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John Blewitt

Understanding Sustainable Development

Second edition



Understanding Sustainable Development

This new and expanded edition builds upon the first edition's powerful multi-perspective approach and breadth of coverage. A truly comprehensive introduction to sustainable development, it is designed specifically to allow access to the topic from a wide range of educational and professional backgrounds and to develop understanding of a diversity of approaches and traditions at different levels.

This second edition includes:

- a complete update of the text, with increased coverage of major topics including ecosystems; production and consumption; business; urban sustainability; governance; new media technologies; conservation; leadership; globalization and global crises; sustainability literacy and learning;
- more examples from the Global South and North America, while retaining its unique coverage of first world countries;
- chapter aims at the start and summaries at the end of each chapter;
- glossary of key terms;
- a new chapter on conservation with a focus on behaviour change and values;
- a brand new website, which includes discussion of how projects are done on the ground, additional exercises and online cases, test questions and recommended readings and films.

Offering boxed examples from the local to the global, *Understanding Sustainable Development* is the most complete guide to the subject for course leaders, undergraduates and postgraduates.

John Blewitt is the Director of the MSc Social Responsibility and Sustainability, Aston Business School, Aston University, UK.

‘Synthesizing the broad array of ideas, debates and approaches to “Sustainable Development” is no easy task. This book does an excellent job of covering the critical issues, and in a very readable form. It moves deftly from theory to practice, touching down in different parts of the world, from China to South America, from the U.S. to the U.K. The inclusion of up-to-date topics like the role of the internet, computers, television and film in sustainable development is most welcome, indeed.’

Lawrence Herzog, San Diego State University, USA

‘John Blewitt’s revised and updated edition is truly a bridge – elegantly and comprehensively connecting theory with practice, socio-economic and political understanding with environmental performance, and the reader to a vast solar system of ideas, solutions and real world examples of sustainability.’

Jeff Loux, University of California, Davis, USA

‘A very comprehensive, resourceful and user-friendly book for developing an understanding of sustainable development and of its interpretation in different policy areas, contexts and sectors; this textbook is essential for both students and teachers.’

Paola Gazzola, Newcastle University, UK

‘This is a comprehensive, authoritative and accessible contribution to sustainable development which can only come from an author who has decades of experience in the field. John Blewitt combines meticulously researched chapters with deeply reflective questions and a clarity of argument that makes this book essential reading for all.’

*Daniella Tilbury, University of Gloucestershire, UK and
Chair of the UN Global Monitoring and Evaluation
Expert Group on Education for Sustainable
Development*

‘*Understanding Sustainable Development* introduces students and professionals to the basic concepts of sustainability and leads them – step by step – to explore inherent paradoxes and complexity of social, economic and environmental issues. A must read for everybody interested in (critical) theory of economic development, sustainability, and related subjects of globalization, democracy and neoliberalism.’

*Helen Kopnina, The Hague University of Applied
Sciences, the Netherlands*

Praise for the first edition:

‘A significant achievement in addressing a complex contemporary issue in such a clear and optimistic way. Will it make a difference to our understanding? I think it will.’

Stephen Martin, Visiting Professor, Center for Complexity and Change, The Open University

‘This is an immensely important book that brings into a cohesive and dialogic whole, the multiple strands that do – or should – feed into understandings of sustainable development. It draws upon worldviews and perspectives often marginalized or ignored in the adrenaline rush to make sustainability a living reality. A “must read” for both those new to and those steeped in the field.’

David Selby, Director, Centre for Sustainable Futures, University of Plymouth

‘Presents a comprehensive account of the sustainability territory, successfully integrating ideas from science, philosophy, sociology and cultural studies in its explication of key topics within this field. It will prove invaluable for those of us from a range of disciplines and perspectives who are trying to make sense of what “sustainability” means, and what actions we might take to realize it within our communities, organizations and homes.’

Donna Ladkin, Senior Lecturer in Organizational Learning and Leadership at Cranfield University School of Management

‘*Understanding Sustainable Development* is a major work and it largely achieves a very difficult task. It comes closer than most to that elusive ideal: the comprehensive book on a broadly based interpretation of sustainable development!’

Julian Agyeman, Associate Professor and Chair, Urban and Environmental Policy and Planning, Tufts University

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Acronyms and abbreviations

| | |
|---------|---|
| ABCD | awareness, baseline, clear and compelling, down to action |
| ALS | amyotrophic lateral sclerosis |
| AMOEBAs | Dutch acronym meaning 'general method for ecosystem description and assessment' |
| ANT | actor network theory |
| ASA | Advertising Standards Authority (UK) |
| BAU | business as usual |
| BSE | bovine spongiform encephalopathy (mad cow disease) |
| CAT | Centre for Alternative Technology (Wales) |
| CBD | Convention on Biological Diversity |
| CEO | Chief Executive Officer |
| CFC | chlorofluorocarbon |
| CITES | Convention on International Trade in Endangered Species |
| CJD | Creutzfeldt-Jacob disease |
| CMC | computer-mediated communications |
| CSR | corporate social responsibility |
| DCSD | Danish Committees on Scientific Dishonesty |
| Defra | Department for Environment, Food and Rural Affairs (UK) |
| DFID | Department for International Development (UK) |
| EM | ecological modernization |
| ENGO | environmental non-governmental organization |
| EPA | US Environmental Protection Agency |
| ESD | Education for Sustainable Development |
| FTO | Fair Trade Organization |
| GBM | Green Belt Movement (Kenya) |
| GCAR | Grupo Cultural AfroReggae (Brazil) |
| GDP | gross domestic product |
| GHG | greenhouse gas |
| GIS | geographic information system |
| GM | genetic modification; genetically modified |
| GMO | genetically modified organism |
| GNP | gross national product |
| GPI | genuine progress indicator |
| GRI | Global Reporting Initiative |
| HDI | Human Development Index (UN) |
| HDR | Human Development Report (UNDP) |

xii *Acronyms and abbreviations*

| | |
|---------|--|
| HPI | Happy Planet Index |
| IA | integrated assessment |
| ICT | information and communication technology |
| IFAW | International Fund for Animal Welfare |
| IMC | Independent Media Center |
| IMF | International Monetary Fund |
| IPCC | Intergovernmental Panel on Climate Change |
| IPPR | Institute for Public Policy Research (UK) |
| ISEW | index of sustainable economic welfare |
| IPSO | International Programme of the State of the Ocean |
| IUCN | World Conservation Union |
| LSX | London Sustainability Exchange |
| MEA | Millennium Ecosystem Assessment |
| NCWK | National Council of Women in Kenya |
| NGO | non-governmental organization |
| NIMBY | not in my backyard |
| NRDC | National Resources Defense Council |
| OECD | Organization for Economic Co-operation and Development |
| PR | public relations |
| R&D | research and development |
| SIBART | 'Seeing Is Believing As a Replication Tool' project (EU) |
| SIGMA | Sustainability – Integrated Guidelines for Management project |
| SOFI | State of the Future Index |
| SPARC | Society for the Promotion of Area Resource Centres |
| SVTC | Silicon Valley Toxics Coalition |
| TEK | traditional ecological knowledge |
| TNC | transnational company |
| TNS | The Natural Step |
| TRIPS | Trade-Related Intellectual Property Rights Agreement |
| TVE | Television for the Environment |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UN-REDD | United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries |
| WCED | World Commission on Environment and Development |
| WEDO | Women's Environment and Development Organization |
| WMO | World Meteorological Organization |
| WSF | World Social Forum |
| WTO | World Trade Organization |
| WWF | World Wide Fund for Nature |

Introduction

In the years since the first edition of *Understanding Sustainable Development* was written and published, quite a lot has happened. There have been a number of climate change conferences, the twentieth anniversary of the first Rio Earth summit has been and gone, the impact of the financial crash of 2007–8 still rumbles on, a near nuclear catastrophe occurred in Fukushima in Japan, we witnessed increasingly extreme weather events, and the global population continues to grow, as do cities and the level of carbon dioxide in the atmosphere. The world is quickly changing and not exactly for the better. The planet's ecosystems are more stressed than ever before and peak oil has led to the almost certain exploration of oil in regions that were formally either inaccessible ethically or physically such as the Arctic as well as a revival of interest in nuclear power and the rapid development of the fracking industry. The geopolitical climate has altered too, not least with the clear emergence of China as probably the dominant economic, and maybe political, force of the twenty-first century. One thing, however, has not changed. We have now clearly and indubitably entered the Anthropocene and few people feel capable of denying that fact. Human actions have impacted seriously and negatively on our planet's ecosystems and will continuously do so until we – that is, humanity – do something about it.

Debates over climate change now focus on mitigation, adaptation and resilience rather than whether it is happening or what is causing it. The answer to this last question is fairly simple and generally agreed. Human action is the predominant cause of the massive and rapid acceleration of greenhouse gasses, global warming and climate turbulence. Our ways of doing business, of producing goods and services, have used the Earth's resources as if they were inexhaustible. The Earth itself has been treated simultaneously as a factory, pleasure park, garbage dump, larder, marketplace and war zone. It is self-evident that we, as a species, cannot continue as we are doing. Obscene poverty and fabulous wealth live side by side, and the natural world, for many, cannot be accessed at all, although poverty, inequality, injustice, environmental degradation and war are not exactly modern phenomena. We cannot simply continue in the same old way without putting the future at risk of not happening at all. Hence, sustainable development is more important than ever before, although the discussions about what it is and how it can be developed remain lively subjects for debate, negotiation and practical action.

