Human Development Report **2007/2008**

Fighting climate change:
Human solidarity in a divided world

Human Development Report Office
OCCASIONAL PAPER

The Kyoto Protocol and Beyond: The World After 2012

Peter Newell

2007/37

The Kyoto Protocol and Beyond: The World After 2012

A contribution to the Human Development Report 2007

Professor Peter Newell[1]

Introduction

The conflict over the extent to which climate change should be a pressing priority for the development community is increasing in intensity. While many claim that global warming 'will cancel out western aid and devastate Africa',[2] or as DfiD claim presents 'the biggest threat facing the world',[3] sceptics take the view that 'climate change can wait', especially in light of seemingly more urgent issues as health[4]. A more balanced view would be that given the intimate relationship between climate change and economic growth, human health, poverty and access to key livelihood resources, we have to address both simultaneously, especially given the capacity of climate change to reverse progress in these other areas (see table 1). Amid this polarisation and controversy, the development community is struggling to develop effective responses to the dual, and increasingly inter-related, challenges of tackling poverty and combating climate change.

Table 1: Climate Change and Poverty

- Food production needs to double to meet the needs of an additional 3 billion people in the next 30 years. Climate change is projected to decrease agricultural productivity in the tropics and sub-tropics.
- One-third of the world's population is susceptible to water scarcity. Populations facing water scarcity will more than double over the next 30 years. Climate change is projected to decrease water availability in many (semi) arid regions
- Wood fuel is the main source of fuel for one third of the world's population. Wood demand is expected to double in the next 50 years. Climate change will make forest management more difficult due to increases in pests and fires
- Today 1.6 billion people are without electricity. Electricity demand in developing countries will increase three to five times over the next 30 years. Fossil-fuel based electricity production will exacerbate climate change.

Source: Davidson et al 2003.

Until very recently climate change has been neglected by donors, seen as having only tangential relevance to the work of the aid industry. According to Shardul Agrawala

[1] School of Development Studies, University of East Anglia and James Martin Fellow, Centre for the Environment, Oxford University.

[2] Grice,A. (2006) 'Global warming 'will cancel out western aid and devastate Africa', *The Independent*, 13th July, London.

[3] DfID (2000) *Eliminating World Poverty: Making Governance Work for the Poor*. International Development White Paper. London, para 1.19.

[4] Lomberg, B. (2006) 'Climate change can wait. World health can't', *The Observer*, July 2nd London, U.K.

of the OECD, for example, there has been 'limited or no attention to climate change in national planning, donor documents and PRSPs' (Agrawala 2004). The untenability of that position has become increasingly obvious to those charged with providing disaster relief in areas struck by extreme weather events or devastated by slower, but no less disruptive, processes of climate-induced changes to agricultural production and rainfall. The findings contained in the latest IPCC[5] report on the impacts of climate change demonstrate quite clearly that poorer and marginalised communities in drought prone areas, those experiencing water scarcity or those whose livelihoods depend on agriculture will be the worst affected and have the least capacity to adapt.[6] As IPCC lead author Neil Adger notes, 'the impacts of climate change are likely to be greater on those countries more dependent on primary sector economic activities [mostly farming], primarily because of the increase in uncertainty on productivity in the primary sectors.'[7] Changes in the supply of water, natural resources and food bring in their wake enormous social changes and disruptions. Within the global South, it is areas of sub-Saharan Africa where poverty is most acute that will be worst affected still.

Intersections with other issues such as conflict and war, which have a long history,[8] have re-surfaced as drought and resource scarcity, conditions exacerbated by climate change, are seen to fuel the conflict in Darfur and elsewhere. Some have claimed that 'Climate change is arguably the most persistent threat to global stability in the coming century'.[9] Yet should climate related conflicts intensify, studies suggest they will tend to be in weak states and climate sensitive regions, those areas of the world in other words in which some of the poorest people live.[10] In so far as conflict amounts to development in reverse, instabilities exacerbated by climate change have the potential to deepen this destruction.

For this reasons climate change is increasingly recognised as one of the most serious threats currently facing humankind and its poorest members in particular. Indeed, a multi-donor report on *Poverty and Climate Change* rightly acknowledges that 'Climate change is a serious risk to poverty reduction and threatens to undo decades of development efforts'.[11] The relative lack of action to date has less to do with the painfully slow diplomatic processes required to secure global agreement on solutions to the problem than to the vested interests, governments included, that benefit, in the short term at least, from doing nothing. Providing the right incentives for governments and in particular the private sector actors whose investments in energy, industry and transport, as well, as the new carbon economy, will largely determine the fate of this issue in the years to come, presents a huge policy challenge. As Geoffrey Heal notes carbon dioxide is produced as a result of 'billions of decentralised and independent

[5] Intergovernmental Panel on Climate Change
[6] See also Tearfund (2005) *Dried Up, Drowned Out: Voices from the Developing World on a Changing Climate* London: Tearfund.
[7] Adger, N. (2001) 'Scales of governance and environmental justice for adaptation and mitigation of climate change' *Journal of International Development* Vol. 13 pp. 921-931.
[8] Rogers, P. (2004) 'Climate change and security' *IDS Bulletin* Vol.35 No. 3 July, 98-102.
[9] Adger, N. S. Huq, K.Brown, D. Conway and M. Hulme (2002) *Adaptation to climate change: Setting the agenda for development policy and research* Tyndall Centre Working paper No. 16, April, p. 4.
[10] Barnett,J. (2001) 'Security and climate change' *Tyndall Centre Working Paper* 7, October.
[11] World Bank Group (2003), *Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation* Washington D.C: World Bank Group.

decisions by private households for heating and transportation and by corporations for these and other needs, all outside the government sphere. The government can influence these decisions, but only indirectly through regulations or incentives'.[12]

In short, we are used to thinking about fossil fuel energy as a pre-requisite to development not a threat to it. De-carbonising the global economy without threatening the well-being of the billions of poor people who have contributed hardly anything to climate change requires change at every level from local government to the United Nations as well as the concerted efforts of a range of non-state business and civil society actors.

Non-state actors in Climate Governance

The role of bilaterals and multilaterals

Above and beyond other development actors, the World Bank has the potential to finance a number of important climate protection initiatives, as well as reduce the climate-changing impact of existing development strategies. In addition to being an implementing agency of the Global Environment Facility, the financing agency for the climate agreements, the Bank has a separate Climate Change Programme initially made up of three components: Climate Change Overlays Programme; World Bank AIJ programme and the Global Carbon Initiative. The Bank also has a Clean Coal Initiative intended to encourage the use of 'environmentally-friendly' coal technologies and runs 'EMPower Info', a focal point for information about environmental assessment processes, the environmental impacts of different energy sources and about pollution mitigation technologies.

Inducing investors to invest in poorer and riskier areas is a potentially important contribution of the World Bank. The Community Development Carbon Fund launched by the World Bank at the World Summit on Sustainable Development in 2002, with initial capital of $128.6 million, is intended to encourage CDM-like development focussed project funding. The CDCF provides financial support to small-scale emission reduction projects through the CDM in the least developed countries and poorest communities within the developing world.

