

<b>Institution: London School of Economics and Political Science</b>
<b>Unit of Assessment: 18: Economics and Econometrics</b>
<b>Title of case study: Designing a global agreement on climate change finance</b>
<p><b>1. Summary of the impact</b> (indicative maximum 100 words)</p> <p>Research undertaken primarily by Nicholas Stern, together with LSE colleagues, has had a significant impact on the negotiations between Parties to the United Nations Framework Convention on Climate Change (UNFCCC). The research has helped to bring about an agreement that rich countries should provide \$100 billion a year by 2020 for adaptation to and mitigation of the effects of climate change in developing countries. It has also provided an understanding of the sources through which this sum should be raised.</p>
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>RESEARCH INSIGHTS AND OUTPUTS:</p> <p>The 13th session of the Conference of the Parties (COP13) to the United Nations Framework Convention on Climate Change in December 2007 adopted the Bali Action Plan, which set out a number of key issues to be agreed at the 15th session (COP15) in 2009. These included 'enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation and technology cooperation'. In the run-up to COP15, Stern and colleagues carried out research into the required scale, nature and potential sources of such support for developing countries.</p> <p>Stern (1) pointed out that managing the huge risks of climate change would require a reduction in annual global emissions of greenhouse gases by at least 50% by 2050. Firm commitments by developed countries to reduce their emissions of greenhouse gases would be a necessary, but not sufficient, prerequisite for an efficient, effective and equitable international agreement to manage the risks of climate change. As eight billion people of the projected global population of nine billion by 2050 would be living in what are today considered to be developing countries, rich countries, given their responsibilities, would need to provide additional assistance to pay for the greater costs of development caused by climate change.</p> <p>Stern's 2008 study (which was based on his Richard T. Ely Lecture to the American Economic Association and written after Stern re-joined the LSE in 2007) estimated that if rich countries delivered on their previous commitment to provide 0.7% of their GDP as official development assistance, at least \$80 billion a year extra would be required to help developing countries adapt to the impacts of climate change. Zenghelis and Stern (2) proposed an expansion of existing emissions baseline-and-credit schemes between rich and poor countries, such as the Clean Development Mechanism, which could generate annual flows of \$20-75 billion by 2020.</p> <p>Stern (3), which built on Stern (1) and was written for a general audience and published in a number of languages, estimated that rich countries should be providing \$130 billion a year in public funding to support both adaptation and the transition to low-carbon economic growth in developing countries, while flows of a further \$100 billion from rich to poor countries could be generated by developing carbon markets by the 2020s. He argued that the \$100 billion in public funding represented just 0.3% of the GDP of rich countries, and should be additional to existing overseas aid commitments.</p> <p>Stern (3) also highlighted the importance of carbon taxes or auctioning of permits as sources of revenue that would also create an incentive to reduce emissions. He suggested that carbon pricing should not only be applied by national governments to their domestic emissions, but also that it should be extended to international shipping and aviation.</p> <p>Stern (4), which was published just ahead of COP15, noted that the UK Prime Minister, Gordon</p>

Brown had proposed that developing countries should receive financial support of \$100 billion a year by 2020, and suggested that for such a commitment to be viewed as credible, about \$50 billion a year would need to be delivered by 2015, equivalent to 0.1% of rich countries' GDP.

KEY RESEARCHER: Lord Stern has been a Professor of Economics at LSE since 2007.

### 3. References to the research (indicative maximum of six references)

1. Stern, Nicholas (2008) 'The Economics of Climate Change', *American Economic Review* 98: 1-37. DOI: 10.1257/aer.98.2.1
2. Zenghelis, Dimitri and Nicholas Stern (2009) 'Principles for a Global Deal for Limiting the Risks from Climate Change', *Environmental and Resource Economics* 43: 307-11. DOI: 10.1007/s10640-009-9277-5
3. Stern, Nicholas (2009a) *A Blueprint for a Safer Planet*, London: The Bodley Head.  
<http://eprints.lse.ac.uk/35716>
4. Stern, Nicholas (2009b) 'Deciding our Future in Copenhagen: Will the World Rise to the Challenge of Climate Change?' *Policy Brief*, December, Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy. DOI: 51574

*EVIDENCE OF QUALITY:* two papers in top-ranked journals. The Richard T. Ely Lecture [1] is arguably the highest profile lecture in the calendar of the Economics profession. Grants that have supported this research: Grantham Foundation for the Protection of the Environment, core funding of the Grantham Research Institute on Climate Change and the Environment (£12.6m, 2008-18): ESRC Research Centre grant, Centre for Climate Change Economics and Policy (£5.8m, 2008-13).

