

Preface

This book is based on the Lionel Robbins Lectures given at the London School of Economics and Political Science in February 2012. These are a high-profile set of annual lectures named in honor of the great economist, who was a professor at the School and a key figure in the creation of its economics department in the 1920s and 1930s.¹ There is also a personal connection in that he was President of the British Academy (1962–1967) and I am one of his successors in that role (as it happens, the first economist and the first from the LSE since his time). There is thus no apology for a strong focus on the economics. That said, I have tried to make the book's argument as accessible as possible to a wide audience. Moreover, I have tried to illustrate the connections between economics and other disciplines, particularly science and ethics. Further, policy to manage climate change and promote growth and reduce poverty necessarily involves the analysis of fundamental change, and this will inevitably require an examination of politics and political economy. And within economics we must be broad, from economic history to behavioral economics and game theory.

The work takes forward the analyses, approaches, and perspectives set out in *The Stern Review*, published online at the end of October 2006 and in book form in January 2007, and my April 2009 book *A Blueprint for a Safer Planet* (titled *The Global Deal* in the US). The first of these was focused on the argument that the costs and risks of inaction far exceed the costs and risks of action, and on analyzing policies and opportunities for mitigation and adaptation. *Blueprint*, published eight months before the major international climate change conference in Copenhagen in December 2009, concentrated on the agenda for an international agreement. A second purpose of that book was to make some of *The Stern Review* (it was 692 pages and long on detail) more accessible.

Much of great significance has happened in the world since *Blueprint* went to press in November 2008, just after Barack Obama was elected president of the United States of America and two months after the collapse of the Lehman Brothers investment bank. The length and depth of the global financial crisis has and will have a profound effect on the world economy and on short- and medium-term political priorities. And it turned out that President Obama was not able or willing to prioritize climate change during his first term in office.

November 2009, shortly before the Copenhagen gathering, saw the release of the emails from the Climatic Research Unit of the University of East Anglia (UEA), and some tried to draw the implication that parts of their data were “doctored.” Three UK inquiries and five US investigations all showed in different ways that this implication was false.² There are a number of independent research results which provide similar data to those of the UEA. The science builds on serious enquiry and basic physics going back almost 200 years. Nevertheless, that episode, in the eyes of some of the public, saw the credibility of the science suffer damage. The onslaught changes form and emphasis from time to time but has not ceased. Just as the assault on the relation between smoking and illness continued for a long time—the vested interests are powerful—we should not expect these attacks on the science to go away any time soon.

The December 2009 Copenhagen conference itself—more formally, the 15th Conference of the Parties (COP 15) to the United Nations Framework Convention on Climate Change (UNFCCC)—despite the presence of the major world leaders, yielded disappointing results. In the end, while it made some progress, it was chaotic and quarrelsome and represented a missed opportunity. Nevertheless the “Copenhagen Accord” thrown together at the last minute by leaders in Copenhagen became the basis for the agreement in Cancún one year later.

Notwithstanding setbacks, action has strengthened in emerging and developed countries. And in richer countries too there has been progress, even though the financial and economic crises have brought some wavering. There are important advances, for example, in China and in Indonesia, Brazil, Mexico, South Africa, and Ethiopia. In addition, progress on crucial technologies like renewable energy has moved much more strongly (and more quickly) than was anticipated in 2005–2006, when *The Stern Review* was written. Further, we have learned much from experience with

different kinds of policies such as carbon pricing and feed-in tariffs. And we have learned much more about the severe health costs of the air pollution arising from the burning of fossil fuels, particularly coal and diesel.

Advances have taken place in international UNFCCC COPs, all of which I have attended since 2006 (Nairobi 2006, Bali 2007, Poznań 2008, Copenhagen 2009, Cancún 2010, Durban 2011, Doha 2012, Warsaw 2013, Lima 2014). While there have not been dramatic breakthroughs, Cancún laid important foundations. Perspectives have continued to change and there is a clear recognition, since Durban, that there is a large “emissions gap” between countries’ current emissions reduction intentions and what is necessary to have a reasonable chance of holding to a 2°C increase (in global average surface temperature relative to the middle of the nineteenth century).³ Thus while there has been action, it is much too slow. This 2°C was the target internationally agreed at Cancún, accepted by the scientific community as the temperature above which climate change should be seen as “dangerous,” in part because of the uncontrolled cumulative effects and feedbacks that could occur.