The Bank is also playing a part in advancing the goals of the global climate regime by launching a Prototype Carbon Fund, with investments from private sector firms, intended to facilitate acquisitions and transfers of credits from the flexible mechanisms created by the Kyoto Protocol. The PCF has been operational since 2000 with a range of governments contributing over $180 million to its financing. The PCF has shareholders from the public and private sectors and was set up to create carbon as an asset for trading in the marketplace. The idea is that trading in carbon credits allows countries to earn export revenue. The PCF is the only buyer in the market and is inundated with deals from developing countries such that deals worth $350 million are under review. Ken Newcombe from PCF claims that while the market is growing in sophistication and complexity, the key constraint is keeping up with business and maintaining the capacity to monitor the quality of the assets. Nevertheless he suggests

[12] Heal,G. (1999) 'New strategies for the provision of global public goods: Learning from international environmental challenges' in I.Kaul, I.Grunberg and M.Stern (eds) *Global Public Goods: International Cooperation in the Twenty-first Century* OUP.

that technologies such as hydro and wind power have received an enormous boost from carbon financing.[13]At a regional level the European Bank for Reconstruction and Development and the Franco-Belgian banking group Dexia have also launched a new private equity fund aimed at reducing energy consumption and emissions of greenhouse gases in Central and Eastern Europe.[14]

There are a number of barriers to the World Bank making a greater contribution to the financing of climate action, however. One of the most serious, is the failure of effective policy integration; the lack of systematic integration of the goals of climate change protection into mainstream lending activities. According to Tellam 'progressive initiatives are very small compared to the Bank's overall portfolio' and are generally dependent upon external funding from developed country governments rather than being wholly supported financially by the Bank.[15] The fact that sustainable energy initiatives are externally driven for the most part, helps to explain why they are poorly integrated within core Bank activities and tend to be 'sealed off' from traditional operations. The Bank has, to some extent, acknowledged this weakness in its paper on *Energy Efficiency and Conservation in the Developing World: The World Bank's Role*, where it is recommended that energy efficiency and renewables should be better integrated into the Bank's general country policy dialogue with developing countries.[16]

If policy integration is understood in its truest sense, however, the climate impacts of all World Bank policies should be factored into their formulation including policies of energy market deregulation. The Bank concedes 'unregulated electricity markets are likely to put renewable energy technologies at a disadvantage in the short-run because they favour the cheapest energy as determined purely by price, but do not capture environmental and social externalities'.[17] In other words, the ecological spill-overs from existing policies are not currently internalised.[18] One report found that less than 10% of all Bank projects are screened for their impact on the climate.[19] Between 1995 and 1997 the Bank invested $2.24 billion on the coal sector while over the same period just $61 million was spent on demand-side management and only $5.9 million on one renewable project.[20] Since 1992, the World Bank has spent 25 times more on climate-changing fossil fuels than on renewables and the fossil fuel projects the World

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[13] *The Kyoto Protocol: Fresh from Bonn* July 30 Report from World Bank seminar, available on the web.

[14] Carpenter, C. (2001) 'Business, green groups and the media: The role of NGOs in the climate change debate' *International Affairs* Vol.77 No.2 pp.313-328.

[15] Tellam, I. (2000) (ed), *Fuel for Change: World Bank Energy Policy- Rhetoric and Reality* London: Zed Books.

[16] World Bank (1993) *Energy Efficiency and Conservation in the Developing World: The World Bank's Role* Washington D.C: The World Bank.

[17] Tellam, I. (ed), (2000) *Fuel for Change: World Bank Energy Policy- Rhetoric and Reality* London: Zed Books, p.33.

[18] A Swedish NGO report, *A Negawatt saved* came to the similar conclusion that 'the World Bank's efforts in pursuing integrated energy strategies have been inconsistent … The status quo of supply-side fossil-fuel fired energy development persists' (cited in Tellam 2000, p.39).

[19] SEEN et al, (1997) *The World Bank and the G7: Changing the Earth's Climate for Business: An Analysis of the World Bank Fossil Fuel Project Lending since the 1992 Earth Summit* By Sustainable Energy and Economy Network USA, International Trade Information Service, U.S, Halifax Initiative, Canada and Reform the World Bank Campaign, Italy, June.

[20] AidWatch, (1997) *Aiding Global Warming: An Analysis of Official Development Assistance for the Coal Industry* Australia.

Bank has financed will over the next 20 to 50 years add carbon dioxide emissions to the atmosphere equivalent to 1.3 times the total amount emitted by all the world's countries in 1995.[21]

To achieve a higher level of policy integration then, climate objectives, and environmental goals more broadly, need to be placed on a par with traditional Bank business. This would include goals relating to funding levels of GEF associated projects and integration into its sector work and the Country Assistance Strategy process, for example. A report on the GEF commenting on the Bank's activities also found that it had not 'taken steps to create staff incentives necessary to put global environmental concerns on a par with traditional bank business; that it is has not systematically integrated global environmental objectives into economic and sector work or into the Country Assistance Strategies (CAS) process, and that it has not adequately addressed the impact on the global environment of its financing of fossil fuel power development'.[22] Clearly, much remains to be done.

The climate-related activities of bilateral aid agencies have also come under increasing scrutiny. As a result, climate change considerations have also been finding their way into traditional ODA programmes such as the German Agency for Technical Cooperation's climate change programme (Measures to Implement the FCCC). The programme selects developing countries with high levels of GHG emissions such as China and South Africa and targets their energy sectors with projects and programmes aimed at climate change protection. Similarly USAID has developed a 'Climate Change Initiative' providing grants to address, among other things, policy reform, institutional capacity-building and technology cooperation and transfer. The 'Development Credit Authority' has also been evolved providing guarantees to help project developers overcome market barriers.[23] There is increasing evidence, therefore, of development agencies screening their project portfolios to both ascertain, firstly, the extent to which existing development projects already consider climate risks or address vulnerability to climate variability and change and, secondly, to identify opportunities for incorporating climate change explicitly into future projects. Adaptation considerations have generally been neglected to date, however.[24] Aid, grants and subsidies will nevertheless continue to be important, particularly to developing countries, for financing climate-relevant technology transfer projects. The financial flows they oversee pale into insignificance, however, when compared to the private sector.

The role of the private sector

Given the decline in ODA, much emphasis is placed on the importance of private transfers to developing countries in making up for gaps in public financing. It is difficult to over-state the importance of the private sector in proposals to address climate change. As the Business Council for Sustainable Development

[21] SEEN et al, *op. it*.
[22] Porter,G. R. Clémençon, W. Ofosu-Amaah and M. Phillips (2001), *Study of GEF's Overall Performance* Working Paper, Washington: GEF.
[23] USAID (1998) *Climate Change Initiative* 1998-2002 Washington DC: USAID.
[24] Klein,R. et al (2007) 'Portfolio screening to support the mainstreaming of adaptation to climate change into development assistance' *Tyndall Centre working paper* 102, February.

acknowledges;[25] `Industry accounts for more than one third of energy consumed world-wide and uses more energy than any other end-user in industrialised and newly industrialising economies'. [26] The UNFCCC secretariat report on this issue acknowledges the difficulty of analysing the investment pattern of FDI by climate-relevant sectors as its distribution in developing countries is not well documented and the statistics on the transfer of ESTs and their impact on GHGs is difficult to determine.[27] Nevertheless, the Asian Development Bank found that almost three-quarters of private investment in low-income countries between 1990 and 1997 has gone into constructing new power generation plants using fossil fuels, while the remaining 25% has gone into existing energy utilities. Only a relatively tiny amount of private investment has been made in energy efficiency or renewable energy.[28] Nevertheless, introducing emission ceilings at firm level alongside international emission trading systems could have a significant impact on the corporate strategies and production planning of firms.

