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# Climate change threatens unprecedented human development reversals

**Brasilia, 27 November 2007**—With governments preparing to gather in Bali, Indonesia to discuss the future of the Kyoto Protocol, the United Nations Development Programme’s Human Development Report has warned that the world should focus on the development impact of climate change that could bring unprecedented reversals in poverty reduction, nutrition, health and education.

The report, *Fighting climate change: Human solidarity in a divided world*, provides a stark account of the threat posed by global warming. It argues that the world is drifting towards a “tipping point” that could lock the world’s poorest countries and their poorest citizens in a downward spiral, leaving hundreds of millions facing malnutrition, water scarcity, ecological threats, and a loss of livelihoods.

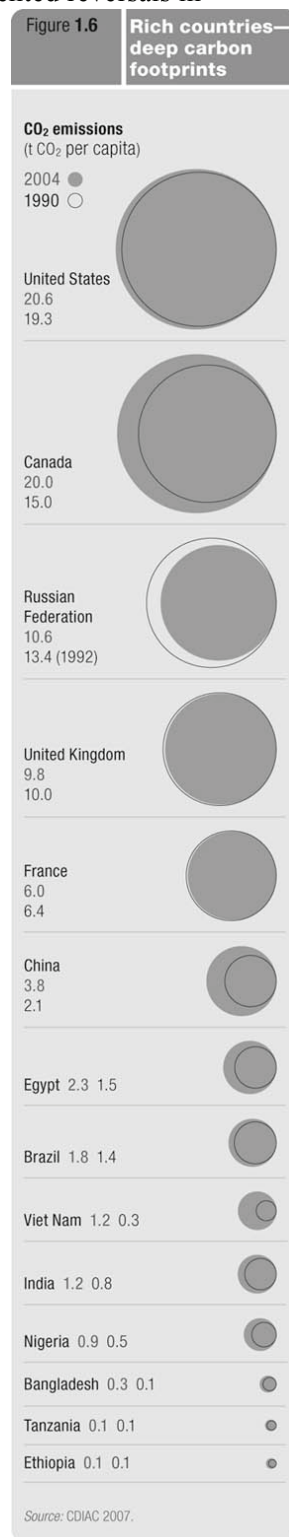
“Ultimately, climate change is a threat to humanity as a whole. But it is the poor, a constituency with no responsibility for the ecological debt we are running up, who face the immediate and most severe human costs,” commented UNDP Administrator Kemal Derviş.

The report comes at a key moment in negotiations to forge a multilateral agreement for the period after 2012—the expiry date for the current commitment period of the Kyoto Protocol. It calls for a “twin track” approach that combines stringent mitigation to limit 21st Century warming to less than 2°C (3.6°F), with strengthened international cooperation on adaptation.

On mitigation, the authors call on developed countries to demonstrate leadership by cutting greenhouse gas emissions by at least 80% of 1990 levels by 2050. The report advocates a mix of carbon taxation, more stringent cap-and-trade programmes, energy regulation, and international cooperation on financing for low-carbon technology transfer.

Turning to adaptation, the report warns that inequalities in ability to cope with climate change are emerging as an increasingly powerful driver of wider inequalities between and within countries. It calls on rich countries to put climate change adaptation at the centre of international partnerships on poverty reduction.

“We are issuing a call to action, not providing a counsel of despair,” commented lead author Kevin Watkins, adding, “Working together with resolve, we can win the battle against climate change. Allowing the window of opportunity to close would represent a moral and political failure without precedent



in human history.” He described the Bali talks as a unique opportunity to put the interests of the world’s poor at the heart of climate change negotiations.

The report provides evidence of the mechanisms through which the ecological impacts of climate change will be transmitted to the poor. Focusing on the 2.6 billion people surviving on less than US\$2 a day, the authors warn forces unleashed by global warming could stall and then reverse progress built up over generations. Among the threats to human development identified by *Fighting climate change*:

- The breakdown of agricultural systems as a result of increased exposure to drought, rising temperatures, and more erratic rainfall, leaving up to 600 million more people facing malnutrition. Semi-arid areas of sub-Saharan Africa with some of the highest concentrations of poverty in the world face the danger of potential productivity losses of 26% by 2060.
- An additional 1.8 billion people facing water stress by 2080, with large areas of South Asia and northern China facing a grave ecological crisis as a result of glacial retreat and changed rainfall patterns.
- Displacement through flooding and tropical storm activity of up to 332 million people in coastal and low-lying areas. Over 70 million Bangladeshis, 22 million Vietnamese, and six million Egyptians could be affected by global warming-related flooding.
- Emerging health risks, with an additional population of up to 400 million people facing the risk of malaria.

