching number of representatives from eligible recipient countries and the developing country Chair or vice-Chair of the Board of the Adaptation Fund⁴. Its decisions are made by consensus.

The Sub Committee has also the task of establishing an Expert Group that makes recommendations on how to select countries to be financed.

Implementing agents of the pilot programs are the MDBs (Asian Development Bank, African Development Bank, European Bank for Reconstruction, International bank for reconstruction and development, International Development Association), the countries selected by the SC, and selected private partners.

Fig. 2 Governance system of the PPCR



Accessing the funds

The process to access funding envisioned by the architects of the PPCR has a top-down structure. Being the fund a pilot project, the Sub Committee has the power to select the countries

⁴ Current contributor country members: Australia/United Kingdom, Canada, Denmark/Norway, Germany, Japan, United States, and recipient country members: Bangladesh, Jamaica, Samoa, Tajikistan, Yemen, Zambia.

that will be funded, with the support of the Expert Group's input. Basic eligibility to PPCR's resources requires that the country is entitled for Official Development Assistance (ODA) according to OECD/DAC guidelines and that multilateral donor banks (MDB) have an active lending program.

In order to decide about the first set of pilot countries, the Expert Group adopted additional criteria, such as the human development index, the climate disaster vulnerability index (Brooks, 2005), the rate of undernourished population, the rate of population living in low elevation coastal zones, the percentage of population with access to improved water resources, two different climate disaster risk index, an environmental vulnerability index and a World Bank based resource allocation index (CIF, 2009).

The choice was made in early 2009 and included the following countries: Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, and Zambia, all members of the SC, and two regional programs for the Caribbean and the Pacific. Countries of special focus in the two regional programs: in the Caribbean Region Haiti, Jamaica, Dominica, St. Lucia, St. Vincent and the Grenadines, and Grenada (OECS); and, in the Pacific Region Papua New Guinea, Samoa, and Tonga (WBG, 2010).

The design and preparation of the measures that will be financed is currently under way. The process, as envisioned by the SC, takes place in two phases. In the first, the country's officials, together with the representatives of the local MDB formulate the Strategic Program for Climate Resilience. They visit the country and draft a work-plan, a timeline, and a budget that supports the formulation process and will be submitted to the SC for approval⁵. After analyzing risk factors, existing climate resiliency strategies, current development plans and institutional structures, the government of the pilot country, involving local stakeholders and decision makers

⁵ A USD 1.5 million has been made available for each pilot country

defines priorities, needs and investments. In so doing it produces a draft of the Strategic Program for Climate Resilience that should have a long term and short term timeline and define a number of infrastructural projects that will be financed by the PPCR. The draft is shared with the appropriate MDB and is discussed with other UN agencies in order to define each agent's role and collaborative agreements. Finally, it is submitted to the PPCR-SC for endorsement.

Once the Strategic Program has been endorsed by the PPCR-SC, the SC approves funding for program and project preparation. A preparation grant will be made available to the respective participating country to enable detailed preparation of the components of the program⁶. Preparation and implementation of the investment program will follow the respective MDB procedures (CIF, 2009).

At least 80% of the funding is expected to be provided in the form of grants, while the Sub Committee agreed that up to 20% of the resources will be available for concessional lending⁷, maybe blending them with existing sources of national and international funding (CIF, 2009).

The allocation of the resources among the pilot countries has been a highly debated topic in the PPCR SC and in the Expert Group (CIF, 2010a). Different vulnerability indexes have been examined, but at the end, given the fact that the Strategic Programs for Climate Resilience financial needs are expected to exceed the available funding, the SC has decided to allocate between USD 30 million and USD 60 million for every pilot, taking into account the quality of the proposed investments in the strategic program for climate resilience and their relevance to the goals and objectives of the PPCR.

⁶ Additional USD 1.5 million will be made available for project preparation in phase 2 for each pilot country.

⁷ Concessional loans have no interest rate, a grace period of about 10 years and can be repaid in 40 years.