A key role for the World Bank and other donors is to create incentives for the private sector to carry some of the burden of funding climate protection given that firms can benefit both economically and by being part of the global community that benefits from climate protection. Despite being expected to lead the way, the problem is that many private investors have little experience with sustainable energy, which they view as high risk. Piloting and demonstrating sustainable energy projects is a key function that Banks and development agencies can perform to minimise some of the risks that deter private actors from investing in public goods.[29] The Bank, the IFC (the Bank's private lending arm) and US-based private foundations, for example, have set up a Solar Development Corporation towards this end. Its aim is to provide business development services to local solar entrepreneurs and to provide credit for both solar businesses and purchasers of solar home systems.[30] However, during the 1990s, only about 7% of the IFC's energy lending went to renewables and energy-efficiency projects.

There is, nevertheless, already a great deal of evidence of companies taking voluntary action on climate change to reduce their emissions, capitalising on the economic savings to be made and the public relations credit to be earned from being seen to take a lead on the issue. Chemicals giant Du Pont reduced its emissions by 65% below their 1990 level while IBM saved $115 million since 1998 through cutting its carbon emissions. A number of NGOs such as the Climate Group in the UK and the Pew Centre in the US have played an important role in making the business case for action

[25]Schmidheiny,S. and the Business Council for Sustainable Development (1992) *Changing Course* Massachusetts: MIT Press p.43.

[26] Greenpeace International have shown in a comparison of CO_2 emissions from the burning of fossil fuels by oil majors with country emissions from fossil fuel combustion, that Shell emits more than Saudi Arabia, Amoco more than Canada, Mobil more than Australia and BP, Exxon and Texaco more than France, Spain and the Netherlands. Greenpeace International (1998) *The oil industry and climate change: A Greenpeace briefing* Amsterdam: Greenpeace International.

[27] UNFCCC Secretariat, `Trends of financial flows and terms and conditions employed by multilateral lending institutions'. First technical paper on terms of transfer of technology and know-how 25/7/97. FCCC/TP/1997/1. (Geneva: FCCC Secretariat, 1997).

[28] ADB Annual Report 1995 cited in I.Tellam (2000) (ed) *Fuel for Change: World Bank Energy Policy- Rhetoric and Reality* London: Zed Books. p.184.

[29] Tellam op cit.

[30] Op.cit

on climate change and publicising the benefits achieved by existing leaders in the field. Some firms such as BP and Shell have gone so far as to establish their own intra-firm trading systems which encourage competitive reductions between different parts of the firm.[31] This carries benefits such as saving money through reduced use of energy, first-mover advantages that come from developing new technologies and production processes to meet the targets and public and employee credibility from being seen as an environmentally-responsible company.[32] Companies have also been keen participants in schemes such as the Chicago Climate Exchange, the European Emissions Trading Scheme, the Carbon Disclosure Project and discussions about a possible Carbon Certification Council to oversee a labelling scheme aimed at consumers emulating existing schemes in the forestry and fisheries sectors.

Another area of private finance is attracting increasing attention in the climate change debate; the financial community. Those pushing for tougher action on climate change have increasingly been forging alliances with insurance companies and banks encouraging them to shift their lending away from fossil fuels and into renewables.[33] The aim is to mobilise the finance sector itself to bring about the shifts in industry necessary to promote more sustainable and climate-benign forms of energy production. There are some indications that the financial community is changing, albeit very slowly, and starting to make climate impacts a feature in their investment choices. The insurance industry has a particular stake in promoting these changes given that it has suffered in the past and will continue to suffer huge losses from pay-outs following climate-related damage to properties that they have insured. For example, by 1995 'leading insurers from all the world's main insurance centres had spoken of the threat of bankruptcy from unmanageable catastrophe losses'.[34] This came on the back of hurricane Andrew in 1992 which cost the insurance industry $20 billion in pay-outs on weather-related damage.[35] The fragile alliance between sections of the financial community and environmentalists seeking to advance action on climate change provides one example of the type of political coalition that will be necessary to carry reforms forward. It also underlines the point that many of the key changes necessary to fund climate protection and deter activities that accelerate climate change, will come not from more international cooperation alone, but from changes in industry itself and in this case from pressure from stakeholders with a clear self-interest in promoting action.

Many of the changes in company policy are consumer-driven and we should not under-estimate the importance of consumer choice and consumer pressure in driving private sector action on climate change. On one level, consumers themselves have to internalise the externalities that they impose on the environment through their consumer choices. One way they can internalise those externalities is by supporting markets for climate-benign products and refusing to purchase goods and services which imply a heavy impact on the climate, as well as changing their own patterns of

[31] Newell, P. (2001) Report on financing of climate change for Swedish government review on financing public goods, *Financing and Providing Global Public Goods: Expectations and Prospects*, Ministry of Foreign Affairs.
[32] There is mounting evidence that companies are seeking to benefit from these gains. See, for example, Schmidheiny (1992) *Changing Course* MIT Press.
[33] Paterson, M. (1999) 'Global finance and environmental politics: The insurance industry and climate change' *IDS Bulletin* Vol.30 No.3.
[34] Jeremy Leggett cited in Paterson (1999) op.cit.p.25.
[35] ibid

consumption in relation to energy use, transportation and the like. Many NGOs have sought to supplement government efforts to persuade consumers to use energy more efficiently by providing booklets and other information materials on how savings can be made from changing simple household practices. Development NGOs such as Christian Aid in the UK have also launched campaigns making people aware of the difference small changes in their consumption of energy can make to people in the South. In a more confrontational manner some groups have also organised boycotts of firms that continue to oppose the Kyoto Protocol, encouraging consumers to use their purchasing power to register their disapproval with companies' obstruction of international action on climate change.[36]

Governments can also facilitate private sector voluntary action through education and awareness-raising, as well as by providing financial incentives such as tax breaks and other forms of support to companies willing to accept GHG reduction obligations. To do this credibly governments have to recognise and address their own contribution to the problem of climate change. State enterprises are themselves major sources of pollution either directly through public production, consumption and investment or indirectly through subsidisation of polluting activities and policies not integrated with climate policy objectives.

Conditionalities?

Besides the use of government incentives to encourage private sector investment in climate benign developments, discussed above, and those sections of the private sector that have their own interests at stake in acting on climate change, there is also a potential role for screening state support to the private sector and multilateral development banks. Export Credit Agencies have the capacity to define and utilise environmental criteria to control and, if necessary, restrict investments made by MDBs if the political will is there to use this approach. Civil society pressure can help in this regard. In the late 1980s, environmentalists successfully mobilised U.S Congress to threaten funding for the World Bank unless environmental safeguards were improved.[37]

One, potentially very powerful critique of this argument, would be that what is being suggested here would amount to climate conditionalities that would merely add to the burden of the poorest countries when so many people are without access to energy of any sort. By placing the idea of tackling energy poverty centrally, however, it becomes harder to justify large scale coal-fired or oil sector projects on the grounds that they help to meet the needs of the poor. In so far as the plentiful supply of cheap energy is central to sustaining the lives of the urban poor in particular, there may be a case, but even here in the context of simultaneous World Bank and IMF pressures to liberalise these sectors, it is clear that the poor are not the reason private companies are willing to take over energy supply in most developing countries and, as a result, are often denied access to improvements in services that may accrue. By far the greatest consumers and beneficiaries of such developments are industry and the rich

[36] Newell, P. (2005) 'Climate for Change: Civil society and the politics of global warming' in Holland,F. et al (ed) *Global Civil Society Yearbook* London: SAGE.

