# 1 Introduction

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The ultimate purpose of this book goes beyond the learning outcomes that are to be found at the beginning of each chapter. Those outcomes are, of course, important but at a deeper and more enduring level, its purpose is to stimulate. To stimulate, that is, a lasting interest in environmental issues; to stimulate critical thinking, through which to develop your own views on the issues; and, hopefully, to stimulate a resolve to do something about it. After all, it is *your generation* that will probably decide the future of this planet.

Environmental issues are produced by the interaction of societies and the environments they inhabit, a relationship which will be explored at some length in Chapter 2. To really grasp these issues, it is necessary to understand both the physical dimensions of the 'natural' environment, as well as the social (including the economic and political). To this end, the case studies are each written by a partnership of a social scientist and a physical scientist.

During the final years of preparing the book, there has been unprecedented media coverage of environmental issues. While overseas problems aren't prominently reported in the UK, and particularly in the US, media a procession of events of unusual magnitude have caused newspapers to publicly question the role of climate change in causing, for example, Hurricane Katrina which devastated New Orleans in 2005 and the extreme flooding of southern England in the summer of 2007. The environment has become headline news. For example, *The Sun* – one of the UK's popular tabloids – had stories on its website on 8 August 2007 headlined: 'Go Green with the Sun'; 'Patio heaters poisoning planet' and 'Do your bit for the planet. Double Whammy! Help save the planet and revive your sex life with our guide' (*The Sun*, 2007). Growing concern about these issues prompted former Prime Minister Tony Blair to declare climate change 'as a greater threat to the world than terrorism' in 2005 (Adam, 2005), and has caused the UK government to recommend climate change as required learning in schools. Sustainable development is already part of the national education curriculum, more of which follows.

This book concentrates on the processes through which environmental issues are produced, understood, and consequently dealt with, and the following three chapters consider in some detail the ways in which different philosophies, value systems, or economic and political systems frame our understandings and action.

The subsequent case study chapters on food, waste, climate change and hazards are designed to illustrate how these social systems, or structures, interact with the natural environment and the implications of this. The chapter on geoinformation technology and the Environment shows how recent powerful information and communications technologies enable us to know so much more about the environment, and how this changes how we understand and treat it. Finally, a concluding chapter on Mexico City draws processes and issues together in a particular geographical context.

How societies define environmental issues in the first place is critical to how decisions are made on how to deal with them, and this is contingent on past and present ideologies, or ways of thinking about the world, and there are many, although some are much more powerful than others. These ideologies come from religious beliefs and practices, science, philosophy and politics and govern not only societies' relationship with nature (which, as Chapter 2 will show, in the West is perceived as external to society, but which in many surviving indigenous people's culture is perceived as integral to it), but also our relationships with each other: between the poor and the rich, women and men, colonised and colonising.

## Discourse

One of the key themes underpinning this book is that a society's relationship with its environment is a product of how powerful and influential groups in that society create, control and maintain knowledge. The ways in which these bodies of knowledge are naturalised (that is, become accepted as normal and generally uncontested by the majority of people) are myriad. In the UK, for example, what is taught in state schools is prescribed by a national curriculum, which determines the key bodies of knowledge which all children are expected to have acquired by a particular age. As this book was being written, sustainable development was included as a mandatory cross-curricular theme, while the UK government had stated that it expected all school children to learn about climate change. It is worth reflecting on how sustainable development and climate change were taught in the school you attended, and what assumptions were made in presenting these. Other mechanisms by which knowledge is naturalised into a discourse include mass media and, increasingly, the internet, although blogging and social networking sites may dilute the development, or progression, of discourses. This is another point to reflect on.

One of the late twentieth century's key thinkers, Foucault, argued that discourse is created through the exercise of power which 'perpetually creates knowledge and, conversely, knowledge constantly induces effects of power' (Foucault, in O'Tuathail et al., 1998: 3). Dalby explains how the development of environmental problems, such as biodiversity loss, ozone depletion and climate change, as global concerns have become new discourses which structure the way in which we 'know' the world. 'People and societies are constructed as "threats" or in need of "management" [and] are not merely technical issues requiring research, analysis and coordination by appropriately qualified experts' (Dalby, 1998: 180). In the

reader on geopolitics which Dalby's chapter introduces, he distinguishes between the actual physical materiality of environmental degradation and the ways in which 'they are described and who is designated as either the source of the problem, or the provider as the potential solution to the problem' (Dalby, 1998: 180). Following Foucault, Escobar has shown the importance of interrogating discourse (or the ways in which social realities are represented) to reveal how 'lived reality' is inseparable from the ways in which that 'reality' is portrayed. He goes on to explain the centrality of language to discourse, in which it is an active agent in constructing reality, and 'the process through which social reality inevitably comes into being' (Bryant, 2001: 162).

