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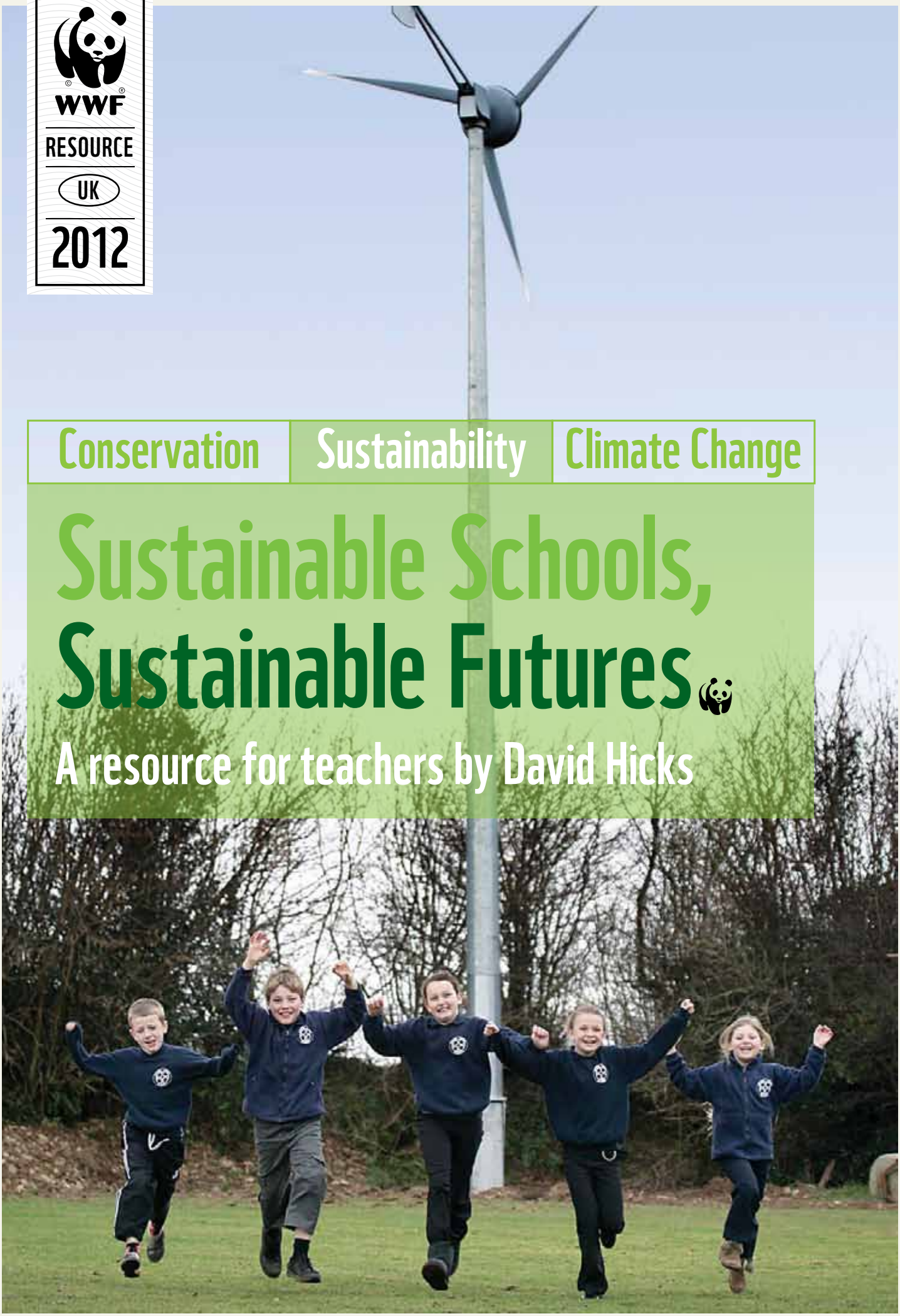

Conservation | Sustainability | Climate Change

Sustainable Schools, Sustainable Futures

A resource for teachers by David Hicks

To my comrade on the journey
Patrick Whitaker
(1941-2010)

Sustainable Schools, Sustainable Futures

This is a practical book for teachers working at Key Stage 2/3 (Second and Third Levels in Scotland). It sets out the need for and the nature of a more sustainable future and the ways in which this can be both explored and realised in schools.

Part 1, Learning for Tomorrow, sets out the major dilemmas faced by society in the 21st century and the need to work towards a more sustainable future. In particular it looks at three educational responses to issues of local-global change which will help young people prepare for a future that will be very different from today.

Part 2, Stories from the Future, explores eight different aspects of a more sustainable future: food and farming, energy and water, travel and transport, consuming and wasting, buildings and biodiversity, inclusion and participation, local well-being, and global connections. For each there is a visual scenario for 2050 with accompanying activities.

Part 3, A Journey of Hope, shows how these themes are inextricably interrelated and how, when woven together, they can help create a more resilient and sustainable future. It then sets out ways in which it is possible to teach in a spirit of optimism and hope that will empower young people to be active citizens in the years ahead.

David Hicks is Visiting Professor, Bath Spa University, where he helped develop and teach the undergraduate Education Studies degree. He is a freelance educator with a particular interest in the global dimension, a futures perspective, climate change and sustainable schools. For further details see *www.teaching4abetterworld.co.uk*

WWF and education for sustainable development

WWF's mission is to stop the degradation of the planet's natural environment and build a future in which humans live in harmony with nature. Young people are key to that mission. We want to share our love of the natural world with them. We also want to help them build the knowledge, skills and values that will help them be caring and wise environmental citizens - now and in the future. To this end, WWF has been working with schools since the early 1980s, exploring the challenges and benefits of putting sustainability at the heart of school life. We hope this publication, which strives to help teachers and learners explore alternative futures, will put them in a stronger position to start making a sustainable future a reality for us all.

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One of the tasks of the progressive educator [...] is to unveil opportunities for hope, no matter what the obstacles may be.

Paulo Freire (1994) *A Pedagogy of Hope*

Author's note

When new political parties come into power priorities in education always change. The Conservative/Liberal Democrat coalition thus chose to downplay many of the educational initiatives of the previous government. Amongst these was the invaluable National Framework for Sustainable Schools. I have referred to the documentation from that initiative throughout this book as it provides a valuable model of good practice in education for sustainability which I believe should transcend party differences.

INTRODUCTION

The second decade of the 21st century and it looks as if there could be trouble ahead. Nothing new there then, as in the past each decade seems to have had some pressing problem that education needs to address – whether numeracy and literacy, boys' underachievement or meeting the needs of the knowledge economy.

This time, however, the challenge is of a different nature as John Beddington, the UK government's chief scientific adviser, says the world is heading towards major upheavals that could come to a head in 2030. This could result, he warns, in a 'perfect storm' of food shortages, water scarcity and insufficient energy resources leading to public unrest, cross-border conflicts and mass migration, since all of these issues are operating on a similar timescale (*Guardian*, 18 March 2009).

What then should the role of education be in turbulent times? Should it turn a blind eye to such alarmist talk and focus instead on league tables and school improvement? Or does it have a wider role – to alert society to possible changes that lie ahead and to prepare young people to face those changes with as much confidence as possible?

For the last 40 years, progressive educators have developed considerable practical expertise in teaching about issues to do with the environment, injustice, wealth and poverty, peace and conflict. Over the last 20 years, many of these concerns have coalesced under the headings of education for sustainability and global citizenship. Much good work has been done in these fields and considerable practical expertise has been developed in teaching and learning about such matters. A significant minority of educators are prepared to deal with the hazards that may lie ahead. In particular we have to learn how to adapt to climate change and to the supply of oil peaking and then finally running out. Taken together these two issues mean we have to move as quickly as possible to a zero-carbon economy or, more broadly, a sustainable future. What a challenge for education!

This book is intended for teachers working at Key Stages 2/3 (Second and Third Levels in Scotland), student teachers, those working in teacher education and the many others who have an interest in creating more sustainable schools. It explores the need for, and the nature of, a more sustainable society and the role that education has to play in its creation. In particular it focuses on the nature of sustainable schools and the crucial role they have to play in preparing young people for a future that will be very different from today. The book will be of value to those who are already interested in such questions but also to those who may not have considered such questions before. It is not an academic book and does not claim to cover every aspect of sustainability, but the scenarios used here are indicative of the debates we should be having and the decisions we should be making now in our schools and our communities.

Part 1 explores the nature of the unsustainable times that we live in and the need for education to have a global dimension and a futures perspective, both of which are essential to any understanding of sustainability. It highlights the important work being done by sustainable schools, and the ways in which the transition movement is addressing issues of climate change and peak oil. In Part 2, sustainable future scenarios are presented for a range of issues such as energy, food and transport, together with case studies of good practice and identification of useful resources for teachers. Part 3 concludes with an overview of some of the key elements of education for sustainability and a reflection on the need to teach in a spirit of optimism and hope. This is a book which both captures the spirit of the times and asks what your contribution to the future might be.

David Hicks, Glastonbury 2011

PART 1
LEARNING FOR TOMORROW

The chapters in this first part of the book look at some of the ways in which education has responded to the needs of a rapidly changing world. Far from being a recent idea, progressive educators were arguing that schools had a responsibility to help young people make sense of the world as far back as the 1920s. In particular, since the 1970s, there have been many educational initiatives focusing on different aspects of the global scene. The need for such an emphasis in education is now widely recognised nationally and internationally, in both policy and practice.

The chapters that follow set the scene for the rest of the book. First, this is through consideration of the state of the world in the early 21st century and the key global dilemmas that now face society – and will continue to do so in the future. In particular this focuses on the crucial concepts of sustainability and unsustainability in relation to people and the environment. Second, this section focuses on three vital educational responses to global issues and events, each of which can help prepare young people for a future that will be very different from today.

All three responses have their own individual history, advocates and associated expertise. Each is a powerful force for change in its own right. Internationally known as global education, futures education and education for sustainability, they are more familiarly referred to in the UK as the global dimension in the curriculum, the need to develop a futures perspective on contemporary issues and the necessity to create more sustainable schools. While each field overlaps with the other, when taken together their sum is much greater than the parts – thus creating a potent tool for both educational and societal change.

1. UNSUSTAINABLE TIMES

"It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us ..."

Charles Dickens, *A Tale of Two Cities* (1859)

Many teachers I have met really relate to this quotation from Dickens. Although written to describe London and Paris in the 1770s it still catches one's attention in the early 21st century. We too live in contradictory and turbulent times, although of a different order, and this book explores what the role of education needs to be at such a time.

This book

However teachers view their role, they act as a 'bridge' between the adult world and the world that their charges will inherit. Whatever one's particular responsibility or subject area, all teachers are by necessity 'interpreters of the world' for the young. It is important therefore for teachers to know something about the world they live in so that they can appropriately interpret it. As a young geography teacher, I felt daunted by all that I felt I was supposed to know. Only later did I realise I didn't need all this information at my fingertips, but I did need to know where to find it.

One of the aims of this book is to provide enough information to begin the process of becoming more knowledgeable about the world and how it may change in the future – for the future that pupils inherit will be very different from today. This first chapter thus considers three questions which need to be asked about society:

- Where have we come from?
- Where are we now?
- Where do we want to get to?

In sketching out some answers to these questions the educational task then becomes clearer.

Where have we come from?

Changing world views

Historians may answer this question in many ways, but I want to focus here on some key events that have contributed to the unsustainable times in which we find ourselves. During the medieval period the Christian church ruled supreme, with society seen as an organic whole, and everything and everyone in their appointed place according to 'God's' law. There was little room for doubt in the medieval mind. Nature was seen as alive, a source of life and nurturance. But during the 16th and 17th centuries, the Scientific Revolution began to change how people saw the world. Descartes argued that mind and matter were separate and that identity should be equated with the rational mind. Newtonian physics saw the universe as a mechanical system, with its separate parts governed by mathematical laws.

Against this shifting cultural background, God became imagined more as a clock maker or engineer; nature was no longer seen as alive and mechanistic philosophies began to stress the importance of order and control. The rise of technology, the revolution in science, the growth of capitalism, all led to a very different perception of the world. The unifying model for science and society became the machine and the organic view of nature went underground to be replaced by the scientific tradition – the new world view.

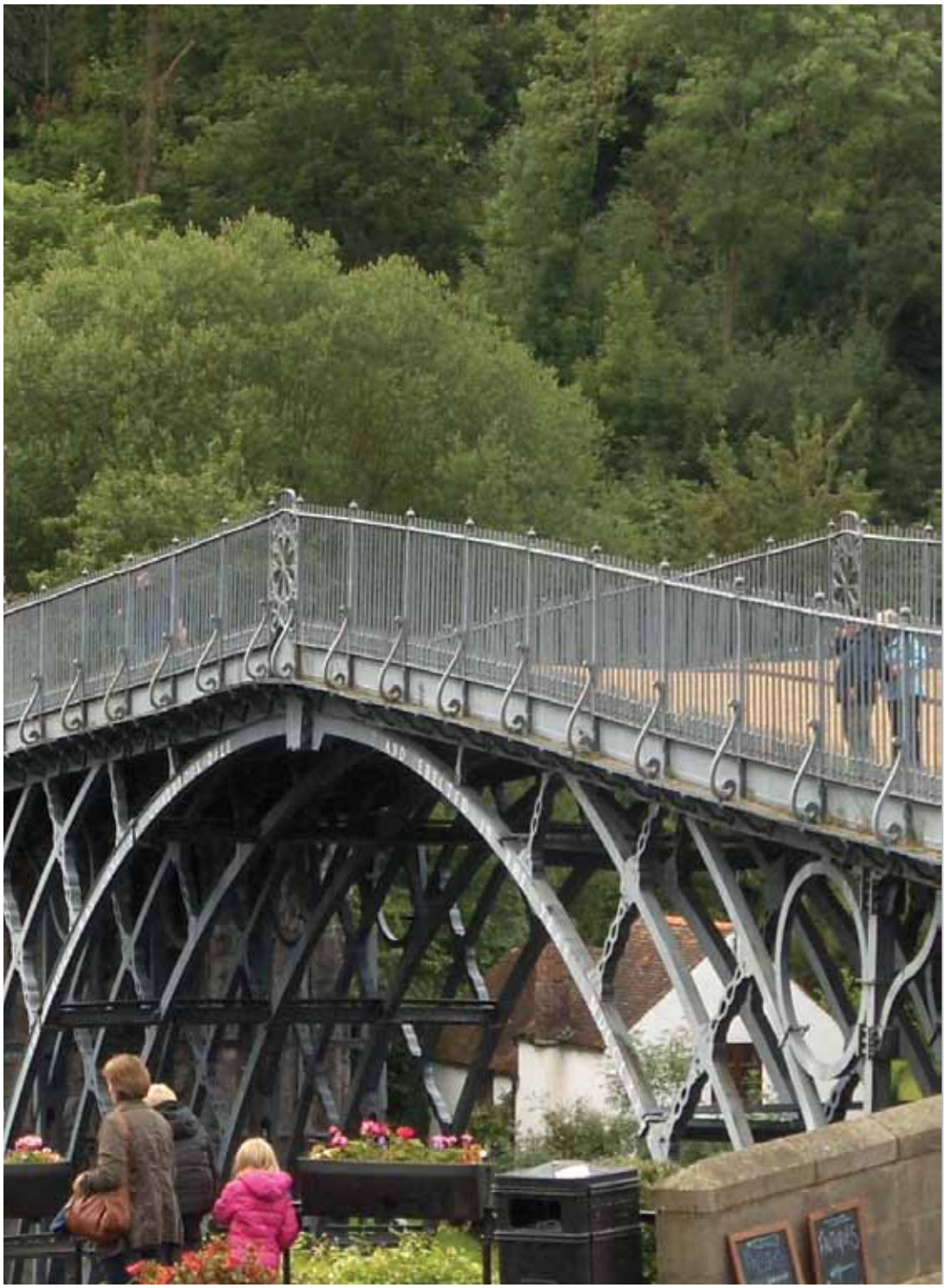
The 18th century Enlightenment played a crucial role in furthering this modern world view, which is unconsciously held by many today. Enlightenment thinkers valued critical rationalism – the application of reason to social, political and economic issues – in the belief that this was the best way to further human improvement. Key features of this world view included the belief that: i) reason and rationality were the key to all knowledge; ii) science held the key to everything; iii) reason and science were universally applicable; and iv) progress would inevitably occur as a result of the application of reason and science. Science thus became the epitome of enlightened reason, an exciting and vital venture because it promised control over harmful aspects of nature and also made change something to be welcomed rather than feared.