[37] Brown,D. and J. Fox, (2001) 'Transnational civil society coalitions and the World Bank: Lessons from project and policy influence campaigns' in Edwards, M. and Gaventa, J., (eds.), *Global Citizen Action* Boulder: Lynne Rienner Press.

that can afford to be supplied. Often indeed the energy is transferred overseas. Over 80% of the World Bank Group's support for oil projects in the last decade have been export-oriented oil projects, primarily supplying consumers in North America, Western Europe, Japan and Australia.[38]

In rural areas more sustainable forms of solar or wind energy are often more appropriate for meeting livelihood needs than coal-fired power stations, for example, which are principally designed to meet urban industrial needs but which often externalise short term human health and environmental costs onto the poor. The same goes for oil. In relation to the Extractive Industries Review commissioned by the World Bank in 2001, the Sustainable Energy and Economy Network claims; 'Over the course of two years of examination, the World Bank Group was unable to provide an example of a single instance where an oil project alleviated poverty. Many examples were provided of oil projects that exacerbated poverty'.[39]

While there may be a case for supporting fossil-fuel energy developments in some cases, where alternatives are under-developed or not practically implemented, the sooner the transition to sustainable forms of energy commences, the easier will be the adjustment. There is no doubt, should they be willing, that multilateral development banks and donors could play a key role in enabling that transition. In many ways, their function would be merely to assist those efforts already being made by many developing countries themselves to promote sustainable forms of energy production. India and China have begun to put resources into the development of renewable energy, for example, and the declaration of the Brasilia Platform on Renewable Energies set a goal for Latin American countries to meet 10% of their total energy consumption from renewables by 2010.

Taken further, however, a critique of an argument for coherence and policy screening would question why climate change policy objectives should trump other competing development goals, especially when many important uncertainties remain. As the World Bank acknowledges; 'Striking the right balance between vital energy development and protection of the environment is complex in theory and even more challenging in practice'.[40] The issue is not to construct a new hierarchy of policy priorities, however, but to bring about a degree of policy integration such that policies aimed at reducing the threat of climate change are not systematically undermined by the effects of trade, aid and development policy more generally. It is not about diverting money to climate change or creating new climate policies. It is about reviewing existing industrial and other polices that accelerate the climate change which the donor community acknowledges is exacerbating poverty. As the environmental group SEEN note, 'Numerous studies have identified the poor as the most vulnerable to climate change. In this sense, the Bank's financing of fossil fuels is putting its own clients at risk'.[41]

A role for adaptation

[38] SEEN (Sustainable Energy and Economy Network) *SEEN key facts* (www.seen.org), February, 2004.
[39] Ibid
[40] IFC (2000) *Fuel for Thought: An environmental strategy for the energy sector* Environment department and Energy, Mining and Telecoms department, Washington D.C: World Bank.
[41] SEEN, 'Talking Points' on World Bank Group response to NGO submissions to its 'Extractive Industries Review'. Accessed from Can-talk, NGO e-mail list on climate change.

Alongside mitigation efforts it is also important to address the significance of adaptation efforts aimed at helping the poorest and most vulnerable adapt to the reality of climate change that they are already living with. There is a strong case for reducing the impact of climate change on the poor by integrating adaptation responses into development planning as suggested by donors in their *Poverty and Climate Change* report[42] and by the OECD.[43] Decades of inaction now mean that short-term adaptation is imperative. If, however, the efforts of the development community become narrowly preoccupied with this admittedly important contribution, we may miss an important opportunity to reconsider the role of aid and development policy in promoting forms of development that continue to exacerbate climate change. Clearly it is not a question of choosing mitigation over adaptation, as donors acknowledge. Both are important. But to leave climate mitigation strategies to environment ministries while development bureaucrats channel all their efforts into adaptation would be a mistake given the pressing need for policy coherence across government.

While donors in the *Poverty and Climate Change* report call for 'steps towards mainstreaming climate issues into all national, sub-national and sectoral planning processes such as Poverty Reduction Strategies or national strategies for sustainable development',[44] the focus is on piggy-backing on other institutional processes that build 'the resilience of countries, communities and households to all types of shocks, including climate change impacts'. Integration, according, to the definition used in the report, occurs 'when specific adaptation measures are added to design and implementation strategies'.[45] The same logic of mainstreaming could be applied, with tremendous effect, if it dealt with the design stage of policies in sectors that cause climate change in the first place.

There is clearly a need for more funds for adaptation, beyond those currently available via both the GEF and other adaptation related bilateral aid. Donors can both work to leverage maximum adaptation results within existing development activities and investments as well as support monitoring and evaluation of mainstreaming processes to build up a body of understanding to inform policy about what works, when and for whom.[46] At the moment, the linkages are not being well made. An OECD analysis of ODA flows to six developing countries indicates a significant proportion of that aid is directed at activities affected by climate risks.[47]

The impacts of climate change on the poor will also impact upon the reconstruction and disaster relief work of aid agencies. Though it is not yet clear whether climate change is directly implicated in the rising number of 'natural' disasters which have

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[42] World Bank Group, (2003) *Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation* Washington D.C: World Bank Group.

[43] S. Agrawala, 'Mainstreaming adaptation in development planning and assistance', presentation at UNFCC Adaptation workshop, Bonn June 18th , 2004.

[44] World Bank Group, *Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation* (Washington D.C: World Bank Group, 2003), p. xi.

[45] Ibid. p. 15.

[46] Tearfund (2006) Overcoming the Barriers: Mainstreaming climate change adaptation in developing countries. Tearfund Climate Change Briefing paper no.1 Brighton: IDS.

[47] Agrawala, S. (2005) (Ed) *Bridge over Troubled Waters: Linking Climate Change and Development* Paris: OECD.

struck developing countries in recent years. Impacts associated with climate change certainly exacerbate existing vulnerabilities to dramatic environmental change. Parks and Roberts argue, for example, that hurricane Mitch in Honduras 'serves as a parable about uneven vulnerability to global climate change'.[48] ECLAC estimated that $5 billion would be necessary to fund reconstruction efforts to say nothing of damage to the banana plantations that were so central to generating export revenue that fell to one fifth of their pre-hurricane levels, forcing Dole and Chiquita to lay off 25,000 workers and setting in train a series of other devastating social consequences. Likewise, the torrential rains and tropical cyclones which struck Mozambique and surrounding countries in 1999 left 700 people dead, 1 million people displaced as well as extensive losses of land, animals and other means of survival leaving a reconstruction bill of $700 million.[49] How to construct effective mechanisms of adaptation raises issues of *distributive* and *procedural* justice, the former focussing on the incidence of consequences of adaptive responses and the latter on how decisions on adaptation are made.[50]

Beyond the construction of solutions from above, it is also important to recognise the tremendous ability and experience poor people bring to coping with change and adversity and to design adaptation strategies that build on those coping strategies and ways of living with risk.[51] Vulnerability to climate change is not strictly synonymous with poverty even if living in poverty means access to resources, services and entitlements and to institutions with the capacity to protect and deliver and access is likely to be significantly reduced. As Adger et al note; 'Since climate is inherently variable for quite natural reasons, human societies have always and everywhere had to develop coping strategies in the face of unwelcome variations in climate or weather extremes'.[52] When farmers in Nigeria manage to achieve continued increases in per capita agricultural production at a time of increasing aridity and population growth or when the government in Bangladesh has been able to provide shelters that reduce mortalities from cyclones, the challenge is to identify what resource and institutional changes made these forms of adaptation possible and effective.[53] The National Adaptation Plans being set up under the Least Developed Countries Fund agreed at the Marrakech meeting in 2001 provide an important opportunity to build on these lessons. Integrating these plans with National Strategies for Sustainable Development and action plans associated with other environmental agreements on biodiversity and desertification for example will improve their chances of making lasting change. Table 2 summarises some emerging lessons on climate change and adaptation.