In broad terms, sustainable development should be quite simple to understand. It is the idea that the future should be a better, healthier, place than the present and the past. The idea is not new, but the way it is understood, reflected upon, cultivated

2 *Introduction*

and implemented possibly is. Neither modern nor postmodern, sustainable development requires an understanding of the natural world and the human social world as being not so much ‘connected’ as one and the same. Sustainable development is a process that requires us to view our lives as elements of a larger entity. It requires a holistic way of looking at the world and human life. It requires a recognition that other people may not see things like this at all and will have different perceptions, values, philosophies, aims and ambitions. It requires an understanding that the world is multifaceted, fragmented and complete. This may not be easy to grasp at first, but it is a way of looking at the world and one that increasingly makes sense. That, in any case, is my view.

There are other views. Sustainable development is the product of many stories, worldviews, values, actions and perspectives which, to be fully appreciated, require a readiness to listen to others, respect differences, suspend established opinions and see with others’ eyes while allowing other voices to resonate and be heard. Sustainable development requires dialogue and is a dialogue of values: that is the underpinning rationale of this book in offering a series of guides and signposts to a range of contributions to this dialogue. Of course, this view is both contestable and not particularly original, but if elements within the text motivate further thought, reflection and dialogue, then hopefully our understanding of sustainable development will have been advanced just a little bit further.

Many people are still coming to sustainable development with little understanding of the key issues and debates. They may have a deep and detailed knowledge of one specific area, but only the vaguest of inklings of anything beyond. Others may have a general but confused understanding of the theories and perspectives because they are immersed in its practice. Some people see sustainable development as essentially about the environment, and indeed sustainable development has its roots in ensuring that the planet’s ecosystems are protected from the ravages of human civilization. Maybe the best way to view sustainable development is as a collage or a kaleidoscope of shapes, colours and patterns that change constantly as we ourselves change. It is for us, therefore, to make sense of the world in all its complexity. We must avoid imposing convenient conceptual frameworks which the world just does not fit but which we find comfortable or accessible. There is a need to acknowledge that we do not, and maybe cannot, understand everything, however hard we might try. Uncertainty and the incomplete nature of our knowledge do not require us to apply simple, or simplistic, solutions to problems. Complex problems require complex solutions. Sustainable development warrants an attitude of mind that welcomes change, difference, creativity, risk, uncertainty, a sense of wonder, and a desire and capacity to learn. It is a heuristic – a way of learning about life and through life. The importance of learning should never be forgotten. We can only grow, flourish and be sustainable if we learn.

Speaking personally

Having just written about values, perspectives and sustainable development, it is perhaps only right to say a little about my own understanding of sustainable development, and my own learning and journey towards it. Like so many other things, my values have evolved, taken on different hues, as I have learned more about the world, other people and myself. Having been a teacher in adult, further and higher education

for over thirty years, learning is actually my business as well as my passion. I have noticed my social, political and ethical values becoming slowly greener with the years. I have a strong commitment to social and environmental justice, and a number of writers and practitioners have been significant influences on my learning journey. I have been particularly open to the social ecology of Murray Bookchin, the bioregionalism and humanism of Lewis Mumford, the urbanism of Henri Lefebvre and David Harvey, and increasingly the ancient wisdom and spiritual engagement of indigenous peoples. The work of Greg Buckman, Wolfgang Sachs and Vandana Shiva has been extremely important for me too. Finally, I have always been most at ease with an interdisciplinary or transdisciplinary approach to understanding the world around us. No one discipline can generate a holistic understanding of human beings and their relationship to the planet or each other. Having said this, I have nonetheless tried to be even handed in my selection and account of ideas, values, issues and actions discussed in this book. I have used a variety of sources and have learned a great deal from many people – friends, family, students and colleagues. Teaching is the corollary of learning, but our learning must not simply be confined to abstract academic exercises or a playing with words. Learning must be married to change, and words to action. As the American philosopher Ralph Waldo Emerson wrote in his famous 1836 essay *Nature*:

Words are finite organs of the infinite mind. They cannot cover the dimensions of what is in truth. They break, chop and impoverish it. An action is the perfection and publication of thought. A right action seems to fill the eye, and be related to all nature.

(Ziff, 1982: 61)

Outline of the book

The chapters of this book are relatively self-contained, but together make for an understanding of sustainable development that celebrates complexity and diversity. The various sections hopefully demonstrate why sustainable development is such a necessity. Theoretical discussions are interspersed with empirical case studies, the voices of numerous others and inevitably some contradictions. [Chapter 1](#) focuses on the emergence and evolution of two related terms sustainability (a goal or condition) and sustainable development (a process). The discourse of globalization and institutionalization sustainable development are explored through the identification of four specific worldviews, the operation of a number of international organizations and agencies and the way in which the language of economics has shaped much of our understanding of what the world actually is. The second edition differs from the first in that more attention is paid to India and China than before. Europe, and particularly the United States, remain of pivotal importance in understanding sustainable development but the world is now both a bigger and a smaller place. Towards the end of the chapter the focus narrows to show how sustainable development policy has been articulated in a national context, and, using the example of the ongoing struggles to conserve the ancient temporal forests of British Columbia in Clayoquot Sound, the relationship between the local and the global is analysed. Finally, the idea of sustainable development constituting a ‘dialogue of values’ is outlined.

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Chapter 2 explores some of the major philosophical, theoretical and ethical contributions to the evolving process of sustainable development. Each section is connected so that the reader may detect similarities and differences between the various perspectives and may gain the opportunity to learn new things or perhaps revisit previously discounted points of view. From ‘deep ecology’ to ‘actor network theory’ to ‘environmental modernization’ and systems thinking, this chapter maps sustainable development’s intellectual terrain. **Chapter 3** extends these earlier excursions by reviewing some of the major controversies, disputes and conflicts which sustainable development has stimulated. The experience of sustainability in the sometimes unreceptive environment of Russia is examined. The ideas and priorities of the Danish statistician Bjørn Lomborg, whose view on climate change and much else is hotly contested, shows how energetic the debate can be and how a certain contrariness can motivate others to develop, refine and rearticulate their own views. The role and meaning of ‘sound science’ and the emergence of what is now called ‘sustainability science’ is also discussed, as are some debates around genetic modification and nanotechnology. Some space is also dedicated to outlining the concept of the risk society and its relevance to understanding the idea that ultimately sustainability is a political act.

Chapter 4 moves towards the social and environmental spheres by discussing the growing significance of the environmental justice movement. The reality of the poor, the disadvantaged and the exploited always seeming to be the victims of corporate greed, government corruption or history demonstrates that at the core of sustainable development is a moral imperative. The decline of Detroit in the US and the emergence of grass-roots movement, particularly around food justice, indicates that even in the richest of nations cruel hardships are not to be accepted passively. Given the unavoidable and mesmerizing advances of new media technologies throughout the globe, the significance of information and communication technology (ICT) is also explored as a means towards fashioning a more just and healthy world as is the continuing relevance of public space and the idea of the cultural commons. **Chapter 5** shifts the focus on to the political, looking at human agency, ecological and workplace democratization, environmental campaigning, civic action, the politics of place and community empowerment. Actions to combat violence against women in India show that democratic participation often requires strong and resolute action. The idea that sustainable development is not just environmentalism is reinforced throughout by demonstrating the complexity and interconnectedness of the issues, actions, challenges and hopes of many sustainability practitioners. Human beings have the capacity, and the capability, to right the wrongs and repair the damage they have done if they have the collective will to do so. **Chapter 6** is new to the second edition. It addresses issues relating to economic development and habitat and animal conservation. The controversies around economic development, big dams, species extinction, food, urbanization and the green revolution add a wider dimension that recognizes the importance of topics that were excluded earlier for reasons of space. **Chapter 7** examines the central importance of economics and business, which have been frequently viewed as a major cause of the problem but are now increasingly seen as a necessary part of the solution. Those services that the planet’s ecosystems kindly offer us have to be respected rather than abused and exploited. Views differ, of course, ranging from the revolutionary dismantling of the global economic system to its restructuring and reshaping through the processes of localization, degrowth,

the green economy, eco-efficiency and corporate responsibility as exemplified by such companies as Interface and such practices as fair trade. A discussion of economic growth and the hegemony of gross domestic product (GDP) frames these explorations.

Now to the future. [Chapter 8](#) looks at how the future has been and is being conceived, by addressing the value of utopian thinking and some practical attempts to establish prefigurative ecovillages. What humans can dream, they can also create in their physical lives on Earth. Much attention is devoted to urban development and environmental design, because today over half the world's population lives in urban settlements and because the origins of our present crises can often be traced back to problems with urban design and planning. The sustainability achievements of Curitiba in Brazil are examined and critiqued. Techniques and examples of backcasting and scenario analysis are also discussed. [Chapter 9](#) moves the focus on to the resolutely practical by exploring the connectivity between means and ends, tools and practices, indices and the nature of human well-being and human flourishing. Ecological footprinting and environmental space, the Natural Step Framework and the Global Reporting Initiative, and eco-labelling and consumption have as their aim to enable us to live on the only planet we have. The frugal innovation ideas stemming from the Indian philosophy and practice of *jugaad* are also addressed. [Chapter 10](#) links communication, marketing, new media, education and learning as vehicles for, and integral aspects of, sustainable development. This immensely important field is central to fashioning a sustainable world, although here, as with so much else, there are debates and disputes as well as dialogue. Combined with action, communication and learning are ways through which many peoples, groups and communities can find their true voice and, if necessary, invite themselves to the high table of policy formulation and practical action. The final chapter, [Chapter 11](#), explores leadership and management, with practical case-study examples, and by rooting the idea and need for leadership in some of the key values and philosophies informing the dialogue on sustainability and sustainable development. The management system Project SIGMA is rooted in the idea of environmental modernization, and the maverick businessman Ricardo Semler's leadership achievements are rooted in corporate creativity, knowledge innovation and self-organization. The practicalities of dialogue, the significance of emotional and ecological intelligence, and the capacity for understanding, being and working with others are presented as key ingredients for community development and personal engagement. The need for authenticity, trust and commitment is an implicit theme running through this chapter, which ends with a reference to the culture of aboriginal peoples, suggesting that leaders are less important than developing wisdom and respect for nature and, by implication, each other.