### 4. Details of the impact (indicative maximum 750 words)

**NATURE OF THE IMPACT:** Stern developed dialogues on climate finance during 2008 and 2009 with a number of leaders and ministers in key countries, outlining the case for significant funding for developing countries. In June 2009, the UK Prime Minister, Gordon Brown (Brown, 2009: Source A), announced his support for a fund to provide \$100 billion a year from the rich countries to developing countries by 2020.

Stern worked closely with the Ethiopian Prime Minister, Meles Zenawi, ahead of the UN climate change conference in Copenhagen in December 2009 on the development of a proposal to be presented at the negotiations to commit rich countries to providing \$50 billion by 2015 and \$100 billion by 2020, and to establish a mechanism through which to explore potential sources. The Times newspaper noted: 'The compromise was brokered by Lord Stern of Brentford, the leading climate change economist, who has been advising the Ethiopian and British delegations in Copenhagen' (Webster, 2009: B). Prime Minister Meles put forward the proposal on 16 December 2009, and it received the backing of the United States and other countries in the following days (Goldenberg, 2009: C). Although no comprehensive international agreement was reached at COP15 in Copenhagen, the Copenhagen Accord, which has been agreed by 141 Parties and noted by the other Parties, included the following statement (UNFCCC, 2009; D):

'Scaled up, new and additional, predictable and adequate funding as well as improved access shall be provided to developing countries, in accordance with the relevant provisions of the Convention, to enable and support enhanced action on mitigation, including substantial finance to [R]educe [E]missions from [D]eforestation and forest [D]egradation - REDD-plus, adaptation, technology development and transfer and capacity-building, for enhanced implementation of the Convention. The collective commitment by developed countries is to provide new and additional resources, including forestry and investments through international institutions, approaching \$30 billion for the period 2010–2012 with balanced allocation between adaptation and mitigation. Funding for adaptation will be prioritized for the most vulnerable developing countries, such as the least

developed countries, small island developing States and Africa. In the context of meaningful mitigation actions and transparency on implementation, developed countries commit to a goal of mobilizing jointly \$100 billion dollars a year by 2020 to address the needs of developing countries. This funding will come from a wide variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. New multilateral funding for adaptation will be delivered through effective and efficient fund arrangements, with a governance structure providing for equal representation of developed and developing countries. A significant portion of such funding should flow through the Copenhagen Green Climate Fund.'

In February 2010, the UN Secretary-General announced the establishment of a High Level Working Group on Climate Change Financing, to be chaired by Ethiopian Prime Minister Meles and Prime Minister Brown (later replaced by Prime Minister Stoltenberg of Norway), and including Stern among its members. The Group was asked to undertake a study on potential sources of revenue for the scaling up of new and additional resources from developed countries for financing climate change mitigation and adaptation activities in developing countries. Stern contributed to a number of analytical papers about different potential sources of revenue, which were produced to inform the deliberations of the Group.

The Group's final report was published in November 2010 ahead of the 16th session of the Conference of the Parties to the UNFCCC in Cancún, Mexico, concluding that it was 'challenging but feasible' to meet the goal of providing developing countries with \$100 billion a year from public and private sources by 2020. The report emphasised the importance of a carbon price in the range of \$20-25 per ton of carbon-dioxide-equivalent as a key element of reaching the target (United Nations, 2010: E). The Parties at COP16 acknowledged the work of the Group and incorporated the commitments by rich countries to provide \$30 billion between 2010 and 2012, and \$100 billion a year by 2020, as well as establishing a new Green Climate Fund to facilitate some of the financial transfers to developing countries (UNFCCC, 2011: F). The 17th session of the Conference of the Parties (COP17) to the UNFCCC, in Durban in December 2011, established a work programme on long-term climate finance, drawing on the work of the High Level Advisory Group on Climate Change Financing, to explore how to scale up the \$30 billion fast-start finance provide between 2010 and 2012 to meet the target of \$100 billion a year by 2020 (UNFCCC, 2012: G).