CONCLUSIONS

The analysis of the existing climate change adaptation funds from an equity perspective highlights that the current adaptation funding regime is supported by conflicting approaches. Elements of distributive justice are hampered by the approach of developed countries that consider their willingness to pay as the limit the amount of resources invested in adaptation that are currently way too little compared to the assessed needs. In other words, the polluter pays only voluntarily, not in proportion to past emissions, nor in relation to the vulnerability of developing countries.

A voluntary contribution means that there is no assumption of responsibility, but also that there is no guarantee of consistency and adequacy of resources in the future.

On the positive side, both developed and developing countries are aware that funds should not be related to donors' good will and that consistency is important. There are great expectations for the performance of the Adaptation Fund and of the International Climate Initiative, that place the burden on GHG emitters, are strictly related to the country's GHG emissions and use a market mechanism to collect the funds, but only with time it will be possible to verify whether they will raise enough resources to provide a constant stream of funding.

As far as the allocation of resources to developing countries is concerned, the analysis of the two case studies has highlighted that there is still not an agreement on how to assess vulnerability; therefore the process is not at all transparent. In both cases all the eligible countries receive the same amount of resources for planning and designing programs. This does not necessarily mean that the distribution of funds is equitable, because different countries might have different planning needs, depending on the size and on the level of exposure to climate

change consequences. Also, once the programs have been endorsed, the distribution of resources is done on a “first come first serve” basis, or based on rules of thumbs that are not explicit.

Problems of distributive justice within developing countries are not addressed by the funding mechanisms examined in this paper. Programming guidelines do not mention how climate change adaptation strategies needs to take into account the needs of those who are most vulnerable and make sure that the funding is used to support marginalized areas and populations. The analysis of existing NAPAs and Strategic Programs for Climate Resilience could reveal whether this is a concern of developing countries governments and implementing agencies or whether these subjects are overlooked.

Procedural equity has emerged as one of the contentious topics in the adaptation funding debate. In the two cases analyzed in this paper, multilateral organizations have a way of enabling representation of developing countries in their decision making processes. In fact, in the GEF’s council and in the PPCR –SC developing countries are present in significant number. However, decisions always need the donors’ consensus and voting mechanisms based on unanimity and on a super majority of funders, limit the autonomy of recipients.

The analysis of LDCF and PPCR has also pointed out that multilateral funding institutions do not allow recipient countries to access the funds directly, but require the assistance of an implementing agent. On one side implementing agencies are organizations that have worked for a long time with developing countries and have the potential to guarantee expertise and knowledge transfer, but on the other their intervention makes the bureaucratic process cumbersome and complicated.

Bilateral funding mechanisms, on the other hand, are often geared to further donors' agenda. There is no evidence of greater flexibility and more empowerment of recipient countries in bilateral programming.

Appendix 1

Tab. A - Funding initiatives for adaptation to climate change

Adaptation funding option	Nature of disbursement	Type of Institution	Resources	Cooperating subjects
Adaptation Fund (AF) http://www.adaptation-fund.org	Grants	Temporarily hosted by the Global Environment Facility (GEF)	Currently USD 156 mil. From sale of CERs related to CDMs.	The AF Board grants accreditation to specific implementing agencies.
Least Developed Countries Fund (LDCF) www.thegef.org	Grants	Multilateral fund managed by the Global Environment Facility (GEF) to fund National Adaptation Programs of Action and their projects through international partnerships.	Pledges amount to USD195 million as of March 2010. The total LDCF allocation for the projects is USD 51.65 million. These projects are expected to mobilize USD 85.07 million in co-financing.	The projects are implemented through other international donors such as UNEP, UNDP, World Bank and others.
Special Climate Change Fund (SCCF) www.thegef.org	Grants	Multilateral program managed by the Global Environment Facility (GEF) finance projects relating to adaptation and technology transfer.	USD 131 million has been pledged to the Program for Climate Change Adaptation and USD 16.5 million to the Program for Technology Transfer.	The projects are financed through other international donors such as UNEP, UNDP and World Bank. Funds are open to all developing countries.
Small Grants Programme (SGP) www.thegef.org	Grants	Multilateral initiative of the Global Environment Facility with a wider scope, from biodiversity to persistent pollution reduction.	The program disburses about USD 55 million per year, 16% is used for climate change related projects.	UNDP is the implementing agency and UNOPS the executive agency. Country programming, and overall program oversight is handled by a national steering committee within each country. Grants are made directly to community-based organizations (CBOs) and non-governmental organizations (NGOs). The maximum grant amount per project is USD 50,000, but averages around USD 20,000.