As both Chapters 2 and 3 will show, sustainable development and environmentalism have become dominant discourses in the West, in large part because they frame environmental problems and solutions in ways which neo-liberal capitalism can manage to its own benefit. So while former Prime Minister Blair has claimed that climate change is the greatest threat facing humanity, there appears to be a lack of imagination in how humanity deals with this. Rather than a reassessment of the fundamental ways in which we organise our social, political and economic lives, the emphasis is on proposed technological solutions to this, including biofuels and nuclear power, which, as later chapters show, have their own considerable negative environmental impacts.

## Sustainable development

Sustainable development has emerged as a term which is used increasingly freely, although in reality it is a deeply problematic term which different interest groups use in different ways to serve their own purposes. After all, its very coinage was a compromise between the development imperatives of business, and of countries in the global south heavily reliant on their natural resources for foreign exchange, with environmental conservation interests in the West. Shiv Visvanathan illustrates how 'sustainable' and 'development' are two concepts which 'belong to different, almost incommensurable, worlds...Sustainability is about care and concern; it speaks the ethics of self restraint. It exudes the warmth of locality, of Earth as home. Development is a genocidal act of control. It represents a contract between two major agents, between the modern nation state and modern Western science' (Visvanathan, 1991). We are not saying that Visvanathan is necessarily right, but that the undeniable ambiguity of the term 'sustainable development' is not much in evidence in its everyday coinage. Such is how discourses are constructed and maintained.

That sustainable development has become a common language among businesses and governments suggests that it has the potential to offer technological fixes sufficient to maintain business as usual. It can be no coincidence that climate change has achieved such prominent attention from politicians and technologically advanced businesses, just at the time that alternatives to fossil fuels are becoming feasible, and that there is significant money to be made in green retailing. *The Independent on Sunday* reported an interview with Richard Branson in

September 2006, in which he declared himself a convert to believing in the impact of anthropogenic climate change and announced a ten-year, $3 billion investment in alternatives to fossil fuels, particularly biofuels, and has invested substantially in seven biofuel refineries in the west of the USA (Lean, 2006). Such investment clearly allows the airline industry, a major target of environmental campaigning groups, to continue to expand. This echoes the success of the phasing out of chloroflourocarbons (CFCs) achieved in the 1980s after their use was scientifically linked to the erosion of the atmospheric ozone layer. Indeed, Jordan (1998) has shown how the enthusiasm (or lack of it) which various countries, such as France, Germany, the UK and the USA, showed towards supporting international legislation, banning first CFCs and then HCFCs, directly mirrored the development of alternative chemical substances developed by chemical companies in the respective states.

Such illustrations show the power of business and industry in shaping action on environmental issues, at least in part by subscribing to the use of an environmentally friendly sounding name – sustainable development, even if the profile of these issues is raised, initially by scientists, and more generally by environmental and health campaigning groups.

## Environmental justice

This raises issues about who bears the costs of environmental damage, and another theme running through the book concerns the inequity of this at various scales, from local neighbourhoods to international divisions between the Global North and South. With the increasing economic power of countries like China and India, and to a lesser extent, Mexico and Brazil, which expands their own environmental footprints (see Box 1.1), it becomes less meaningful to divide the world in this way. However, the economic and technological power of advanced industrial nations of the Global North, and their political strength consolidated in organisations such as the G8[1] and World Bank (in which voting power is relative to size of funding), means that it is still relevant to do so.

In Chapters 2 and 3, some time is spent on explaining environmental justice as both a critique of existing social processes, and as a political movement, or campaign. This dimension of environmental issues is then taken up by the case study chapters to show how people and communities who are poorer, or otherwise discriminated against because of their ethnicity, age or gender, generally suffer environmental problems disproportionately. Indeed, 'routine' injustices which have an impact on health, such as poor housing, poor diet and food availability, living close to noxious activities such as waste disposal sites or polluting factories, coupled with a lack of control of decisions which affect their lives, weakens their ability to deal with catastrophic disaster.

Both environmental justice movements and strategies for alternative livelihoods (particularly those advocated by 'deep green' philosophies) provide some strategies for claiming a better life, and the book's authors hope that reading through the chapters, and thinking through some of the questions they pose, will

enable readers to think imaginatively about some of the solutions to what are intricately linked social/environmental problems.