Table 2: Climate Change and Adaptation

[48] Parks, B. and J. Timmons Roberts (2006) 'Globalization, vulnerability to climate change and perceived injustice' *Society and Natural Resources* Vol.19, pp. 337-355, p. 342
[49] Parks and Roberts 2006: 345.
[50] Paavola, J. and N. Adger (2002) 'Justice and adaptation to climate change' *Tyndall Centre Working Paper* No.23, October.
[51] Ribot, J. A.R Magalhães and S.S Panagides (1996) (eds) *Climate Variability, Climate Change and Social Vulnerability in the semi-arid tropics* Cambridge: CUP.
[52] Adger, N. S. Huq, K.Brown, D. Conway and M. Hulme (2002) *Adaptation to climate change: Setting the agenda for development policy and research* Tyndall Centre Working paper No. 16, April.
[53] Ibid, p.10.

- Climate change will lead to new patterns of **disease** driven by temperature and rainfall variation. Promoting proactive, rather than reactive, **health** services is a priority[54]
- Uncertainty over rainfall levels will create significant challenges for managing **water and sanitation**. Demands on water supplies will increase while replenishment will be less predictable, requiring dedicated water conservation, leak reduction and educational programmes[55]
- Changes to the climate will affect **agriculture and food insecurity**. Innovative conservation farming techniques are required and seasonal climate forecasts must be used to inform well-integrated crop management decisions.[56]
- As climate change causes more intense and possibly more frequent hyro-meteorological hazards, considering how to make **disaster risk reduction** more climate-sensitive is particularly important.[57]

Source: Mitchell and Tanner (2006)

There is a challenge, therefore, for donors to improve coordination and to 'take the lead in internalizing climate issues in all their work' even requiring the 'possible modification of their own institutional processes to ensure climate vulnerability is addressed with due diligence'.[58] Acknowledging, as the report does, that adaptation efforts are poorly embedded across governments because of the concentration of work within Ministries of Environment, which have limited links and leverage over other line ministries, could be the starting point for moves to integrate mitigation efforts across government. After all, the ability to adapt is linked to, not separate from, the ability to mitigate as both depend on social and technological constraints.[59]

Clean Development?

The Clean Development Mechanism (CDM) of the Kyoto Protocol is often highlighted as a great development opportunity for developing countries to use climate related funds to invest in projects and technologies that benefit the poor.[60] The projects it approves are meant to capture social and environmental benefits and meant to be additional to projects that would have been funded anyway. In reality, conflicts between the views of investors and stakeholders hosting the projects, limited capacity to oversee and implement the projects in developing countries and concerns about both the social impacts of projects as well as the extent to which they limit host countries future mitigation options, leaving only higher cost domestic mitigation

[54] See WHO (2004) Methods for Assessing Human Health Vulnerability and Public Health Adaptation to Climate Change www.who.dk/eprise/main/WHO/Progs/GCH/Publications/20031125_1
[55] See also IUCN online book Change-Adaptation of Water Resources Management to Climate Change, www.iucn.org/themes/wani/change
[56] See FAO web site on the impact of climate change on food security www.fao.org/clim
[57] See Tearfund, Reducing Risk of Disaster in Our Communities http://tilz.tearfund.org/Publications/ROOTs/Reducing+risk+of+disaster+in+our+communities.htm
[58] World Bank Group, *Poverty and Climate Change: Reducing the Vulnerability of the Poor through Adaptation* (Washington D.C: World Bank Group, 2003), p. 29.
[59] Tompkins, E and N. Adger (2003) 'Driving response capacity to enhance climate change policy' *Tyndall Centre Working Paper* No. 39, November.
[60] As of June 2007, 690 CDM projects had already been registered.

activities, make these gains harder to achieve.[61] Some expectations about the income that would be generated for poorer groups by such activities have been unfulfilled with currently low levels of investment in sectors such as forestry, for example (see box 1).[62] There is perhaps a fortunate coincidence, nevertheless, that those countries that have been the main actors in project based emissions reductions through the CDM are also key aid donors: the UK, Japan and the Netherlands such that environment-development synergies should, in theory, be easier to realise in practice.

Many of the concerns that relate to CDM projects also apply to the AIJ (Activities Implemented Jointly) which preceded the CDM that allow bilateral projects to be set up between largely Northern investors and Southern implementing agencies in areas such as renewable energy, energy efficiency, fuel switching projects and land and forestry projects. The idea of funding GHG reduction projects in areas of the world where it is both cheapest to do and where the greatest gains can be achieved, grew in popularity in the wake of the conclusion of the UN Framework Convention on Climate Change in 1992. Despite criticisms about the verifiability of gains achieved under such projects, particularly in the absence of clear rules and mechanisms of oversight at that time, and about the potential for such projects to distract attention away from the pressing need to encourage industrialised countries to reduce their own domestic emissions,[63] the popularity of the idea meant that attention turned to ways of managing the projects in a way that ensured meaningful additional gains. Hence a pilot phase for AIJ activities was set up to 'learn by doing'. According to the Kyoto Protocol, actions implemented jointly have to be 'additional to any that would otherwise occur' and 'supplemental to domestic actions'. Scope is provided to include 'verifiable changes in stocks of sinks' in parties' assessment of their net GHG emissions (Article 6). It was established at the COP1 (Conference of the Parties) meeting that all projects are meant to be 'compatible with and supportive of national environment and development priorities and strategies'. The majority of projects to date continue to be in the area of energy rather than forest projects. As of the seventh synthesis report in 2006 there have been 157 projects under the pilot phase of the AIJ.

The brokers that mediate deals between investors and local organisations have a key role in determining who wins and loses from these transactions. Often NGOs or research institutions create and administer trust funds towards this end. In contrast to CDM projects, investors do not receive formal carbon credits but rather benefit from positive publicity and sometimes tax cuts in their country of origin. This is in spite of the sometimes high transaction costs associated with project management and interaction with government representatives from their point of view.[64] Parties are

[61] Kim, J. (2003) 'Sustainable development and the CDM: A South African case study' *Tyndall Centre Working Paper* No.42, November.

[62] Brown, K. and E. Corbera (2003) 'Exploring equity and sustainable development in the new carbon economy' *Climate Policy* Vol. 3 No. 1, pp. 41-56

[63] Climate Network Europe (1994) *Joint Implementation from a European NGO Perspective* July Brussels: CNE.

[64] Contrary to earlier studies which suggested transaction costs to be no more than 1-20% of total project costs, some findings suggest that transaction costs of AIJ projects range between 7% and more than 100% of production costs with 80% of projects lying between 14 and 89%. See PriceWaterhouseCoopers (2000) 'A business view on key issues relating to the Kyoto mechanisms' London: PriceWaterhouseCoopers. Fichtner, W. S.Graehl and O. Rentz (2003) 'The impact of private investor's transaction costs on the cost effectiveness of project-based Kyoto mechanisms' *Climate Policy* Vol.3 pp. 249-259.

encouraged to report on their AIJ under the pilot phase using a uniform reporting format and most parties have a designated national authority to act as a primary national contact for AIJ. The reviews produced for the Conferences of the Parties have revealed an imbalance in the spread of projects, an issue which has dogged the CDM too, particularly the lack of projects in Africa and small-island developing states. Economies in transition still host the majority of AIJ projects. Joint Implementation projects, in contrast to AIJ, can be claimed against countries obligations under the Kyoto Protocol through emission reduction units (ERUs). Projects starting as of the year 2000 may be eligible as JI projects if they meet the relevant requirements, but ERUs may also be issued for a crediting period starting after the beginning of 2008. These transactions are overseen by the Joint Implementation Advisory Committee. An Annex 1 (industrialised country) can also authorize a legal entity to participate in JI projects. One attraction of working with accredited NGOs in this sense is the prospect of reducing transaction costs.

