

# Making the connections between environment, development, and sustainability

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## Introduction

The richest country in the world, the United States, also consumes the most energy per head of population. Although there were signs of change from a new President in 2009, hitherto the United States government had persistently refused to sign any international deals to limit its carbon emissions, on the grounds that to do so might jeopardize the country's economy and lifestyle.

Uganda in East Africa is one of the poorest countries in the world and consumes about ten times less energy per head of population than the United States. People who protest on environmental grounds against hydroelectric schemes on the River Nile and destruction of rainforest are invariably accused by the Government of being 'anti-development'.

These examples illustrate how *development*, which embraces the economy and society, and human-induced *environmental change* are intimately connected. The maxim is equally true of rich (more developed) and poor (less developed) countries. Moreover, human-induced environmental change arising from development has been mostly negative. It involves two processes—*depletion*, such as of oil resources, and *degradation* of air, land or water through pollution. The two are often connected: for example, pollution of a river by industry might poison fish, leading to their depletion.

Worldwide, there is no more pressing issue than this linkage. It was explicitly recognized in 1983, when the United Nations convened a World Commission on Environment and Development (WCED). The WCED itself was the culmination of well-publicized concern, which had originated in the 1960s over pollution, especially from pesticides (Carson 1962), and depletion of resources such as oil and the consequential limits on economic growth (e.g. Meadows *et al.* 1972).

Two world ‘summits’ on the same theme have followed the WCED—1992 in Rio de Janeiro and 2002 in Johannesburg, as well as several mini-summits on particular aspects. Not only is the linkage a major contemporary issue, therefore, it is also an enduring one. The rapid development and its impact on the environment in the world’s most populous country, China, is currently concentrating minds still further, as Chapter 2 explores.

This book is founded on four basic premises. We have just outlined the first, which is that much human-induced environmental change is done in the name of development, or to maintain a developed state, wherever it occurs in the world, even if not always stated explicitly. This link between environment and development is therefore a major issue, possibly the major issue of our times.

A rough and ready view of *environment* associates it with ‘nature’. This doesn’t pass close examination, however, because so much that we consider as nature has been shaped to a significant extent by humans. Sometimes the shaping is deliberate, as in farming landscapes, sometimes it is unintentional through, for example, pollution of the air causing acid rain.

It is more instructive to think of our environment as the biophysical context in which we live and the source of our livelihoods. We should especially think of it as constantly changing under both human and non-human influences. Thus, Chapter 10 explains how our climate has always changed and continues to change.

The timescale of environmental change can be very long. It is, however, uneven and there have been periods of comparatively rapid change. Oil deposits take millions of years to form, yet human activity can use them up within a short time. With climate change, there are tipping points, such as periods when the earth has been plunged into an ice age. The current concern, as Chapter 10 elaborates, is that human activity is pushing towards another tipping point.

Development is explicitly about human change. One view of development is that, like environmental change, it is a long, uneven process, although now the timescale is definitely human and confined to the last few hundred years. A manifestation of development’s unevenness is that the process does not produce benefits equally for the population. It tends to produce losers as well as winners. The present era of **globalization**—meaning the interconnectedness of the world, especially in terms of the economy—that is discussed in Chapter 15, can be seen as the latest phase in the historical process of development.

A second view of development, however, sees it simply as a vision of a good society towards which we strive, while a third sees it as deliberate interventions aimed at improvements in material and social conditions of our lives—such as interventions to provide clean water in rural areas of Africa that are considered in Chapter 4. See Thomas (2000) for elaboration on these views of development.

The three views are themselves interconnected. Deliberate intervention is designed usually to ameliorate the ‘disordered faults’ of the historical process which creates winners and losers (Cowen and Shenton 1996). It is also often designed with some kind of vision of a just society in mind. Sometimes it is designed with the aim of ‘catching up’ by a country that considers itself to be ‘less developed’ (e.g. many African countries) with those that are ‘more developed’ (e.g. the United States and other wealthy countries). Here the vision is ‘modernization’, as described in relation to agriculture in Uganda in Chapter 3.

The views of development also give rise to debate regarding what should be done about environmental change. Thus Chapter 8 notes that in the United States, one side elaborates the need for deliberate intervention to mitigate it, while the other claims that environmental challenges will be met within the tried and trusted process of capitalist development that the US epitomizes.

## Environment, development, and sustainability

*Sustainability* summarizes attempts to meet the overall challenge presented by environment and development. Originally, in the 1950s, sustainability described the continued thriving of a biological species—such as a fish, bird or tree—which might become depleted or even extinct through human activity, over-fishing being a good example. Later it was extended to describe a whole ecosystem—for example, a forest with many interdependent plant and animal species—in similar terms. Conservation (Chapter 12) and biodiversity (Chapter 11) are directly linked to this notion of sustainability.

