

The rich, the poor and the planet

As climate talks approach a climax in Copenhagen, **Nicholas Stern** calls for decisive action to tackle the twin challenges of climate change and world poverty.

The 15th Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), taking place in Copenhagen in December 2009, provides the climax to two years of negotiations over a new global framework to limit concentrations of greenhouse gases and deal with those impacts that cannot now be avoided.

Such an agreement is urgently needed. Concentrations of carbon dioxide and other greenhouse gases in the atmosphere have reached 435 parts per million (ppm) of carbon-dioxide-equivalent, compared with about 280ppm before industrialisation in the 19th century. But emissions of greenhouse gases, primarily from the combustion of fossil fuels, are causing that atmospheric level to rise by about 2.5ppm per year, and that rate is rising.

If we continue with 'business as usual', concentrations could reach 750ppm by the end of the century, leading to a probable rise in global average temperature of five degrees or more compared with pre-industrial times. It has been more than 30 million years since the temperature was that high. Floods and droughts would be more intense and global sea levels would be several metres higher, severely disrupting lives and livelihoods, and causing massive population movements and inevitable conflict across the world.

Sensible risk management means preventing concentrations from exceeding 500ppm of carbon-dioxide-equivalent and stabilising below 450ppm to avoid a temperature rise of more than two centigrade degrees, which would cause very major impacts. The longer we delay in initiating strong action against climate change, the more difficult it will be to reach a safe level.

Developing countries recognise and are angered by the inequity of the present situation. Current greenhouse gas concentrations in the atmosphere are largely due to industrialisation in the developed world from the 19th century. Yet developing countries are the most vulnerable to the impacts of climate change, which threatens the economic growth that is necessary to overcome poverty. Climate change and poverty, the two defining challenges

of this century, must be tackled together. If we fail on one, we will fail on the other.

Annual emissions of greenhouse gases in 1990, the baseline for the UNFCCC, were about 38 gigatonnes of carbon-dioxide-equivalent. Within a couple of years from now, the annual total is likely to reach 50 gigatonnes. If we are to eventually reduce atmospheric concentrations to a stable level below 450 ppm and avoid a temperature rise of more than two centigrade degrees, we will need to cut emissions to below 35 gigatonnes in 2030 and less than 20 gigatonnes by 2050. The challenge facing the world is to meet these 'carbon constraints' while creating the growth necessary to overcome poverty. These two objectives can be met together, as they must, only by cutting emissions per unit of output.

Any credible trajectory for annual emissions over the next few decades towards the eventual target requires the biggest emitting countries to make substantial cuts. For China, continued growth means that emissions per unit of output must reduce by at least a factor of four by 2030.

The United States, European Union and other big emitters, given their own growth ambitions, must achieve similar reductions in emissions per unit of output and very significant cuts in emissions in absolute terms. If we consider that projections for 2050 suggest that the global population will be about nine billion, annual emissions per capita, on average, will have to be no more than around two tonnes of carbon-dioxide-equivalent if the global annual total is to be less than 20 gigatonnes. Per capita annual emissions in European Union countries today are about 10 to 12 tonnes, while in the United States they are nearly 24 tonnes.

Most of the developed countries have set targets of reducing their annual emissions by at least 80 per cent by 2050 relative to the UNFCCC baseline of 1990. They must show ambition, as well as realism about the domestic political challenges they face, in adopting and implementing demanding targets for 2020, 2030 and 2040, if they are to convince developing countries that they are on a credible route to the 2050 target.

Developing countries should receive substantial help and support from the rich nations for their plans for low-carbon economic growth and for adapting to the impacts of climate change that are now inevitable over the next few decades. Many now have ambitious investment plans. Developed countries should also show strong support for measures to halt deforestation in developing countries, which can make a major contribution to reducing emissions quickly and at reasonable cost.

Based on recent estimates of the extra needs of the developing world in a changing climate, rich countries should be providing annual financial support by the early 2020s of about US\$100 billion for adaptation and US\$100 billion for mitigation. These sums should be in addition to existing commitments on official development assistance.

Rich countries must demonstrate to the developing world that low-carbon growth is possible, through investments in new technologies which should also be shared with developing countries to boost their mitigation efforts. We are already seeing extraordinary innovation by the private sector which will drive the transition towards a low-carbon global economy. Ultimately, these technologies could drive growth through an economic transformation surpassing that of the introduction of electricity grids, the railways or the internet. It promises to create an era of progress and prosperity.

