

Cents & Sustainability

*Securing Our Common Future by Decoupling
Economic Growth from Environmental Pressures*

Briefing Information

Cents and Sustainability is a book developed to mark the 20 year anniversary of the UN Brundtland Commission's landmark report, *Our Common Future*. This book will seek to use what we have learned in the last 20 years in economic development and environmental management to inform efforts to effectively decouple economic growth from negative environmental pressures.



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'The Natural Edge Project' hosted by Griffith
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"I commend the team from The Natural Edge Project and their partners for undertaking to develop a response to 'Our Common Future' to mark its 20th anniversary in 2007. The focus of this new book, 'Cents and Sustainability', is to bring together significant evidence from the last 20 years to demonstrate that environmental and social sustainability and economic growth need not be incompatible but rather can reinforce each other. The book will cover a range of efforts, studies, policies and mechanisms designed to show how effective and proven strategies of achieving social and environmental sustainability are already helping economic growth." – **Dr Gro Harlem Brundtland**



*The development of this publication has
been made possible by a Grant from the
Purves Environmental Fund.*

THE NATURAL EDGE PROJECT

*'Cents and Sustainability: Securing Our Common Future by
Decoupling Economic Growth from Environmental Pressures'.*

A response from the next generation to the 1987 Brundtland Commission Report

Building on from the success of our flagship publication in 2005, *The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century*, this book, *Cents and Sustainability*, is a response from the next generation to the key themes developed in the book *Our Common Future*, published in 1987 (also known as *The Brundtland Commission Report*), to mark its 20 year anniversary in 2007.

Our Common Future was one of the first sustainable development publications to suggest that the twin goals of economic growth and sustainable development could be reconciled. The focus of this new book is to provide a response to the call by Gro Brundtland, as stated in the foreword; *'What is needed now is a new era of economic growth - growth that is forceful and at the same time socially and environmentally sustainable.'* With the 20th anniversary in 2007 it is clearly the time to re-examine these important issues. Twenty years on, significantly more evidence and research is now available to allow a deeper investigation and understanding of how this 'forceful sustainable growth' is possible. The goal of *Cents and Sustainability* (OCF20+) is to further explore, in a modern global context, the conditions under which society can achieve a form of economic growth that is both socially and environmentally sustainable.

The book, *Our Common Future*, was a landmark publication in many ways and our intention is not to replace it with an update but rather enhance it and develop new material that builds upon the central issues that were raised in the original work. We feel strongly that there is a need to communicate and build on from the frameworks within *Our Common Future* in a modern context in order to address the key goals of its message in the 21st Century. Our project and its work to date has been greatly inspired by the book *Our Common Future* and we are honoured to be advised on this new book by the lead author Jim McNeill, Secretary General to the United Nations Brundtland Commission in 1989, and formerly the Director of Environment for the Organization for Economic Cooperation and Development (OECD) for seven years. We are also grateful for the advise and mentoring from Professor Steve Dovers.

Our Common Future, we believe, is one of the most comprehensive books ever written on sustainable development. The process of consultation and review undertaken in the development of *Our Common Future* resulted in a significant re-framing of the sustainable development debates of the time and helped build consensus for the need for sustainable development globally. It has been the most important book ever to mainstream sustainable development into government and international institutions. The text and frameworks are so rigorous they have stood the test of time. *Our Common Future* also built the momentum for the first World Summit on Sustainable Development in Rio in 1992 and our generation should be making a significant effort to mark the 20th anniversary.

We invite you to please consider supporting this work with a cover endorsement quote as the important messages in this new book will provide a valuable contribution to the numerous decisino makers tackling the significant issue of reducing environmental pressues while underpinning econoimc growth.
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Decoupling Economic Growth from Environmental Pressures

The concept of 'decoupling' as applied to economic growth and environmental performance has featured in a number of high level policy documents in the last decade. Most notably in 2001, when OECD Environment Ministers committed to decoupling as part of the 10 year Environmental Strategy,¹ leading to the development and tracking of a comprehensive list of decoupling indicators.² More recently the issue of climate change has focused many national governments on how to decouple economic growth from greenhouse gas emissions. A range of significant investigations have been undertaken related to decoupling, however much more is needed. This book is in response to the urgent need for a range of investigations to guide nations as to the development of robust decoupling strategies. The following 10 areas of investigation have formed the structure to much of the exploration and research in the development of the book, *Cents and Sustainability*, and are recommended areas for further investigation by the nations of the world and their leaders:

