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# An ethical approach to climate adaptation finance

Marco Grasso\*

Dipartimento di Scienze Economico Aziendali, Università degli Studi di Milano Bicocca, Via Bicocca degli Arcimboldi, 8, 20126 Milano, Italy

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### ABSTRACT

This article develops a framework of procedural and distributive justice specifically tailored to the international-level funding of adaptation based on the assumptions that the ethical contents of such funding should consist of a fair process which involves all relevant parties, that adaptation funds should be raised according to the responsibility for climate impacts, and that the funds raised should be allocated by putting the most vulnerable first. In particular, after underlining the usefulness and possibilities of an ethical approach to climate adaptation finance, the article, in defining the framework of justice, first explores and justifies principles of procedural and distributive justice, and on their basis advances fairness and equity criteria that serve as benchmarks for assessing the ethical contents of international adaptation funding. Then, in order to test the robustness and investigative potential of the framework of justice developed, the article uses its fairness and equity criteria to evaluate the procedural and distributive justness of some climate adaptation finance architectures.

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## 1. Introduction

The fundamental ethical issues in regard to climate change concern the distribution of the burdens and benefits – broadly defined so as to include also non-monetary elements – as well as fair participation in the distribution of such burdens and benefits among different subjects intertwined in a complex web of responsibilities for, and vulnerabilities to, climate change.

I therefore assume that climate change is a matter of international justice, and that improving the effectiveness of its policy processes requires the broadest possible consensus. Ethical considerations in fact play a major role as unifying principles that facilitate collective actions against climate change: the more international climate negotiations are informed by principles of justice, the more numerous the participants will be, and the more a manageable international solution can in principle be achieved (Gardiner, 2004; Miller, forthcoming).<sup>1</sup>

The ethical aspects of adaptation, which constitute the focus of this article, involve the distribution of the costs and benefits of prevention measures and adaptation activities, compensation for residual damages, and participation in the related decision

processes. It should be stressed that the ethics of adaptation differs from that of mitigation, because the distributive questions that the former poses are “not only between burden-takers (i.e. those who take adaptive or mitigating action) but also between recipients of benefits” (Jagers and Duss-Otteström, 2008, p. 577, emphasis in the original), as long as adaptation needs are, as they are expected to be, greater than the resources available to tackle them. Adaptation decision-making entails elements of procedural and distributive justice at the international level, between the international and the sub-national levels, and at the sub-national one, and it involves both state and non-state actors (Paavola, 2005; Paavola and Adger, 2006).

Some of the ethical facets of adaptation have been directly addressed in the literature, through the definition of burden sharing rules for allocating its cost (e.g. Oxfam, 2007; Baer et al., 2008; Jagers and Duss-Otteström, 2008), or indirectly, through the individuation of responsibility for climate burdens (e.g. Caney, 2005; Paavola et al., 2006; Page, 2008). This article, however, besides dealing with the above mentioned distributive issues, offers a more comprehensive view on the ethics of adaptation in so far as it develops a framework of international justice among state actors for adaptation funding that expressly takes account also of the procedural dimension of justice, a very sensitive topic in the current context, which nonetheless has to date been largely neglected. More specifically, it explores and seeks to justify principles of procedural and distributive justice and to advance fairness and equity criteria with which to evaluate the ethical

\* Tel.: +39 02 6448 7595; fax: +39 02 700 413 751.

E-mail address: [marco.grasso@unimib.it](mailto:marco.grasso@unimib.it).

<sup>1</sup> For a number of interesting quotations on the importance of justice in climate change negotiations, see Muller (1998, p. 5).

contents of climate adaptation finance.<sup>2</sup> On the procedural side, justice concerns are, in fact, necessary to underpin the legitimacy of international adaptation funding, for they allow all countries, and especially the weaker ones, to take an active role in international negotiations. On the distributive side, ethical considerations legitimate poorer countries' demands that the industrialized ones recognize their responsibility for climate impacts, and that the most vulnerable among them, because of their lesser economic, institutional and social capacities to cope with climate change, be given privileged access to adaptation resources.

The article thus argues that three assumptions should be taken into account when defining a procedural and distributive just approach to international adaptation funding:

- the processes of raising and allocating funds should ensure the fair involvement of all parties;
- the raising of adaptation funds should be carried out according to the responsibility for climate impacts;
- the allocation of funds raised should put the most vulnerable first.

The discussion of these issues in Section 2 leads to development of a framework of justice intended to be both a critical synthesis of the theoretical investigation and a normative reference in terms of the fairness and equity criteria put forward, which also serve as benchmarks against which to evaluate, in Section 3, the procedural and distributive justness of an important current instrument for financing adaptation such as the Adaptation Fund, and of three promising funding proposals for the post-Kyoto period, namely the G77 and China +0.5 percent GNP from Annex I Parties; the Swiss Global Carbon Adaptation Tax; and the Mexican World Climate Change Fund (Green Fund). The main purpose of this evaluative exercise is to test the robustness and investigative potential of the framework of justice proposed and, to a lesser extent, to draw some observations on the ethical contents of the investigated architectures, as reported in Section 4.

