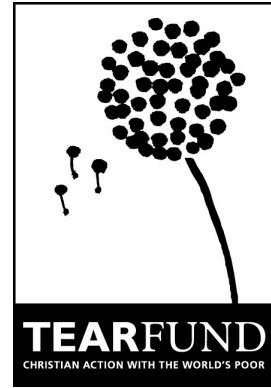


STERN REVIEW

Tearfund comments on 'What is the economics of climate change?'

March 2006



Part One - The Science and International Response

The framework for the review must be within the context of scientific realities. The evidence suggests we must limit global temperature increases to a maximum of 2°C above pre-industrial levels. This boundary requires a global emissions cap to be set, in line with the purpose of the UNFCCC – ‘*stabilising greenhouse gas (GHG) emissions in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system*’ (Article 2). The current science suggests that this cap needs to be around 400-450ppm, and that emissions need to peak and decline within the next 10-15 years. In turn, annual reductions in greenhouse gases globally will need to be achieved. An analysis of the economic costs of climate change must be set within the context of the scientific limits already acknowledged.

This means that the UK (along with other developed countries), must in absolute terms start to cut CO₂ now and continue to do so for several decades. This action does not need to wait for international commitments to be agreed (see below) but in fact the UK can take a lead by cutting its emissions within an effective framework. A UK carbon budget is the simplest and potentially most effective framework for guaranteeing absolute carbon cuts. The UK therefore needs to set a budget on the basis of scientific evidence (3% per year). It should take the form of a simple framework within which declining absolute carbon emissions limits can be set, measured and reported on, and policies to achieve those cuts can be developed and deployed. This will require achieving policy coherence across the UK government. Within such a framework the UK Government must encourage behavioural-change at all levels of society towards meeting national targets, through tax incentives, effective education and awareness-raising.

Internationally, commitments need to be strengthened under the Kyoto Protocol in line with certain principles:

- Global and equitable - The Kyoto protocol is currently only applicable to industrialised countries. The rationale was that in line with the ‘polluter-pays principle’ developed countries ‘take the lead’ in tackling climate change because they are mainly responsible for it: the G8 are responsible for around 50% of world CO₂ emissions. Developed countries must continue to take the lead, however a global problem does require a global solution, and all countries ultimately will need to come on board if climate change is to be tackled effectively. Developing countries must participate in mitigating climate change within a managed and equitable framework and so more collaborative action at UNFCCC ‘COP/MOPs’ (in the form of the equitable participation of developing countries in climate change mitigation processes) is needed.
- Long-term and effective – the UNFCCC must stick to its own principle of ‘preventing dangerous interference’ by firstly setting a scientifically-agreed, global cap on greenhouse gas concentrations. The target, and the global carbon budget it implies, must then form the framework for an equitable global distribution of emissions permits.

Paragraphs 28–32: Likely impacts of climate change on people and livelihoods

1. The paper emphasises future likely impacts. However there are already significant impacts of climate change being reported that need to be acknowledged. Whilst Tearfund is able to provide anecdotal evidence (see dried up, drowned out), there is also documented scientific evidence that climate change is already causing considerable impacts in the developing world. [e.g. Nyong, T. 2005 - Impacts of Climate change in the Tropics: The African Experience (http://www.stabilisation2005.com/Tony_Nyong.pdf); Patz, J. et al, 2005. Impact of regional climate change on human health. Nature Vol 438.]
2. The paper states in paragraph 30 that ‘modern society is potentially quite vulnerable.’ However modern society *is* already very vulnerable. We already know this is the case in the developing world. For example 98% of those killed and affected by natural disasters come from developing countries. In highly developed nations 44 people die per reported disaster, while each disaster in countries of low human development claims an average of 300 people¹.
3. The paper picks out specific regional examples to illustrate the impacts of climate change but does not refer to some of the broader serious impacts. For example paragraph 28 refers to water shortages, but in the context of snow and glacier melt, not referring to changing rainfall patterns and drought. Paragraph 31 mentions declining agricultural yields, but does not give the reason for this - again, partly changes in rainfall variability. This phenomenon of changing rainfall patterns and subsequent impact on growing seasons is being highlighted to us by farmers from all over the world. In addition health impacts are not mentioned at all, for example the result of temperature increases extending disease vector habitats like malaria. It is estimated that the warming and precipitation trends due to anthropogenic climate change already claim 150 000 lives each year (see Patz, 2005 mentioned above).

Part Two: Key challenges for the economics of climate change

Paragraph 57

Bullet point one states the following:

- *First, we discuss the potential consequences for growth and development in both rich and poor countries of different paths of climate change. This is generally characterised as the issue of adaptation.*

However, this description of adaptation needs some clarification as it may be open to misinterpretation and could affect consequent analysis. Adaptation is defined by the Intergovernmental Panel on Climate Change as: *Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.* (IPCC)

There are obviously consequences for growth and development that will occur directly as a result of climate change. Responding to these consequences is ‘adaptation’ (which itself may have consequences for growth and development as it requires a new model of development).