Investments in energy efficiency and low-carbon technologies could also pull the global economy out of the slowdown over the next couple of years, and the transition to low-carbon growth would create the most dynamic and innovative period in economic history. There is no real alternative. High-carbon growth is

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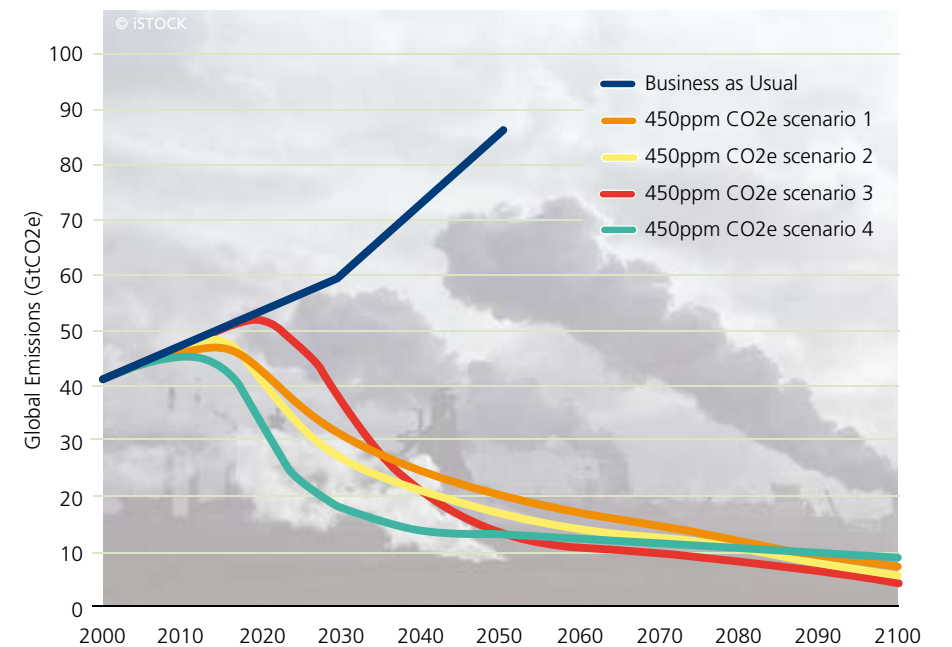
ALUMNI VIEWPOINT



Ahmed Abdel Latif on green technologies

Enhancing the transfer of green technologies, particularly to developing countries, is critical for global efforts to curb greenhouse gas emissions and a key element for reaching an agreement at Copenhagen this month.

Working for the Egyptian Foreign Service on the Global Environmental Facility Small Grants Program gave me a valuable insight into the practical difficulties facing the implementation of local renewable energy



Sensible risk management means stabilising below 450ppm of carbon-dioxide-equivalent. Various emission pathways to achieve this are shown above

doomed, crippled first by the high price of fossil fuels and ultimately killed off by the hostile physical environment that climate change would create. Low-carbon growth will be more energy-secure, cleaner, quieter and more bio-diverse.

We should learn from the events of the past year that if risks are ignored and allowed to mount, the eventual consequences are much worse. If we do not start to tackle the flow of greenhouse gas emissions now, the stock in the atmosphere will continue to grow, making future action more difficult and costly. Other public expenditure can be postponed, but delaying on climate change measures is a high cost, high risk option.

The framework for a strong international agreement is now clear. Emissions must be reduced from about 50 gigatonnes carbon-dioxide-equivalent today to less than 35 gigatonnes in 2035 and below 20 gigatonnes in 2050. Developed countries must commit to a credible and realistic path to reduce their collective emissions

by at least 80 per cent by 2050, compared with the UNFCCC baseline year of 1990. And they must provide financial support to developing countries of US\$100 billion for adaptation and US\$100 billion for mitigation by the early 2020s, over and above commitments on official development assistance.

Climate change poses a profound threat to our economic future while low-carbon growth promises decades of increased prosperity. The choice in Copenhagen is stark and the stakes could not be higher. We know what we must do and we can do it. ■



Nicholas Stern

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projects in developing countries, such as the installation of a wind turbine in a village.

At the Geneva based International Centre for Trade and Sustainable Development (ICTSD), where I now work, our initiative on Climate Change Technology and Trade, launched in June 2008, brings together experts and policymakers to identify ways of enhancing the transfer of climate related technology to developing countries and suggest concrete measures to take this forward.

To address the lack of empirical data on intellectual property rights and green technologies, the United Nations Environment Programme, the European Patent Office and ICTSD have formed a unique partnership to deliver a patent landscape in the area of energy generation, a survey of licensing practices in the same

area and a database containing patent information on green technologies. Initial findings will be presented at Copenhagen.

Enhancing the transfer of green technologies to developing countries is one of the most formidable challenges facing the international community at this critical juncture. International cooperation in this area requires intensified efforts as well as innovative solutions and partnerships.

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