## 2. The framework of justice

The general ethical aspects of the ensuing framework of justice can be better grasped in relation to the elements denoting the definition of justice in international adaptation funding embraced by this article. Such justice, which is erected upon the three assumptions put forward in Section 1, can be broadly defined as 'the fair process, which involves all relevant parties, of raising adaptation funds according to the responsibility for climate impacts, and of allocating raised funds putting the most vulnerable first'.

In what follows I shall first lay out, in Section 2.1, the ethical bases of the definition of justice proposed, on which is developed a framework of procedural (Section 2.2) and distributive (Sections 2.3 and 2.4) justice that culminates in the definition, respectively, of fairness and equity criteria for climate adaptation finance.

### 2.1. General ethical bases

To be fair, and to involve all relevant parties, the international adaptation funding regime requires that both those who have produced climate impacts and those affected by them must be involved in decision-making processes. To this end, the approach

<sup>2</sup> Such ethical criteria are not, of course, the only keys to the evaluation of climate adaptation finance. For instance Muller (2008) maintains that the acceptability of international adaptation funding depends, besides justice, on a number of other factors: novelty and additionality, predictability, appropriateness, adequateness.

ought to be rooted in considerations of procedural justice, a construct profoundly intertwined with the powerful idea that a just process is the prerequisite of any legitimate authority (Shue, 1993). In the context of international adaptation funding, Rawls's (1999) notion of pure procedural justice, in which there are no independent rules for the definition of what counts as a just outcome – the focus being instead exclusively on principles and criteria defining just procedures – seems to be the most useful. In the ethical framework, the *ex ante* stance of pure procedural justice envisions, in fact, that evaluation of the justness of outcomes is left to principles and criteria of distributive justice. In other words, this standpoint on procedural justice has been chosen for the sake of clarity, in order not to overlap the fields of analysis of procedural and distributive justice, the confusion between which in the controversial context of climate change negotiations may be a further source of disagreement among parties.

A number of ethical reasons entail that those who have primarily caused climate impacts should be held responsible for them (Singer, 2002; Gardiner, 2004). Accordingly, the nature of the international adaptation funding problem demands that some subjects are retrospectively responsible for climate impacts. Specifically, these subjects are 'outcome responsible' (Miller, 2004, 2007) – that is, responsible for having made a situation bad intentionally but in a morally non-blameworthy way – and as such they should *prima facie* bear the burdens of their carbon depleting actions. This notion of outcome responsibility should be distinguished both from moral responsibility, which is based on moral fault, and from causal responsibility, which derives from a causal chain not involving the subject's agency. According to Miller (2004, p. 246): "[i]f outcome responsibility is more stringent than bare causal responsibility, it is less stringent than moral responsibility as the term is usually understood." In this context of analysis it seems that the notion of outcome responsibility can be grounded in a broader, "morally neutral" (Miller, 2001, p. 460), notion of retrospective responsibility of the subjects of justice based on the fact that they have acted, whether culpably or not, voluntarily and knowingly or at least could have been reasonably expected to know. In other words, the adopted standpoint of outcome responsibility implicitly acknowledges a notion of retrospective responsibility based on the so-called control condition, which maintains that subjects of justice can be held responsible for acts and choices which they are able to control or which are their fault, as claimed by Nagel (1979) when addressing the problem of moral luck. In the present context, this fault-based (Shue, 1993) form of (outcome) responsibility attaching to those who, even without moral guilt, have contributed to the problem does not raise some of the ethical problems that undermine the significance of the very popular retrospective notion of historical responsibility, espoused for example by the 'polluter-pays' principle: for instance, the difficult distinction between their anthropogenic and non-anthropogenic nature, inadequate knowledge about the causes and effects of climate change, its complicated applicability to collective entities such as states, and to future generations (Caney, 2005; Page, 2008; Miller, forthcoming).

However, outcome responsibility alone cannot generate obligations to remedy the bad situation because of its moral neutrality (Moore, 2008). Therefore, the ethical approach to responsibility in adaptation funding demands that outcome responsibility be supplemented by no-fault forms of prospective responsibility (Shue, 1993) based on the 'capacity' – in terms of institutions, technology, infrastructures, skills – and the 'ability to pay' – in terms of welfare levels – of subjects. These ethical categories are, in fact, indicative of the capacity of subjects to discharge the 'bad situation' that their carbon-intensive life-

styles have imposed on other subjects and of their ability to support the financial burden of such actions; and they therefore ultimately justify remedial duties.

Conversely, there are subjects that are the rightful recipients of obligations of justice because of their severe social vulnerability to climate impacts mostly produced by others (Paavola and Adger, 2006).<sup>3</sup> Therefore, on turning to the third element of the definition of justice in international adaptation funding adopted here – that is, the necessity to put the most vulnerable first – most useful for the purposes of this article is reliance on a ‘starting point’ notion of vulnerability, which for social systems is also termed ‘social vulnerability’ (Kelly and Adger, 2000). In consequence of this choice, the ethical imperative to put the most vulnerable subjects first has various justifications. Many theories of justice show a particular concern for the weakest and most socially vulnerable parties. Furthermore, also universal principles of justice state that subjects have a moral right not to suffer from the adverse effects of climate change. It is to be noted, however, that luck egalitarianism would imply that it is not ethically justified to fund adaptations generated, or favoured, by option luck (Dworkin, 2000), that is, by the irresponsible behaviours of recipient countries. However, in the context of climate change most of recipients are poorer countries, which, due to internal circumstances and exogenous constraints, could not always effectively control, or modify, their behaviours (such as, deforestation) that augmented the dangerousness of climate impacts. Hence the control condition does not hold, and poorer countries consequently cannot, in principle, be held outcome responsible for their climate-irresponsible behaviours. It thus seems possible to argue that the notion of option luck does not apply to poorer countries, and consequently that also the climate impacts deriving from their reckless behaviours are ethically relevant and should be funded, similarly to those impacts deriving from brute luck, by outcome and remedial responsible countries.

