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## Climate policy versus development aid

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## Climate Policy Versus Development Aid

**Richard S.J. Tol<sup>1</sup>**

*Abstract.* Rich countries have emitted most of the greenhouse gases in the atmosphere, while poor countries will suffer most from climate change. Rich countries have therefore committed to help poor countries adapt. However, this is financed from the general development budget, and hence may do more harm than good. Furthermore, development aid also finances emission reduction. These aspects of climate policy need to be overhauled. Development assistance should consider the impact of climate change, and reduce emissions where it can, but this can be achieved by marginal adjustments to current practice.

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# Climate Policy Versus Development Aid

## 1. Introduction

A friend and colleague, Jan Feenstra, used to run a programme, through which the Dutch government helped developing countries to research adaptation to climate change. In the initial budget from the counterpart in Yemen, there was a provision for the purchase of 3,000 sheep. The researchers would test the variation in the quality of milk and meat with temperature. These tests would be done by the researchers and their extended families. The budget was rejected, as the researchers would benefit from such a grant. One cannot blame the Yemenis for trying. Why study tomorrow's problems when there are so many unsolved problems today? The Yemeni researchers obviously thought that climate change research was less important than feeding their families. Jan loathed this programme.

Nobel laureate Thomas Schelling (1992, 1995) voiced a similar concern. Greenhouse gas emission reduction is primarily for the benefit of the grandchildren of the people who are currently poor. Why do we care more about these future people, yet to be born, than we seem to do about their grandparents, our contemporaries? If we would ask the people in Bangladesh and Cameroon, would they want us to spend our money on greenhouse gas emission abatement or on development? Would they want our diplomats to negotiate an international treaty on climate policy, or focus on the Doha round for international trade? Would they want our politicians to focus on reform of energy and transport, or on reducing subsidies for agriculture? Would we not bring greater benefit to the future children if we help, even allow their grandparents to develop? Goklany (2007) and Tol *et al.* (2007) show that, in the poorest countries, the impacts of climate change are dominated by development. Tol (2005) shows that a dollar spent on development reduces the impacts of climate change substantially more than a dollar spent on greenhouse gas emission reduction.

Schelling's penetrating questions are lost on today's policy makers. Whipped up by an ill-informed media (e.g., Smith, 2005) and biased advice (e.g., Stern *et al.*, 2006; Dasgupta, 2007; Nordhaus, 2007), politicians seem to believe that if we do not act now, the Earth will evaporate in ten years and the next election will be lost. In fact, climate

change is slow and gradual. Initial impacts are a mix of positives and negatives (Smith *et al.*, 2001; Schneider *et al.*, 2007). Stopping climate change will take a century or so. Capital turns over only slowly in the energy sector (Wigley *et al.*, 1996). Carbon-free energy is still an order of magnitude more expensive than fossil fuel. It will take another 50 years of technological progress to commercialise renewables at the required scale (Manne and Richels, 1998, 1999). This is not to say that we should not stop climate change. There are enough fossil fuels to make most of this planet unbearably hot (Moomaw *et al.*, 2001), so we should stop burning fossil fuels before they run out. But there are no imminent catastrophes (Keller *et al.*, 2007), and we do have time to wonder whether the part of the money reserved for emission reduction would not be better spent elsewhere. Section 2 looks deeper into this issue.

Although most of the attention, money and effort are focussed on reducing greenhouse gases, there is also the realisation that climate change cannot be avoided altogether (Wigley, 2006). That implies that adaptation to climate change is necessary (Parry *et al.*, 1998). Respecting the “common but differentiated responsibilities” clause of the United Nations Framework Convention on Climate Change, it is commonly accepted that developed countries will take the lead on mitigation policy. The impacts of climate change are concentrated in developing countries (Smith *et al.*, 2001), and so will adaptation policy. Developing countries may receive considerable assistance in adapting to climate change. Section 3 discusses this issue.

## **2. Mitigation and development**

The amount of money pledged for climate policy is substantial, especially for greenhouse gas emission reduction. The futures price for a carbon dioxide emissions permit is some €20/tCO<sub>2</sub> (<http://www.eex.com/en>). Western Europe emitted about 3.3 billion tonnes of CO<sub>2</sub> in 2000; global emissions were 24 bln tCO<sub>2</sub> (<http://earthtrends.wri.org>). So, there is some €65 billion on the table, per year, in Europe alone. Should so much money be spent on climate policy, or should part of it be diverted to development aid? European governments decided not, and are in fact diverting money from development to climate. Around 2000, 7% of the official development aid of the OECD was spent on greenhouse

gas emission reduction (Michaelowa and Michaelowa, 2007), and little of this money was targeted at alleviating poverty in one way or another (Holm Olsen, 2007). The investment in emission reduction in developing countries has increased 20-fold between 2000 and 2006 (Capoor and Ambrosi, 2007), but there is no information on how this was financed. It is unlikely, however, that it is now much below the 7% it was in 2000.