1. An understanding of Previous Related Efforts: The historical context of similar efforts, that may date back to previous civilisations as appropriate, to uncover lessons regarding the reduction of environmental pressures. Our early twenty-first century civilization is not the first to face the prospect of an environmentally induced economic decline. Further more, twenty years on from the publication of *Our Common Future*, there has been extensive research into historical events which support the case that the demise of past civilisations occurred rapidly and soon after they had reached their peak.
2. The Resilience of Environmental Systems: Health of the ecosystems affected by the pressures, in particular their ability to provide services to the economy, and anticipated levels of ecological thresholds, such as undertaken in the 2003 United Nations Millennium Ecosystem Assessment.³ If economic development leads to the degradation of natural systems and the loss of ecosystem services these services may not be able to be recovered and the costs to replicate the services will be prohibitively high. Decoupling efforts need to be informed by information as to the condition of natural systems using appropriate metrics and measurements.
3. Indicators of Performance for Environmental Pressures: Identification, quantification and monitoring of the levels of selected environmental pressures in measurable units, including levels of pollutants, such as outlined in the 2002 OECD study into decoupling indicators,⁴ and other efforts.⁵ Research undertaken in area two above is used to inform the selection of additional environmental decoupling indicators as needed to ensure that key areas of environmental risk are adequately measured to better inform decoupling efforts. The OECD publishes extensive updates of environmental indicators⁶ and existing environmental data.⁷
4. The Costs of In-Action: Level of costs to the economy resulting from the impacts of environmental pressures (including current and anticipated, future direct and in-direct costs), including loss of ecosystem services and damages to human health and physical infrastructure. such as outlined in the 2008 OECD study in to the costs of inaction on key environmental challenges, that

¹ OECD Environmental Strategy for the First Decade of the 21st Century, adopted by OECD Environment Ministers on 16 May 2001.

² OECD (2002) Indicators to Measure Decoupling of Environmental Pressure and Economic Growth, Paris, France.

³ Weaver, P., Jansen, L., van Grootveld, G., van Spiegel, E. and Vergragt, P. (2000) *Sustainable Technology Development*, Greenleaf, UK.

⁴ OECD (2005) OECD Environmental Data-Compendium 2004 and subsequent updates, Paris.

⁵ Ruffing, K., (2007) "Indicators to Measure Decoupling of Environmental Pressure from Economic Growth", Ch. 13 in SCOPE 67, Sustainability Indicators (Eds. Tomas Hak, Bedrich Moldan, Arthur Lyon Dahl), Island Press.

⁶ OECD (2008) Key Environmental Indicators. OECD. Paris.

⁷ OECD (2005) OECD Environmental Data-Compendium 2004 and subsequent updates, Paris.

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demonstrated that the costs of inaction on water and air pollution, biodiversity loss, climate change and natural disasters are already significant,⁸ and will rise significantly by 2030.⁹

5. Potential for Decoupling: Level of potential for the achievement of the reduction in environmental pressures, such as resource consumption and pollution generation, compared with requirement for structural adjustment. A range of publications, including *Factor 4: Doubling Your Wealth and Halving Your Resource Usage*¹⁰, and *The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century*¹¹, have assembled case studies which show that there is significant potential for decoupling in the short to medium term by 2020, particularly in energy, water, and natural resource consumption and the generation of air and land pollution. such as the 1998 study by the Dutch Government into the potential for sustainable technology development.¹² These and other studies show that at least one nation has now achieved significant decoupling cost effectively for the majority of the OECD decoupling indicators.¹³
6. The Costs of Action: Level of real cost in the short to medium term to invest in decoupling activities (including R&D) that will both stimulate economic growth and avoid greater costs in the long term, such as those outlined in detail in the UK Stern Review of the economics of climate change,¹⁴ and the OECD Environmental Outlook 2030.¹⁵ Economists to date have tended to overestimate the costs of action in the short term because they do not appreciate the strong multiplier effect of investments in efficiency and local decoupling initiatives such as recycling and distributive approaches to energy and water. Also economists have tended to underestimate the co benefits of taking action to reduce environmental pressure on reducing other environmental pressures. Van Vuuren et al¹⁶ found that for the Kyoto Protocol, about half the costs of climate policy might be recovered from reduced air pollution control costs.
7. Social factors that Underpin, Undermine or Block Efforts: There has often been significant opposition to efforts to achieve decoupling from industry, workers and communities which either will be or perceive that they will be negatively affected. There is much which can be done to address these traditional sources of opposition to decoupling, such as those investigated in a range of OECD studies.¹⁷ For instance, research should be undertaken on the negative international competitiveness effects on domestic industry from decoupling policy and measures to reduce such effects should be modelled and analysed.
8. Economic and Social Resilience: Level of capacity of the economy/society/institutions to handle decoupling efforts. This area would include investigations into the potentials for job losses and jobs growth in particular industries, the level and form of structural adjustment requirements, and the need for education and re-training. For example, according to a U.N. study, the development of alternative energy technology should create more than 20 million jobs around the world in coming decades as governments adopt policies to reduce greenhouse gas emissions.¹⁸ In 1994, DRI modelled for the EU a scenario where all the revenues from pollution taxes were used to reduce employer's non-wage labour costs, such as social security payments, superfund payments, and

⁸ OECD (2008) *The Costs of Inaction on Key Environmental Challenges*, OECD, Paris.