Four caveats are in order in regard to the scope of justice as it is conceived within the framework of justice proposed hereafter.

First, the ethical analysis of international adaptation funding draws upon the Western philosophical tradition, which is not of course monolithic but nonetheless has developed a common basis for raising universal moral claims and arguments based on long-standing ethical systems (Forst, 2001). It is possible to argue that liberal theories of justice,<sup>4</sup> by and large characterized by shared ethical responsibility and based on equality, needs, opportunities, freedom, and redistribution, can be employed in the context of climate change because the environmental goods/services affected by it, owing to their essentiality in terms of sustainable human existence, “fit naturally into standard liberal accounts of justice such as those of Rawls and Dworkin” (Miller, 1999, p. 171). The liberal perspective, in fact, authoritatively underpins the ethical assumptions of the definition of justice adopted, insofar as liberalism posits that, in order to lessen injustice, the stronger responsible subjects should support and assist the weaker vulnerable ones, who should be given sufficient means, and whose improvement becomes the most ethically important objective: a

conception which, according to Dworkin (1978), is the ‘nerve’ of liberalism.<sup>5</sup>

Second, the ethical argument put forward in the article endorses the conception of international principles of justice as “instituted in and through a system of states” (O’Neill, 2001, p. 181). In particular, states, as collective agents able to coordinate individual behaviour (Miller, forthcoming), can be responsible for climate impacts since they are global issues (Green, 2002), and the rightful recipients of obligations of justice.

Third, the perspective of justice adopted is problem-specific: it deals only with ethical issues arising in the domain of international adaptation funding and does not take account of the repercussions ‘all-things-considered’: that is, other aspects of society (Gosseries, 2007).

Fourth, the focus is on ‘practical’ justice: that is, on a notion of justice limited to the achievable set of options. This is because the purpose of the following analysis is to ‘apply’ ethical considerations to ‘real-world things’ such as adaptation funding architectures, with all the empirical constraints that this implies. This focus indirectly explains also the non-consideration of the intergenerational dimensions of justice, which in the broader context of climate justice remains a central issue, as the UNFCCC underlines and the current literature (Page, 2006; Gosseries, 2007; Caney, 2009) acknowledges. However there are also theoretical reasons for the non-acknowledgment of this extension.<sup>6</sup> In fact, among the dilemmas raised by intergenerational justice, one seems particularly relevant in regard to adaptation funding: the ‘non-identity’ problem. This relates to the question authoritatively addressed by Parfit (1984, pp. 351–380) concerning the non-fixed identity of future individuals. One possible strategy with which to avoid the non-identity problem is to abandon the methodological individualism of Parfit’s ethical argument in favour of future collective subjects of justice (Page, 1999; Vanderheiden, 2008). Yet, here, this perspective raises a fundamental difficulty, for it is implausible to assign to present-day states a positive duty to assist future subjects of justice in adapting to climate impacts, for the very reason that we, the current generation, do not know their social vulnerability, the ethical imperative that characterizes the allocation side of distributive justice as made clear in Section 2.4 and which ultimately depends on economic, social and institutional circumstances whose evolution over time is unpredictable. Hence, even the establishment of a trust fund for the adaptation needs of future subjects would respond to the logic of beneficence, or Samaritanism, rather than to a more stringent logic of justice as intended in this article and which would need to know the (unknowable) social vulnerability of future recipients of funds for it to be ethically justified. To be noted also is that the inclusion of future generations would undermine the requirements of procedural justice as well,

<sup>5</sup> Liberal theories of justice are not the only keys to the ethical dimensions of climate change and, more generally, of global environmental issues; and, in fact, their viewpoint has been attacked from different angles and at various levels. A first general challenge to liberal justice is raised by a group of theories which stress that the notion of justice is context-related. Some schools of thought have in fact contested the abstractness and universalism of liberal theories of justice from particular perspectives, for instance feminist or communitarian, and they have proposed alternative, more concrete and contextualized approaches. In a broader perspective, the application of the liberal paradigm of justice to global environmental issues has been attacked by different strands of analysis in the social sciences. For instance, according to Mason (2008), three are the main theoretical perspectives that challenge liberalism in the context of international responsibility for environmental harm: critical political economy, the global governance approach, and constructivism.

<sup>6</sup> It should be pointed out that also the extension to non-human beings is not embraced here. There are a number of reasons for this choice. Probably the soundest concerns the objectives of the article, whose ultimate aim is to set out a morally acceptable referent for the evaluation of an institutional order, because adaptation funding is primarily an institutional effort whose justness should be evaluated according a socially oriented perspective.