Growing power

The Scientific Revolution and the Industrial Revolution of the 18th and 19th centuries put Europe, and particularly Britain, at the forefront of world development. As European societies became more industrialised, urbanised, commercialised and prosperous, many believed that they were God's chosen – otherwise such blessings would not have occurred. Viewing themselves in this way led to European notions of superiority and the right to dominate and control both the natural world and other peoples and cultures. From all of this the modern world, or modernity as it is sometimes called, was born.

However, Victorian industrialisation and urbanisation began to threaten the natural environment. Cities expanded rapidly and people moved from the countryside into squalid housing and working conditions. Many industrial processes poisoned both land and water. The natural environment was seen as a resource for commercial exploitation. European imperialism and colonialism, backed by the latest military technology, saw the growth of overseas empires, the produce of which was used to enhance British wealth. The colonised, it was felt, should be appreciative of the efforts made by white rulers and settlers to improve their lot.

During the first half of the 20th century these views of nature and non-Europeans became entrenched in western culture because the dominant world view was that of powerful European countries. The colonised were taught that they were inferior but it was this historical subjugation that eventually led to wars of liberation against colonising powers such as Britain, France, Germany and Portugal. From mid-century onwards the right of such countries to control large areas of the Earth's surface was increasingly questioned. In the 1960s the post-World War Two generation began to question radically the values and beliefs associated with their parents' and grandparents' generations. What gave rich countries the right to exploit poorer countries? Why did black Americans not have the vote? Why was the US involved in a war in Vietnam? Why did Russia and America think that a nuclear arms race could preserve peace? If governments seemed to perpetuate these problems, rather than help resolve them, maybe people power could challenge what often seemed like an unjust status quo.



The first ever iron bridge built over the River Severn at Coalbrookdale in Shropshire.

Growing dilemmas

Arising out of these concerns in the 1960s and ’70s, a number of crucial social movements emerged which were increasingly international in scope: the environmental movement, human rights movement, peace movement, anti-racist movement, women’s movement, anti-nuclear movement and more. New non-governmental organisations such as Oxfam and Christian Aid focused on issues of world poverty, and WWF, Friends of the Earth and Greenpeace focused on the environment. The fruits of modernity were increasingly being questioned. Why had western aid and development programmes led to an increasing gap between rich and poor, both between and within countries? Why was the natural environment seen as a never-ending resource for human need and greed? Why historically was it men who made all the rules and women who were supposed to obey? And why was it that the fruits of modernity were so unevenly distributed globally, to the benefit of the few?

In 1983 the United Nations convened the World Commission on Environment and Development (WCED) to address these issues. The subsequent publication, which became known as the Brundtland Report, focused for the first time on issues of both environment and development. It defined sustainable development as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’ Subsequently it was the Earth Summit, held in Rio de Janeiro in 1992, which brought together world leaders and activists to discuss these key issues. While such events can be somewhat unwieldy in their deliberations they can also mark a significant shift in national and international thinking. Put at its broadest, it was recognised that human activity was seriously damaging the environment or biosphere – the narrow zone of earth, air and water on which all life depends – and that issues of development, such as global wealth and poverty, were seriously damaging people’s life chances in both poor and rich countries. The welfare of people and planet, issues of environment and development, were now seen as inextricably related – two sides of the same coin. It was argued that the way forward should be a more sustainable form of development which highlighted equally the needs of people and environment. The debate about the nature of sustainability had begun.

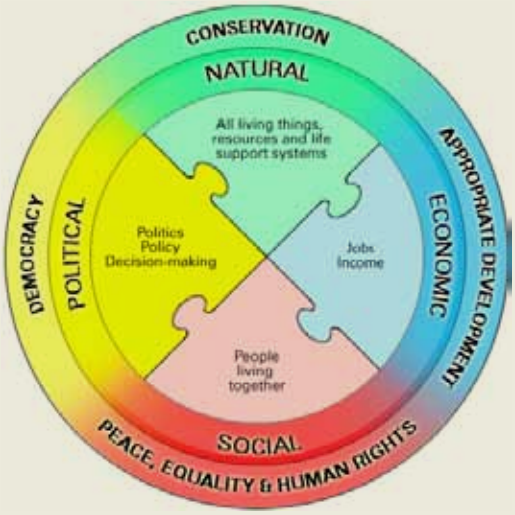
Put simply, any activity is sustainable if it can continue indefinitely without causing harm to people or planet. Any activity which causes harm to people or planet is the opposite – unsustainable. We are now on the edge of a turning point as momentous as the Scientific or Industrial Revolutions once were. But this time it is because we recognise that those previous revolutions, while bringing great benefits, also brought major dilemmas. Our prioritisation of rationality also led, some have argued, to major problems such as the destruction of nature, the global division into rich North/poor South, two world wars and – at its most extreme – the Nazi holocaust.

In the latter part of the 20th century the forces of globalisation bound the world even more closely together, increasingly impacting on people's daily lives. Examples include the growing commonality of problems, from issues of wealth and poverty to climate change, increasing global connections through finance and fashion, crime and terrorism, the rise of powerful transnational corporations and global social movements. Our lives have become increasingly interdependent, with local and

Table 1.1 – Four dimensions of sustainable development

Sustainable development requires simultaneous and balanced progress across four interdependent pillars:

- ✓ Ecological
- ✓ Social
- ✓ Economic
- ✓ Political



All these pillars are closely linked and decisions and actions in one area always affect the others. For example, if economic development is to be sustainable:

- It cannot neglect environmental constraints or be based on the destruction of natural resources.
- It cannot succeed without the parallel development of social (human) resources.
- It will require transformation of the existing industrial base and the development of more Earth-friendly technologies.
- It must consider the needs of all species and their right to enjoy the same quality of life and share of resources.
- It must support fairness between all people so that everyone can enjoy the same level of access to resources and quality of life.
- It must consider the needs of future generations.

As a result of the close relationships between the four pillars of sustainable development, achieving this goal requires a dynamic balance between:

✓ production and consumption

✓ ecology and economics

✓ development and conservation

However, the particular nature of the balance between these factors will vary between the developing countries of the South and the industrialised countries of the North.

From: *Teaching and Learning for a Sustainable Future* at: http://www.unesco.org/education/tlsf/mods/theme_gs.html

national events impacting on distant places and vice versa. However, as well as leading to greater integration, globalisation has also led to greater fragmentation, as witnessed in the resurgence of nationalism, issues of ethnic and religious identity, global terrorism and resistance to rich world consumerism. These mutually opposing tendencies of integration and fragmentation create turbulence in the global system (economic, environmental, cultural, political) so that the times we live in are complex, contradictory and in a state of flux.

Where are we now?

Economics vs ecology

The issue that underlies all others in the early 21st century is sustainability and unsustainability. While some may feel that one challenge, such as global poverty, is significantly more important than others, I would argue that underlying all global dilemmas is the question of how we can move from largely unsustainable ways of living towards a more sustainable society that meets the needs of all. And this is where the differing views of economists and ecologists collide. Put simply, economists tend to believe that there are no limits to growth, while ecologists recognise the finiteness of the Earth's natural systems.

Gardner and Prugh, writing in *State of the World* 2008, point out that:

> *The world is very different, physically and philosophically, from the one that Adam Smith, David Ricardo, and other early economists knew – different in ways that make key features of conventional economics dysfunctional for the 21st century … In Smith and Ricardo's time [late 18th-early 19th centuries], nature was perceived as a huge and seemingly inexhaustible resource: global population was roughly 1 billion – one seventh the size of today's – and extractive and production technologies were far less powerful and invasive* (Gardner and Prugh, 2008:4).

Nevertheless most economists would still argue that what will save the world is continued economic growth. Yet world fisheries are on the verge of collapse, oil production may have already peaked and climate change continues to present new hazards. The assumption that economic activity is somehow independent from nature no longer holds true, if it ever did. Growth, or making an economy bigger, is not the same as development, which should aim to improve human well-being.

Ecologists and others have long argued that: i) technological solutions on their own will not bring about a sustainable society; ii) exponential growth can lead to sudden catastrophes, both economic and environmental; and iii) problems cannot be dealt with in isolation but only when seen as part of an organic whole. Taking the biosphere as their model, ecologists insist that there are clear limits to growth and that humans need to learn to live within these limits.

> *But if economies built according to the conventional model are increasingly self-destructive, a new kind of economy – a sustainable economy – is struggling to be born. Where the conventional economy depends largely on fossil fuels, is built around use-and-dispose materials and practices, and tolerates extreme poverty even amid stunning wealth, the evolving sustainable economy seeks to operate within environmental boundaries and serve poor and rich alike* (Gardner and Prugh, 2008: 4).

Neo-liberalism explained

In trying to make sense of the world it is important to note that no area of human endeavour can ever be neutral or value-free since it is always underpinned by the values and beliefs of its proponents. Such sets of beliefs or world views are known as 'ideologies'. An ideology can be defined as an 'interlocked set of ideas and beliefs about the world held by a group of people that they demonstrate in both behaviour and conversation to various audiences. These systems of belief are usually seen as 'the way things really are' by the groups holding them, and they become the taken-for-granted ways of making sense of the world' (Meighan & Blatchford, 2007: 212).

Neo-liberalism, the major political ideology which underpins the current western world view (including our view of education) influences both the Labour and Conservative political parties. In summarising (if oversimplifying) some of the key elements of this world view, I have found the work of Barbara Goodwin (2007) and David Harvey (2007) particularly helpful.

In Britain liberalism grew out of the ideas of 18th century philosophers such as Hobbes and Locke. It now appears as the basis of western 'reality' rather than as one ideology among others. Because Enlightenment thinkers saw the individual as of prime significance they stressed the importance of individual liberty. The rights of the individual and the attainment of human happiness thus became key goals for liberalism. Liberalism also took the individual to be a rational being who always knew his own best interests. The pursuit of self-interest is therefore what should guide all human activity, and the role of government is to protect the rights of the individual (whether persons or companies) and not to interfere in the pursuit of their self-interest.

The socialist notion of a welfare state, which emerged after World War Two in the UK, was the opposite of liberalism in that it believed the state should provide a range of services to meet everyone's needs. In the UK this led to the creation of a National Health Service, and the notion that services such as water, transport and education should be provided for all. However, during the 1970s in the UK and the US there was a backlash against the idea that the state should provide services for all and especially for the weaker members of society.

Neo (new) liberals in the UK and the US believed that the state should not interfere in these matters and that what is privately owned is good and what is publicly owned is bad. A central belief of neo-liberalism is that of 'economic rationality': everyone should act to maximise their own personal benefits – in other words, the notion of free enterprise. This means that private businesses competing against each other are supposed to result in the greatest good for all. The state should therefore not interfere in any way that might hinder business and industry from pursuing the vital goal of capitalism, which is to maximise profits for producers and shareholders. Such principles lay at the heart of both Margaret Thatcher's policies in the UK (Thatcherism) and Ronald Reagan's in the US (Reaganomics).

Over the last 30 years the impact of neo-liberal ideas on education has been dramatic. This has been well analysed by Michael Apple (2006). In the UK, Thatcher's Conservative government in the 1980s launched a series of ideological attacks against teachers, schools and the education system itself. The metaphors applied to education became those of the market place: parents as consumers, business as the model for education, internal and external competition to bring out what is the best in both pupils and schools. New Labour did little to change this view and thus education become modelled on the business world, taking on a technocratic and performance-driven view of teaching and learning.

Yet there are many spaces in education today where the nature of society and human well-being is open to lively discussion as the succeeding chapters in Part 1 illustrate. Much of the impetus for this came from progressive and radical educators who held that, whatever the changes neo-liberal ideology had

made to education, the real purpose of education was a personal and social one – to help learners understand the world that they were growing up in and the need for them to engage in responsible global citizenship.

The purpose of education

My first year students on an Education Studies degree were often astonished to learn that there have always been debates about the purposes of education. How could this be when the purpose of education was so clear? The purpose of all those years at school, they said, was so that they could pass their A-levels to gain a place at university. And the purpose of going to university was so that they could get a good job. The fact that some initially rejected the idea of any other possible purposes for education is a reminder of the power of dominant ideology. Their experience of school had taught them that this was not a place in which to offer opinions or to ask questions but somewhere to passively learn the 'right' answers. Later they engaged in spirited debate about different possible purposes – to get a job, to know oneself, to be an active citizen, to understand one's cultural heritage, to be successful, to do as you're told, to change the world. In their third year some went on to explore the work of radical educators both outside and within the educational system (Hicks, 2004).

In *Daring to be a Teacher,* Robin Richardson (1991) draws attention to two long-standing traditions in British education – the first focusing on the 'person' and the wholeness of the individual, and the second on the 'political' and the wholeness of society:

> *Both traditions are concerned with wholeness and holistic thinking, but neither, arguably, is complete without the other. There cannot be wholeness in individuals independently of strenuous attempts to heal rifts and contradictions in wider society and in the education system. Conversely, political struggle to create wholeness in society – that is, equality and justice in dealings and relationships between social classes, between countries, between ethnic groups, between women and men – is doomed to no more than partial success and hollow victories, at best, if it is not accompanied by, and if it does not in its turn strengthen and sustain, the search for wholeness and integration in individuals.*

In short, education should be about changing both oneself and society. Unfortunately, there can be a default model of this in schools, as experienced by some of my students, in which they simply learned passivity and acceptance of the status quo. Richardson, however, is writing about a radical and empowering model of education in which pupils have learned the skills of self-reflection and critical awareness of the world.