For the purposes of this review it is important that there is a clear distinction between the following, as each of these issues will have associated costs:

- the *effects* of climate change (including potential consequences for growth and development)
- *responding* to these effects (adaptation)
- reducing the effects through addressing the *cause* of climate change (mitigation)

¹ International Federation of Red Cross and Red Crescent Societies, World Disasters Report 2002

Paragraph 66

The paragraph states the following:

- *However, adaptation can be complex – there are no unique solutions, costs can vary widely and many of the methods are still in their early stages of development.*

Whilst it is true that in some cases adaptation is complex, there are also examples of adaptation that are simple, inexpensive and well-developed, and it would be good to reflect this balance. For example, when dealing with the uncertainties of climate change, reducing vulnerability to today's climate through disaster risk reduction is an excellent method of building adaptive capacity for the future. Communities can be protected from disasters cheaply and simply - tools and methodologies are well developed and can be employed immediately in vulnerable countries and communities (see the box below for an example). Moreover, the cost-effectiveness of such measures has been demonstrated using cost-benefit analysis (see Venton and Venton, 2004. Disaster preparedness programmes in India, A cost benefit analysis. <http://www.odihpn.org/documents/networkpaper049.pdf>).

Flood mitigation and preparedness in North India

Since 2002, Tearfund partner organisation Discipleship Centre (DC) has been working with five villages in Bihar, North India to reduce their vulnerability to flooding. The villages are socially and economically poor and geographically isolated, so government aid programmes do not reach them. For three months of every year, they are subject to monsoon flooding which frequently destroys lives, livestock, houses and property.

Before DC's programme began, the people had no safe route out of the five villages to escape rising flood waters. There was no unity within or between villages so everyone looked after themselves, rescuing possessions, livestock and people in a haphazard, disorganised manner. Boats for rescue purposes had to be hired from local landlords, or banana stems were floated on the water as makeshift rafts. The flood waters submerged and clogged hand pumps so that the villagers had no safe water and were forced to drink from the river. Flood-related diseases were common.

The people wanted to improve their situation so Discipleship Centre mobilised each village to form a Village Development Committee (VDC) and four teams of volunteers which were trained in flood preparedness. The VDCs oversee the teams, which have different responsibilities in the monsoon season relating to early warning and evacuation, management of boats, resource mobilisation and care of the vulnerable. The teams have a recognised uniform, and meet on a regular basis to learn first aid and practice evacuation procedures. Discipleship Centre also mobilised the village communities to build raised embankments to connect the villages to each other and to the main road, providing an escape route out during the flood season. Culverts were also built to reduce water pressure, and tube wells with raised hand pumps were constructed to guarantee safe drinking water when flood levels rise.

These measures have proved effective in saving lives and property. The monsoon floods in 2003 were severe but no lives were lost to drowning or flood-related illness, and very few livestock perished. The villagers frequently comment on the difference the measures have made to their lives: "In the past we all used to dread the flooding season...because we did not know if we would survive. Now we have peace because all the people know they can save themselves".

The project has had other unexpected benefits. The rescue boats are generating income through being hired out for other purposes, and the raised embankment is providing a valuable connection to the main road for trading. The villagers have learnt the value of community cooperation, and developed confidence and leadership skills. They are more aware of their needs and their potential to meet these needs, and as a result are now collecting money for a school.

Discipleship Centre places a strong emphasis on community mobilisation and use of local knowledge in their flood programme. With a small amount of outside assistance, the villagers are able to cope with the floods they have lived with all their lives. As one villager commented: "We could have done this 50 years ago but no-one showed us how".

In addition, it is vital that adaptation to climate change occurs in the context of sustainable development. Thus climate change risk factors and adaptive responses must be factored into development project planning and design at all levels including national cross-sectoral poverty

reduction strategies (e.g. PRSPs), as well as sectoral strategies including those relating to land and water management, agriculture, rural development, health and education, disaster management etc. Ensuring this occurs is a challenge for the use of the adaptation funds set up under the UNFCCC and Kyoto Protocol, but is consistent with recent agreements made in Montreal, and the Commission for Africa recommendation that donors should make climate variability and climate change risk factors an integral part of project planning and assessment by 2008.

The above point raises another important issue. Climate change makes the need to address existing problems such as the failure to implement the Rio principles of sustainable development, the lack of sustainable natural resource management and the related absence of effectively functioning health, water and agriculture sectors in many countries even more urgent. Thus, where resources are not already being managed according to sustainable development principles, the apparent costs of adapting to climate change will be much higher. Whilst these costs rightly need to be factored in, it should be acknowledged that they are not necessarily 'extra' costs specifically arising in light of climate change adaptation.

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