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An issue of trust: state corruption, responsibility and greenhouse gas emissions

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Abstract

Climate change is increasingly seen to raise difficult normative issues. To date, cumulative emissions have been disproportionately from the developed world, while the consequences of climate change are anticipated to hit poorer countries hardest. For this reason, amongst others, it is suggested that more economically developed countries with high greenhouse gas emissions ought to transfer resources to less economically developed, lower emissions countries. Some proponents would justify these resource transfers by ethical or justice-based arguments, often based on some function of the emissions per capita of each country, such that rights of some sort are created and those nations which are emitting more (per capita) than some amount are to compensate those who are emitting less. In this letter we show that national emissions per capita, scaled by economic output, show a systematic negative correlation with state corruption. We discuss this result in the context of justice-based arguments for per capita climate mitigation transfers, and suggest that it would be beneficial for the climate mitigation community to consider state corruption as a relevant factor in the development of mitigation policy.

Keywords: climate change, ethics, corruption, governance, justice

1. Introduction

Attempts to reduce anthropogenic emissions of greenhouse gases present a formidable challenge to the world economy. Estimates of the costs of mitigating climate change suggest that reducing emissions of greenhouse gases may cost around one per cent or more of global GDP (Stern 2007, IPCC 2007, Enkvist *et al* 2007, OECD/IEA 2008, McKinsey Global Institute 2008, McKinsey 2009). Thus mitigation policy involves a significant burden, compared with business as usual economic development. Yet the case for emissions reduction is, in principle, reasonably uncontroversial, since the economic theory of externalities suggests that, given some level of external cost imposed by the anthropogenic release of greenhouse gases (GHG), some reduction of emissions

would be justified (Pigou 1920, Baumol and Oates 1988). Much of the climate mitigation literature has focused on the concept of stabilization of either atmospheric concentrations of CO₂ and other GHG or stabilization of an equilibrium temperature anomaly in response to anthropogenic GHG. Both of these goals, which are normally geared towards meeting the United Nation's Framework Convention on Climate Change (UNFCCC)'s 'ultimate aim' of the 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference in the climate system' would require deep cuts in GHG emissions over the next hundred years. These deep cuts have formed the basis of policy debates, and international negotiations to reduce greenhouse gas emissions are often discussed in terms of obligations surrounding national emissions per capita targets, based on principles such as historical responsibility (UNFCCC

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1997, den Elzen and Schaeffer 2002) or per capita emissions allocation targets either in isolation, such as contraction and convergence (Agarwal and Narain 1991, Meyer 2000), or in conjunction with other development goals, such as Global Development Rights (Baer *et al* 2007, 2008).

These imply burden-sharing models in which either Annex 1 countries or the world's wealthier countries (depending on the precise formulation of the policy), most of whom are in the OECD, are expected to purchase 'spare emissions capacity' from those countries that emit less, which are, on the whole, considerably less economically developed. Thus, typical climate mitigation models imply transfers from OECD countries to non-OECD countries, for several reasons:

- (1) It is more cost-effective to reduce emissions in less developed countries (Stern 2008, McKinsey 2009).
- (2) It is politically necessary to develop such transfers, since these are the only way to secure the buy-in of less developed countries, which face barriers to decarbonization in the form of financial constraints.
- (3) It is more equitable that the costs of climate change fall on those responsible for the pollution, especially where they also have the greatest ability to pay for the necessary decarbonization (Page 2006, Caney 2009).
- (4) Transfers are justified in part because developed countries have benefitted most from the activities that caused and are causing climate change (Page 2008).

There are important debates about the merits of these reasons within the literature. For instance, Caney (2009) is critical of the application of the beneficiary pays principle proposed by Page (2008). In practice, most authors favour ecumenical approaches which place differing weights on each of these arguments. There are differences of opinion about the relative weights (some may be zero) but in general these arguments all contribute to the notion that transfers to developing countries are ethically required. However, as we discuss below, the justification employed is relevant to the reasonableness with which 'good governance' requirements are attached to the payments. Article 3.1 of the UN Framework Convention on Climate Change clearly establishes the principle of 'common but differentiated responsibilities and respective capabilities'⁵. One way of describing the issues we are seeking to raise here is 'given existing and foreseeable capabilities, where ought the responsibility for good governance of climate change mitigation lie'?