⁹ OECD (2008) *OECD Environmental Outlook to 2030*, OECD, Paris.

¹⁰ von Weizsäcker, E., Lovins, A. Lovins, L. H. (1997) *Factor Four: Doubling Wealth, Halving Resource Use*, Earthscan, London.

¹¹ Hargroves, K. and Smith, M (2005) *The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century*. Earthscan. London.

¹² Ibid.

¹³ OECD (2002) *Indicators to Measure Decoupling of Environmental Pressure and Economic Growth*, Paris, France.

¹⁴ Stern, N. (2006) *The Stern Review: The Economics of Climate Change*, Cambridge University Press, Cambridge.

¹⁵ OECD (2008) *OECD Environmental Outlook to 2030*, OECD, Paris.

¹⁶ Van Vuuren, D. P., den Elzen, M. J. E. et al (2006) Exploring the Ancillary Benefits of the Kyoto Protocol for Air Pollution in Europe, *Energy Policy*, 34, pp. 444-60.

¹⁷ OECD (2007) *Instrument Mixes for Environmental Policy: (2008) OECD Environmental Outlook to 2030; (2003) Environmental Policy in the Steel Industry: Using Economic Instruments; (2005) The Competitiveness Impact of CO₂ Emissions Reduction in the Cement Sector*, OECD, Paris.

¹⁸ UNEP (2008) *Green Jobs: Towards decent work in a sustainable, low-carbon world*. UNEP/ILO/IOE/ITUC Paris.

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payroll tax. The study showed that employment in the United Kingdom would be increased by 2.2 million through such tax shifting.¹⁹ However the belief remains amongst many workers that environmental initiatives like decoupling will harm jobs. This needs to be addressed through studies which examine how jobs will be affected by decoupling policy and reform.

9. Potential for synergy with Global Efforts: Level of global commitment and action by both governments and business on a particular pressure. Globally binding agreements are often needed to address global externalities, however they need to ensuring domestic industries are not exposed to unfair international competitiveness issues from countries which have not ratified specific international agreements.
10. Understanding of the complexity of developing National Decoupling Strategies: Research and investigate examples from around the world where rapid decoupling has been achieved without significant negative social or economic effects. There is much evidence to suggest that rapid progress can be made in many areas as long as there is effective policy, incentives and R&D to bring down the costs of action, and effective stakeholder engagement and pro-active communication between parties involved. For instance, The Climate Group's 2005 report *Profits Up, Carbon Down*²⁰ showed that 43 companies have increased their bottom line by a total of \$15 Billion whilst developing ways to reduce their greenhouse gas emissions by as much as 60%. In Massachusetts, for instance, since 1989 the private sector has worked with the government and university researchers to achieve a 70% reduction in toxic chemicals by 1997 without harming profits.²¹ Research needs to be undertaken to identify who are the leading companies, cities and nations for decoupling of all of the major indicators of the OECD indicator set to help inform efforts to globally. The Climate Group²² have begun this investigation this for decoupling economic growth from greenhouse gas emissions.

"At the national level, promoting competitiveness means applying policies and re-vamping institutions to enable the economy to adapt more flexibly to new markets and opportunities, and facilitate the changes needed to raise productivity. Carefully designed, flexible policies to encourage GHG mitigation and stimulate innovation need not be inconsistent with enhancing national competitiveness. On the contrary, the innovation associated with tackling climate change could trigger a new wave of growth and creativity in the global economy. It is up to individuals, countries, governments and companies to tailor their policies and actions to seize the opportunities."

Sir Nicholas Stern²³

¹⁹ DRI, et al. (1994) *Potential Benefits of Integration of Environmental and Economic Policies*, Graham and Trotman and the Office for Publications of the European Communities, Brussels.

²⁰ The Climate Group (2005) *Profits Up, Carbon Down*. The Climate Group.

²¹ See The Massachusetts Toxics Use Reduction Institute at <http://www.turi.org/>.

²² The Climate Group (2005) *Profits Up, Carbon Down*. The Climate Group.

²³ Stern, N. (2006) *The Stern Review: The Economics of Climate Change*, Cambridge University Press, Cambridge, page 283.

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"I commend the team from The Natural Edge Project and their partners for undertaking to develop a response to 'Our Common Future' to mark its 20th anniversary. The focus of this new book, 'Cents and Sustainability', is to bring together significant evidence from the last 20 years to demonstrate that environmental and social sustainability and economic growth need not be incompatible but rather can reinforce each other. The book will cover a range of efforts, studies, policies and mechanisms designed to show how effective and proven strategies of achieving social and environmental sustainability are already helping economic growth."