<sup>3</sup> Also principles that answer the question ‘to whom the transfer should be made’ can be grouped into ‘fault-based’ and ‘no-fault’ (Shue, 1993). The approach delineated here combines the fault-based perspective, because it envisions that adaptation transfers should be targeted to those who suffered climate impacts largely produced by responsible subjects, and the no-fault perspective, in so far as transfers, as made clearer later, should be made according to the level of social vulnerability as measured by the human security of recipients.

<sup>4</sup> The reference is to modern liberalism and, by and large, to the body of literature that has flourished since the seventies and Rawls’s path-breaking contribution of 1971, *A Theory of Justice* (republished in: Rawls, 1999).

because principles of recognition, participation and distribution of power, analyzed in Section 2.2, need the coexistence of subjects of justice in order to be applied.

### 2.2. Fair adaptation funding: inclusion, specification and commitment

The current literature (Adger et al., 2006) regards procedural justice as necessary to underpin the legitimacy of the entire regime of international adaptation funding. An analysis of procedural justice able to address the questions entailed by international adaptation funding can usefully refer, as anticipated, to Rawls's (1999) notion of pure procedural justice. In the adaptation context, pure procedural justice can be based on three principles (Paavola, 2005; Paavola et al., 2006). The first one is recognition, which is the foundation of procedural justice in that it requires acceptance of the different perspective of any minority without having to assimilate it into dominant paradigms (Fraser, 2001). In practice, recognition makes consideration of the characteristics and interests of all subjects or groups a vital part of planning and decision-making. This implies that responsibility for climate impacts, on the one hand, and especially vulnerability to them on the other, should be placed at the centre of the adaptation funding regime as the main characteristics and interests of the parties involved.

The second principle is participation. This assumes many forms, which range from hearing to equal status in decision-making processes. According to Fitzmaurice (2003), participation should encompass the involvement, the right to information and to be heard in policy and law-making, and the right to a general review of the enforcement of laws. In international adaptation funding, owing to the disproportion of means between the North and the South, participation can induce in weaker parties, whose voices have frequently gone unheard, trust and greater involvement in decision-making. Closely linked to participation, and thus equally important in adaptation funding, is the final principle. This concerns the distribution of power, which, in order to foster the procedural fairness of the whole negotiating process, should assure that all parties have the knowledge and skills necessary to take an active part in planning, decision-making and governance. Again, according to this principle the voices of weaker countries in the international regime on adaptation funding must have the same authoritativeness as that of the rich world.

In light of the described principles of procedural justice, the fairness criteria that should guide international adaptation funding processes, and against which they can be evaluated, are the following. First, the effective inclusion on grounds of equality and fairness of all countries, including the most vulnerable ones, which are usually without voice, in all decision-making on adaptation funding (criterion of 'Inclusion of all countries'); a criterion mostly grounded on the recognition principle. Second, fair participation in negotiations requires on the one hand the right to clarify and defend for every responsible subject (dispenser of funds) the dimension of its responsibility and thus of its potential contribution, and on the other, for every victim (recipient of funds), the possibility to bring its social vulnerability and adaptation priorities into negotiations, and for both groups of countries, to make all these elements ultimately count in the processes of raising and allocating adaptation funds (criterion of 'Possibility to specify the terms of participation'). Third, it requires the substantive commitment of richer, responsible subjects to providing different forms of assistance to the weaker ones in the international adaptation funding regime, thereby enabling them to develop the ability to play an effectively proactive role in this complex context, and ultimately reduce their gap with respect to the richer and more powerful subjects (criterion of 'Commitment to assistance from richer to poorer').

### 2.3. Sharing the burden of adaptation: differentiated historical responsibility

In regard to sharing the burden of adaptation, it is necessary to refer to the composite ('fault-based' and 'no-fault') notion of responsibility delineated above, in its outcome and perspective dimensions. When quantifying the outcome responsibility of countries for the amount of GHG released into the atmosphere and consuming its capacity, calculation must be made of their cumulative emissions as proxies for their contribution to the problem. Nonetheless, the share of the atmosphere's absorptive capacity consumed, which determines a country role in generating climate impacts, also importantly depends on various circumstances that do not derive directly from the will of emitting countries, but rather respond to more general institutional, social and economic conditions that influence, on the one hand, say, lesser energy efficiency or capacities to produce and use renewables, and thus higher emissions, and on the other hand determine the capacity to act and ability to pay of countries, and that therefore eventually constitute also the reference for identifying the 'no-fault' requirements of prospective responsibility. In other words, in order to fully capture the notion of responsibility embraced here, account should be taken of the socioeconomic situations of different countries.

This nuanced construct of responsibility should therefore be grounded on a robust theory of justice which can simultaneously ensure substantial differences in equality through acknowledgment of some form of priority to the least advantaged donor countries. This robust theory is John Rawls's theory of Justice as Fairness (RTJF), which has a "tendency to equality" (Rawls, 1999, p. 100) because it is flexible enough to accommodate the two facets of responsibility, and it is institutional and can furnish a flexible structure for any empirical context of application.<sup>7</sup>

The RTJF is based on two principles of justice that guide equal, free, and mutually disinterested rational subjects in their judgments concerning their economic and social arrangements. The first – the egalitarian principle – claims that all subjects have the same right to the most extensive system of equal basic liberties, rights and duties, compatible with a similar system for all. The second holds that inequalities are tolerable only if they satisfy two conditions. First, legitimate inequalities can characterize only situations open to all, under conditions of fair equality of opportunity. Second, inequalities must be to the greatest benefit of the least advantaged subjects (the difference principle), where being advantaged is basically determined by the availability of primary goods and services. In particular, the difference principle holds that inequalities owing to differences in the contingencies of social and natural fortune must be minimized.

