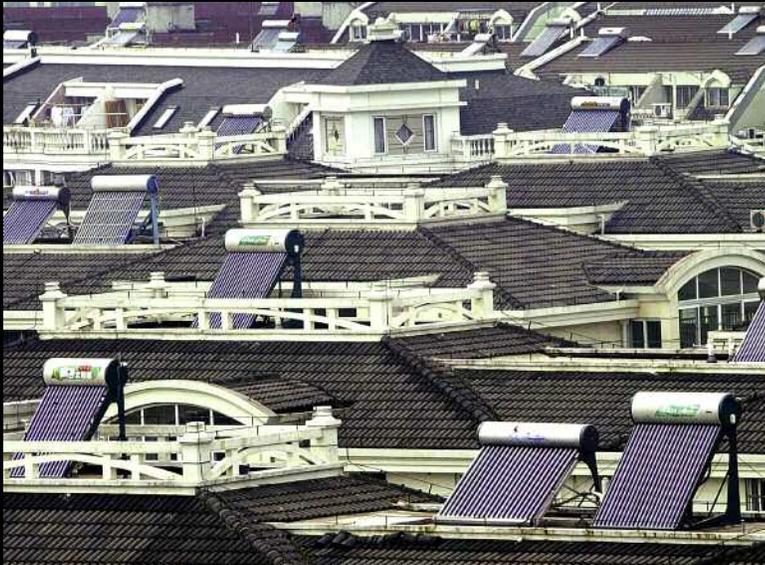


# ACHIEVING LOW CARBON GROWTH FOR THE WORLD

GUEST EDITORIAL  
BY LORD NICHOLAS STERN AND IAN NOBLE

THERE IS NOW A STRONG CONSENSUS EXPRESSED through the conclusions of the Intergovernmental Panel on Climate Change and other reports and the recent negotiations at the UN Climate Change Convention in Bali that the risks of inaction or delayed action on climate change are overwhelming; we possibly risk damages on a scale larger than the two world wars of the 20th century. The threat is particularly alarming for the world's poor people as inadequate responses to climate change would threaten progress on all the dimensions of the Millennium Development Goals.



Solar energy water heaters are installed on the roof of apartment buildings in Ningbo, Zhejiang province, China.



General view of the conference room during the meeting of the G8's Gleneagles Process on climate change and sustainable development held in September 2007 in Berlin.