Sustainable development encompasses far more than can be covered in one book, so accompanying *Understanding Sustainable Development* is a website providing illustrative and complementary material, including additional case studies, exercises and recommended films and readings which will enable the reader to further explore subjects, ideas and actions. But beware, there are no magic bullets. There is no one way of squaring the circle. Sustainable development is, and probably always will be, work in progress even if in the future it goes by a different name. What we do and how we understand what we do is key to making fewer mistakes, to learning better ways and to nurturing the hope that our future will be a better place than the past for the Earth and all that lives and relies upon it.

1 Towards sustainable development

The aim of this chapter is to introduce the concepts of globalization and sustainable development, indicating the complex and often contested nature of various debates, actions and practices that have occurred in recent years. The significance of some key international agreements will be discussed, as will the criticisms and comments they have stimulated. Sustainable development has emerged through political and environmental struggles, through a business, citizen and governmental engagement with the complexity of contemporary ecological and other problems, and a vast array of perspectives, values and interests that have been applied in seeking to understand and deal with them. The chapter ends with the suggestion that sustainable development is perhaps best understood as a ‘dialogue of values’ – a way of encouraging people to learn, to discover and to evaluate.

The road to sustainable development

Until the industrialization of Europe in the mid-eighteenth century, wood was the primary material used for fuel, construction, smelting and shipbuilding. World trade and the great navies relied on a ready and what some believed to be an inexhaustible supply of timber. However, these people were wrong. Although timber is a renewable resource, European nations were harvesting more trees than were being planted and nurtured to maturity. Governments in Britain, France and particularly Germany slowly recognized that such a rate of timber consumption was becoming unsustainable. As Ulrich Grober (2012: 88) writes in *Sustainability: A Cultural History*, a number of foresters and enlightened government ministers such as Johan Wolfgang von Goethe of Weimar, believed that ‘the true capacities of the forests’ should become the basis for their use and exploitation. The science of ecology, the concept of sustainability and the practice of sustainable development was emerging. Closely aligned to its sister concept, namely conservation, sustainability became a key term for a growing body of environmentalists in the new and the old worlds. For Aldo Leopold, an American citizen of German descent and a key figure in the environmental movement in the US in the first half of the twentieth century, land use was far more than an economic problem. It was a moral and ecological issue too. ‘A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise’, he wrote (Leopold, 1970: 262). Some years later in the mid-twentieth century, the publication of Rachel Carson’s (Carson, 2000) *Silent Spring* in 1962, which forensically, but with great emotion and sensitivity, analysed the devastating ecological impact chemical pesticides had on the American countryside, marked the beginning of what become known as Earth Politics and the modern environmental movement.

In Europe and America the 1960s and 1970s witnessed a growing concern that economic growth, development consumerism and related lifestyle demands were undermining the ecological balance, economic stability and security of the planet. These concerns were intensified with the publication of a single image, the lonely and luminous planet earth, taken by an astronaut from the Apollo Eight spacecraft in 1968, which revealed the beauty and fragility of the world as never seen before: *Earthrise* as seen from the moon. In 1972 a further image from the Apollo Project, *Blue Marble*, quickly became the most published image in history and an icon of, and for, the new sustainability advocates and the wider environmental movement. World-famous pressure groups were formed, such as Friends of the Earth and Greenpeace. A number of ecologically minded writers following in Rachel Carson's footsteps came to prominence such as Charles A. Reich who wrote *The Greening of America* (1970), Theodore Roszak and *The Making of a Counter Culture* (1969) and *Where the Wasteland Ends* (1972), and E.F. Schumacher's game-changing *Small is Beautiful* (1973). In 1966 Kenneth E. Boulding wrote 'The economics of the coming Spaceship Earth', in which he stated there were no unlimited reservoirs of anything and that humanity would have to recognize and find its place in a cyclical ecological system capable of continuous reproduction but which continually needed inputs of energy to maintain itself. In 1970 the first major environmental event to have any real social, public and cultural impact was held in the US. Thus, following an earlier discussion in the United Nations that there should be a global holiday, Earth Day drew attention to environmental degradation in a manner never seen before. In 1972 the editors of *The Ecologist* issued a call to action, writing, in *A Blueprint for Survival*:

The principal defect of the industrial way of life with its ethos of expansion is that it is not sustainable. Its termination within the lifetime of someone born today is inevitable – unless it continues to be sustained for a while longer by an entrenched minority at the cost of imposing great suffering on the rest of mankind.
(Goldsmith *et al.*, 1972: 15)

The same year, 1972, saw the publication of the landmark study *Limits to Growth* by a global think-tank known as the Club of Rome and the first serious international discussion of global environmental issues at the United Nations Conference on the Human Environment in Stockholm.

The Club of Rome (Meadows *et al.*, 1972) report attempted to combine optimism concerning human potential to innovate and transcend environmental and demographic problems with a well-evidenced warning that if contemporary trends continued there would be dire economic and ecological consequences. Their global model was built specifically to investigate five major trends – accelerating industrialization, rapid population growth, widespread malnutrition, depletion of non-renewable resources and a deteriorating environment. The authors looked to the future too, posing some key questions: What do we want our world to be like? Can we continually keep expanding production and consumption? The answer was a clear No. Achieving a self-imposed limitation to growth would require considerable effort, however. It would involve learning to do many things in new ways. It would tax the ingenuity, the flexibility, willpower, moral sense and self-discipline of the human race. Bringing a deliberate, controlled end to growth would be a tremendous challenge, not easily

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met. Would the final result be worth it? What would humanity gain by such a transition, and what would it lose? Thirty years later, three of the authors published an update (Meadows *et al.*, 2005). They reviewed the debates and criticisms, analysed new evidence, amended their position but firmly and clearly demonstrated that their theory of necessary limits to growth still remained vital and significant.

Concurrent with the work of the Club of Rome, the General Assembly of the IUCN (World Conservation Union), a body established in the wake of the Second World War, met in New Delhi. With the newly formed WWF (World Wildlife Fund, later renamed World Wide Fund for Nature) the IUCN was concerned to develop new strategic thinking for animal and habitat conservation and human well-being. The concept 'quality of life' became the centrepiece for IUCN thinking and policy development intelligently linking cultural diversity with ecological or biodiversity. In 1980, the IUCN published its *World Conservation Strategy* and so launched into the global public sphere the seemingly new concept, and potential future practice, of sustainable development. Humanity's relationship with the biosphere, the Strategy states, will continue to deteriorate until a new international economic order and a new environmental ethic is established. Prefiguring the more famous Brundtland Declaration of seven years later, the IUCN carefully defined its terms:

Development is defined here as: the modification of the biosphere and the application of human, financial, living and non-living resources to satisfy human needs and improve the quality of human life. For development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base; and of the long term as well as the short term advantages and disadvantages of alternative actions.

(IUCN, 1980: 2)

Conservation is defined here as the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of the future. Thus conservation is positive, embracing preservation, maintenance, sustainable utilization, restoration and enhancement of the natural environment. Living resource conservation is specifically concerned with plants, animals and micro-organisms, and with those non-living elements of the environment on which they depend. Living resources have two important properties, the combination of which distinguishes them from non-living resources: they are renewable if conserved and they are destructible if not.

In 1980 the Brandt Commission published its *North-South: A Programme for Survival*, placing the responsibility for human survival firmly in the political arena at a time when leaders seemed more concerned with Cold War ideological posturing than addressing pressing issues of global poverty, social inequality, justice, self-determination, human rights and the depletion of natural resources. The Commission did not redefine development, but duly noted:

One must avoid the persistent confusion of growth with development, and we strongly emphasize that the prime objective of development is to lead to self-fulfillment and creative partnership in the use of a nation's productive forces and its full human potential.

(Brandt, 1980: 23)

In other words, development strategy should not be predicated upon ever expanding economic growth or GDP. The whole world should not use as its model for future prosperity what has occurred in the West. The standard of life is not the same as the quality of life. Development should focus on enhancing the latter, should be more about well-being than the relentless accumulation of material products, and each region with its own ecological and cultural heritage should be able to chart its own distinct and distinctive path. In many ways the Brandt Commission Report echoed the work of the International Foundation for Development Alternatives (IFDA) which published, also in 1980, Dossier No.17, *Building Blocks for Alternative Development Strategies*, stating:

The development *problematique* can thus be defined in an objective way: the society, its economy and polity, ought to be organized in such a manner as to maximize, for the individual and the whole, the opportunities for self-fulfillment. Developing, as the etymology suggests, means removing the husk – that is overcoming domination; liberating; unfolding. Development is the unfolding of people's individual and social imagination in defining goals, inventing means and ways to approach them, learning to identify and satisfy socially legitimate needs. . . . To develop is to be, or to become. Not to have.

(IFDA, 1980: 10)

Thus wealth and development took on a qualitative as well as a quantitative aspect. Material and spiritual poverty both need to be addressed. In 1983 work started on a major study by the World Commission on Environment and Development (WCED) that would firmly establish sustainable development as the most significant concept and practice of our time. In 1987 the results were published as *Our Common Future* (the Brundtland Report). More than half of the Commission were representatives from developing countries, ensuring that global environmental concerns would not overwhelm the desire to eradicate problems of human need and poverty. Unlike Brandt, Brundtland did offer a definition of *sustainable development*: 'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (WCED, 1987: 43).