In sum, the Rawlsian construct requires on the one hand that equals be treated equally, as stated by principle I of RTJF, while on the other it leaves room for the wide discrepancies that characterize countries facing diverse socioeconomic conditions, as asserted by principle II of RTJF, by taking undeserved inequalities into account. In fact, the unbalanced and unjustified distribution of social primary goods,<sup>8</sup> which proxy the different

<sup>7</sup> It is indeed true that the RTJF mainly seeks to provide moral guidance to individual persons in the definition and assessment of the 'basic structure' of one society. However, Rawls himself extends the scope of the RTJF to the "justice of the law of nations and of relations between states" (Rawls, 1999, p. 6) in paragraph 58 of *A Theory of Justice* (Rawls, 1999, pp. 331–335). It therefore seems possible, according to the state-centred perspective of this article, to enlarge the scope of the egalitarian and difference principles of the RTJF, as explained in this Section, and employ them as ethical references for an allocative scheme of duties among states in the context of international adaptation funding.

<sup>8</sup> According to Pogge and Kosch (2007), it is possible to liken these primary goods to income and wealth. They are all-purpose resources, or impacts measures, useful for building an index in order to distribute unequal shares.

economic, social and institutional conditions, prevents countries from achieving real equalities of opportunity in accessing the atmosphere's absorptive capacity and determines their abilities to support weaker subjects in a morally arbitrary way. Social primary goods are, in fact, basically a matter of (bad) fortune, for they depend on the natural and social lottery which defines, as said, the subject's advantage (Rawls, 1999, pp. 78 ff.).

Hence, grounding the funding of adaptation activities on the RTJF requires the application to states of a prioritarian equity criterion which encompasses all the elements that influence the use of atmospheric absorptive capacity and their abilities to support countries most severely impacted by climate change, and which thus eventually determines their outcome and prospective responsibility. This is called here the criterion of 'Differentiated historical responsibility'. It suggests that outcome responsibility, according to the egalitarian principle, uses historical accountability as its yardstick, whereas the difference principle requires consideration of undeserved inequalities in social primary goods that have actually influenced their historical GHG emissions, contributed to the consumption of the atmospheric space, and, in terms of prospective responsibility, determined their capacity to act and ability to pay.

It is noteworthy that the criterion of 'Differentiated historical responsibility' includes reference both to widely agreed principles of burden sharing in climate change, such as the polluter-pays principle in its consideration of historical responsibility, and to the ability to pay principle in its acknowledgement of the difference principle. On policy grounds, the structure of this criterion is also in line with the provisions of the principle of 'Common but differentiated responsibilities and respective capabilities' affirmed by article 3.1 UNFCCC, and suggested by parties as a crucial element of adaptation financing architectures for the post-Kyoto period.

In practical terms, the criterion of 'Differentiated historical responsibility' envisions that the amount of each single contribution by countries to funding adaptation would be calculated in proportion to cumulative emissions, net of undeserved inequalities deriving from the dissimilar socioeconomic positions produced by an unequal availability of income and wealth.

#### 2.4. Allocating raised adaptation funds: lack of human security

The allocation of raised funds requires awareness of the ability of countries to cope with, and to adapt to, climate impacts. Climatic impacts being equal, the more socially vulnerable a country is, the less are its institutional possibilities and capacities to deal with climate hazards. In this perspective a just allocation scheme for adaptation funds should consider both the physical vulnerability of countries and their social, institutional and economic circumstances, that is, their social vulnerability. It should be pointed out that I am not arguing that subjects characterized by high social vulnerability are more likely to use adaptation resources efficiently, but simply that, on the basis of the ethical construct outlined, they are the ones that most deserve such resources. Such an allocation scheme can be ethically grounded in Amartya Sen's Capability Approach (SCA, Sen, 1999). The Senian construct suggests that well-being should be considered in terms of two complementary but nevertheless distinct categories: functionings and capabilities. Functionings relate to what a subject may value doing or being: they are the living conditions achieved by a subject and represent a set of interrelated activities and states that shape her/his life. Capabilities concern the ability of a subject to achieve different combinations of functionings and define the freedom to choose the life she/he/it prefers. It is to be noted that this perspective operates also at an aggregate level, as Sen (1999) himself acknowledges.

In short, the SCA can be viewed as offering an evaluative space of justice, and as challenging the resourcist and welfarist approaches. It concentrates instead on the ability to convert resources into valuable functionings and capabilities. This approach is particularly useful in allocating adaptation resources because the essence of any effective adaptive response is not solely the availability of funds: rather, it is the possibility of gaining effective protection against climate impacts from adaptation resources, as social vulnerability requires. Therefore the SCA's evaluative space is the *locus* where it seems that the allocation of adaptation resources can be most fruitfully read.