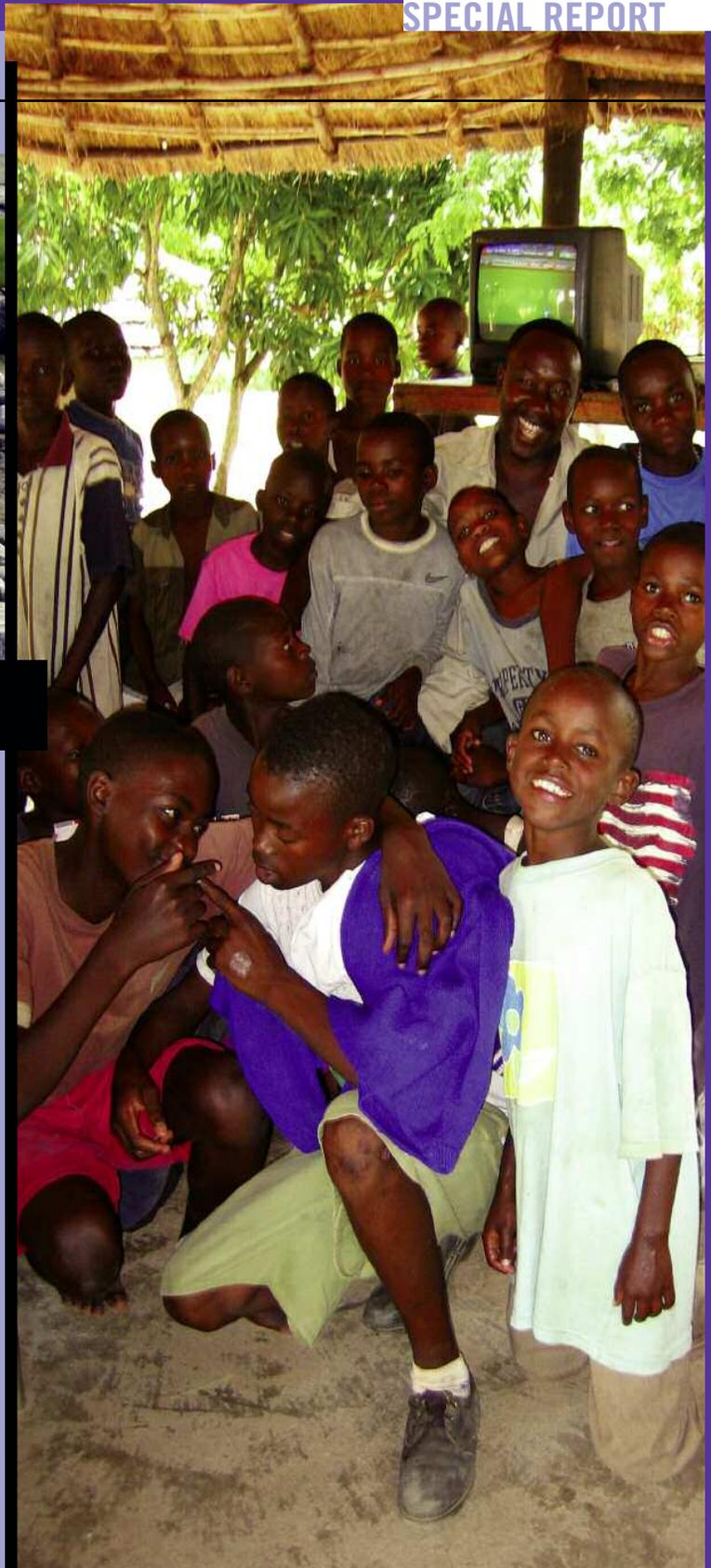
## KEY ELEMENTS FOR A GLOBAL DEAL ON CLIMATE CHANGE



River bank protection activities along the Brahmaputra River, Bangladesh, that completely dries up during the dry season and floods over during the rainy season.

The problem of climate change involves a fundamental failure of markets, namely that those who cause damage by emitting greenhouse gases generally do not pay. This global problem requires a collaborative, global response. Leadership, acceptance of differentiated responsibilities, emission targets and trading must be at the heart of any future global agreement to reduce greenhouse gas emissions.

Developed countries must lead the way in taking action by: adopting ambitious emission reduction targets of their own; promoting rapid technological progress to mitigate the effects of climate change; supporting programs to combat deforestation; encouraging effective market mechanisms; and honoring their aid commitments to the developing countries—all elements of the Bali Action Plan agreed to in December 2007 and summarized at the end of this report.



Solar-powered TV keeps these street children entertained in Northern Tanzania.

## Criteria for fighting climate change

GLOBAL ACTION TO FIGHT CLIMATE CHANGE must invoke three basic criteria:

The first is **effectiveness**. The scale of the response must be commensurate with the challenge, which means setting a stability target for emission reductions that keeps risks at acceptable levels. The overall targets of 50 percent reductions in global emissions by 2050 (relative to 1990) agreed to at the G8/G5 summit in Heiligendamm in June 2007 are essential if we are to have a reasonable chance of keeping temperature increases below 2 or 3°C. While these targets involve strong action, they are not overly ambitious relative to the risks of failing to achieve them.

Second, **efficient** means of keeping down costs of emission reductions must be implemented, using prices or taxes wherever possible. Each of the taxation and market mechanisms based on quotas or permits has its advantages and difficulties. Emission trading between countries, including rich and poor countries, will promote international efficiency, and helping poor countries cover their costs of emission reductions will give them an incentive to play a role in this global challenge.

Third, **equity** is a concern we need to take to heart, as the starting point for taking action is deeply inequitable. Wealthy countries are responsible for the bulk of past emissions, while it is the poor countries that will be hit earliest and hardest by climate change. Fixed targets are crucial for managing risk and even a minimal view of equity demands that the rich countries' reductions should make up at least 80 percent of these global targets. Currently, the US emits more than 20 tonnes of carbon dioxide (CO<sub>2</sub>) per capita per year, while Europe and Japan, with similar living standards, emit around 10 tonnes. China emits about five tonnes per capita, India around one and most of Africa much less than one. To reach a 50 percent reduction in global emissions by 2050, the world average per capita must drop from seven tonnes to two-three tonnes.



In the Bogra district of northwest Bangladesh, kids playing near the Jamuna River, which floods over during the monsoon season.

## Resources for three key elements

DEVELOPED COUNTRIES MUST ALSO PROVIDE resources, including funding, technology transfer and capacity building, for three key elements of a global agreement:

First, a coherent, integrated international program to combat deforestation, which contributes 15-20 percent of greenhouse gas emissions, should be established. For US\$10-15 billion per year, half of the deforestation could be prevented.