### Box 1.1 Ecological footprinting

Mathis Wackernagel, one of the original developers of this concept, stresses the strength of ecological footprinting as enabling planners, individuals and communities to visualise human impact on the Earth in order to begin to minimise this. He admits that it is not a precision tool, but one which offers a way of measuring ecological sustainability by calculating the resources people consume, the waste they generate and the biologically productive area needed to provide enough space for this (Wackernagel, 1998). In an assessment of ecological footprinting, Levett has argued that scoping the contributing factors of the footprint are essentially political and value-laden activities and warns against it becoming a mechanistic planning tool, however, he recognises the concept's usefulness as a framing device (Levett, 1998). There are now many different schemes in which people can calculate their personal ecological footprint, some of the more reputable including those used by the World Widelife Fund (WWF) and the Royal Society for the encouragement of Arts Manufactures & Commerce (RSA). The Stockholm Environment Institute claims that it has created the 'first consistent method to calculate comparable Ecological Footprints for every Local Authority in the UK' (Stockholm Environment Institute, 2007). It has calculated the world average ecological footprint as 2.2 hectares per person: an 'ecological overshoot' of 21 per cent, given that there is only 1.8 hectares per person of biologically productive land available. Communities in the Global North are particularly expansive users of this land with a study in Nottingham, England, estimating that each person's ecological footprint is 5.3 hectares, marginally less than the UK average reported by the WWF in 2006, but a clearly unsustainable size (Birch et al., 2005). The WWF in its *Living Planet Report* shows the ecological footprint of the USA to be 9.6 hectares per person; by comparison, China's is reported as 1.6 (WWF International, 2006).

## Student involvement in environmental issues

The genesis of this book was a series of modules on environmental issues in undergraduate and postgraduate taught courses in Geography, Earth Sciences and Environmental Change. The research and teaching expertise of the lecturers (who are the contributing authors) has largely determined the choice of case studies. This choice inevitably excludes some important issues, such as energy and water, but those which are included – food, waste, climate change and hazards – are all important, of increasingly high profile, and need to be understood in their complexity if the problems which the authors have identified are to be addressed. Moreover, understanding how these issues are produced and dealt with will enable readers to develop their skills in understanding other environmental problems and their impacts.

As well as a commitment to the themes identified in this introduction, our teaching of environmental issues has also been influenced by a commitment to

engaging students in researching real-life issues for themselves. This has been achieved in partnership with a number of organisations which Box 1.2 illustrates. Such engagement requires students (and their tutors) to understand a range of assumptions made about environmental issues, and the different perspectives adopted by the environmental, non-governmental organisations (ENGOs) worked with. While this book will involve students in a different, less physical, kind of engagement, we hope that it will stimulate an intellectual engagement to reflect on their own assumptions and perspectives, those of their tutors and lecturers and of politicians, broadcasters and other opinion-formers. Not least, we hope that it will stimulate readers to take action that will, itself, have a positive impact on their present and future environments, in the broadest sense.

**Box 1.2 Examples of student community environmental partnerships**

Example 1: As a second year undergraduate, Katie worked with the Groundwork Trust (GT) to develop an accessibility guide for visually and mobility impaired users of a large stretch of managed countryside in West London. With a fellow student, Katie surveyed and evaluated the area, producing a pamphlet which is available from the Visitors' Centre. As a result of working with the GT, Katie applied her Level 3 major research project to developing a food growing project for refugees on local unused allotments. Working with the GT, the local authority and a number of refugee organisations, Katie produced a proposal for the GT and the authority to develop.

Example 2: Four second level undergraduate students worked with a London borough on developing a system for distributing otherwise wasted energy to council properties, including social housing, through a local grid. The idea was inspired by the pioneering borough of Woking in southern England which, as Chapter 7 shows, has achieved significant carbon savings and reduced energy costs for households on low income. The group of human geographers worked with a team of student engineers from an American university, which incorporates three months of applied community practice as part of their degree programme (including projects such as the evaluation of tsunami-proof housing in Thailand, and AIDS prevention education in Namibia).

Example 3: As part of the assessed curriculum on the Applied Environmental Research module, a postgraduate student worked with the Women's Environmental Network (WEN) researching climate change and its likely impact on women. This formed the basis of the Climate Change Manifesto for Women, launched by WEN and the National Federation of Women's Institutes in 2007. Another student on the same course designed, conducted and analysed a survey of women's views on nuclear power for WEN's response to the Government's consultation on future energy planning in the UK.

## Notes

1. The G8 comprises: Canada, France, Germany, Italy, Japan, Russia, the UK and the USA.

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