

Enhancing Global Competitiveness through Sustainable Environmental Stewardship

Edited by **Subhash C. Jain** and **Ben L. Kedia**



NEW HORIZONS IN INTERNATIONAL BUSINESS

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Edward Elgar

Cheltenham, UK • Northampton, MA, USA



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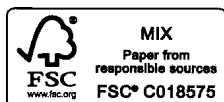
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Published by
Edward Elgar Publishing Limited
The Lypiatts
15 Lansdown Road
Cheltenham
Glos GL50 2JA
UK

Edward Elgar Publishing, Inc.
William Pratt House
9 Dewey Court
Northampton
Massachusetts 01060
USA

A catalogue record for this book
is available from the British Library

Library of Congress Control Number: 2010929036



ISBN 978 1 84844 874 2

Typeset by Servis Filmsetting Ltd, Stockport, Cheshire
Printed and bound by MPG Books Group, UK

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Abbreviations

BBC	British Broadcasting Corporation
BRIC	Brazil, Russian, India, China
CDP	Carbon Disclosure Project
CER	Corporate Environment Report
CIBER	Center for International Business Education and Research
CME	coordinated market economy
CO ₂	carbon dioxide
CSR	corporate social responsibility
EKC	Environmental Kuznets Curve
EMS	environmental management system
EU	European Union
FCC	Federal Communications Commission
FASBI	Financial Accounting Standards Board Interpretations
FDI	foreign direct investment
GAAP	generally accepted accounting principles
GDP	gross domestic product
GRI	global reporting initiative
HCCPBL	Hindustan Coca-Cola Beverage Company Private Limited
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
IRRC	Investor Responsibility Research Center
KGWB	Kerala Ground Water Board
KSPCB	Kerala State Pollution Control Board
LME	liberal market economy
MNC	multinational corporation
MNE	multinational enterprise
NFR	non-financial reporting
NGO	non-governmental organization
OECD	Organisation for Economic Co-operation and Development
PPMV	parts per million per volume
S&P	Standard and Poor's
SEC	Securities and Exchange Commission

SME	small- and medium-sized enterprises
SRI	socially responsible investment
UK	United Kingdom
UNEP	United Nations Environment Programme
VED	voluntary environmental disclosure

Preface

In recent years, the concept of climate change has received growing recognition. It is no more a reserve of scientists and political activists. It has become a mainstream discussion. It is now widely accepted that Earth is warming; to a large extent it is a result of the emission of greenhouse gases resulting from mankind's activities; and it has significant impact for Earth's environment. It is recognized that climate change is a global problem that requires a global approach to resolve it.

In the world of global business, climate change has evolved from being a fringe issue to a strategic concern that requires high level deliberations and decision-making. More and more multinational enterprises (MNEs) have come to accept that the issue of climate change goes beyond the focus on a firm's brand and its social responsibility. While climate change could pose enormous problems for some MNEs, it also offers huge potential for innovation leading to new products and services. Firms that recognize the challenge early, and respond imaginatively and constructively will create opportunities for themselves and thereby prosper. Others, slower to realize what is going on or electing to ignore it, will likely do markedly less well.

Considering the importance of the climate change issue, the Centers for International Business Education and Research (CIBERs) at the University of Connecticut and the University of Memphis decided to organize a two-day by-invitation-only conference from 14–16, May 2009. The conference was held at the main campus of the University of Connecticut in Storrs. The CIBERs at the University of California at Los Angeles (UCLA), University of Maryland, Temple University, University of South Carolina, and University of North Carolina at Chapel Hill co-sponsored the conference.

Thirteen faculty members from different parts of the world made presentations at the conference. Since it was a by-invitation-only conference, it offered the participants a unique opportunity for intensive discussion and interaction. Thirteen presenters submitted nine papers for publication in this book. Collectively these papers provide deep insights into the climate change issue, its negative and positive impacts on different industries, and in different geographic regions of the world. The book is useful for both practicing managers as well as academics. It reinforces the thesis that climate change is a tectonic force that changes the economic

landscape. MNCs must act fast to face the problem, make investments in new technologies and processes, and thus gain global competitiveness. For academics, the book introduces different frameworks and conceptual schemes to tackle the climate change challenge, and identifies areas for scholarly inquiry.

We are grateful to Ms Susanna Easton at the US Department of Education for her encouragement in this endeavor. We sincerely thank CIBER directors Christopher Erickson, UCLA; Kislaya Prasad, Maryland; Arvind V. Phatak, Temple; Lynne Gerber, North Carolina; and William R. Folks, Jr, South Carolina for their support through co-sponsoring the conference.

We thank our deans Chris Earley at the University of Connecticut and Rajiv Grover at the University of Memphis for their advice and counsel in making the program successful. Kelly Aceto, associate director and Michele Metcalf, program assistant at the University of Connecticut CIBER deserve our appreciation for all their administrative support and for managing day-to-day details in organizing the conference.

We also want to thank Dr Dan Esty for his willingness to serve as our keynote speaker. Finally, we want to thank our acquisition editor, Alan Sturmer, and the desk editor, Bob Pickens at Edward Elgar Publishing for their help in seeing the book to completion.