Second, technology development must be accelerated and methods to promote technology transfer found. Addressing carbon capture and storage (CCS) technology for coal is particularly urgent since coal-fired electric power will remain the dominant technology for some decades to come. However, industrialized countries must demonstrate that CCS works before developing countries can be expected to commit to this technology. For price support (ideally soon taken over by the carbon markets) of US\$5 billion a year, it should be possible to create 30 commercial scale coal-fired CCS stations within seven to eight years.

Finally, it is vital that extra resources be made available for new initiatives to help integrate adaptation into development as the extra costs developing countries face as a result of climate change are likely to be upwards of \$80 billion per year as soon as 2015. Developed countries should move quickly to honor their commitments of 0.7 percent of GDP in aid by 2015, which would yield flow increases of \$150-200 billion per year. All parties must also engage in discussions of how to implement their agreements in the UNFCCC that developed countries should *"assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects."*

The World Bank Group (WBG) has sought to provide leadership in each of these areas always within the context of the primacy of poverty reduction as the Group's *raison d'être*. At the climate conference in Bali, the Forest Carbon Partnership Facility was launched and it seeks to raise at least \$200 million

to build capacity and conduct demonstration activities to combat deforestation. In relation to technology transfer, the WBG is engaged in discussions with major donors to manage multi-billion dollar funds that will promote transformational change in low carbon technologies in the developing world. In the recent replenishment of IDA15—the WBG's highly concessional lending and granting program for the world's poorest countries—funding was increased by 42 percent to \$14 billion per year. This was partly in response to the Bank's submission that climate change will increase the resources needed to maintain levels of benefits from IDA by \$0.6 billion to \$1.9 billion per year. Comprehensive climate risk management in IDA projects will likely be the single largest source of funding for adaptation in least developed countries in the immediate future.

## Action is vital and urgent

ACTION IS URGENT if we are to avoid the stocks of greenhouse gases building to levels that involve unacceptable risks. We can control the flows of greenhouse gases, but any delay will build up more stocks, which are very difficult to remove, making actions to stabilize at acceptable levels much more costly.

Different countries will choose different instruments—such as taxes, trading and standards—and different technological mixes, but in all countries, energy efficiency is possible. Price mechanisms for greenhouse gases will be central to correcting the market failure, but the urgency and risk of the problem and inertia in behavior imply that policy must go further. This means bringing forward technologies, deepening an understanding of what responsible behavior means, overcoming other market failures that inhibit energy efficiency and innovation, and combating deforestation. With leadership and the right incentives on carbon finance and technologies, developing countries will engage in future global action, as already shown in Bali.

The building of a global deal and its enforcement will come from the willing participation of countries driven by the understanding that action is vital. Commitments are increasingly being demonstrated by political action and elections around the world, and this understanding is being reflected in the public demand for responsible action. It is this public demand that will promote and sustain action at the individual, community, national and international levels.

Demonstration of effectiveness, efficiency and equity in a global agreement will encourage all countries to pursue their development aspirations via low carbon growth. New technologies can create great opportunities and provide impetus for new growth. Low carbon growth is the growth strategy; weak action will eventually stifle growth. The costs of action are a small price to pay for the grave risks they would avert. ♣



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Note: Much of the material in this article was presented in 'Climate Change, Ethics and the Economics of the Global Deal' by Lord Nicholas Stern, the 2007 Royal Economic Society (RES) Public Lecture delivered at the University of Manchester 29 November and at Logan Hall, Institute of Education in London 30 November. See also his Richard Ely Lecture at the American Economic Association Meetings, 4 January 2008.

## A "GREEN" SUCCESS STORY IN BANGLADESH



Shidhulai Swanirvar Sangstha won first prize in the 2007 Ashden Awards for Education and Welfare. It was founded in 1998 to help poor, marginalized communities living in the remote Chalanbeel region of Bangladesh to develop sustainable livelihoods. Shidhulai has achieved this by building up a fleet of flat-bottomed boats, all made with locally available materials, that make their way through the shallow rivers and canals of the Chalanbeel to bring a range of educational services and renewable energy supplies to water-side families.

These boats use solar PV modules to generate all the electricity they need to provide daily classes in primary education for children, libraries, training in sustainable agriculture, health advice, mobile phone and internet access, and battery-charging facilities. Shidhulai has also provided villagers with 13,500 solar-home-systems, 2,500 lanterns and 15,000 bicycle pumps that deliver between 60 and 100 litres of water per minute—enough to irrigate half a hectare of land during the dry season.

By putting into practice the agricultural techniques they have learned on the boats and using the renewable energy devices, farmers have been able to significantly increase their income and reduce the use of synthetic pesticides, with about one third of farmers eliminating their use altogether.