In the early use, one referred always to the sustainability *of* something, be it a particular fish or a tropical rainforest. A later use simply extended this to a broader set of ‘sustainabilities’: the sustainability of people’s livelihoods, of a society’s way of life (or culture), of a government’s economic policy, of an international system for managing world trade, and so on. In this book, several chapters explore sustainability in relation to both narrower and broader uses of the term.

Three important features follow:

1. Sustainability is a *normative* concept, meaning that it expresses a desirable state—it is desirable for a species, and a human way of life to thrive; so too a country’s economy, and its education and health systems.
2. Sustainability refers to the ability to continue over time, which requires robustness against shocks. But our use of the word ‘thrive’ above implies more. A group of peasants might be able to engage in a farming practice over time, but only in a degraded form as other pressures to gain livelihoods, such as taking temporary waged jobs for somebody else, means they don’t sow at the right time, weed, or water their crops adequately. Sustainability therefore has two broad dimensions—robustness and effectiveness.
3. Different sustainabilities are interconnected. For example, the Stern Review (HM Treasury 2006) into climate change pointed out its economic costs and suggested that climate change is produced by an economic model of growth that will ultimately become unsustainable. Also, an economic model that means the rich become richer while the poor become poorer is likely to be socially unsustainable. These kinds of issues have led academics and practitioners to group sustainability issues under three broad headings or ‘pillars of sustainability’: environment, economy, and society.

We can summarize the above features in the book’s second premise: sustainability is a desirable state that refers to the robustness of something and its continuing ability to do

whatever it does effectively. There can be many ‘sustainabilities’, but it is usual to group them into three interconnected areas of concern: environment, society, and economy.

Because it relates to so much of the book, we end this subsection with a brief discussion of *sustainable development*. If we think of the three pillars of sustainability, development encompasses economy and society—the economy for our material well-being and society for our social well-being (and related elements such as well-being in terms of culture, health, education, and citizen rights). The concept of *sustainable development* connects economy and society to our environment.

There are well over 100 definitions of sustainable development in existence! The one most quoted, however, stems from the World Commission on Environment and Development (WCED) to which we referred above. The definition is often named after the Norwegian Prime Minister, Gro Harlem Brundtland, who chaired the WCED. It appeared in the WCED book, *Our Common Future*, as: ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Brundtland 1987: 43).

Since 1987, the definition has received rigorous scrutiny and refinement, hence the large number of alternatives which abound today. Most are based on the observation that the original definition concentrates on conserving the present for future generations (known as showing a concern for *intergenerational equity*) but ignores existing divisions in the world between, for example, rich and poor countries (a lack of concern for *intragenerational equity*). This led some writers to accuse the WCED of ultimately siding with nature and not justice (e.g. Sachs 1997: 294). The accusation has been a major source of debate between richer and poorer countries at the aforementioned Earth Summits, with poorer countries essentially demanding that:

- They too have a ‘right to development’. The rich countries, therefore, should make available on concessionary terms new technologies that address environmental concerns while simultaneously enabling economic development.
- The rich countries should bear the cost of cleaning up the environmental mess because they created it, and continue to contribute to it in large share, through their past development.

Nevertheless, the Brundtland definition is the starting point for most of the other definitions, even if they end up looking rather different from it. It is also our starting point. You will see, in Chapter 17, just how difficult it is to nail down an agreed meaning of sustainable development, even in a very small country.

## Creating sustainability

Almost everybody can agree upon the notion of sustainability as a desirable state. There are bound to be arguments, however, about what represents such a state, and how we might achieve it—the many definitions of sustainable development just noted being a symptom of these arguments. Nor is it necessarily a stable state. Here, it’s important to take people, organizations, and countries as we are, in continual tension between how

we would like the world to be and our more immediate interests. In European countries, for example, there is evidence that concern for the environment moves higher up the agenda when the economy is doing well, but when it is doing less well our concerns turn to the value of our houses and job security. In poor countries, clashes between what are perceived to be environmental needs and development needs are often very stark. Chapter 9 focuses on how, within a single city (Mumbai, India), rich and poor people view the environment in very different ways. This leads to the book's third premise: there are many different views on what constitutes sustainability in relation to environment and development and on how to achieve it.