Baer *et al* (2007, 2008) argue that global emissions reduction efforts need to be closely tied to sustainable development, and develop the concept of global development rights (GDRs) to facilitate this. Under the GDR proposal a universal development threshold is specified, and income

above this is 'taxed' according to a formula that combines the ideas of responsibility and capacity, where a nation's responsibility is defined as its cumulative share of emissions since 1990 and capacity is defined as a nation's income above the development threshold. Responsibility and capacity are combined into a single index, the RCI, which is used to determine the proportion of the burden that each nation ought to bear. Issues of accountability and governance are not explicitly factored into this formula, though the authors stress the need for 'effective and broadly participatory social and environmental safeguards (to) be built into all carbon-finance systems' and that 'large financial flows will be difficult to get right, and however they are structured, a great deal of civil society and governmental involvement and oversight will be necessary if they are to be both fair and effective'. Roberts and Parks (2007, p 241) argue that '... networks are beginning to form around the issues of climate justice, ecological debt and even contraction and convergence to a per capita accounting scheme for allocating greenhouse gas emissions' and go on to list some key international figures who 'have also signalled potential support for climate justice and payment of the ecological debt'. Yet there is political resistance to the development of such transfers. This paper is intended to help clarify some of these objections.

2. Climate transfers and corruption

In figure 1 we plot Transparency International's Corruption Perceptions Index against 2005 Emissions per capita (in tonnes of Carbon) from the Carbon Dioxide Information Analysis Center, with the size of each data bubble being determined by each country's economic output as measured by its 2007 GDP in purchasing power parity terms, calculated by the World Bank. We use colour to denote OECD (blue) and non-OECD (gold) countries. Though there are anomalies it can be seen that there is clear structure to the picture: there is a group of high emissions often wealthy economies that are relatively well-governed to the right of the chart (most of which are in blue) and there are large number of countries with low emissions that suffer from more corruption to the left. The Corruptions Perceptions Index 'measures the perceived levels of public-sector corruption in a given country and is a composite index, drawing on different expert and business surveys. The 2008 CPI scores 180 countries [...] on a scale from zero (highly corrupt) to ten (highly clean)' and so is a measure of the quality of public-sector governance within each of the countries considered (Transparency International 2008). This is of course an imperfect measure of corruption, since quantifying corruption relies on subjective and often ethically value-laden judgements. However, the data from Transparency International are (i) widely used; and (ii) better than anything else available. The robustness of these data is obviously very important for the current argument, but even if the data were thought to be primarily the product of a Western world view, it would still be of considerable policy relevance. From a practical point of view, the subjectivity of the measure may actually strengthen its relevance, at least in OECD nations: to the extent that the CPI reflects how countries are perceived

⁵ 'The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.' (UNFCCC Art 3.1., emphasis added). It is also relevant to our discussion whether arguments concerning 'responsibility and capability' apply at the level of the individual or the nation state; Müller and Hepburn (2006) consider the former in the context of an aviation levy, and Caney (2009) more generally.