This definition is still commonly used, despite it attracting serious criticisms for suggesting that economic growth, industrial modernization and market imperatives should be key drivers and goals for all nations. Whereas the industrialized North seemed to be, and in many ways still is, concerned with environmental impacts, the issues confronting the majority South included poverty, health, income, agricultural sustainability, food security, educational opportunity and achievement, shelter, sanitation, desertification and armed conflict. Nevertheless, the Brundtland Report did tacitly recognize the internal contradictions within the concept when it stated:

[Sustainable development] contains within it two key concepts:

- 1 The concept of 'needs', in particular the essential needs of the world's poor, to which over-riding priority should be given.
- 2 The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

(WCED, 1987: 43)

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Although acknowledging that its analysis and recommendations were specifically rooted in the 1980s, *Our Common Future* concluded its outline of sustainable development by stating that its realization also required:

- a political system that secures effective citizen participation in decision-making;
- an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis;
- a social system that provides for solutions for the tensions arising from disharmonious development;
- a production system that respects the obligations to preserve the ecological base for development;
- a technological system that can search continuously for new solutions;
- an international system that fosters sustainable patterns of trade and finance; and
- an administrative system that is flexible and has the capacity for self-correction.

(WCED, 1987: 65)

The 1992 Rio Earth Summit and after

Five years later, in 1992, the UN Conference on Environment and Development, the follow-up to Stockholm, was held in Rio de Janeiro. This meeting, known as the Earth Summit, produced a number of agreements, including the Rio Declaration on Environment and Development, the Framework Convention on Climate Change, the Convention on Biological Diversity, a non-binding Statement on Forest Principles, and the hugely cumbersome but nonetheless important agreement known as Agenda 21 (Grubb *et al.*, 1993).

The Convention on Biological Diversity (CBD) and the negotiations before and after the 1997 Kyoto Protocol on climate mitigation are two important examples of multilateral environmental agreements (MEAs). Maintaining biological diversity is key to maintaining the planet's overall health. Healthy ecosystems replenish natural resources, offering all creatures the dynamic equilibrium upon which life depends. If plant and animal species disappear, as they are doing at an unprecedented rate, then monocultures will emerge that are highly susceptible to disease, global warming and other damaging ecological change. Industrialized systems of agricultural production and other commercial activities are creating monocultures, and both governments and corporations officially recognize that such impacts must be mitigated and managed – biological diversity must be conserved, resources must be used more sustainably and the benefits from the planet's genetic resources shared (more) equitably. Following Rio, many national strategies have been based on these broad international agreements, although indigenous peoples and local communities have not always found their inputs accepted when the actual implementation processes are scrutinized closely. Trade and commercial imperatives have led to rather weak attachments to sustainable development. Probably most depressing have been the limited, tortuous and hesitant agreements around Kyoto – so far the only international, legally binding agreement on climate change. The parties involved agreed to a 5.2 per cent reduction by 2012 in greenhouse gas emissions relative to 1990 (8 per cent for the EU) and this was seen

by many, even in 1997, as painfully inadequate, not least because developing nations like China were not included. The conversion of specific sources of pollution into tradable commodities through emissions trading was also allowed with the biggest entitlements and benefits going to the worst polluters. The biggest per capita emitter of all, the US, refused to accept even this and it was not until 2002 that Russia and Canada ratified the Kyoto Protocol, finally bringing the treaty into effect in 2005. At the 2007 G8 summit in Germany, the American administration of George W. Bush did recognize the reality of human induced climate change but nonetheless still refused to endorse international action to significantly curb emissions. However, towards the end of 2007, the US hosted its own international conference on climate mitigation and reluctantly agreed to support, albeit unspecified, climate reduction targets at the United Nations sponsored climate conference held in Bali that December.

Issues of climate change, global poverty, economic inequality and water shortage also highlight the significance of gender in sustainable development. Although much NGO attention has focused inevitably on the appalling inequalities and hardships many women experience, gender issues cannot be separated from wider social, cultural or environmental concerns, which sometimes seems to be the case. The Women's Environment and Development Organization (WEDO) has campaigned vigorously to combat the intergovernmental blindness to the gender implications of environmental policy and actions. Global climate change negotiations, including the Kyoto Protocol and the reports of the United Nations' Intergovernmental Panel on Climate Change (IPCC), concentrate almost exclusively on reducing greenhouse gas emissions, largely ignoring the wider social and gender impacts. By 2007, only:

four out of the fourteen National Adaptation Plans of Action that have been submitted to the global climate change convention specifically mention the importance of gender equality. The MDGs set out global benchmarks on gender equality, poverty eradication and environmental sustainability, although national reports have so far neglected to seriously address the linkages between these areas.

(WEDO, 2007: 3)

A United Nations Environment Programme (UNEP, 2006) survey, 'Gender mainstreaming among environment ministries', discovered that just two countries involved in climate change activities had incorporated a gender perspective. However, as well as arguing that women often suffer disproportionately from unsustainable development, UNEP frequently promotes women as important agents for community empowerment, social leadership and positive change. As the World Conservation Union has shown (IUCN, 2007), communities often cope more effectively during natural disasters when women play a leadership role in early warning systems and post-disaster reconstruction than when they do not. The IUCN also notes that women's local knowledge and skills offer tangible benefits such as the Inuit women of Northern Canada having a deep understanding of weather conditions because of their traditional responsibility for evaluating hunting conditions. When a drought occurs in the small islands of Micronesia, local women who have a sound knowledge of island hydrology find potable water by digging new wells. WEDO (2007: 3) adds that women tend to share information related to community well-being, choose less polluting energy sources and adapt more easily to environmental changes when their families' 'survival is at stake'.

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The forty chapters of Agenda 21 offer an action plan for sustainable development, integrating environmental with social and economic concerns, and articulating a participatory, community-based approach to a variety of issues, including population control, transparency, partnership working, equity and justice, and placing market principles within a regulatory framework. Local Agenda 21 (LA21), its local realization, was and remains not legally binding, although by the end of 2000 many countries, including the UK, had policies and frameworks for sustainable development at local and regional levels, with municipal governments in many countries taking a strong lead. In those, particularly Scandinavian countries where local government has a considerable degree of autonomy to raise income locally and regulate environmental matters, LA21 has been most successful. However, throughout the world, even though local government priorities and powers may differ, global structures of economic, financial and political power, which include support for the neoliberal free-trade system, have compromised attempts to fashion sustainable development from the bottom up. The local cannot be disassociated or disconnected from the global, conceptually or practically. Nonetheless, the LA21 process continued with, from 2002, Local Agenda 21 turning into Local Action 21. In 2004 the Aalborg Commitments (CEMR/ICLEI, 2004) was published, showing many local authorities within the European Union to be firmly embracing the need for urban sustainability and good governance.

Rio was, despite all the compromises and shortfalls, a significant achievement, which over the years, has gained in stature and authority, not least, and somewhat paradoxically, because of the reluctance of the US to accept sustainable development policies, its frequent refusal to recognize the importance of the precautionary principle as a guide to environmental law, the necessity of reaching global agreements on cutting greenhouse gas emissions and its continuing support for neoliberal economic globalization. Also, again somewhat paradoxically, the fact that the Rio Declaration was seriously criticized by many radical green groups made its achievement all the more valuable and symbolic. For instance, *The Ecologist* magazine published a sharp critique, *Whose Common Future?* (*The Ecologist*, 1993), in which the Editor, Edward Goldsmith, noted that the real question is not how the environment should be managed, but *who* should manage it and in *whose* interest. We may share one planet, but we do so in an unequal and frequently unjust way. In addition, poverty is not the absence of a Western lifestyle and neither is it the cause of environmental degradation, rather it is a consequence. Globalized neoliberal economics and free trade will destroy cultural and biological diversity, not conserve it. Pollution and other externalities are caused, not cured, by modernization and development, and global environmental management, technology transfer and World Bank-financed infrastructure projects (for example, US\$50 billion for 500 dams in 92 developing countries) reinforce the economic and political hegemony of the developed nations, notably the US, the big corporations and international financial agencies (Baker, 2006), while leading to further environmental and social problems. There is much evidence to support these assertions. After serious protests and much adverse publicity, in part due to the relentless campaigning of the Booker Prize-winning novelist Arundhati Roy, the World Bank reviewed its commitment to the highly controversial Narmada Dams project in Gujarat and Madhya Pradesh in India, admitting that it was likely that one million people would be adversely affected through displacement and/or loss of livelihood by the project. The Bank withdrew its support but, as will be seen in [Chapter 6](#), this was not the end of the story.

Ten years after Rio, in 2002, the Johannesburg Summit reviewed the decade's progress. The tensions apparent in 1992 remained, with the ideas and values of market liberals and institutionalists still dominating. Although the final Declaration noted that global disparities in wealth and environmental degradation now risk becoming entrenched and that, unless the world acts in a manner that fundamentally changes the lives of the poor, these people may lose confidence in democratic systems of government, seeing their representatives as nothing more than sounding brass or tinkling cymbals, as stated in Paragraph 15 of the 2002 Johannesburg Declaration on Sustainable Development (UN, 2002a). Little was said about financing international development, although in the same year, at an International Conference on Finance for Development in Monterrey, north-east Mexico, a consensus was reached on financing sustainable development, fostering health and education, providing shelter, eradicating poverty and sustaining economic growth. The role of trade and overseas development aid, the importance of debt reduction and good governance in the developing world, and the mobilization of national economic resources and external investment were directly addressed. Economic crises underscore the importance of effective social safety nets (UN, 2002b).

For many anti-globalization protestors who had earlier demonstrated against the extension of the free trade rules of the WTO in Seattle, the Johannesburg Summit was also a disappointment, despite a few positive advances. Economic insecurity was recognized as affecting human well-being, and globalization itself was recognized as a new challenge for those advocating sustainable development. And, despite all the criticisms, disappointments and missed opportunities, the intense diplomatic activities did achieve a number of important things, not least a recognition that sustainable development at a global level has led to, and requires, policies, procedures and principles supporting intergovernmental cooperation and a global civil society that will check, monitor, promote and campaign for change in the face of official reluctance, indifference or denial, and some acute crises in the global economy.