The Senian notion of well-being concerns, as said, the enlargement of substantive freedoms: functioning and capabilities. In general, adaptation resources should thus be allocated with regard to the level of some suitably selected functionings and capabilities according to a rule: the lower the overall levels, the more adaptation funds are due. The equity criterion springing from the construct of justice put forward by the SCA is a prioritarian one based on a vital subset of basic functionings and capabilities grounded in the concept of human security. This criterion is called here 'Lack of human security'. Specifically, consistently with the requirement of putting the most vulnerable first, the lower the degree of human security, the greater the access for more socially vulnerable climate-affected countries to adaptation resources should be. The fundamental point is that the weaker a country is in these domains of well-being that specify human security, the less are its institutional and social capacities and possibilities to carry out effective adaptation actions. Hence, to increase such capacities and possibilities, weaker countries endangered by climate impacts should be given privileged access to funds. This access, though proportional to the population harmed, should nonetheless be inversely proportional to the human security level of the individual country. In fact, the lower the level, the lesser the means to deal with climate-related damage, and the greater should be the just share of raised adaptation funds.

A specification is in order regarding social vulnerability as understood here in terms of human security, which, in fact, apparently seems not to apply to states. And yet states can, and usually do, furnish a number of services to their citizens in order to lessen their social vulnerability and/or to improve their ability to cope with climate impacts. Thus ultimately ascribable to them is the protection of part of the human security of their citizens. Seen from this perspective, a state represents, especially for the most socially vulnerable individuals and communities, an insurer of last resort against climate change that should be funded on the basis of its human security level by other responsible countries.

Table 1 depicts the cornerstones of the ethical approach delineated, which culminates in the definition of fairness and equity criteria for the evaluation of climate adaptation finance.

### 3. Empirical test of the framework of justice

This Section analyzes the ethical contents of a current adaptation funding instrument – the Adaptation Fund (AF) – and of three multilateral proposals for the post-Kyoto period – the G77 and China +0.5 percent GNP from Annex I Parties; the Swiss Global Carbon Adaptation Tax; and the Mexican World Climate Change Fund (Green Fund). In what follows I shall not enter into the technical, scientific or policy details of the architectures investigated; rather, after a brief specification of their relevant features, I shall evaluate them solely against the fairness and equity criteria advanced by the framework of justice. This exercise, in fact, ultimately provides a significant test of its robustness and investigative potential, as summarized in Section 4.

**Table 1**  
Dimensions and domains of justice, ethical imperatives, theories and principles of justice, and fairness and equity criteria.

Dimension of justice	Domain of justice	Ethical imperative	Theory of justice	Principle of justice	Fairness and equity criteria
Procedural	Negotiation processes	Fair involvement	Rawls's Theory of Justice as Fairness (Pure procedural justice standpoint)	Recognition	<i>Fairness criterion 1 (FC1)</i> Inclusion of all countries <i>Fairness criterion 2 (FC2)</i> Possibility to specify the terms of participation <i>Fairness criterion 3 (FC3)</i> Commitment to assistance from richer to poorer
				Participation	
				Distribution of power	
Distributive	Raising of adaptation resources	Responsibility	Rawls's Theory of Justice as Fairness	Equality (in access to, and consumption of, atmospheric capacity)	<i>Equity criterion 1 (EC1)</i> Differentiated historical responsibility (historical responsibility taking undeserved inequalities into account) <i>Equity criterion 2 (EC2)</i> Lack of human security (in the space of basic capabilities)
				Difference (in social primary goods)	
Distributive	Allocation of adaptation resources	Social vulnerability	Sen's capability approach	Basic capability equality	

### 3.1. The Adaptation Fund

The AF, which raised considerable interest and hope in the poorer countries, is indeed their primary source of funds within the UNFCCC regime and its only instrument for financing, through revenues generated by an international levy on private sector projects under the Kyoto Protocol's Clean Development Mechanism (CDM), concrete adaptation activities. For these reasons the governance of the AF was a sensitive and contentious issue within climate change negotiations. It consequently seems useful to empirically test the fairness and equity criteria of the framework of justice against the relevant COP decisions that shaped the AF governance structure, whose adoptions were indeed favoured by the inclusion of ethical considerations that, in fact, proved crucial in lessening the controversies between the developed and the developing countries (Grasso, forthcoming).

Despite its adoption at COP 7 in 2001 thorough decision 10/CP.7 'Funding under the Kyoto Protocol', the breakthrough for the operationalization of the AF came at COP 12 in 2006, in Nairobi, with the adoption of decision 5/CMP.2 'Adaptation Fund', which defined the most important features of its governance structure. The 2007 Bali COP 13 successfully finalized the operational details of the AF (Ott et al., 2008) through decision 1/CMP.3 'Adaptation Fund'.

As far as procedural justice is concerned, decision 5/CMP.2 includes among the guiding principles of the AF "[a]ccess to the fund in a balanced and equitable manner" (paragraph 1(b)) and "[t]ransparency and openness in the governance of the fund" (paragraph 1(c)). Both these requirements pertain to the principle of procedural justice of recognition and thus acknowledge FC1. Paragraph 3 decides that the governing body of the AF shall be constituted by parties to the Kyoto Protocol, follow a one-country-one-vote rule, and have a majority of parties non-Annex I to the Convention. More specifically, decision 1/CMP.3 at paragraph 6 decides the composition of the management entity of the AF – the Adaptation Fund Board – in a way that all parties have a "fair and balanced representation". These provisions reinforce the possibility for every country to be incorporated in decision processes on grounds of equality as demanded by FC1.