This does not mean that emission reduction is necessarily bad news for developing countries: The benefits of emission reduction would primarily befall the poor (Schelling, 1995). However, cost-benefit analyses point out that the costs of the mitigation plans of the European Union are substantially larger than the benefits (Nordhaus and Yang, 1996; Tol, 2007).

There are also indirect effects of climate policy, on the markets of energy, food, and capital (Kuik and Gerlagh, 2003). Greenhouse gas emission reduction entails a reduction of energy use, and a shift of fossil fuels to carbon-free alternatives. If the rich countries embark on such a policy, the demand for and price of fossil energy would fall. The effects on poor countries are mixed. Energy importers would benefit. Energy exporters would lose (Babiker *et al.*, 2000). The latter may be a concern for the elite, but does not necessarily affect the poor.

Biomass energy is one of the alternatives to fossil fuels. Biomass energy competes with food for land (Sands and Leimbach, 2003; van Vuuren *et al.*, 2006) and water (Jackson *et al.*, 2005). The current demand for biofuels in the EU and the US – the former for reasons of climate policy, the latter for reasons of energy security – may be one of the factors contributing to rising food prices, even though biofuels cover only a small fraction of energy demand. Rising food prices are good for farmers, and bad for the urban poor.

Strict emission reduction in the countries of the OECD will also affect capital markets (Babiker, 2001). Energy-intensive industries will gradually relocate to countries with more lenient regulation. This is unlikely to benefit the poorest countries. Rather, the chemical industry would move to the source of oil; and the steel industry would move to middle-income countries with a reasonably well-educated labour force and relatively secure property and contract law (Kennedy *et al.*, 1996).

Discussions about the global distribution of income are complicated by the fact that there are three groups: the rich, the poor, and the formerly poor who are rapidly becoming rich (e.g., Park, 2001). It may well be that emission abatement in the rich countries will benefit the formerly poor, and hurt the still poor. As climate policy is so often justified with reference to the impacts climate change would have on the poor (Banuri *et al.*, 1996; Byrne *et al.*, 1998; Ikeme, 2003; Sagar, 2000; Gardiner, 2006; Toman, 2006), this is ironic.

### **3. Adaptation and development**

Greenhouse gas emission mitigation may negatively affect development. Furthermore, adaptation to climate change is being pushed on to the development agenda. Adaptation captures all anticipatory or responsive measures by private or public actors to alleviate the negative consequences of climate change, or to take advantage of the new opportunities brought about by climate change (Smit *et al.*, 2000). Adaptation is particularly important in developing countries, because a large share of economies and livelihoods is exposed to weather and climate (Smith *et al.*, 2001). Development that is not climate-change-proof, may be worth little. Examples include irrigation schemes designed for yesterday's rainfall; and cultivars bred for yesterday's temperature.

At first sight, it makes sense to tie adaptation and development. Rich countries caused most of the climate problem, while poor countries will suffer most of the consequences (Azar, 2000). Therefore, rich countries should compensate poor countries for the damage caused (Tol and Verheyen, 2004), or at least offer assistance in coping with the problem, that is adaptation. This reasoning holds only if the money spent on adaptation is on top of development aid (see below). I was unable to find hard data, but anecdotal evidence suggests that an increasing number of people in development aid are concerned with adaptation to climate change – the current special issue is one example; Burton and van Aalst (2004) is another. As with mitigation of greenhouse gas emissions, adaptation to climate change may crowd out other development work.

The UN Adaptation Fund may become a prime instrument to help developing countries with adaptation to climate change. The UN Adaptation Fund was established under

Article 4.4 of the UN Framework Convention on Climate Change, which has that “[t]he developed country Parties [...] shall [...] assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.”<sup>2</sup>

The UN Adaptation Fund is small at present, but it could grow to a substantial size as it is financed by a small tax on emissions trade. At present, the tax is a 2% ad valorem tax on Certified Emission Reductions from the Clean Development Mechanism, the vehicle through which rich countries sponsor emission abatement in poor countries. Recall that Michaelowa and Michaelowa (2007) argue that most CDM money is redirected development aid. The UN Adaptation Fund would therefore be financed by a tax of development aid.

The main problem with the UN Adaptation Fund, however, is that this money will probably come with the wrong strings attached. No decisions have been made yet, but precedence and discussions point in this direction. Multilateral organizations, such as the Global Environment Facility, only fund mitigation projects that are “additional” to what the receiving country would do annual; and the additionality test is quite elaborate<sup>3</sup> (Greiner and Michaelowa, 2003). Following this example, according to current plans, the money in the UN Adaptation Fund can be only spent on adaptation to climate change, and on adaptation that countries would not do themselves. It is likely that this money will be spend on things that are easy to measure (dams, satellites) rather than on things that seem to work (education, institution building) – an unfortunate reversal to the bad old days of development aid (cf. Easterly, 2002). It is also likely that the money will be spent on things that would have no obvious benefit if it were not for the remote threat of climate change.