Faced with the debates about self and society that present and future generations must engage in, these skills must be at the heart of good education. To discuss issues, at their own level, such as limits to growth, the nature of consumerism and how education can prepare them for the future, requires bold, critical, creative and outgoing students. Here in the early 21st century we are at a point where teachers, schools and teacher trainers can either help or seriously hinder society in these endeavours.

Where do we want to get to?

Debates about sustainability

'Would that the notion of sustainability was only that simple,' a colleague said. What she was referring to was the sense that we all somehow agree on what sustainability looks like without having to actually discuss it in detail. Or perhaps we don't discuss it because deep down we fear that all sorts of differences of opinion might emerge. Here I want to highlight a number of crucial differences that come up in debates about the meaning and nature of sustainability. These are:

- environment vs development
- the rich North vs poor South
- technocentrism vs ecocentrism
- light green vs deep green

It was clear from the Brundtland Report and the Earth Summit in 1992 that issues of environment and development were to be seen as of equal importance and two sides of the same coin. However, many government departments, non-governmental organisations, activists and enthusiasts came from backgrounds that related to either environmental issues or issues of inequality and injustice. As a result, while they may have embraced the notion of sustainability

it is sometimes still only in relation to their area of expertise. This means that in both discussion and in publications the notion of sustainability put forward may be incomplete – for example, that it is basically about wildlife, or about poverty reduction. This emphasis on either the environment or development can also sometimes be found in schools. The emphasis needs to be holistic, giving equal stress to both and also the interrelationships that exist between them.

Both at the Earth Summit and since, major tensions have surfaced between what are sometimes called the countries of the rich North and the poor South. In particular, poorer countries objected to the way in which richer countries defined the problems and the solutions to unsustainable practices. Rich northern governments wanted poorer southern countries to be more responsible stewards of the Earth, protecting the rainforest and endangered species, for example. Southern governments wanted the North to help them eradicate poverty, their most pressing concern. Caring for the environment was a luxury that many of their citizens could not afford. The South also saw imperialism, neo-colonialism, and the strategies of the World Bank and the International Monetary Fund as largely responsible for the unsustainable development they experienced.

Those who hold a technocentric world view are of the opinion that science and technology hold the answers to sustainable development and that this is thus where major investment should be put. From this perspective new fertilisers, herbicides and genetically modified crops will solve world food production. Nuclear power and new coal-fired power stations, with carbon capture and storage, will easily keep abreast of rising energy demand. Technocentrists believe humanity should take control of nature. Those who take an ecocentric view of the world emphasise the interdependence of all life and the need for humanity to live within the limits of the biosphere. This involves a deep awareness and understanding of the natural world and the ways in which we need to adapt to it and work in harmony with it. Food production would therefore tend to be organic and locally based. Energy supplies would focus on a variety of decentralised renewable sources including, for example domestic generation.

The terms ‘light green’ and ‘deep green’ are sometimes used to refer to the nature of the changes needed to create a more sustainable future. There are many notions of what a more sustainable society might look like and therefore of what might need doing in order to help create it. But just how much change and what sort of change might it demand? Light greens believe that life can go on much the same as before as long as governments introduce legislation to minimise environmental damage, help create a greener economy, and new technology is developed to meet the needs of society. Deep greens do not believe that this will lead to a sustainable future because it is mostly about surface change. They argue that it is the deeper structures of society – economics, materialism, consumerism, continued growth and greed – which have led to the unsustainable present. Only significant changes in lifestyle, attitudes, economy and ethics, they argue, will lead to a more sustainable future.

Envisioning sustainable futures

It is always useful in life to know where one is going or where one wants to get to. We think about, imagine, dream of the holiday that we want to go on or the school that we’d really like to teach in. Thinking about our preferred future, imagining it, planning it, is something that we naturally do in our own lives. Indeed we may also have images of our preferred future self in which we look better, relate better, live and work better. Such images help us formulate goals that we may wish to work towards. Politicians, of course, do something similar at a national level, although how far they look ahead is often constrained by the date of the next election.

These normal human processes can also be used to reflect on the future of society and how we would like it to be. Far from this being ‘wishful thinking’, such a process can be used to clarify how we feel our local community could change for the better. Elise Boulding (1994) was one of the first people to work with a variety of groups to help them identify their preferred future. Until recently, she was also one of the few people to have detailed the outcomes of such futures workshops and to have analysed the imagery that often arose. In particular, she noted the presence of several common themes:

> *Whatever people are doing, women and men are doing it together. Children and the elderly seem to be everywhere – there is no age segregation. Communities are also described as racially mixed. Learning seems to take place 'on the job'. [...] This is a non-hierarchical world; no one is 'in charge'. It is also one in which locality is very important. [...] Technology is low profile, but it does exist and everyone reports that it is shared. [...] Although the new-consciousness theme varies in importance, there is widespread reporting that people are operating out of a different sense of awareness than that of [the present].* (Boulding cited in Hicks, 2006).

Having run such futures workshops with numerous different groups over a period of some years, she came to describe this as the 'baseline future', common to most groups that she worked with. She also reported among younger people the use of adjectives such as 'bright', 'clean' and 'green' to describe their preferred future world.

Much of Boulding's work was carried out in the 1980s and so I was interested to see what the results would be from such workshops in the UK in the first decade of the new millennium. I thus ran workshops at three different institutions of higher education with some 90 students, most but not all of whom were training to be teachers (Hicks, 2006). The given purpose was for them to identify the main features of their preferred futures 25 years ahead. In order of importance, the themes most commonly mentioned were as shown below.

Table 1.2 – Key features of students' preferred futures

Green – clean air and water, trees, wildlife, flowers

Convivial – co-operative, relaxed, happy, caring, laughter

Transport – no cars, no pollution, public transport, bikes

Peaceful – absence of violent conflict, security, global harmony

Equity – no poverty, fair shares for all, no hunger

Justice – equal rights of people and planet, no discrimination

Community – local, small, friendly, simpler, sense of community

Education – for all, ongoing for life, holistic, community

Energy – lower consumption, renewable and clean sources

Work – for all, satisfying, shared, shorter hours

Healthy – better health care, alternative, longer life

Food – organic farming, locally grown, balanced diet

Two things struck me at the time. First, the PGCE student who said: 'Do you know, in my entire educational career no one has ever asked me before about my hopes for the future.' Second, that while no reference was made to sustainability in the workshops, what they collectively envisioned were many of the features of a more sustainable society. Later work, this time with a range of educators rather than students, also produced similar results (see chapter 15).

But are such exercises in envisioning any use? Do they make a difference? Do they help people move towards their preferred future? Dennis Meadows and his colleagues (2005: 272) see such activity as being of vital importance:

> *We should say immediately, for the sake of skeptics, that we do not believe vision makes things happen. Vision without action is useless. But action without vision is directionless and feeble. Vision is absolutely necessary to guide and motivate. More than that, vision, when widely shared and firmly kept in sight, does* bring into being new systems [emphasis in the original].

Far from being wishful thinking, what I believe such activity taps into are some of the deepest hopes and dreams that people have for themselves, their families and their communities. It is increasingly clear too that for many people their preferred future is one that embodies many of the elements of sustainability, although they might not personally use such a term.

The contribution of education

The remainder of this book is devoted to an in-depth exploration of how education can help young people envision and work towards more sustainable futures. The chapters that follow in Part 1 look at how the global dimension in the curriculum attunes students to issues of local-global interdependence, how developing a futures perspective encourages critical and creative thinking about the future, how the Sustainable Schools programme encourages new and innovative thinking about social and environmental change, and how local communities are learning to envision and implement their own plans for a more sustainable future.

The Sustainable Schools National Framework (Department for Children, Schools and Families, 2006/7) identified eight 'doorways to sustainability' for pupils and teachers to explore. These correspond with Eco-Schools Scotland's eight themes. Part 2 of this book contains chapters dedicated to each of these doorways. Each chapter also contains a visual scenario identifying some of the key features of what a sustainable future might look like in 2050.

The times may be difficult, the task may seem hard, but the willingness to envision and help create a more sustainable future is there among the children and students we teach and among those who have chosen to be teachers in these times. The purpose of this book is to help you harness that willingness in visionary and practical ways.

USEFUL STARTING POINTS

The sources listed here are not for classroom use but they do provide vital background reading for any teacher who wants to understand the nature of these times and the wider context for the issues discussed in this book.

✓ Christopher Lloyd (2009) *What on Earth Happened?... In Brief,* London: Bloomsbury Publishing.

This very readable book is subtitled 'The planet, life and people from the big bang to the present day.' If you want to be clearer about how it all began, the history of the Earth, human evolution, ancient and modern history and our impact on the planet, it is all entertainingly summarised here. It provides a quick introduction to the questions 'Where have we come from?' and 'Where are we now?'

✓ Michael Apple (2006) *Educating the 'Right' Way: Markets, standards, God and inequality, 2nd edition,* New York: RoutledgeFalmer.

Michael Apple is one of the best writers on why and how political ideologies deeply affect all aspects of education. While teachers accept that governments periodically revise the curriculum and the way in which schools are run, the underlying reasons for this are seldom made clear. Apple demonstrates in detail the ways in which neo-liberal ideology has profoundly affected the ways in which we both view and practise education today.

✓ Worldwatch Institute (2008) *State of the World 2008: Ideas and Opportunities for Sustainable Economies,* London: Earthscan.

Each year the Worldwatch Institute in Washington, DC publishes its State of the World report, which should be a reference book in all school staffrooms. Experts from around the world focus on all aspects of sustainability with detailed case studies on how individuals, organisations and governments are working for creative change. Keep up to date with this annual publication. See also: *www.worldwatch.org*

WWF International in association with Zoological Society of London and Global Footprint Network (2010) *Living Planet Report:* WWF-World Wide Fund for Nature, Gland, Switzerland

This is WWF's periodic update on the state of the world's ecosystems. It describes the changing state of global biodiversity arising from human consumption of natural resources and draws on two key indicators: the Living Planet Index and Ecological Footprint.

Robin Cohen and Paul Kennedy (2007) *Global Sociology, 2nd edition,* Basingstoke: Palgrave.

This is an exciting textbook which provides a wealth of information on contemporary global issues and the state of the world. A good resource book for teachers, and you don't need to be a sociologist to find it useful. See in particular the chapters on thinking globally, modernity and the evolution of world society, consumerism and everyday life, and global social movements, towards a sustainable future. There is a website for the book at: *www.palgrave.com/sociology/Cohen/index.html*

Copenhagen windfarm.

2. THE GLOBAL DIMENSION

"The global dimension addresses social, political, environmental and economic issues that are of direct concern to young people. Considering how they can affect these issues helps them understand that both action and inaction have consequences. This can help develop positive attitudes to the wider world and its challenges, and equip young people to make informed judgements and act with integrity."

QCA (2007) *The Global Dimension in Action*

As a young teacher I would have felt daunted by the above passage. Weren't these concerns best left until pupils were older? What did it have to do with my own subject interests? How would I begin to get a grasp on social, political, environmental and economic issues?

The purpose of this chapter is to identify:
i) why it is important for teachers to understand global issues;
ii) what is meant by the global dimension in the curriculum; and
iii) the findings of recent research on global learning.

Understanding the issue

The notion of a global dimension in the curriculum sounds big because in a spatial sense it is, incorporating as it does the entire planet. A colleague said recently that he preferred the term international because it sounded more manageable. However, these two terms are not interchangeable since 'international' refers to relationships between countries while 'global' refers to the whole planet.

Common problems we share

Global issues are those that are found in various parts of the world so that they are experienced by many people in many different places. If one considers these issues first at a general level it is clear that in different ways we all face dilemmas relating to inequality (wealth and poverty), injustice (human rights), violence (peace and conflict), and the environment (biosphere) for example. Global issues are, of course, experienced locally and personally, but in diverse ways. They refer to major problems that we often share in common as part of the human condition.

Global issues are thus also local issues. In our own communities, and in our schools, on a daily basis we are faced with questions relating to inequality, injustice, conflict and the environment. Global issues matter because they are common problems that urgently require our attention. They require our attention because we will all be facing them at some time or another and because other people are sharing similar experiences in different contexts and trying to resolve them too.

Conflict in Afghanistan is clearly not the same as conflict in the playground and should not be considered so but, in that they are both conflicts, similar questions can be asked about both. Thus in any conflict situation the parties concerned are likely to differ about: a) the nature of the problem; b) the extent of the problem; c) the origins and history of the problem; d) the resolution of the problem; e) they are also likely to both misunderstand and mistrust each other. These five commonalities can provide a valuable template for exploring any conflict situation.

Local-global connections

Because global issues always have a local face, this can remind us that they are often connected. As chapter 1 pointed out, events in distant places impact on our local communities, and events locally and nationally also affect lives very distant from our own. When a major company closes, hundreds of people may face unemployment. A natural response is for people to appeal to management, politicians or the government to ameliorate this situation. However, the decision to close that company may have been made on the other side of the world in the offices of a giant transnational corporation over which local politicians and national governments have little control.

When householders living near the coast are threatened by more frequent flooding they often turn to the local council for support. While local and national bodies tasked with such matters can help in a variety of ways, from better drainage schemes to improved flood defences, they cannot put an end to the problem. One of the effects of global warming, as ice sheets melt, is a slow but continuous rise in sea levels. Low-lying coastal areas, both in the UK and elsewhere, will increasingly be under threat because the burning of fossil fuels by rich countries over the last 200 years has contributed to global warming.

The rise of interest in ethical shopping has come about because people began to ask questions about the sourcing of items such as their coffee, jeans, trainers and food. Most people, it seems, have little interest in where such items come from; nevertheless, their production connects us inextricably to people and places far away. Who made them? Where do they live? Under what sort of conditions do they work? How much do they get paid? Are they appropriately rewarded for the work they have put into that product or do the profits benefit someone else? Living in the rich world we probably contribute to global inequality and injustice every day, not just in an abstract way but in relation to particular people and families. Ethical shoppers face up to this by acknowledging the nature of such links, confronting such practices and challenging consumerist culture (Clark, 2006).

Impact on the future

The local-global connections considered so far have all been spatial in nature, but they also occur on a temporal continuum. Both the 'goods' and 'bads' of the society we live in arose from the countless decisions made or not made by our forebears. Our lives today are marked, for better or worse, by the Scientific and Industrial Revolutions, by the colonial empires that once existed, the impact of two world wars, the nuclear arms race, and long-standing cultural prejudices. History may be in the past, but every day we live with its consequences.

Similarly all the choices, large and small, that we and others make today will influence the future and the lives of future generations. Rubbish dumped in the sea will not only foul beaches elsewhere but beaches in the future. Continuing to burn coal as a fuel will affect the lives of our great-grandchildren. Taking more than our fair share of the world's resources, whether water, oil or food, may contribute to resource wars in the future. And not helping young people understand about the world and how it is changing will leave them ill-equipped to deal with the issues that they will have to face in the future.