Larger-scale projects also offer the prospect of gaining economies of scale. In the case of the CDM project in Guangxi China, overseen by the BioCarbon Fund with funding from Italy and Spain, a watershed management project has been set up in the Pearl River basin aimed at saving 25,795 metric tonnes of CO_2 equivalent per year. Alongside this, there has been renewed emphasis on small-scale sinks projects implemented by low-income communities in the CDM such as forest carbon projects. According to Boyd et al, the key is adapting these projects to local realities on the ground, 'capitalizing on synergies with other rural development strategies, ensuring stakeholder participation by working with accountable, representative local organisations and creating flexible and adaptive project designs.' [65] Carbon sequestration through forest projects is appealing from a developed country point of view and may even generate much needed revenue for developing countries.[66] Annual flows of official overseas aid for forestry development in poor communities could be vastly outstripped by private financial flows of up to $300 million per year through carbon credits for sequestered carbon.[67] But it does raise issues of whose forests are involved, who has a right to earn revenue from them, whose property rights are affected and what other livelihoods might be displaced by the use of the forests as a carbon sink. Box 1 provides a summary of a relevant case study in this regard.

Box 1: Sinks project case study

The *Fondo Bioclimatico* project in Chiapas Mexico has been part funded by the UK based *Future Forests* which buys carbon and sells it to those wanting to offset their greenhouse emissions. *Fondo Bioclimatico* is a reference to the trust fund created to manage and administer carbon investments.

[65] Boyd, E. M. Gutierrez and M. Chang (2005) 'Adapting small-scale sinks projects to low-income communities' *Tyndall Centre Working Paper* No.71, March.
[66] Pearce, D. (2000) 'Save the planet: Sell carbon' *World Economy* Vol.1 No.3, pp. 61-79
[67] CIFOR 'Forest carbon and local livelihoods: Assessment of opportunities and policy recommendations' http://www.cifor.cgiar.org

During the last 5 years the project has grown from an initial group of 47 campesinos to more than 450 carbon suppliers from 20 communities across Chiapas. Every producer or community involved has to produce their own forest management strategy which, once approved by project developers, means they receive an up-front payment of 20% of the carbon expected to accrue from the plan. They receive 60% annually of the sale price per tonne of carbon sequestered and the remaining 40% is set aside to cover the costs of technical support for farmers, administrative costs, monitoring and reporting. Access to land to be used in this way has been restricted to 1-2 ha per producer in order to promote income inequality across members and communities. The maximum income gain for producers, which is dependent on the forestry management system and its carbon sequestration potential, has been estimated at about US$ 700 over 10 years, 'a modest but significant amount relative to local incomes'.

Source: Brown and Corbera 2003

Other critiques have picked up on this issue of the global South being reconstituted as a sink for Northern emissions, most critically referred to as 'carbon colonialism'.[68] Even senior government officials within the climate change negotiations such as Estrada noted at the time of the Kyoto agreement:

> My reservation was that the CDM is considered a form of joint implementation but I don't understand how a commitment can be jointly implemented if only one of the parties involved is committed to limit emissions and the other party is free from a qualitative point of view. Such disparity has been at the root of every colonisation since the time of the Greeks.[69]

Indeed, there have been examples of negative impacts on the poor when land is given up for carbon sink purposes. For example a Norwegian company operating in Uganda that leased its' lands for a sequestration project resulted in 8,000 people in thirteen villages being evicted.[70] The project in Bukaleba Forestry Reserve was meant to offset GHG emissions of a coal fired power plant to be built in Norway. International criticism at the time prevented the project from claiming carbon credits to 'offset' the power plant emissions, but the project continued and the trees were planted. After lengthily negotiations, the Norwegian owners accepted to allocate less than 5% of the land they received from the government at a 'bargain price' to the local people previously threatened with eviction. According to one NGO 'The eucalyptus trees chosen for the project appear to have been a poor choice for the local site. Local people state that they are paid very low wages and that most of their labour is not sourced locally'.[71]

Nevertheless, on a more positive note the potential for participation in such projects to generate needed revenue with the World Bank estimating that the CDM will absorb up to $2 billion per year in investments by 2008, has, to some extent, unsettled the traditional stance of developing countries against involvement in a climate regime on the grounds that the primary cause of the problem and therefore key responsibility for

[68] Bachram, H. (2004) 'Climate fraud and carbon colonialism: The new trade in greenhouse gases' *Capitalism, Nature, Socialism* Vol.15 No.4, pp. 10-12.
[69] Estrada, R. (1998) 'First approaches and unanswered questions' in *Issues and Options: The Clean Development Mechanism* UNDP, pp. 23-29.
[70] Bachram, H. (2004) 'Climate fraud and carbon colonialism: The new trade in greenhouse gases' *Capitalism, Nature, Socialism* Vol.15 No.4, pp. 10-12.
[71] Kill, Jutta (2003) 'Land grab in Uganda in preparation for CDM sinks project' *World Rainforest Movement Bulletin* No.74, September.

tackling it resided with the developed world. The problem is that investors have been attracted to those areas where 'low-hanging fruit' are plentiful and the management institutions much stronger. By 2008, according to World Bank figures, 80% of CDM investments will go to Brazil, India and China.[72] There is clearly a geographically uneven spread of the benefits of climate projects across the developing world.

Transferring Technology

Technology clearly has a key role to play in mitigation and adaptation to climate change. There has been concern that climate change does not become the latest policy arena in which to repeat previous mistakes in development policy about the inappropriate transfer of technology as aid to the global South.[73] Concerns about subsidies to flailing technology sectors whose applications are inappropriate to local Southern contexts for which they were not designed, the use of conditionalities and tied aid which requires recipients to purchase the technology from the donor have all re-surfaced as legitimate concerns expressed by developing countries in the climate change debate.[74] Much of the controversy has also centred on the Global Environment Facility set up to oversee North-South transfers of environmental aid. Its close ties to the World Bank to whom it is chiefly accountable has been a particular source of concern for many developing countries.[75]

Alongside the use of technologies intended to bring about a degree of leap-frogging to a more sustainable energy path, there have been calls to develop spectacular techno-fixes to the problem of climate change. Designed to avoid having to take politically sensitive action to mitigate emissions, such grand designs include filling the oceans with iron fillings to increase the rate at which they absorb CO_2 or the use of huge mirrors placed in the atmosphere to deflect the suns rays. Given the numerous issues about the plausibility and desirability of such global techno-fixes, I will not focus further attention on them.