Earlier I isolated 'robustness' and 'effectiveness' as two broad dimensions of sustainability. Robustness relates to the ability to continue over time, but it can also be taken to mean that sustainability is not necessarily a steady state. Robustness equates with the ability to adapt and evolve in line with changing contexts, and even shocks, over time. Sustainability is not, therefore, an end state, but is continually being reinvented.

The capacity among human beings to adapt and reinvent stems from our ability to *innovate*. **Innovation** is a term used in economics to describe the creation of new products that are sold. Here we articulate a more general definition: our ability to do new things in any sphere of action. Crucially, our ability to innovate depends on what we know—our knowledge—and a useful general definition of innovation is 'knowledge put to productive use' (Chataway 2005: 597). The centrality of innovation for sustainability is discussed in Chapters 19, 20, and 21.

We get to know through learning, but how do we learn? One powerful idea is that we learn both formally and informally from comparing what we don't know with what we already know. In short, we learn from difference. In this sense, it should be a cause for celebration that there are so many different views about environment, development, and sustainability, as they are resources for our learning and hence our knowledge and ability to innovate.

As with everything else, however, it's not so simple. Difference in the world is not often perceived positively as a rich source of learning. More likely it is associated with conflict between groups, defined ethnically, religiously, in terms of respective material wealth, by gender and so on. All too often such conflict is in violent form, which gives difference a negative connotation. More generally, such conflict is usually based on inequality between the groups and this is what difference really means. More generally still, *inequality* is itself a symptom of power relations between people and groups, and conflict is basically a struggle to readjust power relations. Knowledge itself is related to this power relation, with some people's knowledge being valued more than that of others (see for example the discussion of traditional/improved/modern water supply and irrigation in Niger and Ethiopia in Chapter 4). To give a crude comparison, the knowledge of how things are done in the United States is very powerful and serves as a model for many other countries. The knowledge of how things are done among a community in a tropical rainforest or a village in sub-Saharan Africa will be very different, however, and not valued as highly by outsiders. The situation is further complicated because the tropical rainforest community and the African villagers might themselves have internalized the idea that their knowledge is worth less than that which emanates from a United States citizen.

Where, then, does this leave us, if on one hand difference between people is a rich source of learning, while on the other it represents a power relation, inequality, and

conflict? That is the ultimate challenge for this book, which has deliberately set out to provide you with different perspectives on environment, development, and sustainability in its chapters. These perspectives derive from the different knowledges of the authors. Some are based on their origins; others on their educational background (whether they are primarily natural scientists or technologists or social scientists—see Chapter 26); and still others on what they do, as academics, practitioners, and activists.

One practical challenge for the book is for us as editors to afford equal validity to each chapter. Another is to make the connections between them. This means going beyond celebrating the difference between our authors to generating new knowledge out of that difference, to make the whole greater than the sum of the individual parts. Although each chapter is self-contained and you may read only those chapters that are of direct interest to you, there is much to gain, therefore, from treating the book as an integrated whole.

A final challenge is to enable us (meaning ‘you’ the reader alongside ‘us’ the editors) to act in the real world, in whatever realm we find ourselves—as citizens, members of communities, professionals and lay people—with a sense of two things:

1. The power differences that circumscribe our relations to one another, whether as individuals, groups or whole countries.
2. The interconnectedness across scales, by which we mean the web of multi-directional influences between the global, national, and local scales.

Such action will vary from context to context, and emphasize different aspects. It might appear to be rather circumscribed and limited. But at least it stands a chance of being realistic, even if the demand feels like the impossible!

Much of the book is about action. Chapter 7 discusses environmental activism in Australia, while Chapter 16 examines how ethics can guide appropriate action, and Chapter 17 explores how it is negotiated politically in a small country (Wales). Chapters 19, 22, 23, and 24 explore ‘participation’ in a variety of settings—agricultural biotechnology in Kenya, industrial clusters and community development in Zimbabwe, and conservation in South Africa—as a practice for accommodating many voices in order to make decisions on what to do. Chapter 25 continues the theme by examining tools that might facilitate collective decision making, such as environmental impact assessment.

We now arrive at the book’s fourth and final premise: the many perspectives on environment, development, and sustainability are a resource for us to learn from, gain knowledge and thereby, act appropriately. A major challenge, however, is to work within, while simultaneously challenging, the potentially negative dimensions of difference in terms of inequality and power relations.

## ■ SUMMARY

- This chapter has explored the key terms in the title: environment, development, and sustainability, and their interconnections through the concept of sustainable development.
- Out of this exploration, the chapter has developed four premises on which the book is based. Keep them in mind as you read the chapters which follow.

## ■ REFERENCES

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