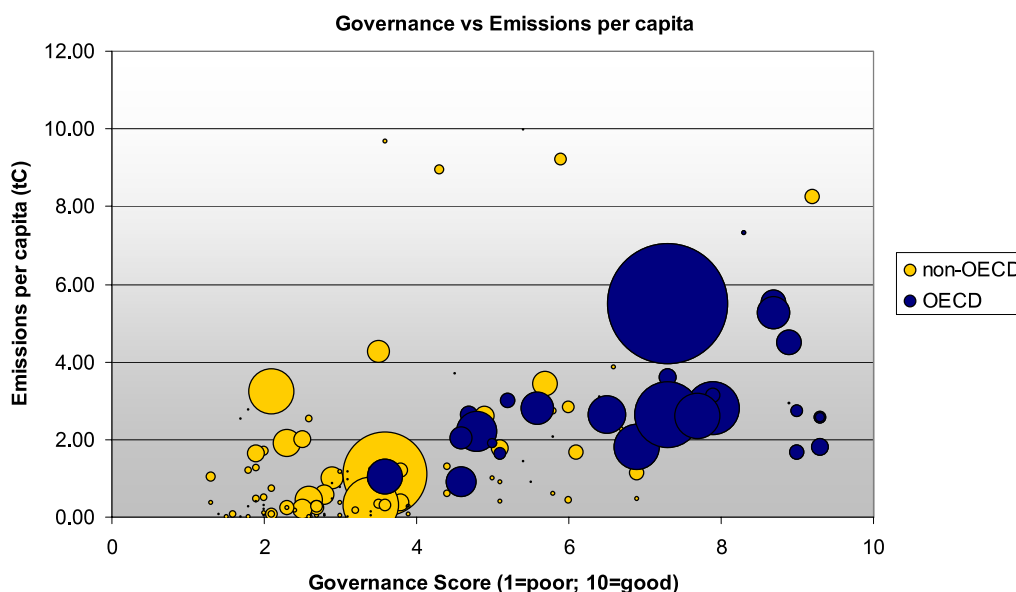


Figure 1. Transparency International's median corruption perceptions index (abscissa) versus Emissions per Capita from the Carbon Dioxide Information Analysis Center for OECD (blue) and non-OECD (gold) countries, with the size of each bubble being indicative of each country's GDP, as estimated by the World Bank⁶.

by Western voters, it will reflect their qualms regarding the governance of recipient countries, and it is the perception of corruption that induces OECD voters to be concerned about the transfers.

The transfers associated with climate mitigation under the sorts of burden-sharing models outlined above are usually from the blue bubbles to the gold bubbles, and usually employ the nation state as the relevant agents delivering or receiving the transfers; the point to note in this context is that they are from right (relatively well-governed states) to the left (more corrupt states). Since international mitigation policies involve such transfers between such groups of nation states, it seems highly relevant to consider the trustworthiness of the states delivering and receiving transfers. Two concerns are suggested: the first is that a state may not use the transfer for its intended purpose; the second is that a state may promise a transfer on which it subsequently reneges. Figure 1 gives considerable prima facie evidence for the first sort of concern, and we suggest that the figure is really just a quantified representation of the concerns citizens of more developed countries often have in regards to the sorts of mitigation proposals outlined above. Where a state that is more corrupt is asking for transfers from a less corrupt state, it seems reasonable that the citizens in the less corrupt state seek reassurance that the recipient state will use the resources efficiently and for their intended purposes. These qualms may be heightened when explicitly moral arguments are deployed, ahead of explicitly economic arguments revolving on notions of efficiency and 'cost containment' (which are nevertheless also normative), to attempt to justify transfers from well-governed, high emitting, comparatively developed countries to lower emitting, less economically developed but more corrupt states.

This paper is not attempting to argue for a particular position regarding the specific relationship between state corruption and climate change mitigation policy; rather its intention is to argue that state corruption is an ethically and policy-relevant, but usually neglected, component in any transfer-based mitigation strategy. State corruption is particularly relevant given (1) that nation states are the actors under discussion in most mitigation policy options and (2) that there is a strong negative correlation between national corruption and national emissions (when one accounts for economic output) and (3) that the history of development aid provides substantial evidence of the gap between commitments and delivery.

3. Addressing the issues: getting the incentives right

There could be various ways of addressing the issues that state corruption poses for climate change mitigation policy, but the intention ought to be to design the structures surrounding the transfers so as to both (i) to reward well-governed states and punish the corrupt and (ii) tie both the commitments and the delivery of mitigation transfers to sanctions on those who fail to disburse committed funds, and (iii) ensure that there are appropriate, and binding, limits on recipient countries, such that it can be traceably demonstrated that the transfers have been used in emissions reduction initiatives.