Furthermore, decision 5/CMP.2 at paragraph 2(c) states that projects to be financed through the AF "should be country driven and should be based on needs, views and priorities of eligible parties", as required by the principle of justice of participation, as per FC2. Moreover, decision 1/CMP.3, at paragraph 29, decides that

parties eligible for funding from the AF should submit their projects directly to the Adaptation Fund Board: this opportunity greatly increases the possibility to specify the terms of participation envisaged by FC2.

In terms of distributive justice, decision 10/CP.7 recognizes in its preamble the provisions of articles 4.3 of the Convention and 11.2 of the Kyoto Protocol on the appropriate burden sharing rule among developed countries for the raising of funds for an instrument under the Protocol. This evinces that an aspiration to distributive justice characterized all parties and is clearly in line with EC1. Furthermore, decision 5/CMP.2 states that a share of the proceeds from CDM projects should assist particularly vulnerable developing countries parties; similarly, decision 1/CMP.3 stresses that only particularly vulnerable developing country parties to the Kyoto Protocol are eligible for funding from the AF. Again, the attention given to particular vulnerability is exactly as required by EC2, and seems to testify to the exigency of the developing countries that the needs and special circumstances of weaker parties should be given priority in the management of the AF.

### 3.2. Post-Kyoto proposals

However, not even the satisfactory finalization of the AF made the UNFCCC regime on adaptation funding able to meet the needs of developing countries, amounting to tens of billions of dollars annually, while the sums available from the UNFCCC (and also outside it) are clearly inadequate (Muller, 2008; Stern, 2007). This circumstance is a potential obstacle against achievement of a post-Kyoto agreement, as testified by the Bali Action Plan (UNFCCC decision 1/CP.13), which, in fact, in charting the course for new negotiating processes and their main contents, emphasizes the importance of adaptation funding. This document expressly demands its strengthening and suggests that it is greatly favoured by an 'appropriate burden sharing'. At the same time, the Bali Action Plan requires 'improved access' to funding architectures, which can be understood as a demand for the greater inclusion of the weaker countries in their governance systems, so that it can be usefully read from the perspective of procedural justice. Therefore, given the attention of the envisaged post-Kyoto adaptation funding regime to ethical aspects, it seems interesting to test the framework of justice delineated also against some of the proposals recently advanced. Such architectures have been chosen both because of their organized and structured form and because they cover the three main possible funding options. Specifically,

the '+0.5 percent GNP from Annex I Parties' envisages 'conventional' contributions (i.e. grants or loans made available by the general budget of the donor country); the 'Global Carbon Adaptation Tax', relies on 'unconventional' contributions (i.e. raised through market mechanisms); the 'World Climate Change Fund (Green Fund)' depends on 'hybrid' contributions (i.e. a combination of the previous two).

### 3.2.1. Conventional funding: +0.5 percent GNP from Annex I Parties

The G-77 and China proposal (UNFCCC, 2008a) demands the establishment of a financial mechanism under the COP to give full implementation to the Convention's commitments to the provision of financial resources for a number of activities, among which adaptation actions. It should be funded through a contribution by Annex I countries ranging from 0.5 percent to 1 percent of their GNP.

In terms of procedural justice, FC1 seems to be respected insofar as the envisaged financial mechanism should be governed by a Board, appointed by the COP, which will have an equitable and balanced representation of all parties.

The equity criteria put forward, instead, did not surface in this proposal, despite a vague reference to the principles of Equity and Common but differentiated responsibilities that should underpin the mechanism.

### 3.2.2. Unconventional funding: Global Carbon Adaptation Tax

The Swiss proposal (UNFCCC, 2008c) envisions "a global burden sharing system, based on the principle of Common but differentiated responsibilities, and legally binding to all nations" (UNFCCC, 2008c, p. 94). The revenues are to be raised through a uniform global carbon tax of \$2/tCO<sub>2</sub> on all fossil fuel emissions with a basic tax exemption of 1.5 tCO<sub>2</sub>-eq per inhabitant. Therefore countries with higher emission levels (and thus high income levels, due to their strict correlation) contribute the most, and the free emission level guarantees further lessen the burden of low-emitting countries, who can have most of their emissions covered by the exemption. In ethical terms, this structure implies that the raising of adaptation funds is conducted on the basis of EC1, since each country contributes on the basis of its emissions through the tax, and since contributions take account of the different abilities to pay through the introduction of a *per capita*-based basic tax allowance.

The largest quota of funds raised are channelled according to countries' *per capita* GDPs to a Multilateral Adaptation Fund (MAF), which invests money on two 'themes': prevention and insurance. The insurance pillar is focused particularly on "vulnerable institutions, enterprises, and segments of population in medium and low income countries" and "compensation of lost assets of the most vulnerable groups shall have priority" (UNFCCC, 2008c, p. 97). Thus, in regard to this provision, the MAF is in line with EC2.

An open question in the Swiss proposal "How to ensure an effective governance..." (UNFCCC, 2008c, p. 100) testifies that future developments of this architecture will concentrate on issues of procedural justice as well.