Setting out the evidence from a new research exercise, the authors of the Human Development Report argue that the potential human costs of climate change have been understated. They point out that climate shocks such as droughts, floods and storms, which will become more frequent and intense with climate change, are already among the most powerful drivers of poverty and inequality—and global warming will strengthen the impacts.

“For millions of people, these are events that offer a one-way ticket to poverty and long-run cycles of disadvantage,” says the report. Apart from threatening lives and inflicting suffering, they wipe out assets, lead to malnutrition, and result in children being withdrawn from school. In Ethiopia, the report finds that children exposed to a drought in early childhood are 36% more likely to be malnourished—a figure that translates into 2 million additional cases of child malnutrition.

While the report focuses on the immediate threats to the world’s poor, it warns that failure to tackle climate change could leave future generations facing ecological catastrophe. It highlights the possible collapse of the West Antarctic ice sheets, the retreat of glaciers, and the stress on marine ecosystems as systemic threats to humanity.

“Of course there are uncertainties, but faced with risks of this order of magnitude uncertainty is not a case for inaction. Ambitious mitigation is in fact the insurance we have to buy against potentially very large risks. *Fighting climate change* is about our commitment to human development today and about creating a world that will provide ecological security for our children and their grandchildren,” Mr. Derviş said.

### **Avoiding dangerous climate change**

The authors of the Human Development Report call on governments to set a collective target for avoiding dangerous climate change. They advocate a threshold of 2°C (3.6°F) above pre-industrial levels (the current level is 0.7°C, 1.3°F).

Drawing on a new climate model, the report suggests a ‘21st Century carbon budget’ for staying within this threshold. The budget quantifies the total level of greenhouse gas emissions consistent with this goal. In an exercise that captures the scale of the challenge ahead, the report estimates that business-as-usual could result on current trends in the entire carbon budget for the 21st Century being exhausted by 2032. The authors warn that on current trends the world is more likely to breach a 4°C threshold than stay within 2°C (3.6°F).

The Human Development Report addresses some of the critical issues facing negotiators in Bali. While acknowledging the threat posed by rising emissions from major developing countries, the authors argue that northern

governments have to initiate the deepest and earliest cuts. They point out that rich countries carry overwhelming historic responsibility for the problem, have far deeper carbon footprints, and have the financial and technological capabilities to act.

“If people in the developing world had generated per capita CO<sub>2</sub> emissions at the same level as people in North America, we would need the atmosphere of nine planets to deal with the consequences,” commented Mr. Watkins.

Using an illustrative framework for an emissions pathway consistent with avoiding dangerous climate change, the Human Development Report suggests that:

- Developed countries should cut greenhouse gas emissions by at least 80% to 2050 and 30% by 2020 from 1990 levels.
- Developing countries should cut emissions by 20 percent to 2050 from 1990 levels. However, these cuts would occur from 2020 and they would be supported through international cooperation of finance and low carbon technology transfer.

Measured against this benchmark, the authors find that many of the targets set by developed country governments fall short of what is required. It notes also that most developed countries have failed to achieve even the modest reductions—averaging around 5% from 1990 levels—agreed under the Kyoto Protocol. Even where ambitious targets have been set, the report argues, few developed countries have aligned stated climate security goals with concrete energy policies.

Scenarios for future emissions reinforce the scale of the challenge ahead. On current trends, CO<sub>2</sub> emissions are projected to increase by 50% to 2030—an outcome that would make dangerous climate change inevitable. “The bottom line is that the global energy system is out of alignment with the ecological systems that sustain our planet,” commented Mr. Watkins, adding: “realignment will take a fundamental shift in regulation, market incentives, and international cooperation.”