International Climate Initiative http://www.bmu.de/english/climate_initiative/general_information/doc/42000.php	Grants	Bilateral initiative funded by part of the auctioning revenues from emissions trading through the Federal Environment Ministry in Germany and will be implemented through bilateral agreements between the Ministry of the Environment of Germany and the countries involved.	€ 120 million/year of revenues from the sale of EU-ETS permits is earmarked for investments in mitigation and adaptation in developing countries and countries in transition.	
Adaptation to Climate Change Initiative http://www.usaid.gov/keywords/adaptation_initiative.cfm	Grants	Financed by the Australian Government and implemented through bilateral agreements.	USD 110 million over three years from 2008–2009 and USD 178.2 in the next two years.	Some resources are earmarked for bilateral initiatives among governments and other for Australian and international NGOs to partner with local NGOs.
Global Climate Change Alliance (GCCA) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0540:FIN:EN:PDF	Grants	Bilateral initiative funded by the European Commission through its Environment and Sustainable Management of Natural Resources included Energy Program.	€ 91.2 M have been allocated for the 2008-2010 period. Additional € 40 M from the 10th European Development Fund have been committed for the time period 2008 - 2013.	The EU intends to use these funds mainly for general budget support to Africa, Caribbean, Pacific and the group of Asian Least Developed Countries. It is also for individual projects, if possible co-financing programs with other international organizations.
Cool Earth Partnership http://www.mofa.go.jp/policy/economy/wef/2008/mechanism.html	Grants and Technical Assistance	Bilateral initiative funded by the Japanese government	USD 2 billion in five years, starting in 2009.	JICS as a procurement agent manages the provided fund, procures necessary equipment and services, and supervises the overall projects in accordance with contracts with developing countries' government. It is preferable that the technical assistance may be provided by Japanese nationals if appropriate.
MDG Achievement Fund (MDG-F) http://www.mdgfund.org/content/environmentandclimatechange	Grants	Bilateral initiative funded by the government of Spain	€89M in 5 years, out of a € 618 M development funding initiative are devoted to climate change adaptation projects and programs.	Aimed at projects proposed by international organizations such as UNICEF, UNDP and FAO.

<p>Nordic Development Fund (NDF) http://www.ndf.fi/home.shtml</p>	<p>Grants</p>	<p>Multilateral fund aimed at promoting Nordic countries' technologies.</p>	<p>€ 1 billion in 35 years</p>	<p>NDF provides grants by co-financing with its multilateral and bilateral partners—such as the World Bank, the Asian Development Bank, the Inter-American Development Bank, the African Development Bank—and with the Nordic countries' development assistance agencies.</p>
<p>Global Facility for Disaster Reduction and Recovery (GFDRR) http://www.gfdr.org/gfdr/</p>	<p>Grants</p>	<p>Multilateral partnership of the International Strategy for Disaster Reduction (ISDR) system. The partnership is managed by the World Bank on behalf of the participating donor partners and other partnering stakeholders.</p>	<p>About two-thirds of GFDRR's assistance has had a primary focus on climate change adaptation (CCA). GFDRR support has leveraged an additional USD 17 million of co-financing from development partners and greater amounts from World Bank investments</p>	
<p>Pilot Program for Climate Resilience (PPRC) of the Strategic Climate Fund (SCF) http://www.climateinvestmentfunds.org/cif/ppcr</p>	<p>Grants and Loans</p>	<p>Multilateral initiative of the World Bank with 8 donors. Half can be provided as grants and half as highly concessional loans.</p>	<p>USD 945 million for Pilot Program for Climate Resilience out of a total USD eq. 1.8 billion pledged to the SCF by March 2010.</p>	<p>The pilot programs and projects implemented under the PPCR are country-led, build on National Adaptation Programs of Action (NAPA) and other relevant country studies and strategies. They are strategically aligned with other donor funded activities.</p>