### 3.2.3. Hybrid funding: World Climate Change Fund (Green Fund)

Mexico's proposal (UNFCCC, 2008b) is to establish a multi-lateral financial mechanism, the World Climate Change Fund (Green Fund) (WCCF), complementary to the existing funding mechanisms, with the objective, among others, of supporting adaptation to climate hazards and to the impacts of response measures. Contributions, generated both by countries' budgets and by emission permits auctioning, are expected from all countries with the exception of the LDCs, in strict accordance with the principle of Common but differentiated responsibilities, which should be operationalized through different combinations of three

indicators: 'Greenhouse gas emissions', 'Population', 'Gross Domestic Product (GDP)'. The specific burden sharing formula should be determined – preferably on a consensual basis and periodically reviewed – by criteria such as: 'polluter-pays', 'equity', 'efficiency', and 'payment capacity'. This formula should, however, ensure that Annex I countries are the largest contributors, and that developing countries receive benefits that exceed their contributions. Furthermore, the WCCF also envisages that the contributions received should be subject to an as yet unspecified adaptation levy allocated to the AF. These two features of the WCCFs disbursement scheme make it consistent with EC2, because it privileges, directly or via the AF, the weakest parties.

On the burden sharing side of distributive justice, the WCCF is in line with EC1 because its burden sharing rule is based on a 'Responsibility-and-Capability' indicator which, among donor countries, privileges those with less ability to pay.

As far as procedural justice is concerned, the governance structure of the WCCF envisions that all contributing and beneficiary countries, developed and developing, will participate on an equal footing in the systems, which accords with the FC1 requirements.

## 4. Concluding remarks

The article has had two main objectives: (i) to develop a framework of justice specifically tailored to the international-level funding of adaptation; (ii) to empirically test its robustness and investigative potential through evaluation of selected climate adaptation finance architectures against the fairness and equity criteria advanced by it.

The reasons for testing the normative framework of justice proposed concern the need to give it thorough empirical justification. In fact, principles of justice and fairness and equity criteria were theoretically validated in Section 2, in so far as validation requires analysis and contextualization of the ethical constructs that govern the argument concerned. But the framework of justice also needs a 'pragmatic justification' put forward on empirical grounds, and able to show its broader evaluative strengths and weaknesses.<sup>9</sup> By so doing, it is in fact possible to evince its real potential for evaluating, through the fairness and equity criteria proposed, the ethical dimensions of the international adaptation funding regime, and thus ultimately make clearer the scope and limits of its application.

In this regard, it should be noted that, on the one hand, fairness criteria are presumably universal in so far as their ethical imperative is a general demand for fair involvement. Conversely, equity criteria are more context-dependent, because they are expressly tailored to the present-day reality of climate change characterized by differences in power and in economic and institutional capacities between the developed and the developing countries that have brought about the current situation in terms of responsibility and social vulnerability, making, in general, the former donors of adaptation funds and the latter their recipients. Were this situation to change, the application for evaluation purposes of the criteria of Differentiated historical responsibility and of Lack of human security would have to be carefully reconsidered in light of the diverse dynamics emerging. These criteria may even have to be abandoned if they prove unable to handle the novel challenges raised by the different or new situation. On the contrary, as said, the broader ethical imperative of fairness criteria makes them more robust against the instability of the context. They can thus be employed with less caution in

<sup>9</sup> This twofold notion of justification is inspired by Feigl's (1952) well-known distinction between 'validation' (*justificatio cognitio*) and 'vindication' (*justificatio actionis*).

evaluation, for instance, also of the ethical contents of other global environmental concerns. In practice, equity criteria should be applied in ethical evaluations of international adaptation funding with particular attention paid to the stability of the context. If, say, fast-growing developing countries become large emitters to the extent that their emissions rival or even exceed those of current industrialized countries, or if some developed countries face a collapse in their social, economic and institutional conditions, equity criteria will not be applicable in assessment of distributive justice.

As far as the evaluative exercise carried out in this article is concerned, I believe that equity criteria can be applied both to current adaptation funding instruments (e.g. the AF) and to the proposed post-Kyoto architectures (e.g. those analyzed in Section 3.2), because of the homogeneity and stability of the context. That of the second commitment period is, and will be, in my opinion, still largely the same as that of the first commitment period of the Kyoto Protocol in terms of responsibility and social vulnerability.

It is also interesting briefly to interpret the main findings of the empirical segment of this article. A first consideration concerns the general attention paid by the structures analyzed to justice in both its procedural and distributive aspects. This circumstance testifies, I believe, to the growing awareness of all involved parties that ethical considerations can reconcile their different instances, make it possible to gain theoretical consensus on an approach to adaptation funding, and eventually favour the political feasibility of the financial architecture deemed just. From a different perspective, the demand for procedural justice put forward by the architectures examined seems to cover, especially in the post-Kyoto proposals examined, only the principle of inclusion. In my opinion, however, forgetting the other principles of procedural justice (recognition and balance of power) produces a dangerous void that may undermine the entire significance of procedural justice. By contrast, distributive justice, when considered, includes both of its foundational principles (equality and difference in regard to burden sharing; basic capability equality in regard to its allocative side) and therefore offers a more solid ethical argument for the acceptability and feasibility of funding architectures.

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