Meanwhile the science, as well as providing still stronger evidence on causation, has also given rise to implications that are more and more worrying. Emissions go on rising, the absorptive capacity of the planet and its atmosphere, particularly the oceans, may be less than had been estimated, and many of the changes, such as the melting of the Arctic ice, are proving more rapid than anticipated previously. From projections made on the basis of current plans or trajectories of different countries, we could be heading to a median increase of 4°C, a temperature not seen on the planet for tens of millions of years. Its consequences could be catastrophic.⁴ On the science, I have had the opportunity to take account of the very valuable fourth (2007) and fifth (2013/2014) assessment reports of the IPCC, both published since *The Stern Review*.

This book reflects the changes that have occurred and what we have learned over the years since *The Stern Review* and *Blueprint*, while retaining from this previous work the basic tripartite focus which must guide action on climate change: analyzing the risks and costs of inaction; analyzing the possibilities for action and change, and the costs and benefits of different forms of action; and examining or charting feasible and desirable courses for international cooperation.

After Copenhagen I have been closely involved in two major initiatives to try to move forward the analysis of, and considered action on, climate change. The first was as a member of the UN Secretary-General's High-Level Advisory Group on Climate Change Financing, which began work in early 2010 soon after Copenhagen and was chaired by Prime Minister Meles Zenawi of Ethiopia and Gordon Brown (until June 2010) and Jens Stoltenberg (after June 2010), prime ministers of the UK and Norway, respectively. It produced at the end of 2010 some clear recommendations on how funds could be raised for financing flows from richer to poorer countries. This was prompted by the proposal in the Copenhagen Accord for \$100 billion in such flows per year to help fund investment in mitigation and adaptation for climate change in poorer countries. Meles Zenawi and I played a strong role in negotiating that proposal into the accord in Copenhagen.

The second, in 2013–2014, is as the co-chair of the Global Commission on the Economy and Climate chaired by Felipe Calderón, the president of Mexico until late 2012, who presided over the successful COP 16 in Cancún (where I had the pleasure of working closely with him). I am also chair of the Economic Advisory Panel to this commission. This commission has, in my view, produced some very thorough and valuable work, under the leadership of Jeremy Oppenheim, on how the coming transformation of the world economy over the next two decades can be combined and interwoven with action on climate change to produce both strong growth and powerful acceleration of action on climate change. There is a remarkable coincidence of two coming periods, each of two decades or so: the first of fundamental structural change in the world economy, and the second, the time when the opportunity to hold to 2°C could be seized or lost. That these two periods coincide presents both opportunity and time for decision. We can take the opportunity or we can lose it.

The world output in that time will likely approximately double, there will be a surge of population into the cities, world population will rise from 7 billion to more than 8 billion, and the future of the world's forests and land areas will be profoundly shaped as population and incomes rise. At the same time, the rapid shift of economic activity from developed countries to emerging and developing countries will continue: in the

mid-1980s developed-country proportion of world output was around two-thirds and it is now around a half. Twenty-five years or so from now it will likely be around one-third. And much of the world's energy system will be created or renewed.

If the world manages that transformation well, with rising resource efficiency, robust, clean and smart infrastructure, and strong innovation, most of what is necessary for climate change will be achieved at the same time. Thus the story is not a generalized one of “green growth”; it is a much more particular one of transformation over a specific and crucial period of profound structural change. The report of the Global Commission on the Economy and Climate, titled *Better Growth, Better Climate: The New Climate Economy Report*, was published in the middle of September 2014. It is reflected at a number of points throughout this book and is central to an understanding of what new and more sustainable paths could look like and how they could be achieved.