Thus the first fifteen years of the twenty-first century has seen economic and financial crises and limited progress with regard to sustainable development. In December 2009 a major climate conference was convened in Copenhagen to decide the successor to Kyoto, but no legally binding treaty emerged from the tortuous negotiations that were frequently deadlocked. China, India and the United States were each in turn blamed for the conference failure by politicians from other nations, international NGOs and media commentators. However, delegates did agree that global warming should not exceed two degrees centigrade but set no actual targets for cutting emissions. As Benito Muller (2010: ii) of the Oxford Institute for Energy Studies wrote, the real culprits were not the negotiators at Copenhagen but '*a lack of political will and leadership*' during the months leading up to the Conference to engage in real negotiations'. However, over the next few years talks continued at Cancun, Durban, Bangkok, Bonn and in November–December 2012 in Doha, Qatar. A number of documents were produced at Doha, collectively known as The Doha Climate Gateway, which extended the Kyoto protocol to 2020 but limited the scope of global carbon emissions to 15 per cent because Japan, Russia, Canada and the US did not participate and because China, India and Brazil were classified as developing nations at Kyoto and are consequently not subject to these emissions reduction targets. Climate campaigners and others reviewing these negotiations have frequently expressed their exasperation and frustration. In 2011 Kevin Anderson

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and Alice Bows published a paper for the Royal Society in the UK warning that there was ‘no chance’ of keeping global warming below 2°C and in any case recent studies relating to the impacts associated with such a rise have been revised upwards from ‘dangerous’ to ‘extremely dangerous’. Consequently, Anderson and Bows write: ‘with tentative signs of global emissions returning to their earlier levels of growth, [the year] 2010 represents a political tipping point’ (2011: 41).

Ten years further on and despite the high expectations, there were many disappointments with the Rio+20 conference too. Although progress since the first Earth Summit in 1992 was carefully evaluated, commemorated and celebrated, there were no new agreements or targets in 2012 but plenty of ‘reaffirmations’ and ‘recognitions’ in the final published document *The Future We Want* (United Nations, 2012: para 19 [p. 4]). Indeed, the clear admission expressed in the statement ‘we emphasize the need to make progress in implementing previous commitments’ indicates both why and how so many delegates felt so deflated with the conference outcomes. Much of the debate was polarized around the meaning of the ‘green economy’, which for many seemed to coalesce around the desire for green energy technologies rather than defining the need for a new economic paradigm that favoured social equity and quality of life above economic growth. UNEP, for example, clearly advocated and advocates a series of policy prescriptions characterized by the key principles of ecological modernization, the low carbon economy and eco-efficiency. At a moment when the global economy was experiencing considerable stress as a result of the serial failures of finance capitalism, the Rio+20 vision for the future was hesitant, modest and accommodative:

In this regard, we consider green economy in the context of sustainable development and poverty eradication as one of the important tools available for achieving sustainable development and that it could provide options for policy making but should not be a rigid set of rules. We emphasize that it should contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth’s ecosystems.

(United Nations, 2012: para. 56 [p. 9])

No wonder, then, that the defensive concept of ‘resilience’ seemed to hold centre stage, being referred to on thirteen separate occasions in the summit’s outcomes document (Blewitt and Tilbury, 2013). Having said that, if progress was made at Rio in 2012 it was in acting on the recognition that no single assessment matrix for sustainable development had been previously devised and accepted. Thus it was decided that an immediate task for the future was to fashion a set of sustainable development goals (SDGs), which in effect would supersede the Millennium Development Goals (MDGs) formulated at the turn of the century (see p. 31 for a discussion on MDGs). These goals would be action orientated, concise, easy to communicate, limited in number, aspirational, global in nature and universally applicable to all countries. In January 2013 a thirty-member working group of the UN was tasked to devise a proposal on the SDGs, which would then be integrated into the UN’s post-2015 development agenda. An IIED (International Institute for Environment and Development Policy Paper published in March 2013 (Geoghegan, 2013) outlined a number of possible principles and approaches to help the process move forward.

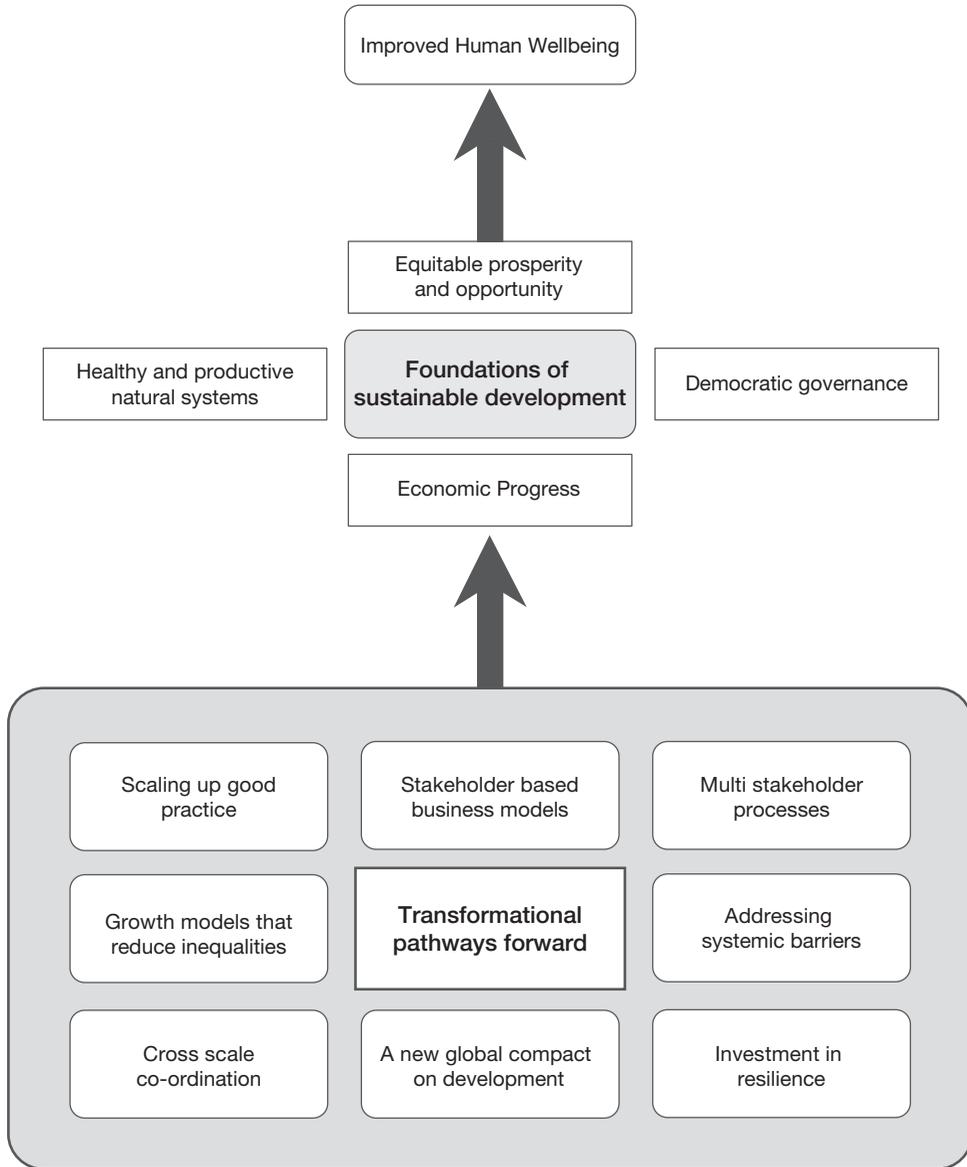


Figure 1.1 The foundations for the post-2015 sustainable development process
Source: Adapted from Geoghegan, 2013: 4.

Although there were some activist protests as well as internal disagreements among negotiators at Rio in 2012, there were little, if any, popular protests or street-based discontent with the outcomes in the world's major cities as the predominant concern for most people in the world was squarely with the economic. Financial austerity in Europe, the increase in global unemployment and in social inequality concentrated many people's minds on looking for genuine alternatives to the present order of things and ways of being. The Occupy movement and a renewed interest in alternative forms of political and economic organization did take to the streets in many of the world's global cities. As Indian activist and novelist Arundhati Roy said at the end of her 2003 *Confronting Empire* (Roy, 2003) speech at the World Social Forum in Porte Alegre, for a moment it seemed for some at least that just perhaps, 'Another world is not only possible, she is on her way. On a quiet day, I can hear her breathing.' But it wasn't breathing at Rio in 2012.

Sustainable development and the question of spatial scale

Sustainable development is about protecting and conserving the planet's natural environment and promoting social equity and a degree of economic equality within and between nations. This can be conceptualized as a process of convergence so the question of spatial scale is a necessary element in any serious thinking and action, designed to make our world a better place. It is possible to conceive of scale in ecological and socio-political terms (Grainger, 2004):

Table 1.1 Ecological and socio-political scales (adapted from Grainger, 2004)

| <i>Ecological scale</i> | <i>Socio-political scale</i> |
|-------------------------|---|
| Biosphere | World |
| Biome-type | Supranational regions |
| Biome | State |
| Landscape | Region |
| Ecosystem | Locality 1: city, town |
| Community | Locality 2: village, community, neighbourhood |
| Population | Household |
| Organism | |

Institutions and organizations operate at many different levels. The United Nations and the World Bank are large international bodies operating on the global scale and through their various projects shape the lives of people in specific communities and households. These bodies may develop and implement policies, treaties and actions that affect all ecological scales. The European Union operates at a supranational level and the Environmental Protection Agency in the USA operates at a national level but its effects may be experienced far wider. And there are countless numbers of community groups, businesses, and formally or informally structured activist organizations that operate at the very smallest scales. National or neighbourhood campaigns to reduce, recycle or reuse will ultimately rely on individual households and citizens wanting to conduct themselves in a more sustainable manner. Complementing, and perhaps complicating, this further are the various 'capitals' dispersed across the planet on a variety of spatial scales. When we consider the possible conditions – strong, weak or very weak – it may become very difficult to see some

capitals applying to more than one spatial scale. Grainger suggests that under the Very Weak condition, Critical Natural Capital is meaningful at a global scale but becomes less so at lower ones. There are implications too with regard to practical action and communication. As a consequence of natural and other endowments, it may not be possible for a small town or village to be sustainable if sustainability is understood in isolation from the wider ecological or political processes, or isolated from other towns, villages and surrounding rural hinterlands. Although an individual town may strive towards being carbon neutral, this may be practically impossible although the actions of ‘transition towns’ may contribute to overall sustainability at higher levels and, most importantly inspire, communicate or model sustainable action for people in other localities. As towns and cities are intensive resource users, often having huge environmental footprints, any improvement will impact positively on global sustainability. Actions at local level, if multiplied, may influence policy and practice at higher levels. We can act locally and think globally. We can also act globally and nationally too, as Pontin and Roderick (2007) demonstrate in their call for a ‘converging world’ of equitable resource use across the planet initiated by grass-roots community-based action incorporating carbon offsetting, civic dialogue, fair trade business development, one planet living, localization and the emergence of broader solidarity movements linking North and South.