Gro Harlem Brundtland (Foreword Writer), Chair of the World Commission on Environment and Development, widely referred to as the Brundtland Commission

"It gives me great pleasure to contribute this foreword to 'Cents and Sustainability' and support a response by our next generation to the seminal publication Our Common Future, following its recent 20th anniversary. The Natural Edge Project is to be commended for tackling this vitally important issue and highlighting where in the world already communities, regions and nations are creating solutions to this great challenge of our time."

R. K. Pachauri (Foreword Writer), Chief of the Intergovernmental Panel on Climate Change (IPCC), accepting the Nobel Peace Prize on behalf of the IPCC in 2007

"The leitmotif of this book is how to decouple environmental pressures from economic growth while simultaneously making progress towards attaining the millennium development goals. It thus addresses a number of economic, social, and environmental dimensions of sustainable development. The book restates the case for reducing environmental pressures. Failure to do so will entail very high costs to ourselves and future generations; the technological means and the policy tools needed already exist and, in most cases, have been deployed in one country or another; finally, the costs of implementing a decoupling agenda are eminently affordable, amounting to only a few percentage points of future increases in GDP."

Dr. Kenneth G. Ruffing (Foreword Writer), formerly Deputy Director and Chief Economist of the OECD Environment Directorate from 2000 to 2005

"It is not wise simply to hope that our decision makers will make the right choices, especially given the fact that there are still powerful vested interests who do not want to see a transition to sustainable development. In the end, it is up to each and every one of us to leave as positive a legacy as possible to future generations. Cents and Sustainability, with its inspiring world class success stories, our earlier 1987 report to the United Nations entitled Our Common Future, and free online education and training packages by The Natural Edge Project will help empower you to play your part in helping achieve a sustainable future."

Jim MacNeill, O.C. (Introduction Writer), Secretary General, World Commission on Environment and Development, and Chief Architect and lead author of Our Common Future (1987)

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About The Natural Edge Project

The Natural Edge Project (TNEP) is an independent Sustainability Think-Tank based in Australia and working on collaborative projects with a number of international leaders. TNEP's mission is to contribute to and succinctly communicate leading research, case studies, tools and strategies for achieving sustainable development across government, business and civil society. TNEP is a non profit project and is administratively hosted in-kind by Griffith University and Australian National University. The TNEP team have developed a number of internationally renowned books on sustainable development, including contributions from the likes of Alan AtKisson, Amory Lovins, Ernst von Weizsäcker, Gro Brundtland, Jeffery Sachs, Leo Jensen, R. K. Pachauri, and William McDonough.

The teams flagship collaborative book, *'The Natural Advantage of Nations: Business Opportunities, Innovation and Governance in the 21st Century'* (Earthscan 2005), was awarded the Australian Banksia Award for Environmental Leadership, Education and Training. Building on from this work the team delivered two online open access books, *'Whole System Design: An Integrated Approach to Sustainable Engineering'* (Earthscan 2008), and *'Energy Transformed: Sustainable Energy Solutions for Climate Change Mitigation'* and is currently working on an update of *'Factor 4'*, co-authored with Ernst von Weizsäcker, and a book on accelerating engineering education for sustainable development. The team have worked with international partners such as UNESCO, UNEP, Wuppertal Institute, World Federation of Engineering Organisations, Chicago Climate Exchange, World Technopolis Association, Chicago Manufacturing Centre, and Rocky Mountain Institute.

About the Authors

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Michael Smith is co-author and co-editor of 'The Natural Advantage of Nations' and is the research director of the sustainability think-tank The Natural Edge Project. Mike completed a double major Science degree in Chemistry and Mathematics from the University of Melbourne, and in his honours year Michael researched chemicals to replace those that destroy the ozone layer at the University of Sydney. His recently completed PhD thesis at ANU discussed the latest advances in the classic sustainability debates such as economic growth vs. sustainable development with co-supervisor Dr Stephen Dovers.

Karlson 'Charlie' Hargroves TNEP Executive Director/Research Fellow Griffith University



Charlie Hargroves is the co-founder and Executive Director of The Natural Edge Project, an Australian based Sustainability Think-Tank. Charlie and the TNEP team have developed a number of internationally renowned books on sustainable development with many of the leaders in the field. Charlie is a graduate in Civil and Structural Engineering from the University of Adelaide and is currently completing a PhD in Sustainable Industry Policy with Professor Peter Newman at Curtin University. Charlie spent 12 months on secondment as the CEO of Natural Capitalism Inc, Colorado, and represents the team as an Associate Member of the Club of Rome.