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This book is University of Connecticut and Memphis CIBER-supported research initiative. CIBER is a program of the US Department of Education. The CIBER program's mandate is to enhance US competitiveness in the global business arena through activities involving US businesses, educators, and students.

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PART I

Perspectives on sustainability

1. Climate change and global business: challenges, opportunities and research guidelines

Subhash C. Jain

Kogut (2003) has identified ‘context’ as the key component of international business (IB) inquiry and research. Although the twenty-first century is still young, recently a variety of events and concerns have surfaced that suggest re-defining the context of international business to accommodate them. Buckley and Ghauri (2004) and Peng (2004) suggest broadening the context in response to the emerging globalization of national economies, since it affects the strategy, structure and performance of multinational corporations (MNCs). After the debacle of the WTO meeting in Seattle in 1999, non-government organizations (NGOs) assumed a significant role in influencing the global perspectives of nation states and MNCs. According to Teegen, Doh and Vachani (2004), the IB field should be redrawn to include NGOs, since they impact MNCs in their endeavors to create value through resource transformation and exchange.

In the aftermath of 9/11, terrorism has become a substantial phenomenon, presenting a new type of risk for companies that conduct business internationally. Jain and Grosse (2007) propose adding post-9/11 security measures as another core element in examining the field of IB for theory development and research.

In recent years, climate change has developed from being a fringe concern within the corporate world, addressed primarily through a company’s corporate and social responsibility (CSR), to an increasingly central topic for strategic deliberation and decision-making by executives and investors around the globe.

The driving force behind this change in corporate outlook is an emerging consensus on three broad points: that Earth is warming; that this is largely the result of greenhouse gas emissions; and that this will produce significant consequences for Earth’s environment. In this context, this chapter takes a hard look at global warming. We begin by examining the relevant scientific and climatological evidence. We then proceed to the

economic consequences and policy implications, followed by a discussion of the potential impacts on major business sectors globally and the steps that MNCs might take to prosper under these conditions and to make positive environmental contributions. The chapter concludes with suggestions for future academic research.

GLOBAL WARMING: SCIENTIFIC AND CLIMATOLOGICAL EVIDENCE

With widespread industrialization, the environmental impact of fossil fuels (such as coal, oil, and natural gas) has taken center stage in an international debate over the phenomenon known as global warming. Fossil fuels provide roughly 84 percent of the energy consumed in the US and make up 80 percent of the energy produced worldwide (International Energy Agency, 2006). The question is: does the use of fossil fuels which emit carbon dioxide (CO₂) lead to deleterious global warming?

Analyzing historical data, Mann et al. (1998, 1999) have concluded that there has been a sharp increase in Earth's mean temperature in the second half of the twentieth century. The 2001 report of the Intergovernmental Panel on Climate Change (IPCC) noted that over the course of the twentieth century, Earth's average temperature rose by about 0.6 of a degree centigrade. According to Brumfiel (2006), 2005 was the warmest year over several millennia. Furthermore, nine of the last ten years have been the warmest since the end of the nineteenth century, when temperature records were first kept (Shaw, 2006).

Changes in Earth's temperature are caused by the concentration of greenhouse gases in the atmosphere, which increase the amount of energy reflected down to earth. There is a positive correlation between Earth's temperature and the concentration of greenhouse gases. Thus, greenhouse gas emissions add significantly to atmospheric greenhouse gas concentration.

Under natural conditions, the Earth goes through gradual cycles of cooling and warming. But excessive emissions disturb the natural cycle. Thus, the actual warming resulting from human fossil fuel emissions might be 15–78 percent higher than the natural warming (Scheffer et al., 2006). If the status quo continues, the atmospheric concentration of greenhouse gases could reach 500 ppmv (parts per million per volume) by 2050 (Shaw, 2006).

Tables 1.1, 1.2 and 1.3 show the rising trend of CO₂ emissions. The carbon emissions generated by nations in the Organisation for Economic Co-operation and Development (OECD) declined by 25 percent during

Table 1.1 Rising CO₂ emissions (in millions of metric tons)

1751	1775	1800	1825	1850	1875	1900	1925	1950	1975	2000
0	4	8	17	54	188	534	975	1630	4613	6611

Source: Oak Ridge National Laboratory, NASA Goddard Institute for Space Studies

Table 1.2 Carbon emissions by region

Region	Carbon emissions (1973)	Carbon emissions (2004)
OECD	66%	49%
Former USSR	14%	9%
China	6%	18%
Asia except China	3%	9%
Latin America	3%	3%
Africa	2%	3%
Middle East	1%	5%
Others	5%	4%
Total	100%	100%

Source: World Resources Institute, 2006.

Table 1.3 Carbon emissions by sector

Sector	Carbon emissions
Power	24%
Land use	18%
Industry	14%
Transport	14%
Agriculture	14%
Buildings	8%
Other energy-related	5%
Waste	3%
Total	100%

Source: World Resources Institute, 2006.

the 31-year period between 1973 and 2004. On the other hand, the share of carbon emissions by Asian nations increased three-fold over the same time period. In 2000, industry, transport and agriculture generated equal amounts of carbon emissions. Industry can be subdivided into sectors,