Educational responses

A long-standing concern

How one might teach about global issues has been a concern of educators for several decades. Not surprisingly there is a wealth of expertise available and a plethora of materials for use in schools. My own introduction to these matters came as a young teacher when I saw a documentary in the ’70s called ‘Due to lack of interest tomorrow has been cancelled’. This film was about the newly-emerging environmental movement, and I knew that these issues needed to become part of my teaching. On moving into teacher education I came across the work of Robin Richardson and met teachers and tutors from various subject areas all of whom felt that a global dimension was missing from the curriculum. New materials, classroom activities and courses were enthusiastically developed and disseminated.

While ‘world studies’, as it was then called, argued that a range of global issues should be explored in school, other progressive educators in the ’70s were pressing for the inclusion of specific issues in the curriculum. Environmental education stressed the importance of environmental issues; development education the need to explore issues of wealth and poverty; and multicultural education issues of race and racism. In the ’80s peace education focused on conflict and human rights education on rights. While at the time there was an element of competition between these initiatives, what it also meant was that the proponents of each built up specific expertise in teaching and learning about their specific area (Hicks, 2008).

While the introduction of a Conservative national curriculum in the late ’80s deliberately marginalised these global initiatives, they re-emerged in the ’90s as clearly as before. What was also significant was that the separate fields had now begun to take on some of the concerns of the others, so that the interdependence of global issues was now being recognised. Gradually the terminology converged until there was a general consensus that what was needed was a ‘global dimension’ in the curriculum. When this was eventually taken up officially by the DCSF and Qualifications and Curriculum Authority (QCA) it became known as ‘the global dimension’.

Current guidance and support

In 2005 the Department for Education and Skills, as it was then, published *Developing the Global Dimension in the School Curriculum*. In putting this milestone document together the DfES had been supported by the DEA (now called Think Global) a key national organisation with particular expertise in this area, and the Department for International Development (DFID). The document argued that the global dimension could best be understood through eight key concepts (shown in Table 2.1 below).

Table 2.1 – The eight key concepts underlying the global dimension

Interdependence – Understanding how people, places, economies and environments are all inextricably interrelated, and that choices and events have repercussions on a global scale.

Diversity – Understanding and respecting differences and relating these to our common humanity.

Sustainable development – Understanding the need to maintain and improve the quality of life now without damaging the planet for future generations.

Social justice – Understanding the importance of social justice as an element in both sustainable development and the improved welfare of people.

Human rights – Knowing about human rights, including the UN Convention on the Rights of the Child.

Conflict resolution – Understanding the nature of conflicts, their impact on development and why there is a need for their resolution and the promotion of harmony.

Values and perceptions – Developing a critical evaluation of representations of global issues and an appreciation of the effect these have on people's attitudes and values.

Global citizenship – Gaining the knowledge, skills and understanding of concepts and institutions necessary to become informed, active, responsible citizens.

From: *Developing the Global Dimension in the School Curriculum,* DfES

In 2007 the QCA produced *The Global Dimension in Action: A curriculum planning guide for schools*, which contains further elaboration and a number of case studies from both primary and secondary schools.

In Scotland, Learning and Teaching Scotland, IDEAS (International Development Education Association Scotland), Scottish Executive and DFID produced the influential *The Global Dimension in the Curriculum: educating the global citizen.* (2007).

A more recent document, *Cross-Curriculum Dimensions: A planning guide for schools* (QCA, 2009), identifies the global dimension and sustainable development as one of seven dimensions which are 'unifying areas of learning that span the curriculum and help young people make sense of the world'. The other cross-curricular dimensions are: identity and cultural diversity, healthy lifestyles, community participation, enterprise, technology and the media, creativity, and critical thinking.

The three extracts from this document, shown below, provide the clearest statement yet on the importance and nature of the global dimension to both the primary and secondary curriculum.

Table 2.2 – The global dimension and sustainable development

Learning about [the] global dimension and sustainable development can help young people to understand the needs and rights of present and future generation, and to consider the best ways to tackle climate change, inequality and poverty. It can also motivate learners to want to change things for the better – equipping them with the knowledge, skills and values that are crucial to envisaging and creating a sustainable future.

The global dimension and sustainable development engages pupils critically with the following three questions:

- What are the biggest challenges facing our planet and how might they alter its future?
- How can I enjoy a good quality of life, without transferring problems to people in other parts of the world?
- How can I become an active global citizen and help look after the planet for future generations?

Through this dimension young people learn to:

- explore their own place within a changing world
- communicate with people from a range of countries and cultures
- argue a case on behalf of themselves and others
- understand long-term global challenges including climate change, conflict and development, and how these issues impact on and change society
- reflect on the consequences of their own actions and take account of the needs of present and future generations in the choices they make
- think imaginatively about what individuals can do to develop a more informed society and sustainable future

To achieve these outcomes, learners need opportunities to:

- participate in global partnerships
- make links between personal, local, national and global issues and events
- appreciate the importance of a global context and engage in a range of culturally diverse experiences
- study and debate different viewpoints on the challenges facing society
- investigate how environmental change arises, including the impact of human activity
- consider alternative future scenarios for the planet and the risks associated with not tackling sustainability
- use their own ideas to act and contribute to change

From: *Cross-Curriculum Dimensions, QCA*

The value of recent research

Over the years there have been a number of research studies that have looked at how young people and student teachers view the world, and these have been summarised in Hicks and Holden (2007). More recently there have been three excellent research studies carried out by Ipsos MORI (Market and Opinion Research International) which were commissioned by the Geographical Association and by the DEA. The key findings of each make interesting and useful reading.

The Geographical Association commissioned a study called *World Issues Survey* (GA/Ipsos MORI, 2009), which identifies the issues that Key Stage 3 pupils think are important and whether they feel they are learning about them. This was based on 598 interviews with 11-14 year olds in England. Some of the findings are shown below.

Figure 2.1 – Which issues are the main ones affecting the world today?

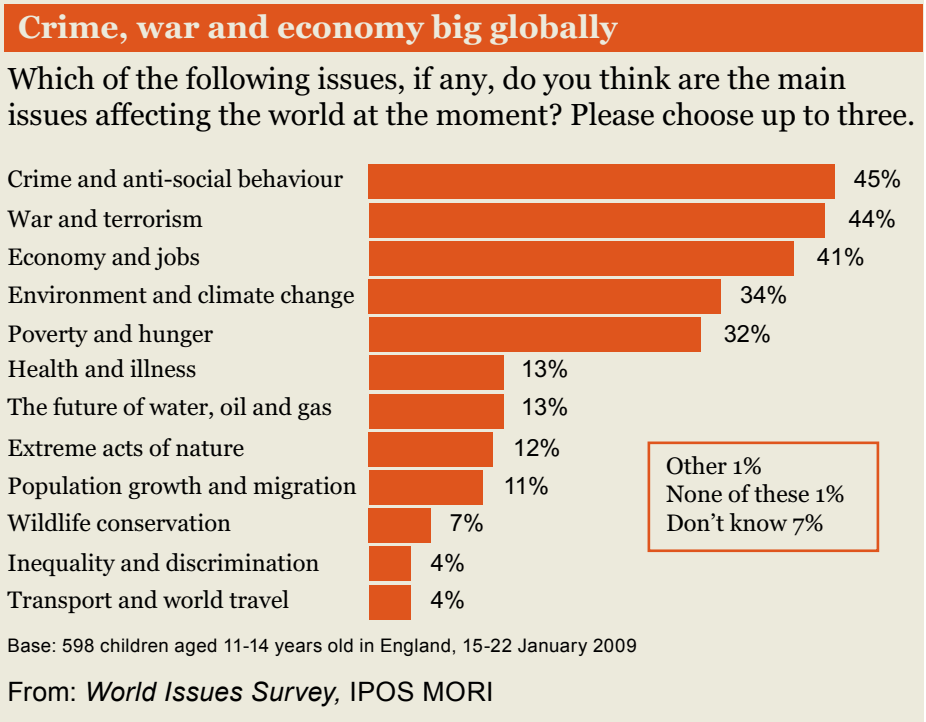
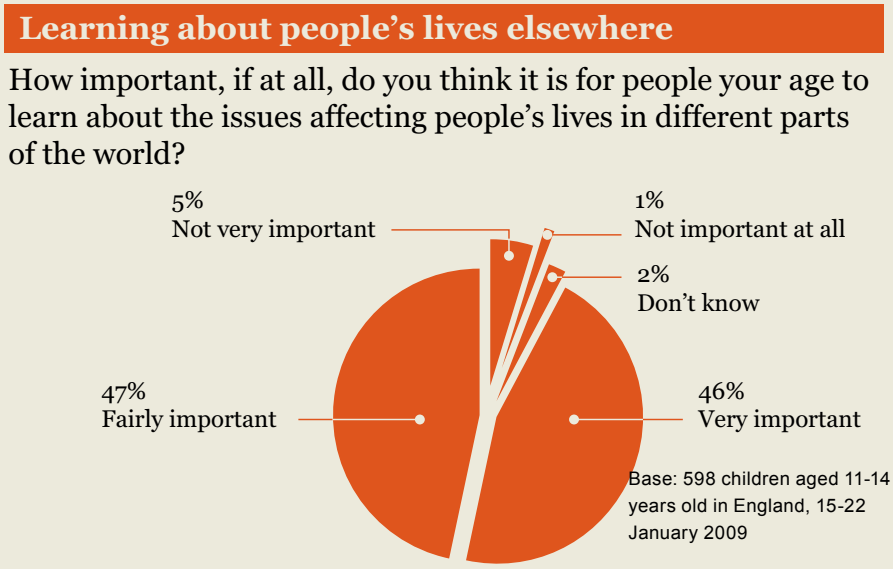


Figure 2.2 – Importance of learning about people's lives elsewhere



From: *World Issues Survey,* IPOS MORI

The global issues that students feel are the most important are also the ones which they have learned about in school. The top subject areas for discussion of such issues are Geography (49%), PSHE (30%), History (29%), Citizenship (27%) and Science (25%). As far as the importance of learning about such issues is concerned, 93% of respondents felt it was very or fairly important.

DEA commissioned a study called *Young People's Experiences of Global Learning* (DEA/Ipsos MORI, 2009a) which explores whether 11-16 year old pupils are experiencing global learning at school, whether they feel this is important, and whether they feel they can take action to make the world a better place. The sample was of 1,955 pupils.

Table 2.3 – Some findings on young people's experiences of global learning

- Over 50% of students say they have experienced global learning in school… whilst a slightly larger proportion see global learning as important. Over three-quarters of pupils for example, think it is important that schools help pupils understand what people can do to make the world a better place (78%).

- There appears to be a demand for global learning, with more pupils believing global learning is important than actually experience it in school. Findings suggest that there are a proportion of young people who are not experiencing global learning in school: one in five (19%) for example, say they have not discussed news stories from around the world at all in school.
- Findings suggest that global learning has an impact: those who have experienced global learning in school are keen to understand more about the problems in the world, as well as being more likely than average to believe that what they do in their daily lives can affect those in other countries and that people like them have the ability to make a difference. These more informed pupils also appear to be more open to people of different backgrounds than those who have not experienced global learning in school, and more likely than average to say that they try to do things that make the world a better place

From: *Young People's Experience of Global Learning*, DEA/Ipsos MORI

The second survey commissioned by DEA is on *Teachers' Attitudes to Global Learning* (DEA/Ipsos MORI, 2009b) and examines teachers' opinions on the importance of teaching about a range of global issues, on how well schools provide global learning, and teachers' confidence in addressing global issues. Some 848 teachers from primary and secondary schools were interviewed.

Table 2.4 – Some findings on teachers' attitudes to global learning

- The vast majority of teachers in England see global learning as an important aspect of teaching in schools: 94% feel that schools should prepare pupils to deal with a fast-changing and globalised world.
- However, there is a large gap between the proportion of teachers who think schools should prepare pupils to deal with such a world and the proportion who believe schools actually do this (58%) […] Just 53% of secondary school teachers agree schools prepare pupils well, compared with 62% of primary staff.

- The existence of this gap between 'ideal' and 'actual' may be linked to a lack of confidence amongst practitioners in teaching specific global issues.
- A high proportion of teachers (80%) agree that thinking about how teaching contributes to making the world a better place motivates me to stay in teaching. Younger, less-established teachers (85% of age 34 and younger) are more likely than older colleagues (77% of age 45 and older) to express this view.

From: *Teachers' Attitudes to Global Learning*, DEA/Ipsos MORI

Taken together, these three research studies provide an interesting snapshot of the state of global learning in England. Nearly half of 11-16 year olds think it is very important to learn about issues affecting people's lives in different parts of the world and a further 46% think it fairly important. The global issues that concern them most are crime and anti-social behaviour, war and terrorism, the economy and jobs, environment and climate change, and poverty and hunger. Most feel they have learned something about these issues in school. More pupils feel global learning is important than are receiving it. Those who are engaged in global learning want to know more, are more tolerant, and are more likely to feel that they can make a difference. While most teachers think global learning is vital, far fewer feel it is happening in schools. It is thought that there may be a lack of confidence among teachers in dealing with global issues.

Whilst since 2010, the Coalition government has paid somewhat less attention to these matters, issues of local-global interdependence will always remain of vital educational concern. Many of the elements of good practice have been summed up by Hogg (2010) in *Global learning in schools: a review of what works*.

This chapter has explored and explained why the global dimension is such an important element of the school curriculum. Put simply, many global and local issues are inextricably intertwined and require collective action to resolve them. The long-standing nature of this educational concern has been highlighted, together with key documents and recent relevant research.

USEFUL STARTING POINTS

- Tony Pickford (2009) *Get Global! A Practical Guide to Integrating the Global Dimension into the Primary Curriculum,* Stoke-on-Trent: Trentham Books.

  This book 'presents a clear rationale for integrating a global dimension in the primary curriculum and uses subject and thematic contexts as doorways through which children can explore global links. The book is for all primary teachers who wish to move teaching and learning about global issues beyond a simple 'us and them' approach to one that is genuinely inclusive of diverse cultures and perspectives, through exploring shared values and understandings. The practical activities described are tried and tested and [...] firmly rooted in curriculum contexts and in classrooms, from foundation stage to the top of key stage two.'

  It includes chapters on how the global dimension can be taught through English, Maths, Science, Geography, History, Religious Education, Drama, Art, Music and Physical Education, as well as covering cross-curricular themes such as travellers, puppetry, and climate change.

- David Hicks and Cathie Holden (eds) (2007) *Teaching the Global Dimension: Key principles and effective practice,* Abingdon: Routledge.

  This book draws together much of the information needed in order to feel confident about teaching the global dimension. It includes: a framework for understanding global issues; a model identifying the key elements of good practice; insight into young people's concerns for the world and the future; tried and tested strategies for handling controversial issues in the classroom; and practical chapters by leading educationalists on how to explore each of the key concepts in the primary or secondary classroom.