Intermediate technology, on the other hand, may have a key role in promoting climate friendly short term solutions to pressing poverty needs. Here the 'development first' approach is in evidence, as well as efforts to capitalise on the synergies noted in table 3. The work of development NGOs such as Practical Action (formerly the Intermediate Technology and Development Group) epitomises this approach. The group works with local communities to improve their energy security through designing sustainable energy technologies that use renewable energy sources and involve the community in the design and maintenance of appropriate projects. Examples include micro-hydro plants, small scale wind generators, solar lanterns and biogas plants. In the case of small scale wind power generators, these can charge up the vehicle batteries that are used by hundreds of thousands of off-grid households to light their homes.[76]

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[72] Niederberger, A. and R. Saner (2005) 'Exploring the relationship between FDI flows and CDM potential' *Transnational Corporations* Vol.14 No.1, p.28.
[73] McCully, P. (1991) 'The case against climate aid' *The Ecologist* Vol.21 No.6, pp. 224-51.
[74] Tickell,O. and N. Hildyard (1992) 'Green dollars, green menace' *The Ecologist* May/June Vol. 22 No. 3, pp. 82-83.
[75] Young, Z. (2002) *A New Green Order? The World Bank and the Politics of the Global Environment Facility* London: Pluto Press.
[76] Practical Action, 'Energy' http://practicalaction.org/?id=energy

In more general terms, as Tompkins and Adger show,[77] in terms of political priorities and resource demands, there are some difficult trade-offs to face between investment in the development and diffusion of new technology and investment in encouraging and enabling society to change its behaviour and or adopt a new technology. They suggest: 'The preference for a more technological response as opposed to a policy response that focuses on changing social behaviour will be influenced by the capacity of different societies to change the climate; perceived vulnerability to climate impacts and capacity to modify social behaviour and the physical environment.'[78]

Some tough choices lie ahead. In a world of limited development finance, countries have to prioritise among these options and between environment and development goals. Developing countries have distinct and competing interests and while many Latin American countries have been in favour of including forestry projects under the CDM given their endowments of these resources, other areas of the world are concerned about a consequent reduction in transfers of technology and finance. Clearly there is a role for all these solutions, but the extent of it has to be judged on a case by case basis rather than presented as a 'one-size fits all' solution to climate change and development. There is an added challenge here for donors, each with their own sense of priorities in this area and with closer ties to some parts of the developing world than others, to coordinate their work to build on strengths and comparative advantages, share expertise and lesson-learning and avoid duplication even if joint projects offer a useful way of reducing transaction costs.

It would be easy to argue that priorities for projects, technology development and other forms of development assistance should be focussed in those areas where there is a clear and substantial developmental as well as environmental gain. Davidson et al refer to this as a 'development first approach' in which a future climate regime should focus on development strategies with ancillary climate benefits and increase the capability of developing countries to implement these.[79] Placing the priority on the developmental over the environmental gains would appear legitimate given who is being asked to host these climate projects (people in the South) and those who contributed most to the problem and claim to be most concerned about it (people in the North). The reality, however, in the light of what we increasingly know, is that failure to achieve a meaningful short-term environmental gain is likely to offset short-term developmental gains. The two are intimately connected (see table 3).

Table 3: Exploring synergies: Climate Change and Development

- Reducing fossil fuel consumption contributes to the abatement of urban and regional air pollution and the reduction of health risks, but also contributes to reducing climate risks

[77] Tompkins, E and N. Adger (2003) 'Driving response capacity to enhance climate change policy' *Tyndall Centre Working Paper* No. 39, November.
[78] Ibid
[79] Davidson, O. K. Halsnæs, S. Huq, M.Kok, B. Mertz, Y. Sokona, J. Verhagen (2003) 'The development and climate nexus: The case of sub-Saharan Africa' *Climate Policy* Vol. 3 No.1, pp. 97-113.

- Agro-forestry projects protect soils and provide employment opportunities for local farmers, but also result in carbon sequestration
- Coastal zone management activities not only protect against extreme events due to climate variability, but also strengthen the capacity of local communities to deal with the impacts of sea-level rise and provide a resource base for local livelihoods.
- Development of drought resistant crops to reduce farmers' vulnerability to current climate variability and future changes in the climate.

Source: Davidson et al 2003.

Institution-building

A key challenge in strengthening the resilience and effectiveness of institutions at all levels to tackle climate change is to address the 'participation gap'. Improving the voice of developing countries as representatives of those groups most affected by climate change will be key to shaping a regime that responds more directly to the needs of poorer groups in the GHG reduction targets it sets and the rules constructed for use of the Kyoto mechanisms. There is precedent for such an effort and UNCTAD, amongst others, has sought to build the capacity of Southern delegations through programmes around trade for example that could be applied to the issue of climate change.[80]Table 4 provides some examples. These are aimed at building understanding of how institutions work: their mandates, responsibilities and decision-making procedures as well as improving levels of legal and scientific literacy, especially relevant in environmental negotiations where there is a premium on these forms of knowledge in basing policy on complex and evolving science and the careful negotiation of legal text in international treaties.

There have also been attempts to among donors and multilaterals to fund the participation of government and NGO delegates from the South which might be applied to climate negotiations. Procedures exist, for example, within the GEF to fund the attendance of NGOs from developing country NGOs at GEF meetings through a voluntary fund to which members contribute. As developing countries become increasingly involved in both mitigation and adaptation efforts, it will be crucial to encourage international organisations, governments and civil society to do all they can to improve the participation and understanding of developing country governments and civil societies in activities and rule-making which increasingly impinges upon their development prospects.

Table 4: Creating voice: Capacity building for LDCs

1. Recognizing the need for technical assistance on trade and environment in favour of developing countries and countries with economies in transition, UNCTAD and UNEP launched, in 2000, a Capacity-Building Task Force for Trade, Environment and Development (CBTF). The objective is to help developing countries enhance

[80] This work has been undertaken in relation both to trade and environmental negotiations and involves NGOs with significant legal expertise such as FIELD (Foundation for International Environmental Law and Development)

understanding of trade, environment linkages, address trade-related environmental and environment-related trade problems and participate effectively in international negotiations.[81] Activities towards this end include:

- Policy dialogues and briefings with Geneva-based delegations
- Regional seminars on specific issues
- National policy dialogues to facilitate policy-coordination on key issues, preferably based on a multi-stakeholder process and with the active involvement of the private sector and other members of civil society.
- Training seminars (3 to 4 days)
- National capacity-building projects

2. Specifically around trade issues, UNCTAD has also designed a programme on 'Technical assistance and capacity building for developing countries, especially LDCs, and economies in transition in support of their participation in the WTO Post-Doha work programme'. This deals with specific issues that developing countries face in trade policy in the 'development round'.

3. One such area would be Intellectual Property Rights. The Capacity Building Project on (IPRs) and Sustainable Development is being implemented by UNCTAD and the International Centre for Trade and Sustainable Development (ICTSD) over two years.[82] The main goals of the project are as follows:

a. To improve understanding of the development implications of the TRIPS Agreement.

b. To strengthen the analytical and negotiating capacity of developing countries so that they are better able to participate in IPR-related negotiations in an informed fashion in furtherance of their sustainable development objectives.

A second key institutional challenge is *policy coherence*. Policy coherence is perhaps the greatest contribution that governments can make towards providing climate protection and it is also potentially the least economically costly. By ensuring that policies in areas such as energy, agriculture, transport and industry are designed with the imperative of climate protection in mind, governments will be going along way towards addressing the problem of climate change in a way that helps to avoid the need for expensive mitigation and adaptation projects at a later stage. The goal of policy integration has been clearly articulated, even if not fully practiced, by the EU and there are lessons from this experience which could guide other governments' responses to climate change.[83] Within developing countries, Poverty Reduction Strategy papers provide an important opportunity to integrate climate concerns, to mainstream adaptation and to build in some of the synergies suggested in table 3.[84] We need to be attentive here to avoiding the pitfalls of mainstreaming where the issue loses visibility and as a result becomes easier to ignore and impact becomes harder to trace, a fact which may diminish donor interest and the prospects of future funding.

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[81] For more see: www.unep-unctad.org/cbtf/index

[82] http://www.iprsonline.org/unctadictsd/description.htm

[83] Grant,W. D. Matthews and P. Newell, (2000) *The Effectiveness of EU Environmental Policy* Basingstoke: MacMillan.

[84] Tearfund (2006) Overcoming the Barriers: Mainstreaming climate change adaptation in developing countries. Tearfund Climate Change Briefing paper no.1 Brighton: IDS.