**Fighting climate change** identifies a range of policies needed to close the gap between climate security statements and energy policies for avoiding dangerous climate change. Among the most important:

- **Pricing carbon.** The report argues that both carbon taxation and cap-and-trade schemes have a role to play. Gradually rising carbon taxes would be a powerful tool to change incentive structures facing investors. It also stresses that carbon taxes need not imply an overall greater tax burden because they could be compensated by tax reductions on labour income.
- **Stronger regulatory standards.** The report calls on governments to adopt and enforce tougher standards on vehicle emissions, buildings and electrical appliances.
- **Supporting the development of low carbon energy provision.** The report highlights the unexploited potential for an increase in the share of renewable energy used, and for breakthrough technologies such as carbon capture and storage (CCS).

**Table 3.2 Proposals for the European Union Emissions Trading Scheme**

	2005 verified emissions under Phase II of ETS (Mt CO <sub>2</sub> )	Emissions cap for 2008–2012 period		
		Proposed by government (Mt CO <sub>2</sub> )	Allowed by European Commission (Mt CO <sub>2</sub> )	Allowed by European Commission as % of 2005 emissions
Austria	33	33	31	94
Belgium	56	63	59	105
Czech Republic	83	102	87	105
Finland	33	40	38	115
France	131	133	133	102
Hungary	26	31	27	104
Germany	474	482	453	96
Greece	71	76	69	97
Ireland	22	23	21	95
Italy	226	209	196	87
Netherlands	80	90	86	108
Spain	183	153	152	83
Sweden	19	25	23	121
United Kingdom	242 <sup>a</sup>	246	246	101
<b>Total</b>	<b>1,943<sup>a</sup></b>	<b>2,095</b>	<b>1,897</b>	<b>98</b>

a. Does not include the United Kingdom's installations which were temporarily excluded from the scheme in 2005 but will be covered in 2008 to 2012, estimated to amount to 30 Mt CO<sub>2</sub>.

Source: European Union 2007c.

- **International cooperation on finance and technology transfer.** The authors note that developing countries will not participate in an agreement that provides no incentives for entry, and which threatens to raise the costs of energy. The report argues for the creation of a Climate Change Mitigation Facility (CCMF) to provide \$25-50 billion annually in financing the incremental low-carbon energy investments in developing countries consistent with achieving shared climate change goals.

Drawing on economic modeling work, the Human Development Report argues that the cost of stabilizing greenhouse gases at 450 parts per million (ppm) could be limited to an average to 1.6% of world GDP to 2030. “While these are real costs, the costs of inaction will be far greater, whether measured in economic, social or human terms,” warned Mr. Derviş. The report points out that the cost of avoiding dangerous climate change represents less than two-thirds of current world military spending.

### Adaptation efforts overlooked

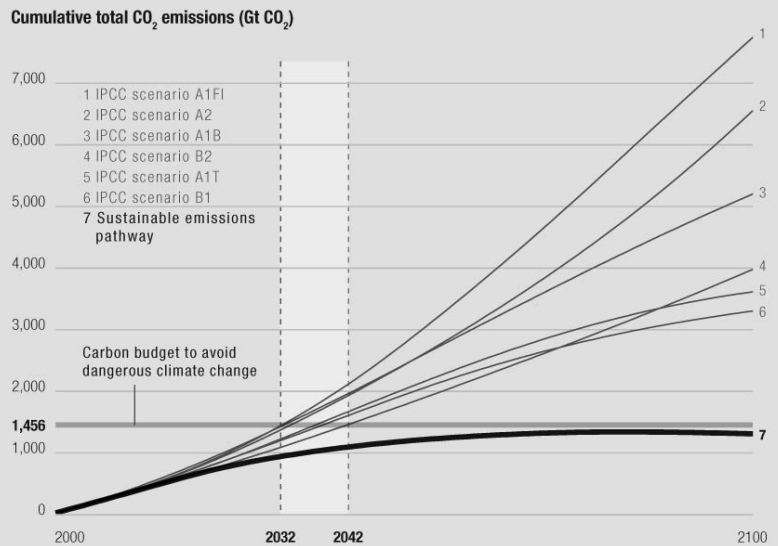
While stressing the central medium-term role of mitigation, **Fighting climate change** warns against neglecting the adaptation challenge. It points out that, even with stringent mitigation, the world is now committed to continued warming for the first half of the 21st Century. The report warns that adaptation is needed to prevent climate change leading to major setbacks in human development—and to guard against the very real danger of insufficient mitigation.