Think Global (originally the DEA) – Promoting education for a just and sustainable world. CAN Mezzanine, 32-36 Loman Street, London SE1 0EH. See also: *www.think-global.org.uk*

Think Global is one of the leading national organisations involved in promoting and resourcing the global dimension. In particular, it has a number of informative publications on secondary subject areas and the global dimension. These include *Science* (Brownlie, 2003), *Geography* (Lambert et al. 2004), *The Arts* (Theodore, 2006), which covers Art and Design, Dance, Drama and Music, and *Exploring Together: A global dimension in the secondary curriculum* (Huntley and Young, 2009), which summarises the possibilities in all secondary subject areas. Think Global is also responsible for the Global Dimension website at *www.globaldimension.org.uk*. In Scotland the global dimension is promoted and resourced by IDEAS (International Development Education Association Scotland) details of which can be found at *http://www.ideas-forum.org.uk*

Belgeonne, C. (2009) *Teaching the Global Dimension: A Handbook for Teacher Educators,* Manchester: Development Education Project.

This useful booklet draws together and cross-references a range of important initiatives and concerns. It sets out how university tutors and school mentors can support trainee teachers to engage with the global dimension. It looks at questioning, critical thinking and critical literacy; teaching strategies; staff and trainee training activities; and links to initiatives such as Every Child Matters, Personal, Learning and Thinking Skills (PLTS), Social and Emotional Aspects of Learning (SEAL), Sustainable Schools, community cohesion, and global dimension audits, awards and benchmarking systems.

Miscellaneous fish on display at Rock Nore Fisheries, an MSC certified fish seller in Hastings, East Sussex.

3. A FUTURES PERSPECTIVE

"The idea of the future is one of the central symbols through which human beings have ordered their present and have given meaning to their past. Whilst futures research in the academic sense is a recent pursuit, conjecture, speculation, and exploration of future events have always been prime features of the human condition. Human survival itself is very largely predicated on the conscious capacity to organise present actions in terms of past experience and future goals."

John McHale (1978) *Handbook of Futures Research*

There's nothing unusual in thinking about the future. We do it all the time, but often in a somewhat fragmented and sporadic way. So what's new? Well, as the two previous chapters have pointed out, there are many issues – both local and global – that will affect the future we will find ourselves living in. It is essential, therefore, that we find ways of thinking more systematically about the future in school.

Understanding the issue

A central symbol

As John McHale argues, thinking about the future is one of the things we should be good at because our well-being and our survival depend on it. It's something we do every day. I wake in the morning and go through the list of things that I have before me. It's my way of checking what needs to be done and not missing anything out. My planning for the future has begun. During the course of the day I also think ahead to a journey I have to make – train times, connections, car hire, accommodation, seeing people. On the train I look forward to a holiday in France. The ferry had to be booked a long time ahead but I still have to sort out travel insurance and euros.

As I ponder in this way, other things come to mind. How long till the mortgage is paid off? How many more years before I retire? How old will I be when the grandchildren go to university? What might they do with their lives? As the train approaches my destination I wonder how much the place will have changed since I was last there and how it may change in the future. I wonder how different the future looks to others elsewhere in

the world. What sort of future do people expect in their lives and communities? Is what they expect the same as what they would wish for? How much control do I have over my life, or will I have to live the future that the more powerful groups in society want to bring about?

Futures studies

Many of our trains of thought are about our families, our work and our neighbourhood. But in the same way that the local cannot be understood unless set in a global context, so one's personal future needs to be seen in the context of wider social changes that may dramatically affect our lives. The academic field concerned with foresight and global futures is known as 'futures studies' and those involved with it as 'futurists'. While thinking about the future more widely and professionally originally had its origins in business, industry and the military, many fields require speculation about and planning for the future. This extends from town planning, the building of schools and population growth to weather forecasting, energy supplies and flood defences. Futurists and futurist organisations tend to work in two main ways: at one end of the spectrum are those who believe it is possible to predict and therefore control the future (technical); and at the other end are those concerned with the possibility of developing a better society (humanist).

Wendell Bell, Emeritus Professor of Sociology at Yale University, describes the purpose of futures studies as follows:

> *To discover or invent, examine and evaluate, and propose possible, probable and preferable futures. Futurists seek to know: what can or could be (the possible), what is likely to be (the probable), and what ought to be (the preferable)* (Bell 1997: 73).

Possible futures are all those that could conceivably come about. Science fiction is the literary field in which wide-ranging possible futures are explored, often in order to reflect on present human dilemmas and the problems that may arise. *Probable futures* are all those that seem most likely to come about. We deal with these all the time when pondering our own future or that of the nation, whether in relation to traffic, health care and energy demand or care of the elderly, food supply and climate change. *Preferable futures* are of a different order in that they are the futures one would most like to see

come about. It is our preferable futures which can act as drivers for change in our lives.

It should be noted at this point that futurists generally talk about futures in the plural rather than in the singular. This is because at any point in time any number of futures could come about – whether personal, local or global. I therefore generally adopt this usage.

Jim Dator, who teaches futures studies at the University of Hawaii, has set out what he calls his 'laws of the future' after many years of working in this field:

> *The future cannot be studied because the future does not exist. Futures studies does not – or should not – pretend to study the future. It studies ideas about the future (what I usually call 'images of the future') which each individual and group has (often holding several conflicting images at one time). These images often serve as the basis for actions in the present. Individual and group images of the future are often highly volatile and change according to changing events or perceptions. They often change over one's lifetime. Different groups often have very different images of the future. Men's images may differ from women's. Western images may differ from non-Western. […]*
>
> *The future cannot be predicted, but alternative futures can, and should be forecast. Thus, one of the main tasks of futures studies is to identify and examine the major alternative futures which exist at any given time and place. The future cannot be predicted, but preferred futures can and should be envisioned, invented, implemented, continuously evaluated, revised, and re-envisioned. Thus, another major task of futures studies is to facilitate individuals and groups in formulating, implementing, and re-envisioning their preferred futures. Part of the activity we do in futures studies is helping people in envisioning a more plausible future than they might otherwise. And we do it by giving them a greater range of images, by helping them to choose the way they want the future to be so that they can move in the right direction* (Dator, 2005).

Let us now go back briefly to the three questions about society posed in chapter 1 – Where have we come from? Where are we

now? Where do we want to get to? Clearly history is the academic field and curriculum subject which specifically deals with the first question. The second question is constantly under investigation by many academic fields and subjects such as Geography, Science, Citizenship, Sociology, Media Studies and Personal, Social and Health Education (PSHE). However, while the third question is explored by futurists, who takes responsibility for this in the school curriculum?

Educational responses

The missing dimension

Figure 3.1 – Futures in the curriculum

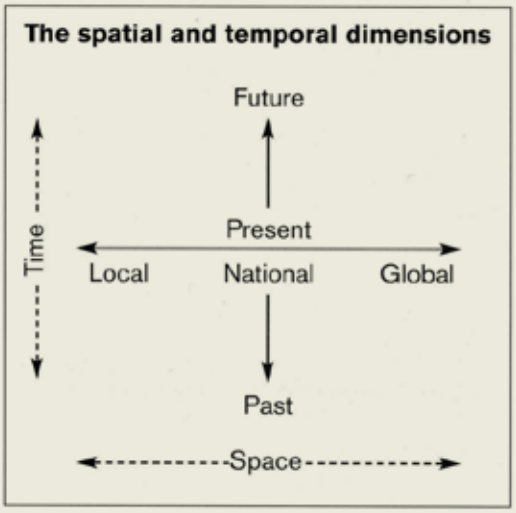


Figure 3.1 is one way of summing up the concerns of this book, showing that both human existence and the school curriculum have a spatial and temporal dimension. While chapter 2 dealt with the global dimension (and its links with the national and local) this chapter notes that, while the past and the present are generally well covered in the curriculum, the future, as yet, is not. While teachers are clear that they have a responsibility to teach about the past and present, the future is often something they feel less clear about – the missing dimension.

Primary teachers, at this point, sometimes used to ask me whether I was talking about PSHE, and secondary teachers whether I was referring to careers. Fortunately someone else generally said: 'But isn't the future about much more than PSHE or careers?' Today

I think the initial responses would be different as it's clear that issues of sustainability will have a major impact on the lives of children in school today and that climate change will require significant changes to the way in which we live. While the future may have long been the missing dimension in the curriculum (Hicks, 2006; 2007), things in education are now beginning to change.

Don't confuse these two

At this point I need to make clear a vital distinction in relation to 'futures *in* education' and the 'future *of* education'. When educators talk about the need for pupils to develop a futures perspective, they are referring to a range of skills that pupils need in order to think more critically and creatively about the *future*. They thus need to explore both probable (likely) and preferable (desirable) futures for themselves, their school, their community and wider society. In other words, they study futures as part of their investigations in education. As a result they are then able to envision a range of different futures, to analyse them, choose thoughtfully between them and contribute towards bringing their preferred future about. This could be in relation to the school grounds, energy use in school, the food they eat, the community they live in. They will become knowledgeable and skilled at choosing from among alternative futures to match their own and others' needs. This is only just beginning to happen in schools but without these abilities the notion of a more sustainable society cannot really be understood or achieved.

However, when I talk to managers, policy makers and others in education, I find this is not what they are interested in. Instead the issue that they want to know about is what the future of *education* will look like. For example, the DCSF project Beyond Current Horizons (2009) investigated long-term socio-technological change and its implications for education. Papers were written on demographics, community, knowledge, work and services and 'the ways in which trends in these fields may intersect with science and technology' and 'the implications of such developments for the goals, organisation and methods of education.' At heart, this is an attempt to 'predict' probable futures so that new forms of education can be planned to meet the agenda of science and

technology. It also arises, I believe, from a technocentric and managerial view of education, underpinned by a neo-liberal view of the world (see chapter 1).

It is the complete opposite of Richardson's view of education (chapter 1) as being about changing self and society. Developing a futures perspective, the study of alternative futures in education as outlined above, is inclusive, empowering and liberating, helping students develop the skills *they* need to explore their world and to participate in creative action for change.

Purpose and rationale

Put simply, developing a futures perspective is shorthand for a form of education which *promotes the knowledge, skills and understanding that are needed in order to think more critically and creatively about the future.* Elaborated in more detail it: i) enables pupils to understand the links between their own lives in the present and those of others in the past and future; ii) increases understanding of the social, political and cultural influences which shape people's perceptions of personal, local and global futures; iii) develops the skills, attitudes and values which encourage foresight and enable pupils to identify probable and preferable futures; and iv) works towards achieving a more just and sustainable future in which the welfare of both people and planet are of equal importance. The rationale for such an education is set out in table 3.1

Table 3.1 – Educational rationale for a futures perspective

Pupil motivation
Pupils' expectations about the future can affect behaviour in the present – for example, whether they believe something is, or is not, worth working for. Clear images of desired personal goals can help stimulate motivation and achievement.
Anticipating change
Anticipatory skills and flexibility of mind are important in times of rapid change. Such skills enable pupils to deal more effectively with uncertainty and to initiate, rather than merely respond to, change.

Critical thinking

In weighing up information, considering trends and imagining alternatives, pupils will need to exercise reflective and critical thinking. This is often triggered by realising the contradictions between how the world is now and how one would like it to be.

Clarifying values

All images of the future are underpinned by differing value assumptions about human nature and society. In a democratic society, pupils need to be able to begin to identify such value judgements before they can themselves make appropriate choices between alternatives.

Decision making

Becoming more aware of trends and events which are likely to influence one's future, and investigating the possible consequences of one's actions on others in the future, lead to more thoughtful decision-making in the present.

Creative imagination

One faculty that can contribute to, and which is particularly enhanced by, designing alternative futures is that of the creative imagination. Both this and critical thinking are needed to envision a range of preferable futures from the personal to the global.

A better world

It is important in a democratic society that pupils develop their sense of vision particularly in relation to more just and sustainable futures. Such forward thinking is an essential ingredient in both preserving and improving society.

Responsible citizenship

Critical participation in democratic life leads to the development of political skills and thus to more active and responsible citizenship. Future generations are then more likely to benefit, rather than lose, from decisions made today

How might one summarise the skills that a more futures-orientated curriculum should develop? Put succinctly, I believe it looks like this.

Table 3.2 – Developing a futures perspective

1. Anticipating the future

- understanding the uses of hindsight
- understanding the need for foresight
- in a rapidly changing world

2. Accepting consequences

- for oneself, others and the environment
- in the present/in this place
- elsewhere in time and space

3.Envisioning alternatives

- considering a range of scenarios
- personal, local and global
- identifying preferable futures

4. Making wiser choices

- choosing from alternatives
- weighing up benefits/disadvantages
- to make better choices in the present

5. Taking responsible action

- in one's personal life
- in the local community
- as a global citizen

One thus begins with issues in the present and looks ahead to their possible consequences, and the responsibility for these. This leads to consideration of a range of possible future outcomes and the identification of both probable and preferable futures. As a result, wiser and more responsible choices can be made about future directions and appropriate action can be implemented in the present.

The value of scenarios

One tool that futurists often use to help them think more critically and creatively about the future is scenario creation. Scenarios are a useful device for exploring possible futures and often involve four quite distinct and different versions of the future that could emerge from present trends in, say, 20 or 30 years. See, for example, the work of the Carnegie UK Trust (2007) on scenarios for civil society. Each scenario is designed to highlight a different option or outcome of present choices, and can then be used as a tool for discussion and debate. This notion can also be adapted for classroom use, as Alun Morgan (2006) has illustrated in 'Teaching geography for a sustainable future'.

The examples given below are taken from Citizenship for the Future (Hicks, 2001), and are specifically designed for classroom use. They were designed to illustrate four quite different futures that could come about, entitled respectively: More of the Same, Edge of Disaster, Technological Fix, and Sustainable Development. Each scenario has an accompanying summary for the teacher as shown below.

Each scenario is accompanied by the same five discussion questions.

1. Do you think people like this possible future?
2. What are some of the good things about it?
3. What are some of the difficult things about it?
4. Who will benefit and who will lose from this future?
5. Why would / wouldn't you like to live in this future?