By the end of 2012, developed countries reported that they had exceeded their fast-start finance goal (CFU, 2013: H). Overall, in the words of Andrew Steer (2013: Source I): 'There is no doubt that Lord Stern's work has had a more important impact on climate finance developments than any other body of work. I was Director-General in the UK Department for International Development (DFID) at the time of the Copenhagen climate negotiations ... The commitment of advanced countries to provide \$100 billion per year for climate investments in developing countries owes much of its intellectual basis to Lord Stern. ... The High Level Commission on Climate Finance set up by Ban Ki Moon and chaired (initially) by PM Gordon Brown [UK] and PM Meles Zenawi [Ethiopia] was, in many ways, an outcome of Stern's research and influence. During the course of that High Level Panel's work Lord Stern was the dominant intellectual leader, drawing upon the results of his research program'.

**WHY THE IMPACT MATTERS:** The potential cost of climate change if nothing is done is conservatively estimated at several percentage points of global income, averaged over location, time, and possible outcomes. The potential global temperature increases that could arise from inaction have not been seen on the planet for millions or tens of millions, of years and are way beyond the experience of homo sapiens. Such changes could involve the movement of hundreds of millions of people and severe and extended conflict. Stern's analyses of potential impacts, and possible responses, have contributed significantly to – and on key occasions led – the agenda for addressing the problem.

These risks, and how they can be radically reduced, matter for investment reasons (spending now reduces the future costs of climate change); they matter for insurance reasons [J]; and they matter for reasons of distributive justice: '[e]ven if environmental costs were distributed equally ...

developing countries would still bear 80% of the burden (because they account for 80% of world population). As it is, they bear an even greater share, though their ... carbon footprints are much smaller' [K].

#### 5. Sources to corroborate the impact (indicative maximum of 10 references)

All Sources listed below can also be seen at [https://apps.lse.ac.uk/impact/case\\_study/view/105](https://apps.lse.ac.uk/impact/case_study/view/105)

A. Brown, G. 2009. 'Roadmap to Copenhagen' speech, 26 June 2009.

<http://webarchive.nationalarchives.gov.uk/20090706064025/http://www.number10.gov.uk/Page19813%2020>

B. Webster, B. 2009. 'Africa lowers sights to boost hopes of doing cut-price deal in Copenhagen', *The Times*, 17 December. <http://www.thetimes.co.uk/tto/news/world/article1844528.ece>

C. Goldenberg, S. 2009. 'US bids to break Copenhagen deadlock with support for \$100bn climate fund', *The Guardian*, 17 December. <http://www.guardian.co.uk/environment/2009/dec/17/us-copenhagen-100bn-climate-fund>

D. UNFCCC 2009. 'Copenhagen Accord'. In: Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009. Addendum. Part Two: Action taken by the Conference of the Parties at its fifteenth session.

<http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>

E. United Nations 2010. Report of the Secretary-General's High-Level Advisory Group on Climate Change Financing.

[http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/AGF\\_reports/AGF%20Report.pdf](http://www.un.org/wcm/webdav/site/climatechange/shared/Documents/AGF_reports/AGF%20Report.pdf)

F. UNFCCC 2011. 'The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention'. In: Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010. Addendum. Part Two: Action taken by the Conference of the Parties at its sixteenth session.

<http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>

G. UNFCCC 2012. 'Outcome of the work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention'. In: Report of the Conference of the Parties on its seventeenth session, held in Cancun from 29 November to 10 December 2010. Addendum. Part Two: Action taken by the Conference of the Parties at its seventeenth session.

<http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf>

H. Climate Funds Update 2013. <http://www.climatefundsupdate.org/global-trends/fast-start-finance>

I. Available from LSE: one endorsement from each of a developed country (a former special advisor to Gordon Brown), a developing country (chief economic advisor to the late Ethiopian Prime Minister, Meles Zenawi), and an international financial institution (former Special Envoy for Climate Change at the World Bank). (This source is confidential)

J. Governments should act not on the basis of the likeliest outcome from climate change but on the risk of something really catastrophic. (2006, November 2). *The Economist*. Retrieved from

<http://www.economist.com/node/8108221>

K. A bad climate for development. (2009, September 17) *The Economist*. Retrieved from

<http://www.economist.com/node/14447171>