The *New Climate Economy Report* fed directly into the Climate Summit in New York in late September 2014, which was attended by many of the world's presidents and prime ministers. It was called by the Secretary-General of the United Nations to provide sufficient lead time for high-level discussion ahead of the Paris COP 21 of November/December 2015, where there will be an attempt to put together an international agreement. This is in a sense another go at achieving what was tried at Copenhagen.

The intervening six years have brought much experience and technological advances, as described in this book. And in some respects, international discussion is more mature, with some sharing of assessments and principles for international action. The change during this time in the policies and plans of China, by far the world's largest emitter, is of profound importance. But many disagreements remain, and there is a long way to go before agreement can be established. Of course, time does not stand still while international discussions take place, and there has been strong progress in a number of countries in addition to China. That progress would be much faster, however, if an international agreement were in place.

I hope that this book, alongside the *New Climate Economy Report*, makes a contribution to the shared understanding of issues and principles

which is a vital part of international agreements. The discussion must include analysis of both the risks of taking little or no action and the potential for finding different and more sustainable paths. And it must include analysis of and principles for equitable and cooperative ways forward, or in the language of the Cancún agreement in December 2010, “equitable access to sustainable development.”

This is also, however, a book on economics in the tradition of, and in honor of, the great economist Lionel Robbins. Thus it is built, in large part, on economic principles. It begins with the science and how we can understand the immense risks, and the processes that lie behind them, that unmanaged climate change could bring. It considers appropriate ways of thinking about, and principles for, acting on such risks. We have to consider the ethics, both across generations and within generations, for analyzing and assessing different paths where the risks are potentially very large and where many of the consequences of decisions appear in what might seem the distant future. We could, through neglect, be facing a transformed and impoverished world a century from now. Most frameworks of economic analysis which are used by economists for the “normal” problems of the day are not equipped to grapple with such decisions, and many attempts to do so have been cavalier, misguided, and often wrong.

A considered analysis of the economics of these decisions cannot avoid careful examination of the principles of moral philosophy and the ethical principles that can arise from its different strands. And it is important to examine a number of approaches, as we cannot assume or assert that just one is relevant or acceptable. When we do this, we find that most of them point in the same direction, to strong action on climate change. Notwithstanding the great risks and the long time horizons, we can find a secure foundation for economic and political decision-making.

International cooperation too must be examined both from the perspective of ethics and equity and from those of practical politics of international interaction, interpretations of self-interest, and assumptions about what others are doing or might do. And we have to consider how opinions form and how they might change. All this inevitably leads us to some game theory and behavioral economics. We have to think too about political economy and political movements or pressures; also about leadership.

The second purpose of this book is therefore to contribute to the whole range of fascinating and deep economics that these difficult questions raise. In so doing I draw on some of my own research over the last few years, including some which followed the Lionel Robbins Lectures and was prompted in part by ideas arising from those lectures.

The above description of developments in the world economy, politics, and emissions, in technology, in the evidence on the science and on health, explains how my ideas have deepened and changed since *The Stern Review* and *Blueprint*. The scientific analyses of the continuing dependence on burning hydrocarbons look still more worrying, underlining that the questions must be framed in terms of the management of immense risks and that delay is dangerous. I would emphasize this still more strongly than in the earlier work, and place less focus on narrow frameworks of cost-benefit analysis, which often leave out or trivialize the big risks.

Technological progress in low-carbon activities has been remarkable since *The Stern Review* was published. The price of solar and wind electricity has plummeted, most big car makers are producing electric cars, and lighting has become far more efficient, to name just three. These changes have transformed cost comparisons and investment opportunities. At the same time, there has been technical progress in hydrocarbons, including so-called unconventional oil and gas, and these changes are also discussed in this book.

I now see the story of alternative low-carbon paths as still more exciting and full of opportunity, given the coming together of phenomenal technical progress and structural transformation. Thus I would place still more emphasis on a Schumpeterian interpretation of learning, rapid technological change, and radical change in structure. This embodies a still more dynamic and structural approach to growth and development than in *The Stern Review*.