The national context: sustainable development in China

For a huge country China is surprisingly relatively poor in natural resources. It had a population of 1.344 billion in 2011 but only 20 per cent of the fresh water which is available to the US with its population of 311.6 million. Southern China may receive decent rainfall but the north of the country is looking to become the world’s largest desert. Since 1979 China has introduced a number of market-orientated reforms that have transformed Chinese society and the Chinese economy. In 2010, China GDP stood at US\$6 trillion but in terms of per capita income ranked 128 out of 130 countries. China is a developing country but one whose income inequalities are increasing, whose political system is largely undemocratic and whose economy needs to grow in the long term but not at the expense of its population or its natural environment. In recent decades the increases in economic production and consumption, urbanization and population movement have been immense, and these have often been accompanied by considerable social and environmental problems that have had a negative impact on the Chinese economy (Economy, 2004; Jacques, 2011; Andressen *et al.*, 2013). For instance, development has been highly resource and carbon intensive. Acid rain affects 28 per cent of Chinese territory and 300 million people lack clean drinking water. Pollution and environmental degradation accounted for 10.51 per cent of gross national income in 2008; and, since 2007 China has exceeded the US as the largest emitter of greenhouse gases in the world, although per capita emissions still fall short of those of US citizens. Public health issues ranging from respiratory illnesses to cancer are increasing. According to Guan *et al.* (2012), emissions in China may actually be up to 20 per cent higher than official statistics demonstrate. However, China has also recognized the need to implement a number of significant sustainable development policies, of which poverty reduction and population control are of primary importance, but spending on environmental protection is still largely inadequate and much tends to get diverted through local corruption.

However, the Chinese press have become more vigilant than previously in investigating environmental failings and the Chinese public have become more confident in challenging political decisions they see as being damaging to the environment and to public health. In 2011 an editorial by Environment Minister Zhou Shengxian stated the ‘depletion, deterioration, and exhaustion of resources and the worsening ecological environment have become bottlenecks and grave impediments to the nation’s economic and social development’ (quoted in Economy, 2013). In March 2012 former Prime Minister Wen Jiabao acknowledged that the government had failed to meet many of the environmental targets in the country’s eleventh five-year plan, including reductions in nitrogen and sulfur dioxide, action to combat water-pollution measures and to reduce energy intensity.

There have also been human rights concerns over China’s one-child policy, and poverty eradication has often meant prioritizing economic growth at the expense of the ecological environment. The one-child policy became national policy in 1979 and the fertility rate – that is, the average number of births per woman – has fallen from 2.91 in 1978 to 1.6 in 2010. Apart from skewed sex ratios, China now has an ageing population and social security finance issues. The controversies around the construction, environmental destruction and population displacements of the massive Three Gorges Dam have received global attention. Over 120 million people live in rural poverty, and deforestation, resource degradation, overgrazing and the over-exploitation of agricultural land remain serious and unresolved problems. Around 60 per cent of the oil China uses is imported and 40 per cent of the energy China uses is to produce exports for Western markets. Much of this energy comes from coal, which in China is cheap and abundant. New environmental laws and regulations on clean production, renewable energy, environmental impact assessments and pollution control have been passed to deal with the adverse environmental impact of these market externalities and market failures, but enforcement has not yet matched the strict intentions of the law makers (Zhang, 2002). Local officials are not always very responsive to the advocacy efforts of local environmental campaigners. Air pollution in some of China’s massive new cities is a major policy concern. Thus in 2012 China published a major *National Report on Sustainable Development* (Peoples Republic of China, 2012) and some Chinese economists, particularly Angang Hu (Hu, 2006, 2011), have powerfully advocated a non-traditional modernization/people-centred sustainable development, comprising green cities, green technologies, green industries and green energy. ‘It is possible for China not to repeat the high resource consumption and high pollution discharge process adopted by many Western countries and go straight to the stage of “green development”’ (Hu, 2006). China aims to generate 15 per cent of its electricity from renewable resources by 2020 and over 30 per cent by 2050, and has set itself the goal of becoming a global leader in low carbon technologies, including wind turbines, solar, hydro-power and batteries.

China is often presented in the West as being uninterested in combating climate change, but its National Report on Sustainable Development strongly asserts the opposite, stressing that it adheres to the principles of fairness and ‘common but differentiated responsibilities’, as outlined in the UN Framework Convention on Climate Change, and has made considerable progress in this area.

As of the end of 2010, China had ratified 3,241 clean development mechanism projects, of which 1,718 projects successfully registered with the United Nations

Clean Development Mechanism Executive Board. For the registered projects, the certified emission reductions are expected to be about 351 million tons of carbon dioxide equivalence, accounting for 63.78% of the global total, which is a tremendous contribution to global greenhouse gas emissions reduction.

(People's Republic of China, 2012: 85)

In 2008, China published the Circular Economy Promotion Law following those of Germany and Japan, making it the world's third. A number of pilot programmes have been introduced on resource utilization, the industrialization of remanufacturing and the recycling of renewable resources.

A total of 90 pilot cities in three batches and 11 distribution markets have been identified as pilot programs for renewable resource recycling system building. An urban renewable resource recycling system, based on recycling stations and the sorting, processing and gathering areas (bases), and supported by an information management platform, has gradually been formed. Since 2009, 110 end-of-life vehicle recycling and dismantling enterprises have been selected for pilot projects for retrofitting and upgrading, in an effort to improve the level of resource utilization. The construction of "urban minerals" model bases is being carried out in order to promote the large-scale and high-value recycling of renewable resources.

(People's Republic of China, 2012: 16)

Internationally, China has persistently argued that the developed countries should lead the world in changing unsustainable patterns of production and consumption, and that they ought to help developing countries develop a green economy through finance, technology transfer, capacity building and access to expanding markets. For developing countries, including China, green economic strategies should be designed and implemented in line with national conditions.

Many developing countries are at a stage of rapid industrialization and urbanization, during which they are faced with both the arduous tasks of poverty eradication, economic restructuring and the transition to a green economy, and with the constraints of energy, resources and environmental factors. Developing a green economy in these countries is crucial to the global sustainable development, and they deserve the understanding and support from the international community.

(People's Republic of China, 2012: 89)

A globalizing world

Like so many other concepts, globalization has been subject to a considerable amount of debate in academic and policy circles. Although a few people dispute whether globalization is either occurring or is indeed a useful way of making sense of current trends and processes, there is a general consensus that globalization is real and characterizes the nature of our times. There are a number of definitions on offer, including notions of space-time compression and accelerating interdependence but for Held *et al.*: 'Globalization may be thought of initially as the widening, deepening

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and speeding up of worldwide interconnectedness in all aspects of contemporary social life, from the cultural to the criminal, the financial to the spiritual' (1999: 2).

Held *et al.* recognize the importance of various spatial attributes, suggesting that globalization can be located on a continuum that includes the local, national and regional understood as functioning clusters of states, economic relations, networks and societies. The authors continue: 'Globalization can be taken to refer to those spatio-temporal processes of change which underpin a transformation in the organisation of human affairs by linking together and expanding human activity across regions and continents' (1999: 15).

Without reference to these spatial connections there can be no meaningful articulation of globalization. This approach implies:

A stretching (extensity) of social political and economic activities across frontiers such that events, decisions and activities in one region of the world have significance for individuals and communities in others.

Connections across frontiers are regularized rather than occasional or random making for an *intensification*, or growth in magnitude, of interconnectedness, patterns of interactions and flows which transcend the various societies and states making up our world.

The growing *extensity*, *intensity* and *velocity* of global interconnectedness relates to a speeding up of global interactions due to the development of worldwide systems of transport and communications which increase the speed of the global diffusion of ideas, goods, information, capital and people.

The local and global are often deeply inter-related so that distant events may have profound local impacts in other parts of the world and very local developments may eventually have enormous global consequences. *The boundaries between domestic and global affairs are therefore likely to become blurred.*

Many globalization theorists, including most notably Manuel Castells (1996), frequently reference to:

- *Flows* – the movements of physical artefacts, people, symbols, tokens and information across space and time.
- *Networks* – regularized or patterned interactions between independent agents, nodes of activity or sites of power.