<p>IDB (Policy Base) Loan http://www.iadb.org/topics/climatechange/secci/index.cfm?artid=6961</p>	<p>Loans</p>	<p>In 2007 IDB has created the SECCI Funds, from funds put forward by the IDB and by International Donors. The purpose of the funds is to finance activities aiming at mainstreaming of adaptation to climate change into the policies and programs across sectors in Latin America and the Caribbean (LAC).</p>	<p>USD 20 million</p>	<p>IDB funds adaptation projects also through its ordinary funds.</p>
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Source: websites of funding institutions

Appendix 2 Table B – Resources for adaptation (in million USD) –

Country	SCCP Adaptation		LDC Fund		Pilot Program for Climate Resilience		MDGF - Achievement		Global Climate Change Alliance	Cool Earth Partnership	International Climate Initiative	Adaptation to climate change initiative	Global Facility for Disaster Reduction and Recovery
	Pledged	Paid	Pledged	Paid	Pledged	Paid	Pledged	Paid					
Australia			7	7	37	24						178	17
Austria			1	1									
Belgium			1	1									
Canada	10	10	7	7	96	96							3
Croatia*													
Denmark	7	7	16	16	7	7							13
European Union									181				78
Finland	5	4	9	9									-
France			15	12									2
Germany	26	14	56	35	67	4					151		9
Greece													
Iceland													
Ireland	1	1	10	10									1
Italy	5	-	1	1									9
Japan			0	0	99					2,000			12
Liechtenstein													
Luxembourg			6	6									6
Monaco													
Netherlands	3	3	16	16									7
New Zealand			4	4									-
Norway	19	19	8	8	8	8							12
Portugal	1	1	0	0									-
Spain	6	6	2	2			113	55					12
Sweden	6	6	10	10									20
Switzerland	3	3	4	4									4
Turkey													
United Kingdom	19	19	22	22	341	34							9
United States	20	-			290								3
Total	131	93	195	169	945	173	113	55	181	2,000	151	178	216

Source: websites of funding institutions

Appendix 3

Table C – Areas of interest of climate change adaptation funds

Adaptation funding option	Regions					Funding (million USD)
Adaptation Fund (AF)	Small Island Developing States	South and Central America	Africa	Asia-Pacific	Least Developed Countries	156
Special Climate Change Fund (SCCF)	Small Island Developing States	South and Central America	Africa	Asia-Pacific	Least Developed Countries	131
Small Grants Programme (SGP)	Small Island Developing States	South and Central America	Africa	Asia-Pacific	Least Developed Countries	
Least Developed Countries Fund (LDCF)					Least Developed Countries	195
International Climate Initiative	Small Island Developing States	South and Central America	Africa	Asia-Pacific	Least Developed Countries	131 (per year)
Cool Earth Partnership	Small Island Developing States	South and Central America	Africa	Asia-Pacific	Least Developed Countries	2,000 (in 5 years)
MDG Achievement Fund (MDG-F)	Small Island Developing States	South and Central America	Africa	Asia-Pacific	Least Developed Countries	113 (in 2 years)
Adaptation to Climate Change Initiative	Small Island Developing States			Asia-Pacific		178 (in 2 years)
Global Climate Change Alliance (GCCA)	Small Island Developing States				Least Developed Countries	181 (in 5 years)
Nordic Development Fund (NDF)					Least Developed Countries	1,000 (in 35 years)
Global Facility for Disaster Reduction and Recovery (GFDRR)	Small Island Developing States	South and Central America	Africa	Asia-Pacific		216
Pilot Program for Climate Resilience of the Strategic Climate Fund (PPCR)	Small Island Developing States	South and Central America	Africa	Asia-Pacific	Least Developed Countries	945
IDB (Policy Base) Loan	Small Island Developing States	South and Central America				

Source: websites of funding institutions

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