The second sort of concern outlined above—that a state reneges on a promised transfer—is also in evidence: there is a gap between aid commitments and disbursements that amounts to an 'aid shock', in which even comparatively well-governed countries like Ghana find their development finances subject to an arbitrary and disruptive volatility (UN Human Development Report 2005). Between 2003 and 2007, for instance, donor countries disbursed 75% of the aid they had committed (OECD

⁶ http://siteresources.worldbank.org/DATASTATISTICS/Resources/GDP_PPP.pdf

2009). However, this aggregation masks both large variations in the reliability of aid flows across recipient countries, and also volatility in the time-series of the aid flows, which is damaging since it leads to fiscal uncertainty in recipient countries. In the context of transfers associated with climate mitigation policy, the experience of alarming gaps between commitments and disbursements is likely to lead developing countries towards positions of suspicion, or towards practices of which vitiate against the intended purposes of the transfer, such as cuts in spending on infrastructure, and the building up of cash reserves to smooth expenditure in anticipation of future volatility (UN Human Development Report 2005). These practices may appear to developed country observers as misallocations of mitigation transfers, yet they are arguably quite rational responses to the capriciousness of development transfers. Finding ways to bind donor countries to their commitments would thus seem to be an essential part of ensuring the success of mitigation policy in the developing world.

Though perhaps most obviously associated with Western reticence to supply resources for sustainable development, state corruption should also be of concern to environmentalists who want to see resources go towards the sustainable development of local communities and climate adaptation funds, as well as mitigation funds.

Roberts and Parks (2007, p 241) note that ‘coalitions [...] concerned with issues of fairness and justice face an obstacle in climate change that did not exist in the debt relief and intellectual property rights cases: Support for an equitable solution may cut deeply into Western taxpayers’ pocketbooks’. Yet this obstacle has a moral component of its own, as figure 1 implies: many Western taxpayers have reservations about significant portions of their incomes being transferred to corrupt states which lack accountability and have a poor track record of managing public funds. To dismiss these concerns as morally irrelevant or as the product of narrowly conceived material self-interest is unfair on those who are being asked to pick up the tab, but is especially unfair on the citizens for whom the transfers are made: it is hard to see how the citizens of less economically developed countries are well-served by unconstrained transfers to their corrupt governments. Tying GDR or climate justice transfers to anti-corruption moves could, potentially, achieve several desirable ends: not only would it assuage the qualms of the Western taxpayers who are being asked to foot the bill (in the first instance), it would also help reduce political opposition to costly climate mitigation policies in Western societies, where broad political support for climate initiatives is a necessary condition of the successful, on-going development of mitigation policy. Most compellingly, it would be of benefit to the vast majority of citizens of low emission, less economically developed countries, who would be more confident of seeing genuine development benefits from the transfers claimed on their behalf.

This sort of conditionality is often controversial, especially where it implies domestic political reform in recipient countries (e.g. Feldstein 1998, Collingwood 2003). But in the case being described here the only conditionality

we are suggesting simply involves ensuring that resource transfers claimed in the name of climate change mitigation—not even necessarily those funds for adaptation or for other compensatory funding—are used for their agreed purpose. It is not ethically or politically unreasonable to ensure that funds have been disbursed for a specific purpose are used for that purpose; nor it is a reduction of sovereignty or ‘meddling in a country’s internal affairs’ if the recipient country agrees to monitoring, reporting and verification requirements that are attached to the funds. The fact that MRV was such an important issue of debate between China and the USA in the 2009 Copenhagen negotiations and Accord reveals its political importance⁷.

Requiring the processes surrounding the mitigation transfers to involve clear measurement, reporting and verification ought to go some way towards addressing these issues, though these are inherently more difficult in the case of avoided future growth in emissions than in the case of actual emissions reductions. Both are important in combating climate change—the former arguably more so in the case of much of the developing world—but baselining issues similar to those in forestry make avoided growth in emissions more difficult to monitor.

Exactly where in the mitigation transfer process the conditionality should occur is an issue for further discussion, but it should not be assumed that it falls exclusively on recipient countries: donor countries and international financial institutions such as the World Bank and International Monetary Fund (who are large investors in developing world energy infrastructure) ought also to bear some responsibility for ensuring that these flows are conducted in a reliable, open, transparent and efficient manner. Conditionality requirements and MRV obligations could fall on a number of existing international and intergovernmental institutions, as well as states. The creation of new institutions to govern the financing of climate change-related investments and transfers could also plausibly provide vehicles for conditionality. Here we do not wish to review the range of options or argue for particular architectures: our intention is to open the area up for discussion rather than prematurely suggest a solution.