To understand globalization it is probably useful to consider issues such as climate change or transboundary pollution – for example, acid rain or the fall-out from nuclear disasters such as Chernobyl. Such phenomena do not respect national boundaries. Desertification, environmental degradation, resource depletion, world trade, global communication, new media, population movements, the refugee crisis, crime, war and security issues also rarely stay confined within states or even regional jurisdictions (Homer-Dixon, 1999; Barnett, 2001). Economic growth, industrial development and consumerism in countries such as India and China are currently having massive global impacts, influencing the wider ecological and economic environment and the everyday life experiences of citizens throughout the world. This

has led geographer Doreen Massey (1993: 66) to reconceptualize the specificity of a place as 'a constellation of relations, articulated together at a particular locus' comprising many experiences and understanding of its links to a wider world. Social relations of domination and subordination are consequently stretched over space, over the whole planet, so that child labour on one continent supports consumer materialism on another, or environmental degradation or conflict in one region subsidizes politics and energy use in another (Massey, 2005).

Held *et al.* (1999: 377) posit an anthropocentric conception of *environmental degradation* which refers to 'the transformation of entire eco-systems or components of those ecosystems . . . whose consequences, whether acknowledged by human actors or not, have an adverse impact on the economic or demographic conditions of life and/or the health of human beings'. This conception recognizes the importance of the interaction between the natural and human-social worlds together with the problems and opportunities that human activity generates. Resource depletion, water shortages and, of course, climate change are again key issues. Given this, the globalization of environmental degradation may take various forms:

The exploitation and destruction of the *global commons* – the atmosphere, marine environment, hydrological cycles.

Demographic expansion and exponential economic growth that leads to increases in pollution and consumption of global raw materials e.g. oil, timber, etc.

Transboundary pollution involving the transmission of pollutants through the air, soil and water across political borders so that their environmentally degrading impact occurs in many other countries.

Joseph Stiglitz and globalization

Former Chief Economist at the World Bank and Chair of President Clinton's Council of Economic Advisers, Joseph Stiglitz (2002) has been an eloquent and constructive critic of economic globalization, suggesting that experience of the 1980s and 1990s has been at best uneven and at worst disastrous for many developing countries. As a result of IMF and World Bank policies, many saw their debts increase, their economies weaken, their environments degraded, and social injustice and economic inequality spiral downwards. Globalization has not brought the economic benefits to poorer countries which advocates of liberalization in the West promised. The developed world did not open up their markets to goods coming from the developing world, the developed world did not abolish subsidies to their own farmers, while frequently benefiting from the loosening of controls on capital flows that enabled money to easily move in and out of countries irrespective of the social consequences. Conditions attached to IMF loans undermined the sovereignty and social infrastructure of developing nations, with governments forced to privatize their assets, abandon plans for public investment in health, training and education, and lower or abolish trade tariffs. There is very little for unskilled workers to do in lesser developed countries in a globalized economy apart from live in slums and join the informal sector of beggars and casual labourers. These 'structural adjustments' have had profoundly adverse effects on many urban dwellers, increasing poverty and hardship to such an extent that researchers have wondered how the poor actually survive

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(Rakodi, 1997; Potts, 1997). And it is not just the urban areas that have suffered because, as Potts and Mutambirwa (1998) have shown, the strength of rural urban economic interaction means that the destiny of the countryside is often tied to that of the town and city. The idea that economic growth, driven by the free market, would ultimately benefit everyone via the magical notion of ‘trickle-down economics’ has been a fiction. The hegemonic dominance of the ‘Washington Consensus’ forged between the IMF (on 19th Street), the World Bank (on 18th Street) and the US Treasury (on 15th Street) focused on a one-size-fits-all strategy, emphasizing down-scaling government intervention in the economy, deregulation, rapid liberalization and privatization. In most cases, this strategy did not work (Africa, Latin America) but where it was tempered or ignored (East Asia, China) economic resilience and development was able to emerge from the global economic turbulence of the 1990s. The Asian Development Bank, by contrast, argued for alternatives, a ‘competitive pluralism’, in which governments in developing countries, although basically relying on markets, were active in shaping and guiding these markets through promoting new technologies, and by insisting private businesses seriously consider the social welfare of their employees and the wider society in which they live. Stiglitz, however, is not opposed to globalization as such, for he believes that with appropriate regulation, equitable trade laws, good nation-state and corporate governance it can be a genuine force for global good. There are alternatives to the Washington Consensus, which he develops in both *Fair Trade for All* (Stiglitz and Charlton, 2005) and *Making Globalization Work* (Stiglitz, 2006).

Stiglitz acknowledges that making globalization work ‘will not be easy’ (2006: 13), suggesting a number of general actions that can, and should, be initiated to produce a more comprehensive approach to global development. These include:

Increase foreign assistance from the rich countries to the poor to the value of at least 0.7 per cent of their GDP.

Cancellation or relief of foreign debt, with regard to the decision by the G-8 at Gleneagles in 2005 when the debts owed by the eighteen poorest developing nations to the IMF and World Bank were written off.

Genuine fair, rather than free trade, recognizing the limitations of economic liberalization and iniquities produced by global corporate monopolies and cartels.

Protection of the global environment on which all economies ultimately depend through a sensible and workable public management of global natural resources and regulations on their usage and on actions, giving rise to ‘externalities’ and costs.

Good, democratic, government, including enhanced possibilities for democratic regulation of the economic and participation in decision-making processes at all levels.

The voice of the developing nations ought to be listened to more frequently. The fictional trial of international financial institutions that took place in Sissako’s 2006 film *Bamako* is taking place in many other forums within global civil society. The USA ought to recognize, and act on, its moral obligations to emit fewer greenhouse gases, particularly CO₂, offer more aid and negotiate better trading arrangements.

Developing countries frequently do not have sufficient resources to avoid illegal logging so they should be paid to stop further deforestation, according to the Rainforest Coalition led by Papua New Guinea, by being allowed to sell carbon offsets for new forest planting. Stiglitz (2006) also believes that although global corporations frequently facilitate technology transfers, raise skill standards and develop markets that do help developing countries, their primary purpose to make money is clearly articulated by their fiduciary relationship to their stockholders. Consequently, to counteract the harmful effects of corporate actions Stiglitz believes that it is necessary to reshape private incentives with social costs and benefits to avoid environmental destruction and labour exploitation. This can be achieved through:

- A combination of corporate social responsibility supplemented by stronger regulations to prevent unfair competition.
- Limitation of corporate power through the implementation effective global anti-trust laws.
- Better corporate governance whereby companies are held accountable to all stakeholders – employees and communities as well as shareholders – making environmental destruction a crime just like fraud and embezzlement.
- International laws should be enacted against price fixing and labour exploitation.
- Reducing the scope for corruption, with bribery being viewed as an unfair competitive practice and bank secrecy eradicated so as to prevent the incentive to, or possibility of enhancing after-tax profits garnered from questionable business practices.

Stiglitz's time at the World Bank did see some changes with development priorities being refocused on poverty reduction, partnership and the creation of 'good policy environments' rather than simply economic growth. Despite these changes, limiting conditions on development loans remain, constraining the possibilities of developing nations to 'own' the preferred development policy (Pender, 2001).

Anti-globalization critiques

Activists and campaigners like Greg Buckman (2004), Vandana Shiva (2000), Walden Bello (2002) and George Monbiot (2004) criticize existing global institutions and internal trading systems. Their views have informed some of the more radical approaches to sustainability and sustainable development. They advocate alternatives that have a different value base, offering different sets of prescriptions and types of knowledge than that currently characterizing the dominant *neoliberal* discourse of economic growth, development and globalization. For Wolfgang Sachs (1999) of the Wuppertal Institute for Climate Environment and Energy, the costs and benefits of economic globalization have not been equitably globalized and nature has itself been colonized through the 1994 TRIPS (Trade-Related Intellectual Property Rights) agreement that gives corporations the right to patent genetic materials such as micro-organisms, seeds and even cells. This has helped 'modernize' agriculture, reinforcing the commercial advantages of growing cash crops in the developing world for markets in developed countries, and has effectively stolen the harvests and livelihoods of many local farmers in India and other nations (Shiva, 2000). For Bello (2002), founding director of Focus on the Global South, the IMF and the World Bank have

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been ‘unmitigated disasters’, with oligarchic decision-making defining the WTO and the centralizing tendencies of all three organizations, combined with the inordinate power of big corporations, militating against popular struggles for decentralization and democracy in many developing nations. At the very least, corporate power needs to be checked and regulated more effectively. In *Deglobalization: Ideas for a New World Economy* (Bello, 2004), he states that continuing anti-globalization action must be married to concrete proposals for an alternative system, re-empowering local and national economies, re-embedding the economy in society rather than having society driven by imperatives profit maximization, cost efficiency and other market verities. This may be accomplished as follows:

- By allowing countries to use their own internal financial resources to promote development rather than becoming dependent on foreign investment and foreign financial markets.
- Redistributing land and incomes to create a vibrant internal market that would secure economic prosperity and free up financial resources for internal investment.
- Lessen the salience accorded to economic growth in favour of emphasizing equity in order to fundamentally reduce ‘environmental disequilibrium’.
- Strategic economic decisions should be made subject to democratic debate and decision-making processes and not be left to the guiding invisible hand of the market.
- Civil society organization should constantly monitor both the private sector and the state.

New approaches to production, distribution and exchange should be developed that enable the emergence of a system that includes community co-operatives, private and public enterprises and exclude transnational corporations.

For environmental activist George Monbiot, globalization refers to first, the removal of controls on the movement of what has become known as ‘footloose’ capital; second, the removal of trade barriers and the ‘harmonization’ of trading rules; and third, the growth of multinational corporations which displace local and national businesses. However, the problem is not globalization as such but the inability of people, civil society and governments to control and restrain it. Monbiot writes: ‘our task is not to overthrow globalization, but to capture it, and to use it as a vehicle for humanity’s first global democratic revolution’ (2004: 23). His prescription or manifesto includes the establishment of a world parliament modelled in part on the World Social Forum, the establishment of an International Clearing Union, which would replace much of the undesirable work of the International Monetary Fund, many commercial banks and the World Bank whose policies and actions have increased the financial debts of the developing world. More economically sensitive and benign policies, including debt reduction and/or abandonment will replace them. Between 1980 and 1996 nations in sub-Saharan Africa paid out twice the sum of their debt in interest, thus owing three times as much in 1996 as they did sixteen years earlier. Finally, Monbiot (2003) advocates the creation of a Fair Trade Organization (FTO) to replace the iniquitous World Trade Organization whose operations seem to consistently benefit the rich nations at the expense of the poor. This would lead to greater global political and economic equality as well as a social and cultural equity only currently dreamed of.