What this means is not viewing climate change as an isolated problem, but rather as a product of a whole series of policy choices about economic and energy strategy that need to be revised to ensure minimal impact on climate change. Otherwise the effects of actions taken to protect the climate will continue to be systematically offset by decisions taken in policy areas such as energy, trade, transport and agriculture. At the moment, governments' professed commitments to tackle climate change, expressed in the Kyoto Protocol, are being undermined by their continued support for financial institutions that promote activities that generate vast amounts of greenhouse gases. As Tellam puts it; 'While the governments of industrialised countries continue to publicly state their commitment to dealing with the climate issue under the Kyoto Protocol, they continue to work with the World Bank, with multilateral development banks and with export credit agencies to directly or indirectly finance the development of energy systems in low-income countries based on fossil-fuels'.[85]

At national level, decisions by governments in areas such as trade, agriculture, energy and transport that are taken without regard to their climate footprint, have the same counter productive effect. The decision by the UK government to approve a new terminal at Heathrow airport, already the one of the world's busiest, has the potential to single-handedly undo the emissions savings likely to be achieved by all other proposed actions. Anderson et al show that if the aviation industry is allowed to grow at rates even lower than those being experienced today, the EU could see aviation accounting for between 39% and 79% of its total carbon budget by 2050. In the case of the UK, this means that all other sectors of the UK economy would need to reduce their carbon emissions significantly in order to allow the aviation industry to grow at even moderate rates.[86] Addressing these sorts of policy contradictions is critical to reducing the climate risks the rich impose on the poor.

Until now climate change has rightly been viewed as a rich country problem. It has been largely created by the fossil fuel intensive patterns of industrialisation from which we have benefited in Europe, North America and East Asia. The problem is that the impacts of climate change will be, many argue already are, being felt most acutely by the world's poorest nations. In addition, the rapid industrialisation of parts of South-East Asia, China and South America has created a situation in which the former North-South dynamic has given way to a recognition that many of countries within these regions will join the ranks of the largest polluters within the next two decades. Whereas development practitioners are used to working with the poor, with climate change we have to recognise that to avert further displacement and suffering as a result of climate change, we need to identify and enforce a new set of policy mechanisms in the industrialised and new industrialising world for integrating climate change objectives within policy areas that have traditionally been perceived to have nothing to do with either development or environment. This requires us to look not only at the activities of governments, but at the international institutions and market actors that shape so strongly the direction of national development strategies.

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[85] Tellam, I. (2000) (ed), *Fuel for Change: World Bank Energy Policy- Rhetoric and Reality* (London: Zed Books, p.185.

[86] Anderson, K. and A. Bows and P. Upham (2006) 'Growth scenarios for EU and UK aviation: Contradictions with climate policy' *Tyndall Centre Working Paper* No. 84, January.

We have seen heightened attention in recent years to the use of market mechanisms for tackling climate change. From carbon taxes, to emissions trading schemes and voluntary efforts by market actors, we have seen the increasing use of market-based forms of climate governance. We have noted many of these mechanisms in this paper. But it is clear that the potential of market mechanisms to realise their potential to meet the needs of poorer groups is contingent on strong institutions being in place to set targets, monitor performance, allocate (and re-allocate) property rights and establish clear rules and procedures for such mechanisms. Carbon markets are created by global and national institutions often overturning long-established traditional management and property regimes in their wake.[87] As noted above in relation to CDM projects, this can create conflicts between the needs and preferences of investors, brokers, NGOs and local community members. Brown and Corbera argue 'the ability of the 'new carbon economy' to provide real benefits for sustainable development may ultimately be constrained by the nature of the market itself'.[88]

Mediating conflicts and ensuring particularly that the needs of poorer groups are protected is a critical role for institutions through (i) *regulation* (ii) *participation* and (iii) *representation*. This is as true of local institutions as it is of the CDM executive board which oversees project approvals against defined social and environmental criterion. It will be central to delivering the three types of equity that Brown and Corbera identify: equity in access, equity and legitimacy in institutions and decision-making at all scales and equity in outcome. Their work in Mexico (see box 1) shows clearly that where organisations for forest management and managerial capacity are present, communities are more likely to benefit. Given the different vulnerabilities that social groups face institutions have to ensure that benefits flow to poorer groups since currently it is those farmers with larger holdings that are able to risk setting aside a portion of their land for reforestation and poorer groups without such access that cannot. As they suggest:[89]

> These three elements need to be addressed if instruments such as the Kyoto mechanisms can make any claim to sustainability. At a minimum, such initiatives require robust and equitable institutions at the local level and means of distributing financial benefits to the stakeholders who may forego immediate and short-term gains in lieu of longer-term benefits of sustainable development.

Conclusion

Building coalitions for the sorts of climate change and development agenda I am proposing here will not be easy and will not be achieved any time soon. Donors, NGOs and others willing to embrace this approach will find themselves pitted in opposition against the most powerful elements of government and their allies in industry that are strongly attached to fossil-fuel led growth trajectories. Arguing that there is an overwhelming developmental and environmental case for revising many conventional economic strategies may not make much headway with hard headed officials from trade and finance ministries. This is in spite of growing evidence of the

[87] Brown, K. and E. Corbera (2003) 'Exploring equity and sustainable development in the new carbon economy' *Climate Policy* Vol. 3 No. 1, pp. 41-56.
[88] *Ibid* p. 41.
[89] Brown, K. and E. Corbera (2003) 'Exploring equity and sustainable development in the new carbon economy' *Climate Policy* Vol. 3 No. 1, pp. 41-56. P. 45.

minimal costs associated with taking action on climate change, especially when set against the potential costs of not taking action.[90]

There is a case that can and is being made, however, on grounds of the enormous savings to be made from 'win-win', 'no-regrets' policy options that can be achieved in the short-term, at little cost and can be justified on many grounds other than the seriousness of tackling climate change as a problem in its own right. Making the case that a truly 'joined-up' approach to policy on climate change may mean revising some policies, or dropping others altogether, will take longer and be resisted fiercely. In the first instance, it means recognising the nonsense of one set of policies, allegedly aimed at enhancing welfare, systematically undermining the asset base on which all economic activity depends. Ultimately, it means recognising that if trade, energy, transport and agricultural policy are more substantively oriented to the goal of sustainability, there should be no need for a separate climate policy. This might require us to revisit our faith in a model of economic development that appears to be increasingly at odds with the goal of stabilising the climate system which so directly impacts upon the livelihoods of the poor.

Ignorance about the effects of our actions upon the poor is increasingly not a viable excuse for inaction. We can expect more resort to legal actions by those affected by climate change.[91] Perhaps the prospect of direct and substantial financial losses by key polluters will provide sufficient incentive to act on this issue. The experience of the insurance industry should serve as a timely reminder, however, of the ability of business to cut its losses and protect itself from liabilities without fundamentally dis-investing from a fossil fuel based carbon economy.[92] Financial incentives go so far. A strong moral case can nevertheless be built that it is ethically unacceptable to reduce the life chances of the majority of humanity in order to sustain the excessive and unsustainable consumption of rich world elites.

If a rights-based approach to development is to mean anything it must surely start with the premise that no one has the right to deny others the right to life. We are now entering a stage in climate politics, where that is not only a possibility, it is a probability. This fact alone should ensure that climate change assumes a central place in efforts to promote sustainable human development.

[90] Stern, N. (2007) *The Economics of Climate Change: The Stern Review* Cambridge: CUP.
[91] Newell, P. (2007) 'Civil society, corporate accountability and the politics of climate change' (forthcoming)
[92] Paterson,M. (1999) 'Global finance and environmental politics: The insurance industry and climate change' *IDS Bulletin* Vol.30 No.3.

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