To understand this, we need to take a closer look at the impacts of climate change. Infectious diseases are sensitive to weather and climate, and climate change is likely to lead to more widespread diarrhoea (Checkley *et al.*, 2004) and malaria (Martens *et al.*, 1997). Prevention and cure are simple and cheap (Laxminarayan *et al.*, 2006), so only the

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<sup>2</sup> [http://unfccc.int/cooperation\\_and\\_support/financial\\_mechanism/items/3659.php](http://unfccc.int/cooperation_and_support/financial_mechanism/items/3659.php)

<sup>3</sup> [http://www.gefweb.org/Operational\\_Policies/Eligibility\\_Criteria/Incremental\\_Costs/incremental\\_costs.html](http://www.gefweb.org/Operational_Policies/Eligibility_Criteria/Incremental_Costs/incremental_costs.html)

poor suffer from these diseases. They often spend a substantial part of their income on alleviating the symptoms. These diseases hinder schooling and reduce productivity, and hence help keep the poor in poverty (Deaton, 2003; Bloom *et al.*, 2003, 2004). From a development perspective, the issue is clear: Break this vicious cycle (Sachs and Malaney, 2002). Climate change adds to the urgency: The infectious diseases problem is likely to get worse if we do not act now. But with the additionality clause in the money from the UN Adaptation Fund, one can help only those people that would not have fallen ill if it were not for global warming. That is, one can buy bed nets for the people in the currently malaria-free highlands, but not for the people in the malaria-ridden lowlands.

Climate change would lead to a general drying of sub-Saharan Africa, particularly Southern Africa (Hesselberg Christensen *et al.*, 2007). The need for irrigation would increase. However, to satisfy the additionality clause, the UN Adaptation Fund would only finance irrigation in areas that would not be irrigated for any other reason. The potential for irrigation is still large in Africa, and this is high on the development agenda (e.g., Rosegrant *et al.*, 2002; Salath, 2002). The UN Adaptation Fund will therefore only finance irrigation in areas where irrigation has little commercial promise.

Climate change would lead to sea level rise. This calls for additional coastal protection. Africa's coastal cities are insufficiently protected against sea surges at present (e.g., Nicholls *et al.*, 1993; Leatherman and Nichols, 1995; Nicholls and Leatherman, 1995; Nicholls and Small, 2002). The UN Adaptation Fund would finance sea walls in places that are least likely to be protected for other reasons – that is, sparsely populated areas. The UN Adaptation Fund may also finance the raising of dikes in places that are already protected, which tend to be the most affluent quarters.

In all three examples, there is no problem if the UN Adaptation Fund brings additional money. Helping people is good, even if such help is biased towards those who are less in need. However, if adaptation funds distract from development funds, assistance is shifted from the needy to the not-so-needy. This is unacceptable. And even if the adaptation money is additional, then it would compete for scarce resources, such as bed nets, medical personnel, engineers, and equipment. Many studies argue that development is the best way to adapt to climate change, particularly for the poorest countries (Adger, 2006;



Brooks *et al.*, 2005; Tol and Yohe, 2007; Yohe and Tol, 2002; Yohe *et al.*, 2006). Specific adaptation projects that crowd out generic development projects may do more harm than good.

#### **4. Discussion and conclusion**

Climate change is a matter of ethics. The rich have caused most of the problem. The poor will suffer most of the consequences. Reduction of greenhouse gas emissions is the main policy response, but the abatement budget crowds out the development budget, and emission reduction negatively affects the economic prospects of the poor. Adaptation to climate change is a secondary policy response, but it crowds out development assistance or distorts it. Climate policy may increase the inequities of climate change.

How should the development community respond to the demand for action on climate change, be it mitigation or adaptation? Climate change is the flavour of the month in Western Europe. Seasoned development specialists know that fashions come and go, and that effective development assistance requires that one pays lip service to the political whims of the day (to secure continued funding) but keeps a steady course in the actual development work. Climate change is no different.

That said, development assistance should make a few adjustments in the light of climate change. Expensive and unreliable energy hinders economic growth. The poor tend to use energy very inefficiently because of faulty technology. Improving energy efficiency, e.g. in cooking, would help to improve living standards. It would also help to reduce greenhouse gas emissions, although increase energy use would largely offset the efficiency gains. Renewable energy may be a viable alternative to fossil fuels. Solar power, in particular, is the best option if there is no electricity grid. Solar power has the additional advantage that it is energy on a small scale, and therefore avoids the incompetence and corruption that characterise so many of the public utilities in developing countries. Promoting solar power furthers both development and emission abatement.

Development projects that invest in long-lasting, weather-sensitive infrastructure (irrigation, roads) should make sure that the design is sufficiently robust or flexible to withstand future climate change. “Soft” development projects, say on agricultural extension services, should take into account that circumstances may change, and hence emphasize understanding and information rather than fixed rules-of-thumb. This advice borders on the self-evident (Fankhauser *et al.*, 1999), and there really is little need to call on expensive consultants to advice on the mainstreaming of adaptation in development aid.

In sum, climate change calls for a marginal adjustment of development policy. The diversion of resources from development to climate policy should be reversed.

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