Some in developing countries might see the sort of conditionality we are discussing as a form of imperialism or paternalism. If the justification for the transfers is historical responsibility for damage done, and if it is accepted that the relevant agents are states, rather than individuals, then recipient governments might argue that it is up to the donor countries to fulfil their obligations by making the transfers and not, additionally, to interfere in the way the donor states disperse the funds. A straightforward response is that payments based on historical responsibility follow the ‘polluter pays principle’, and hence intended to compensate victim countries by supporting their adaptation to climate change, and to leave them whole for the harms incurred, rather than to support mitigation to prevent those past victims

⁷ ‘Non-Annex I Parties will communicate information on the implementation of their actions through National Communications, with provisions for international consultations and analysis under clearly defined guidelines that will ensure that national sovereignty is respected.’ UNFCCC (2009).

from polluting in the future. Clearly there is a wide scope for disagreements surrounding the ethics of adaptation funding; here we restrict our attention to transfers surrounding mitigation. Behaviourally, one might expect this distinction to matter: individual states have rational incentives to adapt to climate change since sensible adaptation decisions will save them money. This is not true of mitigation at the level of the individual state: the climate change problem is difficult in large part because states and firms do not internalize the effects of their greenhouse gas emissions. There is thus a much weaker incentive for individual states to mitigate than to adapt, and hence issues of corruption might reasonably be expected to be more acute in the area of mitigation.

Though the sort of conditionality we outline above may be controversial for some, it will probably be a requirement in the eyes of many. Discussing the relationship between corruption, disbursement, trust and climate policy seems essential if we are to have a just climate regime. The justice and climate literature so far has focused primarily on distributive justice, rather than procedural justice⁸, and this is possibly one reason why corruption has received little attention in the literature, despite the fact that corruption is clearly of ethical relevance when transfers are being claimed on ethical grounds. In any case, even if our policy strategies do not explicitly address state corruption, the issue will remain relevant at the implementation level. If transfers are made to corrupt nation states then climate policy will not be as effective as it ought to be. This is likely to erode the political will behind such transfers, much as similar processes undermined development aid in the 1970s. Ensuring that sensible incentives are in place from the outset will help mitigation transfers achieve their desired results and save valuable time.

4. Conclusions

Very often in climate change policy, the central issue turns out to be how closely to couple climate and other sorts of policy. What other parts of policy are relevant for climate policy? Energy policy and transport policy are usually, and rightly, considered highly relevant to climate mitigation efforts. Increasingly, trade policy is coming to be seen as closely enough linked to climate policy that carbon-related border tariffs are beginning to be discussed (e.g. Helm 2009, Ismer and Neuhoff 2004). This paper is arguing that state corruption or the quality of government institutions ought also to be considered as an area quite closely coupled to climate mitigation policy, especially since (1) there is a systematic negative correlation between corruption and emissions and (2) nation states are the primary actors in mitigation policy. Just as emissions reduction policies may, in the future, be coupled to

trade policy, it may be that the transfers involved in the sorts of mitigation policies discussed in this article become coupled to corruption-reducing reform in low emission, high corruption states. In principle it would be hard to object to this: surely very few states that suffer from corruption would attempt to defend such practices, so it ought to be in the interests, primarily, of the citizens of those high corruption countries, on whose behalf the transfers are being justified, to ensure that the benefits of climate mitigation resources are appropriately distributed and deployed at the sub-national level.