This book also emphasizes more strongly the co-benefits of the low-carbon transition beyond reduced climate risk. We have seen much more clearly over the past few years the huge health risks of air pollution, and the environmental damages of deforestation become ever more striking.

The controversies of how we value the future, including discounting, have taught me that knowledge of the basic theories and principles of

discounting in imperfect economies cannot be taken for granted, even in the economics profession, and that these have to be set out still more clearly and strongly. And in so doing, I have learned that we must look at ethics and moral philosophy much more deeply and broadly than we usually do in economics. The questions at hand concern potentially immense changes in lives and livelihoods, and the relevant economics and ethics must be capable of grappling with the issues involved. Hence I have gone much more deeply into these issues.

Finally, our experience of international collaboration has taught us lessons, and my own thoughts have changed over the last five or six years on this set of issues. We can see much more clearly the potential mutually supportive relationships between overall agreements at the international level and actions at the national, regional, city, or firm level. We can see the importance of emphasizing the potential dynamic gains from collaboration and the challenges of building trust. We can see that questions of equity must be at center stage in international discussions. We can see that looking for formal international sanctions within an agreement that have real “bite” may be a mistake. We can see that, so far, collective ambition on the scale of cuts has been much too low. And we can see that there are routes and processes that can encourage both collaboration and ambition. These will form an important part of this book.

This book embodies all these differences from my earlier work. Nevertheless, the basic message that the costs of action are far less than the costs of inaction in managing climate change, and that delay is dangerous, still comes through loud and clear; indeed, still more strongly. Here the analysis, building on experience and further research, is more dynamic, more embodied in structural change, goes more deeply into the ethics, and probes still more carefully into how collaboration can be created, ideas can be formed, leadership can be fostered, and decisions can be taken.

In this way, I hope we can help bring about the acceleration in action that is vital to the management of climate change and taking the opportunities now available to us. Understanding why we have been moving too slowly and how we can change—in other words, examining the question “Why are we waiting?”—takes us directly to the conclusion that now is the time for action.

I am sure that Lionel Robbins would have recognized the immense importance of the issues, that national and international policy decisions and economic actions are urgent, and that, to understand the issues, policies, and actions, some fundamental and difficult economic analysis is essential. Had he been with us, I am sure he would have been engaged.

Nicholas Stern
October 2014

This is a section of [doi:10.7551/mitpress/10408.001.0001](https://doi.org/10.7551/mitpress/10408.001.0001)

Why Are We Waiting?

The Logic, Urgency, and Promise of Tackling Climate Change

By: Nicholas Stern

Citation:

Why Are We Waiting?: The Logic, Urgency, and Promise of Tackling Climate Change

By: Nicholas Stern

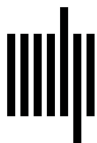
DOI: [10.7551/mitpress/10408.001.0001](https://doi.org/10.7551/mitpress/10408.001.0001)

ISBN (electronic): 9780262329200

Publisher: The MIT Press

Published: 2016

The open access edition of this book was made possible by generous funding and support from the author



The MIT Press

© 2015 Nicholas Stern

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

MIT Press books may be purchased at special quantity discounts for business or sales promotional use. For information, please email special_sales@mitpress.mit.edu

This book was set in Sabon 10/14pt by Toppan Best-set Premedia Limited. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Stern, N. H. (Nicholas Herbert)

Why are we waiting? : the logic, urgency, and promise of tackling climate change / Nicholas Stern.

pages cm. — (The Lionel Robbins lectures)

Includes bibliographical references and index.

ISBN 978-0-262-02918-6 (hardcover : alk. paper)

1. Climatic changes—Economic aspects. 2. Climatic changes—Government policy. 3. Environmental policy—Economic aspects. I. Title.

QC903.S833 2015

363.738'74—dc23

2014039907

10 9 8 7 6 5 4 3 2 1