Economic development for the poorer countries can only take place through a combination of trade and aid together with a degree of protection. Free trade rules benefit strong mature economies and not weak developing ones, which require a degree of government intervention to maintain social standards, business and economic security. For Monbiot, contemporary free trade rules are similar in effect and purpose to the imperial relationships and treaties first imposed on weaker nations – Brazil, Persia, China, Japan and the Ottoman Empire – in the nineteenth century. Poor nations are forced to grow cash crops and export raw materials to the affluent developed nations, which then ‘add value’ through production processes and refinement, while externalizing any environmental costs to the country of origin. ‘Footloose capital’ would be fettered. Multinationals would not be allowed to move from country to country seeking lower labour and environmental standards in order to boost or maintain profitability. Instead, corporations would be obliged, through incentives, to set high standards and would be punished if they did not. Producers and consumers should carry their own costs and not dump them on other people. Monbiot (2003) writes:

The FTO would, in this respect, function as a licensing body: a company would not be permitted to trade between nations unless it could demonstrate that, at every stage of production, manufacture and distribution, its own operations and those of its suppliers and sub-contractors met the necessary standards. If, for example, a food-processing company based in Switzerland wished to import cocoa from the Ivory Coast it would need to demonstrate that the plantations it bought from were not employing slaves, using banned pesticides, expanding into protected forests or failing to conform to whatever other standards the FTO set. The firm’s performance would be assessed, at its own expense, by a monitoring company accredited to the organisation. There would be, in other words, no difference between this operation and the activities of the voluntary fair-trade movement today.

The global meets the local at Clayoquot Sound, Canada

Despite the slogans, banners and protests it is sometimes difficult to see how the global meets the local, how abstract forces of supply and demand, of conflicts between the old and the new, and the cultural and economic, have broader effects. The fierce struggles, conflicts, debates and dialogues surrounding the logging of the old growth forests on Vancouver Island in western Canada from the mid 1980s onwards show how sustainable development frequently engages the local and global simultaneously, how ultimately the process is unavoidably political and unavoidably personal. At Clayoquot the interests of local businesses, the provincial government, native peoples and environmental activists combined with regional and global economic forces, with the needs and wants of individual and corporate consumers and the growing global concerns with wilderness preservation, environmental protection and the maintenance of community. The issues were (and are) far from simple and through political action, global media debate and engaged dialogue the concept of sustainable development was refined, applied and revised. Consequently, Clayoquot Sound is more than the active protests and the 800 or so arrests of 1993, the clear-cut logging practices of big corporations and the degrading of one of the most beautiful natural

environments on the planet. ‘Clayoquot Sound’ involves networks of actors, values, spaces and places, compromises and powerplays.

Although the physical action occurred in a remote rural locality the conflict was also quite urban. The major logging company had its headquarters in Vancouver, profits and products went to Toronto and Los Angeles, the Ministry of Forests was located in Victoria and the environmentalists pitched their media messages to audiences in New York and London. It demonstrated that if rural and urban areas are to be sustainable, then linear production processes relying on a one-way extraction of natural resources and the extensive waste of unused material have to be replaced by a more circular model where waste is reused and recycled – a resource for further productive activity. Clayoquot activists launched a global campaign to save other temperate rain forests. Ecotourism was identified as the economic saviour of the area, enabling business to become aligned with the environmentalists. However, the indigenous people of the locality, the Nuu-chah-nulth, feared their place-based cultural heritage would be overrun by more outsiders. As Warren Magnusson and Karena Shaw (2002: 7–8) argue in *A Political Space: Reading the Global through Clayoquot Sound*, Clayoquot is a site where many phenomena converge:

- The globalization of political struggle through the mass media, cultural exchanges and international trade relations.
- The shift from an industrial (logging jobs) to post-industrial economy (tourism jobs) dependent on information technology and orientated toward the consumption of signs, of the aesthetic natural beauty of the Sound, in the global cultural marketplace to attract tourists and their dollars.
- Ethnonationalist resistance to the homogenizing impact of the capitalist economy and Western culture.
- The global challenge to patriarchal gender relations, as well as the norms of sexual and personal identity, e.g. female corporate spokespeople feminizing the image of an international logging company.
- The rise of indigenous peoples as credible claimants to sovereignty under international law (British Columbia was not colonized through treaty negotiations).
- The threat of environmental calamity and the concomitant rise of a globalized environmental movement.
- The continuing critique of state institutions for their political/democratic inadequacy as a result of their actions, e.g. closed meetings, exclusion of elected representatives, etc.
- The problematization of science as a contested and highly politicized way of knowing the world (whose science? in whose interests? incorporation of traditional ecological knowledge in scientific deliberations, etc.) through its differing and competing methodologies and truth claims.

Sandilands (2002) suggests the experience of Clayoquot offers lessons in the delicate move towards dialogue and the recognition of pragmatic hybridity. In seeing a future for the locality in tourism, both extractive industry and wilderness were rejected as a multiplicity of interests, interpretations, perspectives, actions and goals became entwined in the unending politics of sustainable development. A Memorandum of Understanding between the major conflicting parties was signed in 1999 and the United Nations designated the area a Biosphere Reserve in 2000. This settled some

of the issues but not all. In March 2007, the Friends of Clayoquot Sound announced that environmental groups and the Tla-o-qui-aht First Nation people had won a five-year Moratorium on Logging in Clayoquot Sound's intact Upper Kennedy Valley (around 4,000 hectares) despite the provincial government's 2006 logging plan, which had included this area and where 75 per cent of the original forest had already been clear-cut. At the time of writing, this deferral allows time for the Tla-o-qui-aht to develop their own land-use plan for the entire Kennedy watershed.

The logging tenures in Clayoquot are now owned by five local First Nations who have formed the Iisaak Forest Resources. In January 2012 scientists across North

Box 1.1 Berlin Civil Society Center: Advancing the Post-2015 Sustainable Development Agenda

In March 2013 two hundred and seventy representatives from over two hundred civil society organizations from across the globe gathered for three days in Bonn, Germany, to discuss 'Advancing the Post-2015 Sustainable Development Agenda: Reconfirming Rights, Recognizing Limits, Redefining Goals'. With a multitude of discussions and consultation processes going on worldwide, the conference gathered key actors in the Post-2015 Sustainable Development Agenda debates, helping them to exchange information, learn from each other and identify common agendas and strategies.

The Post-2015 Agenda must address inequalities

Inequalities within and between countries in the distribution of wealth, opportunities or power are drivers of extreme poverty, conflict and violations of human rights. Therefore, addressing increasing inequalities within and between countries is a central strategic demand.

The Post-2015 Agenda must respect planetary boundaries

The realization of human rights for all and the eradication of poverty and extreme inequalities must be achieved within the limits of our planet's resources. This requires a holistic approach across all development goals and an equitable distribution of the burdens of adjustment, taking into account historic responsibilities.

The Post-2015 Agenda must aim for a transformation of global structures

This includes the regulation of financial markets, the restructuring of unfair trade regimes and of intellectual property rights regimes, the termination of tax havens, the redefinition of progress away from GDP towards measures of sustainability and well-being, and policy coherence for development. All these steps are necessary since the current global economic and financial regimes impose obstacles to poverty eradication and the full implementation of all human rights. New rules have to be created and others removed to ensure that the global frameworks do not constrain human rights and development goals.

Source: adapted from www.berlin-civil-society-center.org/shared-services/post-2015.

America signed a declaration stating that the Sound's temperate rainforests 'remain highly vulnerable to continued development'. In 2009 a Vancouver-based mining company sought and won the consent from First Nation chiefs to undertake test drilling for copper and gold on their hereditary lands. Logging continues and in the first decade of the new century the volume of timber extracted has steadily increased: in 2000, 25,000 cubic metres; in 2005, 94,000 cubic metres; and in 2008, 158,000 cubic metres (Mychajlowycz, 2010).

Perspectives and world views

Public debates, discussions and discourses on globalization, anti-globalization, sustainability and the environment reveal a wide range of perspectives and worldviews. Clapp and Dauvergne (2005) offer a fourfold categorization albeit recognizing their categories are *ideal types* and that many organizations, groups and individuals share elements drawn from two or more. Complexity and interconnectedness frequently characterize both our world and our attempts to make sense of it. The four categories and associated beliefs include the following:

Market liberals

- The main causes of global environmental problems are poverty and poor economic growth brought on by market failures and bad government policies that lead to market distortions – e.g. subsidies, unclear property rights.
- Globalization is largely positive because it fosters economic growth and, combined with the application of modern science and technology and human ingenuity, will in the long run improve the environment and people's material well-being.

Institutionalists

- The primary cause of global environmental problems are weak institutions and inadequate global co-operation, which has failed to correct environmental failures, promote development or counteract the self-interested nature of some states' actions.
- The main opportunity of globalization is to enhance opportunities for co-operation, capacity building and innovative eco-efficient technologies, which will generally enhance human well-being. The *precautionary principle* should inform the evaluation of new developments.

Bio-environmentalists

- The main causes of the environmental crisis are excessive economic growth, overpopulation, over-consumption and rampant materialism.
- Globalization is driving unsustainable growth, trade, investment and debt while accelerating the depletion of natural resources and filling waste sinks. The way forward is to create a new global economy operating within the Earth's ecological limits.