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Disclaimer

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References

- Agarwal A and Narain S 1991 *Global Warming in an Unequal World: A Case of Environmental Colonialism* (New Delhi: Centre for Science and Environment)
- Baer P, Athanasiou T, Kartha S and Kemp-Benedict E 2008 *The Greenhouse Development Rights Framework: The Right to Develop in a Climate Constrained World* 2nd edn (Berlin: Heinrich Böll Foundation, Christian Aid, EcoEquity and the Stockholm Environment Institute) www.ecoequity.org/docs/TheGDRsFramework.pdf
- Baer P, Athanasiou T and Kartha S 2007 *The Right to Development in a Climate Constrained World. The Greenhouse Development Rights Framework* (Heinrich Böll Foundation Publication Series on Ecology vol 1) (Berlin: Heinrich Böll Foundation, Christian Aid, EcoEquity and the Stockholm Environment Institute)
- Baumol W and Oates W 1988 *Theory of Environmental Policy* 2nd edn (Cambridge: Cambridge University Press)
- Caney S 2009 Justice in the distribution of greenhouse gas emissions *J. Global Ethics* 5 125–46
- Collingwood V 2003 Assistance with fewer strings attached *Ethics and International Affairs* 17 55–67
- den Elzen M and Schaeffer M 2002 Responsibility for past and future global warming: uncertainties in attributing anthropogenic climate change *Clim. Change* 54 29–73
- Enkvist P-A, Nauclér T and Rosander J 2007 A cost curve for greenhouse gas reduction *McKinsey Q.* 1 35–45
- Feldstein M 1998 Refocusing the IMF *Foreign Affairs* 77 27
- Helm D 2009 EU climate-change policy—a critique *The Economics and Politics of Climate Change* ed D Helm and C Hepburn (Oxford: Oxford University Press) pp 222–44
- Ismer R and Neuhoff K 2004 *Border Tax Adjustments: A feasible way to address nonparticipation in Emission Trading* (Cambridge Working Papers in Economics) 16 June, www.dspace.cam.ac.uk/handle/1810/388
- OECD/IEA 2008 *Energy Technology Perspectives: Scenarios and Strategies to 2050* (Paris, France: International Energy Agency)
- IPCC 2007 *Climate Change 2007: Synthesis Report—Summary for Policymakers* (Cambridge: Cambridge University Press)
- McKinsey 2009 *Pathways to a Low-Carbon Economy: Version 2 of the Global Greenhouse Gas Abatement Cost Curve*

⁸ Page (2006, p 51), makes the argument that flavours of procedural justice, which draw only on historical principles regarding the legitimacy of ownership and transfer of resources rather than on outcome- or merit-based principles, are likely to be difficult to constructively apply in the case of climate change: 'historical approaches may never emerge from conceptual puzzles concerning the rectification of inequities brought about by previous generations who had no knowledge of the enhanced greenhouse effect [...]. Focusing on the effects themselves and theories designed to limit the inequities that they bring about, seems much more straightforward'.

- McKinsey Global Institute 2008 *The Carbon Productivity Challenge: Curbing Climate Change and Sustaining Economic Growth* (London: McKinsey and Company)
- Meyer A 2000 *Contraction and Convergence: The Global Solution to Climate Change* (Devon: Green Books)
- Müller B and Hepburn C 2006 *IATAL—An Outline Proposal for an International Air Travel Adaptation Levy* (October, Oxford) (Oxford: Oxford Institute for Energy Studies)
- OECD 2009 *Query Wizard for International Development Statistics* <http://stats.oecd.org/qwids/>
- Page E 2006 *Climate Change, Justice and Future Generations* (Cheltenham: Edward Elgar)
- Page E 2008 Distributing the burdens of climate change *Environ. Politics* **17** 556–75
- Pigou A C 1920 *The Economics of Welfare* (London: Macmillan)
- Roberts J T and Parks B 2007 *q, q, and Climate Policy* (Cambridge, MA: MIT Press)
- Stern N 2007 *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press) www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm
- Stern N 2008 The economics of climate change *Am. Econ. Rev.* **98** 1–37
- Transparency International 2008 *Persistently High Corruption in Low-Income Countries Amounts to an ‘Ongoing Humanitarian Disaster’*, (Berlin, Sept.) www.transparency.org/news_room/latest_news/press_releases/2008/2008_09_23_cpi_2008_en
- UNFCCC 1997 Proposed elements of a protocol to the United Nations framework convention on climate change *Proc. Conf. in Brazil in Response to the Berlin Mandate. Paper No. 1 (Brazil)* UNFCCC/AGBM/1997/MISC.1/Add.3 GE.97-, Bonn
- UNFCCC 2009 *Copenhagen Accord* http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf
- UN Human Development Report 2005 *United Nations Development Programme, 2005*