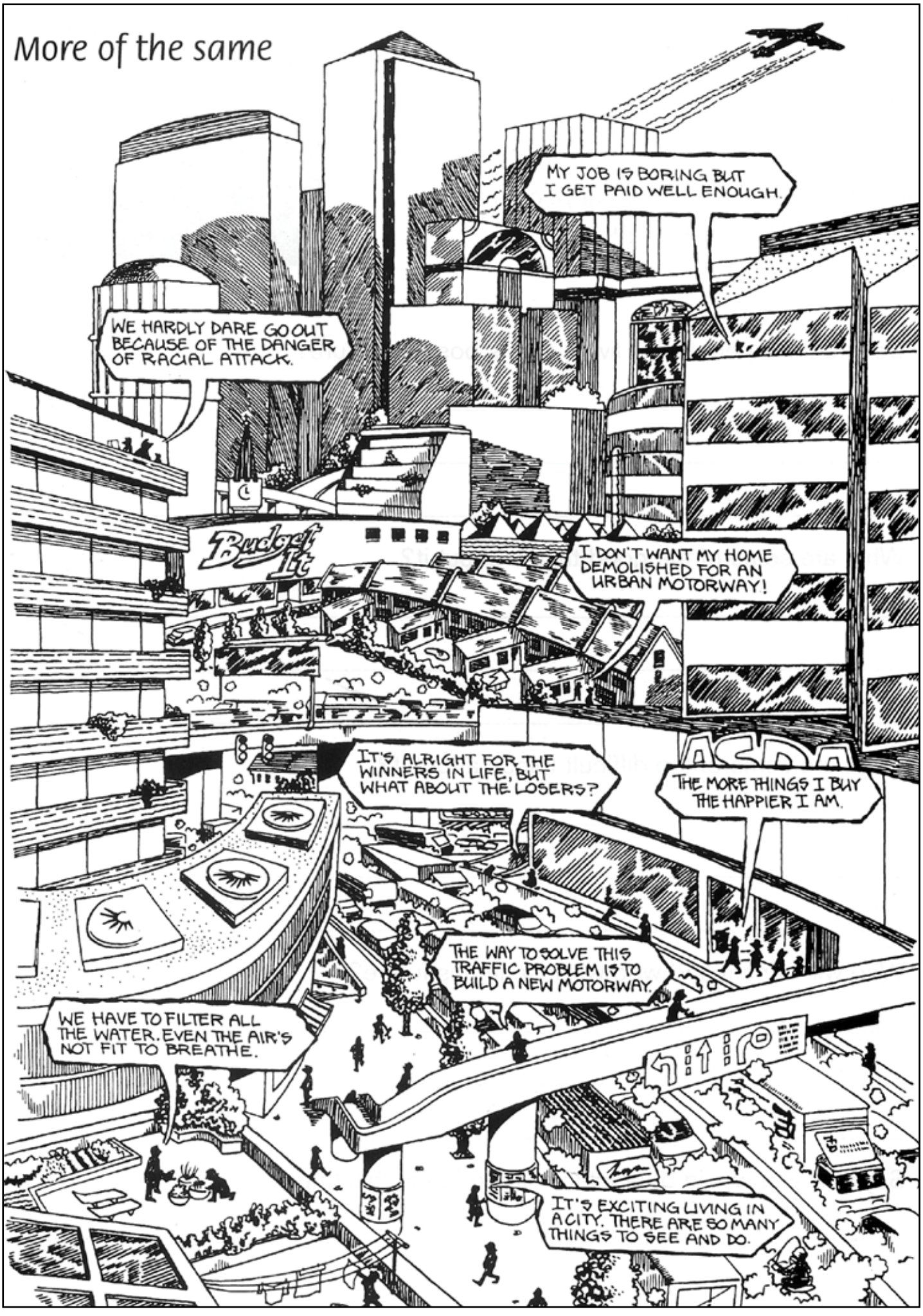
Figure 3.2 – Using scenarios

More of the same This future has come about because people feel safe with things as they are and don't imagine things being very different. It is based on the assumption that things worked reasonably well in the past and will therefore continue to do so in the future. Similar problems will occur and be dealt with in similar ways to today. This future benefits those who are already well off and those who don't like change. It could, on the other hand, lead to an edge of disaster scenario.

Edge of disaster This future has come about because people and governments responsible for making decisions were too slow to act. They worked on the assumption that the problems were not that serious. This assumption was wrong and the scenario shows various disasters, not all of which would necessarily occur at the same time. However, for those living in the 'poor world', many of these disasters are already here as a result of 'rich world' policies. This future doesn't benefit anyone. It can, however, encourage people and governments to make significant changes in the way that they live.

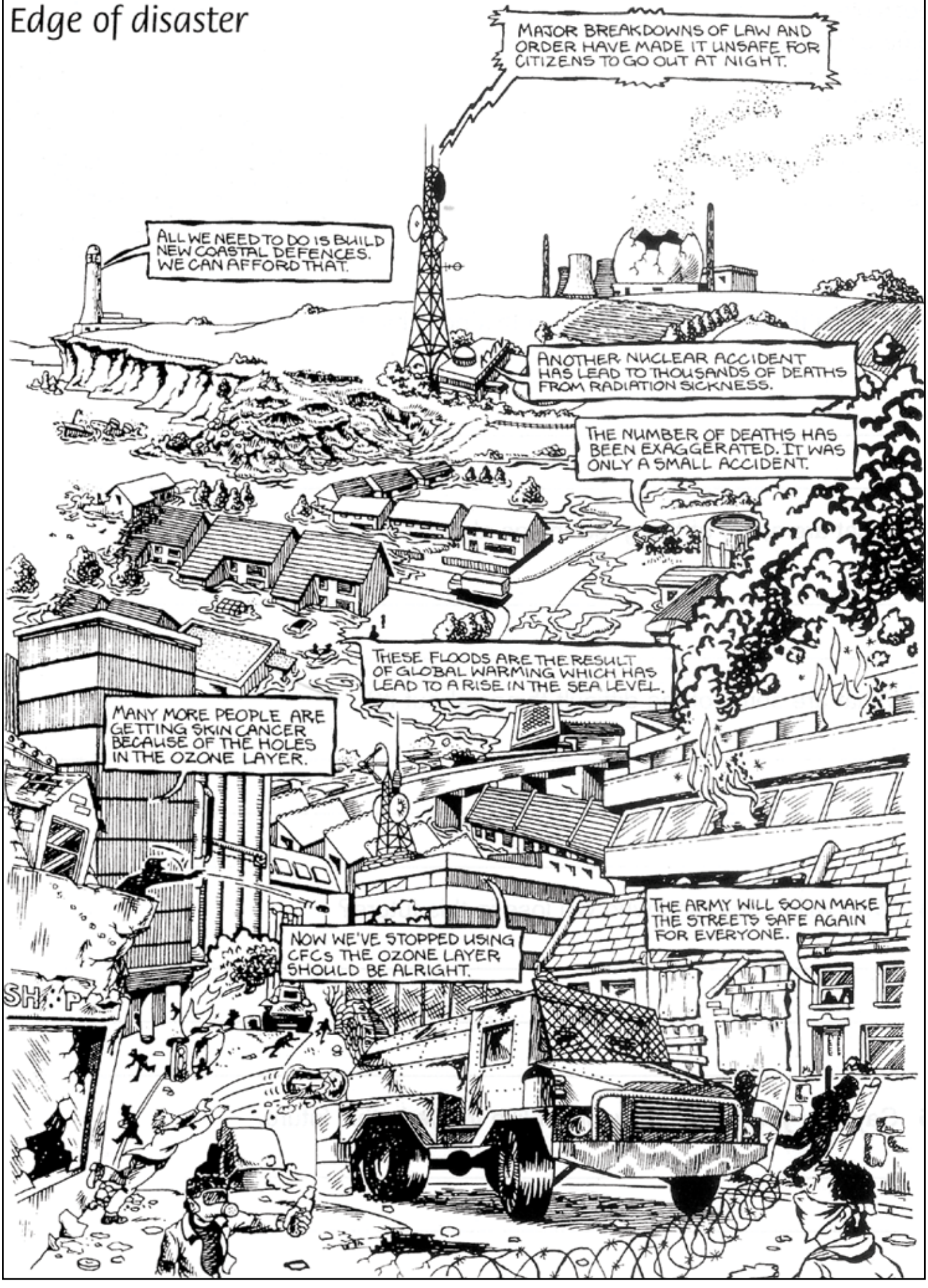
Technological fix This future has come about because people felt that rapid growth of science and technology would solve all their problems. It is based on the assumption that what can be invented always should be invented. This future can bring many benefits but can also have many unforeseen consequences. At the same time it also involves dominating nature and thus cuts people off from the natural environment on which all life depends.

Sustainable development This future has come about because people recognised the need for major change. It is based on the assumption that caring for the environment, other people and future generations also brings a better quality of life in the present. This future offers a less stressful and simpler lifestyle for many people. Developments in science and technology are used by the community to meet their own local needs.



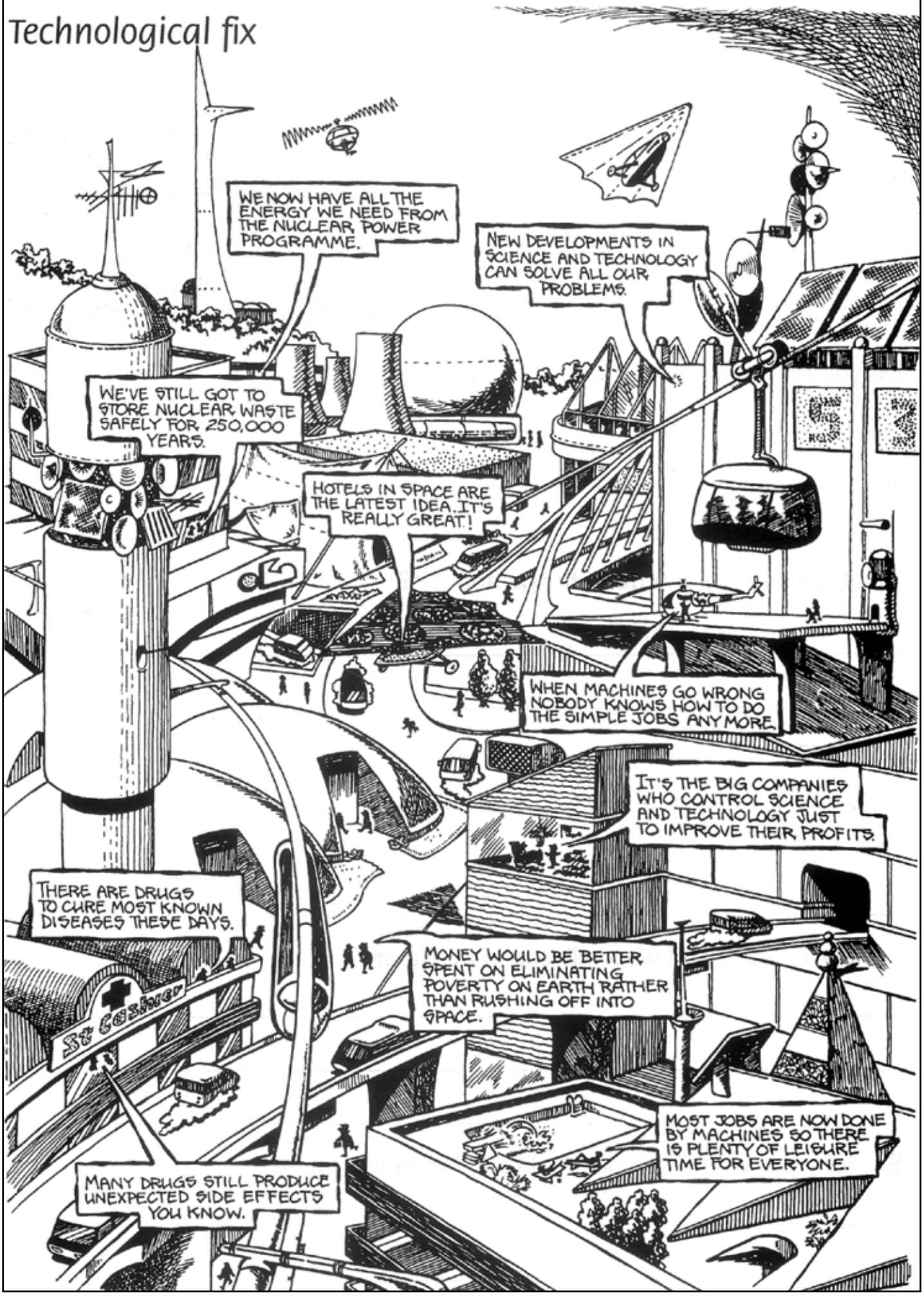
SOURCE: BRICK

Edge of disaster



SOURCE: BRICK

Technological fix



SOURCE: BRICK

Sustainable development

SOURCE: BRICK

One could also draw or ask pupils to draw visual scenarios to illustrate possible futures for the playground, the school, one's street or community. The purpose is always to free up discussion about how things may change, what changes are likely and what changes one would prefer for society. As Table 3.2 above suggests it is a tool to aid in wiser decision-making in one's local and global community.

An important note

It is important to point out that scenarios can be used in different ways. The ones above are intended as examples of *possible* futures and should always be introduced as such. The subsequent discussion may well then hinge around which might be probable and which preferable. This choice should initially be for individuals to decide and then for groups to discuss, defend and justify. The scenarios found in Part 2 of this book are different in that they are all intended to illustrate different aspects of some people's *preferable* sustainable futures. The notion here is that we cannot move towards a future we prefer unless we are able to imagine it first. Part of the discussion needs to be about whether the scenarios in Part 2 do portray a more sustainable society or not, and what needs to be done to move in that direction.

One of the factors that led to the creation of these new scenarios was the way in which societal images of the future have changed over the last decade – since the above scenarios were drawn. Thus it is now accepted by many that a business-as-usual scenario (More of the Same) is not an option, since this is what has led to current climate change. A contemporary version of Edge of Disaster would now have to focus particularly on climate change and its consequences. The other two scenarios, Technological Fix and Sustainable Development could now be used to highlight different emphases in relation to sustainability. Should we look mainly to technology or to ecology, or a mix of both, for answers to the dilemmas that face us now and in the future?

This chapter has stressed the importance of helping young people think more critically and creatively about the future, whether in relation to their own lives or the local and global community. It has set out the aims and rationale for developing a futures perspective, an essential ingredient of any discussion about sustainable schools and sustainable futures, and has also highlighted the value of scenarios in this context.

USEFUL STARTING POINTS

Jane Page (2000) *Reframing the Early Childhood Curriculum: Educational imperatives for the future,* London: Routledge.

> *Pre-school children [...] have a fundamentally different attitude [compared with older children] towards the future and attendant notions of time and change. Early childhood professionals are thus optimally placed to lay important foundations for young children's long-term development.*
>
> *'Children maintain a positive and constructive outlook on life, have a strong sense of the continuity of time, are creative and imaginative and have a sense of personal connection with time and the future. All these qualities should be recognised and addressed in early childhood educational programmes as a means of counteracting the difficulty young people experience in knowing what to expect in their future lives and in coming to understand their roles in shaping them.'*

This book should be compulsory reading for all those interested in developing a futures perspective because it starts at the beginning with the youngest children. Among the topics explored are four- and five-year-old children's understandings of time and the future; futures studies and early childhood education; applying futures values to the early childhood curriculum; and early childhood professionals as agents of change.

David Hicks (2001) *Citizenship for the Future: A practical classroom guide,* Godalming: WWF-UK.

This was the first handbook for teachers in the UK on developing a futures perspective in the classroom at Key Stages 2 and 3.