The report draws attention to extreme inequalities in adaptation capacity. Rich countries are investing heavily in climate-change defence systems, with governments playing a leading role. By contrast, in developing countries “people are being left to sink or swim with their own resources,” writes Desmond Tutu, Archbishop Emeritus of Cape Town, in the report, creating a “world of ‘adaptation apartheid’.”

“Nobody wants to understate the very real long-term ecological challenges that climate change will bring to rich countries,” Mr. Watkins commented. “But the near term vulnerabilities are not concentrated in lower Manhattan and London, but in flood prone areas of Bangladesh and drought prone parts of sub-Saharan Africa.”

The Human Development Report shows that international cooperation on adaptation has been slow to materialize. According to the report, total current spending through multilateral mechanisms on adaptation has amounted to \$26 million to date—roughly one week’s worth of spending on UK flood defences. Current mechanisms are delivering small amounts of finance with high transaction costs, the authors say.

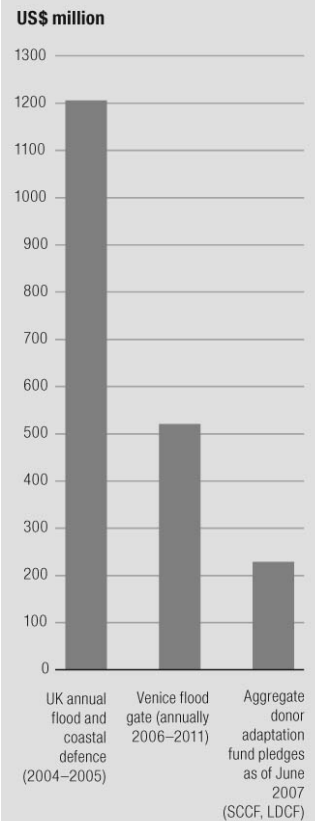
Figure 1.10 The 21<sup>st</sup> Century carbon budget is set for early expiry



Note: IPCC scenarios describe plausible future patterns of population growth, economic growth, technological change and associated CO<sub>2</sub> emissions. The A1 scenarios assume rapid economic and population growth combined with reliance on fossil fuels (A1FI), non-fossil energy (A1T) or a combination (A1B). The A2 scenario assumes lower economic growth, less globalization and continued high population growth. The B1 and B2 scenarios contain some mitigation of emissions, through increased resource efficiency and technology improvement (B1) and through more localized solutions (B2).

Source: Meinshausen 2007.

Figure 4.5 Developed country investments dwarf international adaptation funds



Source: Abbott 2004; DEFRA 2007 and GEF 2007.



The report argues for reforms including:

- Additional financing for climate proofing infrastructure and building resilience, with northern governments allocating at least \$86 billion annually by 2015 (around 0.2% of their projected GDP).
- Increased international support for the development of sub-Saharan Africa's capacity to monitor climate and improve public access to meteorological information.
- The integration of adaptation planning into wider strategies for reducing poverty and extreme inequalities, including poverty reduction strategy papers (PRSPs).

*Fighting climate change* concludes that “one of the hardest lessons taught by climate change is that the historically carbon intensive growth, and the profligate consumption in rich nations that has accompanied it, is ecologically unsustainable.” But the authors argue, “with the right reforms, it is not too late to cut greenhouse gas emissions to sustainable levels without sacrificing economic growth: rising prosperity and climate security are not conflicting objectives.”

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**ABOUT THIS REPORT:** The Human Development Report continues to frame debates on some of the most pressing challenges facing humanity. It is an independent report commissioned by the United Nations Development Programme (UNDP). Kevin Watkins is the Lead Author of the 2007/2008 report, which includes special contributions from UN Secretary-General Ban Ki-moon, President Luiz Inácio Lula da Silva of Brazil, Mayor of the City of New York Michael R. Bloomberg, Advocate for Arctic climate change Sheila Watt-Cloutier, Chair of the World Commission on Sustainable Development and former Prime Minister of Norway Gro Harlem Brundtland, Archbishop Emeritus of Cape Town Desmond Tutu, and the Director of the Centre for Science and Environment Sunita Narain. The Report is translated into more than a dozen languages and launched in more than 100 countries annually. Further information can be found at <http://hdr.undp.org/en/reports/global/hdr2007-2008/>. The 2007/2008 Human Development Report is published in English by Palgrave Macmillan.

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