Part 1 provides the background, outlining the theoretical and classroom context for a range of classroom activities which relate to issues of citizenship and also the need to work towards a more sustainable future.

Part 2, which makes up the bulk of the book, contains detailed activities and photocopiable material on thinking about the future, envisioning the future, choosing the future, and on a sustainable future.

Part 3 provides further information about useful resources and support for citizenship and education for sustainable development.

This book contains all that you need to know in order to help pupils think more critically and creatively about the future in the local and global community.

✓ David Hicks and Cathie Holden. (2007) "Remembering the future: what do children think?" *Environmental Education Research,* 13 (4): 501-512.

This paper looks at the growing interest in exploring alternative futures and in particular at the need for a futures perspective in education. It looks at the ways in which educators are responding to this and at the concerns expressed by young people themselves about the future. It stresses the value of a futures perspective in work exploring issues of environment and sustainability, whether in local or global contexts. Also available at: *www.teaching4abetterworld.co.uk/docs/dowload8.pdf*

✓ David Hicks (2007) "Lessons for the future: a geographical contribution", *Geography, 92 (3): 179-188.*

This article is based on the author's keynote address at the Geographical Association's 2007 conference on 'Geographical Futures'. Beginning with young people's concerns about the future, attention is drawn to the importance of understanding both spatial and temporal interdependence in geography and, in particular, the need for students and teachers think more critically and creatively about the future. The field of futures studies is cited as a source of expertise which can be used by geographers to develop a futures dimension in the curriculum. Exemplar futures activities are outlined and seen as vital to any notion of good practice in teaching geography. Also available at: *http://teaching4abetterworld.co.uk/docs/download3.pdf*

David Hicks (2006) *Lessons for the Future: The missing dimension in education, V*ictoria BC: Trafford Publishing.

If one of the main purposes of education is to prepare young people for the future then where in education are they given the opportunity to explore that future? While up to now the future has been a neglected dimension in education, issues of sustainability require a much more future-orientated curriculum. This book sets out some of the many ways in which teachers and students are now beginning to 'reclaim the future'.

Chapters include: Remembering the future: a personal/ professional journey; Reclaiming the future: what every educator needs to know; Towards tomorrow: strategies for envisioning the future; Retrieving the dream: how students envision their preferable futures; Stories of hope: a response to the psychology of despair; Always coming home: identifying educators' desirable futures; and Teaching about global issues: the need for holistic learning. Available from: *http://trafford.com/06-0130*.

Teaching for a Better World:
http://teaching4abetterworld.co.uk

See in particular the teaching unit entitled 'Preparing for the Future: An Introduction for Educators' and other materials.

4. SUSTAINABLE SCHOOLS

"Successful schools are often inward looking, focused on attainment and good management, and the survey indicates that most school leaders place the global dimension relatively low on their priorities. However, sustainable schools look outwards to engage with their local communities and have a global perspective. This wider, more inclusive vision is also seen in the strong pupil voice and involvement of pupils in decision-making."

Jackson, L. *(2007) Leading Sustainable Schools*

There is an interesting contrast made here by the National College for School Leadership. Many of the schools adjudged to be 'successful' by the standard indicators of achievement are, at the same time, insular and inward looking. This seems a high price to pay for success. On the other hand, schools which have fundamentally embraced issues of sustainability are more outward looking and attentive to pupil participation and voice. They are equally successful but in a more holistic and socially conscious way.

Understanding the issue

Issues of unsustainable global practice (which include the regional and local) and their consequences for both people and planet have already been described in chapter 1. It is important in this chapter, however, to highlight and add to some of the key points made previously.

One of the outcomes of Enlightenment thinking and the Scientific Revolution was the emphasis on dissecting or breaking things down in order to understand their individual parts. As a result of this process great advances in human knowledge have been made and our understanding of ourselves and nature increased immeasurably. We have become experts and specialists, taking it for granted that knowledge, and thereby life, is always divided into discrete parts. This is reflected in the long-accepted division of knowledge into separate subject areas, as found in the school curriculum. 'That's not geography,' a pupil said to me once about an event in the news, 'we've already done it in English!'

But, it is argued, such a mechanistic and reductionist view of the world, while bringing great insight, can also bring great danger.

The danger is that we see and experience the world as if it were actually made up of discrete and separate parts unrelated to each other. Many young people see food as something that comes from a supermarket and is always permanently available. However, the ingredients of your breakfast come from many countries, have responded to different climates, have been grown and processed by many people, and transported in different ways to the UK. Supermarket shelves could be empty in three days if anything went wrong with this vital chain. Similarly, the choices we make when buying have consequences back down the line that we may never dream of. We are all interconnected, but it is as if we have largely forgotten this. It's time to put the parts back together, to see both the links and the whole, as the NASA astronauts did 40 years ago when they first saw the Earth from the moon and realised that everything was indeed connected to everything else. Our survival depends on seeing the connections and acting accordingly. The mechanistic world view thrives on and learns much from the dismembering. An ecological or holistic world view is about putting the parts back together; it is about the process of re-membering.

While the welfare state view of society described in chapter 1 had its difficulties, it was essentially based on the view of a more responsible and caring society – one in which there was a concern for the well-being of all and an acceptance that government had an important role to play in this. Neo-liberalism, by contrast, with its emphasis on competition, individualism and profit, may have brought material benefits to many but it has also led to a more selfish and consumerist society, less sense of community and greater inequality. Our often unconscious world views literally shape the world.

And the way we are 'managing' the world is unsustainable. Soil, air, water, flora and fauna are still often treated as an inexhaustible resource and a sink for our wastes. To damage the biosphere is to damage the natural systems on which all life, human and non-human, depends. If all countries were to consume resources at the same level as the UK we would need between two and three planets to support us. This is not sustainable and the way in which we see and treat the biosphere as an endless resource is thus unsustainable. Similarly issues of violence, inequality and injustice arise as a result of uncaring attitudes to human difference and the unequal distribution of power. The suffering of people, whether

from overt violence or economic and political systems which diminish the quality of life, is unsustainable leading as it does to environmental degradation, ill health, poverty, oppression and premature death. The social goals of peace, justice and equality are thus just as central to any notion of sustainability as is ecological balance.

Educational responses

Three educational fields in particular contributed to the emergence of education for sustainable development. Each field had its origins in the 1960s and each, by the early 1990s, had developed a considerable body of international expertise. These fields were environmental education, development education and global education. Environmental educators focused on the natural and built environment (mostly the former), development educators focused on issues of global poverty and injustice, and global educators considered a range of issues to be of importance (environment, development, injustice, conflict). By the early 1990s these fields had each widened their interests so that there was a significant degree of overlap between them. All had become concerned about issues of sustainability (Hicks, 2008), as had geographers and others too. All contributed to the emergence and growth of education for sustainable development in the 1990s

What shall we call it?

Because the Brundtland Report and the Earth Summit in 1992 focused on the need for a more sustainable form of development the term 'sustainable development' came into common parlance. However, the meanings of this term have been contested ever since. It is important as a teacher to know about the reasons for this, since the term education for sustainable development (ESD) has also entered the educational literature. At root, the problem arises from the different associations that the word 'development' has historically and culturally.

In the mid-20th century, economists and others often referred to developed (rich) and third world, later developing (poor) countries. It was assumed then that countries were poor because they were 'backward' and that if they followed the example of Europe and America they could somehow catch up and become developed.

This notion of superiority and inferiority came out of Victorian ideas on culture and race. In the 1970s it was suggested that the term rich North and poor South was less pejorative. Economists from the South pointed out that far from being 'backward' the poverty of their countries arose from European historical exploitation of their resources, western rather than indigenous notions of development and the continued process of neo-colonialism through tied aid and unfair trade practices.

This is part of the baggage carried by the term 'development' and subsequently 'sustainable development' and it remains a controversial debate today because so much that is written about sustainable development and education for sustainable development comes from western sources. Bob Manteaw (2009) thus argues that there are major differences between American and African notions of development and also of ESD. He points out that the idea of 'one human family', so often proposed by the west, ignores the world's social, cultural and historical differences and therefore the many differing ways in which sustainable development and ESD needs to be approached.

Because of these controversies it is not surprising that progressive educators avoid the expression 'education for sustainable development' (ESD), using instead the term 'education for sustainability' (EfS) or WWF's preferred term 'learning for sustainability' (LfS), although the meanings of sustainability are contested too. Little wonder the DCSF eventually chose the term 'Sustainable schools' as the focus for its educational endeavours. What has been clear for some considerable time is that young people themselves are concerned about issues of environment and development. Research on children's hopes for the future shows that at all ages children have a concern about the environment and people's welfare. They want to know what grown-ups are doing about these matters and what they can do too.

Sustainable schools

In 2005, all government departments committed themselves to the UK sustainable development strategy. Separate strategies were developed for devolved governments of the UK, but with a common theme. Sustainable development (Defra, 2009) is defined as follows:

The past 20 years have seen a growing realisation that the current model of development is unsustainable. In other words, we are living beyond our means. From the loss of biodiversity with the felling of rainforests or over-fishing, to the negative effect our consumption patterns are having on the environment and climate. Our way of life is placing an increasing burden on the planet. […]

Unless we start to make real progress toward reconciling these contradictions we face a future that is less certain and less secure. We need to make a decisive move towards more sustainable development. Not just because it is the right thing to do, but also because it is in our own long-term interests. It offers the best hope for the future. Whether at school, in the home or at work, we all have a part to play. Our small everyday actions can add up to make a big difference.

The educational response to this was a consultation document, *Sustainable Schools for pupils, communities and the environment: delivering UK sustainable development strategy* (DfES, 2006), which set out the parameters for this exciting UK initiative, including the hope that every school would be a sustainable school by 2020. In Scotland, plans were set out in *Learning for our Future: Scotland's First Action Plan for the UN Decade of Education for Sustainable Development* (Scottish Executive, 2006).

Detailed practical guidance for schools in England on how to promote sustainability in the curriculum, on the campus and in the community can be found in two valuable publications, *Planning a Sustainable School* (DCSF, 2008a) and *s3: Sustainable School Self-Evaluation* (DCSF, 2008b). The former document sets the scene as follows.

Table 4.1 – Sustainable Schools

The future holds many challenges for young people

Climate change, obesity and global poverty are clear examples. Our current model of development is placing an increasing burden on the planet. In order to secure the future of children all over the world, we need to make a decisive move towards sustainable development.

Young people have a high stake in the future

Some of them may live to see the 22nd century. We don't know what that will be like, except that it will be very different from today. Some fuel reserves may be exhausted. The polar ice-caps may have melted. World population may have doubled. And much more of Africa may have become a desert. On the other hand, some people may benefit from dramatic improvements in medicine, and drive silent, emission-free cars. Amid the potential dangers are fantastic opportunities.

Schools have a special role to play in preparing young people to build a brighter future

As places of learning, they can help pupils understand our impact on the planet and encourage them to weigh up the evidence for themselves. As models of good practice, they can offer young people the chance to contribute to sustainable living, and demonstrate good practice to others. Empowering young people to take responsibility for their own future is not only desirable: it is a crucial feature of their education.

The government would like every school to be a sustainable school by 2020

In practice this means integrating high standards of achievement and behaviour with the goals of healthy living, environmental awareness, community engagement and citizenship – many of the aspirations set forth in Every Child Matters.

A National Framework has been established to guide schools towards this aim

It comprises three interlocking parts:

A commitment to care

Sustainable schools have a caring ethos – care for oneself, for each other (across cultures, distances and generations), and for the environment (far and near). Schools are already caring places, but a sustainable school extends this commitment into new areas. It cares about the energy and water it consumes,

> the waste it produces, the food it serves, the traffic it attracts, and the difficulties faced by people living in its community and in other parts of the world.
>
> An integrated approach
>
> A sustainable school takes an integrated approach to its improvement. It explores sustainable development through its teaching provision and learning (curriculum); in its values and ways of working (campus); and in its engagement of local people and partners (community).
>
> A selection of 'doorways' or sustainability themes
>
> The doorways are entry points, or places where schools can establish or develop their sustainability practices. Each of the doorways draws its inspiration from a range of national priorities around sustainable development.
>
> From: *Planning a Sustainable School*, DCSF

I particularly like this introduction for three reasons: i) because it is very clear about the vital role schools have to play in helping create a more sustainable future; ii) the emphasis on a notion of caring which embraces both people and planet, now and in the future; and iii) it is holistic in stressing a whole-school approach that integrates curriculum, campus and community. There is also a welcome and necessary emphasis on participation, making connections, building ownership, taking responsibility, systems thinking and action learning. The webs of interconnectivity being spun here reflect the ecological world view from which the notion of sustainability emerged.

The eight doorways to sustainability in this framework are: food and drink, energy and water, travel and traffic, purchasing and waste, buildings and grounds, inclusion and participation, local well-being, and the global dimension. While these are primarily described in terms of the school and its community, they all involve wider consideration of these issues in the UK and beyond. In recognition of this, I have slightly reworded some of these doorways as they appear in Part 2 of this book. Many of the above issues, of course, are already being explored in exciting ways in

school without teachers necessarily using the term 'sustainability'. However, as this book makes clear, this is the over-arching concept that brings all these interrelated matters together.

In addition to setting the scene in an exciting and challenging way, the greater part of *Planning a Sustainable School* (DCSF, 2008) consists of 13 participatory activities which will enable heads, school leadership teams, teachers, staff and governors to identify the needs of their school and their aspirations for its future. Some schools, of course, already have Education for Sustainability co-ordinators and pupil Eco-teams and local authorities may also have dedicated officers working with Sustainable Schools. If you are reading this book, the tide is beginning to flow in your direction.

Figure 4.1 – Eight doorways to sustainability

From: *Valuing Our Future Toolkit*, NCSL

What has been learned so far?

Over a three-year period Ofsted (2009) visited a selection of primary and secondary schools to see how effectively they had developed their pupils' understanding of sustainability. Over that period all but one of the schools improved the effectiveness of their provision. The key findings of this research were as follows:

- In the most successful schools, education for sustainability was an integral element of the curriculum and all pupils and staff contributed to improving the sustainability of their institution.
- Most of the headteachers found that, over the course of the survey, education for sustainability had been an important factor in improving teaching and learning more generally.
- Some school leaders identified links between particular pupils' involvement in sustainable activities and improvements in their attitudes and behaviour generally.
- Pupils responded particularly well to education for sustainability when it gave them the opportunity to take part in practical activities within and outside the classroom and enabled them to research, plan and implement projects that made a clear difference to the school and the local community.
- A common characteristic of the lessons observed, across the full range of National Curriculum subjects seen during the survey, was the high level of engagement of the pupils in work they perceived as relevant to their lives and future well-being.
- The schools demonstrated how greater awareness of the need for sustainability can lead to reduced financial costs and better management of resources and estate.
- The knowledge and understanding that the pupils gained at school contributed to their leading more sustainable lives at home which, in turn, led their families to examine their lifestyles and use of resources (Ofsted, 2009).

The National College for School Leadership, in its review of research on leadership in sustainable schools (Jackson, 2007), found that this was a largely un-researched area of school practice – presumably because of its relatively recent arrival in the curriculum. However, case studies showed that schools are using sustainability to deliver the National Curriculum in ways which

are real and relevant to students and thus leading to high levels of attainment. It stressed that pupils can play a key role in driving this agenda in schools. In terms of leadership styles and qualities it was noted that:

> *The emerging model of green, or sustainable, school leadership builds on what we already know about effective school leaders, but has distinct additional characteristics based on the personal values of leaders who choose to embrace sustainable development. These include fostering participation in decision making, an outward orientation looking beyond the school gates and an optimistic world view. [...]*
>
> *These leaders are conscious of the place of the school in the local and global community [and] have an integrated, systemic understanding of the world and their place in it and can communicate this to others. They understand the interconnectedness of society, the environment and individuals within these contexts.*

Gillian Symons (2008), who carried out a review of research on ESD for SEEd (Sustainability and Environmental Education), identified the following enablers for sustainable practice in schools:

- **Time to create a shared vision:** as a whole school community.
- **A joined-up approach:** clearly linking initiatives, supported by senior management, subject associations, and national policy.
- **Distributed leadership:** both to share the load and to increase participation.
- **Formalisation:** embedding sustainability in policies, curriculum, budgets and staffing.
- **Local authority support:** identified as crucial but currently very variable.
- **External partnerships:** with local businesses and community, NGOs and internationally.
- **Student participation and leadership:** student involvement not only enables, but can also drive, the sustainability agenda.
- **Training:** on addressing values, developing an outward orientation and pedagogical principles relevant to educating for sustainability, as well as to increase the knowledge base.

- **Active citizenship:** clear links with the sustainability agenda.

Another overview of the experience of sustainable schools is that produced by Groundwork (2009). This suggests that awareness of the Sustainable Schools Framework does not seem to be the problem, but that clarity around the goals of the programme and delivery of these is. Local authority support varies from very supportive to doing nothing, partly because there are no targets set that they need to report on. NGOs have a major role to play in supporting both local authorities and schools. It would thus seem to be the case that this is still work in progress for many authorities.

There can also be a misconception in schools that there needs to be an end product which demonstrates when a school can claim to be sustainable. Schools often respond best where the local authority promotes sustainability through a range of other initiatives. The most experienced schools tend to be in regions where government offices have named school coordinators working with the local authority who have nominated teachers in schools disseminating best practice and encouraging a whole-school approach.

The picture that we have here is of a vital, innovative and timely initiative waiting to take its crucial place centre stage in schools and local authorities. The early innovators have already grasped its importance and begun to model and disseminate good practice in different regions. The National College for Leadership of Schools and Children's Services is clear that sustainability is everyone's business:

> *Preparing children and young people for the future has always been at the heart of our education and children's services system and, by extension, at the heart of leadership. But, as we all know, the future is not as secure as it used to be. It stands in the balance – with technology, knowledge and population growth increasing more rapidly than ever before, and the physical, economic and social resources that sustain us being rapidly depleted.*

> *As educators and leaders, we are uniquely placed to tackle the legacy we have inherited – the future generation that will make a difference is in our hands right now. The question we must therefore ask ourselves is: if we are not leading for a sustainable future, what are we leading for?* (Porritt et al. 2009).

Valuable research already exists (Gayford, 2010) on the most effective teaching and learning strategies for exploring issues of sustainability. These are interesting and challenging, so exciting times lie ahead – as the next chapter shows.

USEFUL STARTING POINTS

- Fran Martin and Paula Owens. (2008) *Caring for Our World: A Practical Guide to ESD for Ages 4-8,* Sheffield: Geographical Association.

  This is an excellent introduction to education for sustainable development (ESD) with younger children, which brings together initiatives such as Sustainable Schools, Personalised Learning, Every Child Matters and SEAL. Experiences from a number of schools are used to illustrate six themes: growing schools, food and farming, forest school, school grounds, sustainable energy and travelling to school.

  These are brought to life with both teacher and pupil voices, first with an example of one school's work across a range of subject areas, followed by additional vignettes from other schools which offer several different perspectives. A resources section including a short- and medium-term plan, and lists useful books and websites for each chapter will help you plan and resource your own lessons.

- Ken Webster (2004) *Rethink, Refuse, Reduce... Education for Sustainability in a Changing World,* Preston Montford, Shrewsbury: FSC Publications.

  This informative and thought-provoking short book by Ken Webster sets out all you need to know to make a good start in education for sustainability. It looks thoughtfully and in detail at the state of the world and goes on to show how western myths and world views have led to the crisis of unsustainability. This is followed by a valuable investigation into teaching and learning about issues of sustainability.

- Government Office for London (2008) *Towards Whole School Sustainability: A View from London Schools,* London: Government Office for London.

  This is an inspiring report on work in schools which covers the following six areas in practical detail: 1. Planning checklist;

2. Engaging busy teachers: embedding sustainable schools into existing work plans; 3. Gaining the support of the Headteacher, Senior Leadership Teams and governors: demonstrable benefits; 4. Empowering students to take the lead: guiding enthusiasm and enabling student voice; 5. Involving parents, families and the wider community: schools at the heart of a sustainable community; 6. Where can we go from here? Ideas, links and resources.

✓ QCA (2009) *Sustainable Development in Action: A Curriculum Planning guide for Schools,* London: Qualifications and Curriculum Authority.

A useful resource which gives guidance on teaching about sustainable development, practical activities for teachers and a series of valuable case studies, from both primary and secondary schools.

✓ Orr, D. (2004) *Earth in Mind: On Education, Environment, and the Human Prospect, 10th anniversary edition, W*ashington DC: Island Press.

One of the seminal texts on education, environment and sustainability. The opening paragraph says it all: 'Education is not widely regarded as a problem, although the lack of it is. The conventional wisdom holds that all education is good, and the more one has of it, the better. [...] The truth is that without significant precautions, education can equip people merely to be more effective vandals of the earth.'

✓ WWF-UK (2010) *Learning for Sustainability in schools: Effective Pedagogy. A report by WWF-UK, based on research by Dr Chris Gayford:* WWF-UK, Godalming

This research identifies the key pedagogical approaches used in primary and secondary schools to effectively support learning for sustainability. The findings are drawn from 32 examples of teaching currently undertaken in 26 rural, suburban and urban schools in Scotland and England and support the aim, set out in the various forms of guidance to schools, that learning for sustainability should have a higher profile with an explicit presence across the curriculum.

5. A TIME OF TRANSITION

"Visioning, networking, and truth-telling are useless if they do not inform action. There are many things to do to bring about a sustainable world. New farming methods have to be worked out. New businesses have to be started and old ones have to be redesigned to reduce their footprint. Land has to be restored, parks protected, energy systems transformed, international agreements reached. Laws have to be passed and others repealed. Children have to be taught, and so do adults. Films have to be made, music played, books published, Web sites established, people counselled, groups led, subsidies removed, sustainability indicators developed, and prices corrected to portray full costs."

Meadows, D. et al. *(2005) Limits to Growth: The 30-year update*

What an exciting and challenging time to be a teacher – a time which demands an education that is about changing both self and society. So much of contemporary education takes the skills that it aims to develop as ends in themselves – numeracy, literacy, ITC, creativity, critical thinking. But the real question is what purposes they can best be put to, since such skills can as easily be used for selfish or malign ends as humane and positive ones.

This book argues that education has a central role to play in moving towards more sustainable schools and a more sustainable future and this will require all of the changes that Dennis Meadows refers to above. This chapter, which concludes the first part of the book, explores the three issues that are key to any understanding of sustainability in the 21st century – climate change, peak oil and limits to growth. (Hicks, D. 2010).

Climate change

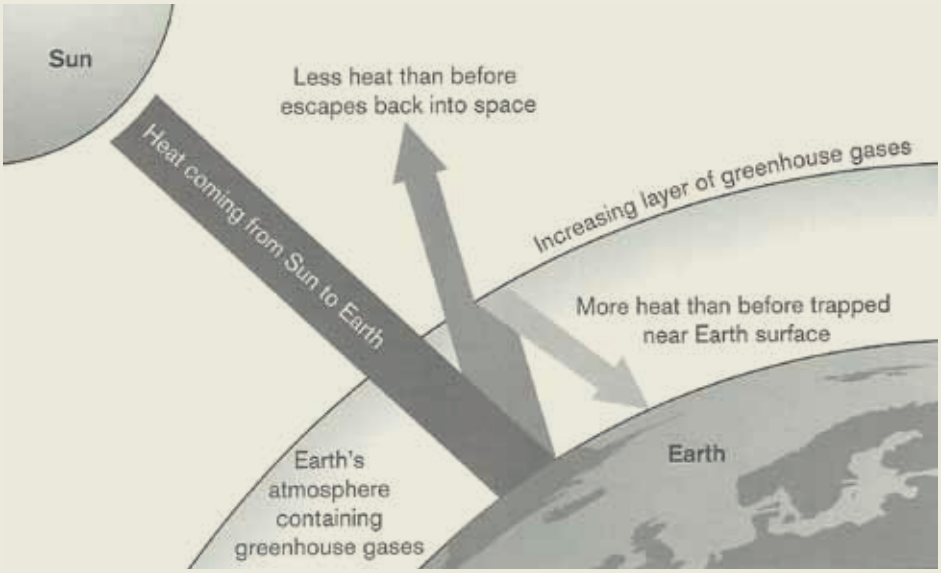
Nature of and causes

While 20 years ago there was debate about whether human activity was causing climate change – or even if global warming was a real phenomenon – today there is scientific consensus that this is now part of daily reality. Some of the changes already apparent in the UK are an increased likelihood of flooding in both river valleys and on the coast, changes in the patterns of the seasons which are beginning to affect natural ecosystems, more extreme weather, both sudden and more severe storms, as well as periods of higher temperatures and drought. These changes are affecting both people and the environment in the UK and, in different ways, around the world. It is thus urgent that we reduce

our carbon footprint and investigate the changes that are needed – social, environmental, political and cultural – in order to limit climate change and create a more liveable future.

Greenhouse gases are essential to life on Earth, and without a layer of greenhouse gases such as carbon dioxide (CO2), methane and nitrous oxide to trap the heat from the sun the planet would be too cold to sustain life. However, these gases have also long been released into the atmosphere by the burning of fossil fuels (coal, oil and gas), by industry, agriculture, transport and nearly every aspect of modern life.

Figure 5.1 – Global warming



From: *Citizenship for the Future,* WWF-UK

While global temperatures have varied enormously over geological time the present global average is around 15°C. During the course of human history (some 200,000 years) this has only fluctuated by about 1°C. However, as a result of increased human production of greenhouse gases, especially CO2, temperatures have begun to shift upwards. The concentration of CO2 in the atmosphere has risen by more than 30% since 1800 – largely as a result of increased burning of fossil fuel during the Industrial Revolution and in the 20th century. The cost of such scientific and technological 'progress' is thus increasingly being seen as unsustainable as is the use of non-renewable resources in the first place.

CO2 emissions arise from many aspects of 20th and 21st century life: power stations that provide electricity through the burning of coal, oil or gas; industries that manufacture all the items of everyday life that we take for granted; transport such as cars, lorries and buses, short and long-haul flights; lighting, whether at home, work or in the street; heating of houses, schools and offices; cooking at home, school, work, restaurants. So the dilemma is that all of these contribute to our 'carbon footprint' – the amount of CO2 that you and I put into the atmosphere. It is this which drives global warming and which in turn has led to climate change.

In particular it should be noted that as a result of their obsession with constant growth and endless consumption it is the rich countries of the world that have contributed most to global warming. Because of their wealth, these countries are also in the best position to deal with climate change. While poorer countries will be equally affected, they have contributed little to it and they don't have the resources to deal with its consequences.

Some of the consequences

It is now clear that climate change is affecting both the timing and duration of the seasons. In December in my street I can see a hawthorn tree with both dying leaves and spring blossom on it at the same time. The Cairngorm mountains in Scotland have been in the news because ecologists have found they are beginning to lose their unique flora and fauna as temperatures gradually rise. Ski slopes there are also going out of business as less snow falls over consecutive years. England's characteristic oak and beech woods could disappear in a warmer climate. Plants and animals are all affected by such changes; so too are patterns of land-use such as agriculture and gardening and our water supply. As these change, our 'normal' lifestyles will have to change too. Extreme weather events will also become more common – such as the flooding in Cumbria and the unexpected and prolonged snow in the winter of 2009-10.

Temperature increase in the Arctic since the 19th century has been greater than for the rest of the world, and the consequent rise in sea-level from melting Arctic ice will threaten low-lying coastal areas in the UK and elsewhere. Glaciers melting in Alaska are resulting in a rise in sea-level. And the change in temperature

is also beginning to thaw the permafrost which covers vast areas of the Arctic north where the ground is frozen solid to the depth of many metres. As the ground thaws, roads, houses and oil pipelines are damaged and new lakes begin to appear. If the entire Greenland icecap were to disappear, sea levels could rise by as much as 7 metres, threatening coastal cities such as London, New York, Tokyo and Calcutta.

Many parts of the world are already experiencing changes: the permafrost is melting in Siberia; the glaciers in the Andes that supply coastal cities with their water are retreating; Pacific islanders are having to evacuate their homes on low-lying coral atolls; China is suffering dust storms and desertification; and more and stronger hurricanes are hitting the US and the Caribbean. The impact of climate change is also far greater on those living in poorer countries. In Europe, North America, Australia or Japan, far more resources are available to combat the effects of climate change. In a country such as Bangladesh, fewer resources are available to limit the effects of the flooding that regularly occurs in this low-lying country. People are not equally affected by climate change. The richer countries of the world, those that have contributed most to global warming, are also in a better position to deal with the impact.

The data on climate change comes from many researchers across the world and is summarised in the reports of the Intergovernmental Panel on Climate Change (IPCC). Many experts are involved in this huge venture, from climate scientists, meteorologists and oceanographers to ecologists, glaciologists and palaeontologists. The likely consequences of climate change are investigated through complex computer models which explore the interactions between an ever-increasing number of variables. One of the ways in which climate scientists test such models is to set them for a date in the past for which they already have weather data and then run them forward to see how closely they predict the conditions that actually occurred. If a model can do this fairly accurately, and several can, they are also likely to be able to do so for the future. However, climate change is a phenomenon so complex that that no computer can predict all the possible consequences, many of which may be more sudden than expected.

In particular, climate scientists look at what impact different degrees of global warming could have on the planet. The consensus is that if the global average temperature rises more than 2°C above pre-industrial levels, it could lead to even more rapid and dangerous climate change. To have a chance of avoiding this, it has been calculated that we need an 80% cut in carbon emissions by 2050. This requires a major shift of emphasis in every aspect of our lives. In the months leading up to the UN climate summit in Copenhagen, in 2009, research was predicting higher and more rapid sea-level rises than before and also arguing that it may be too late to keep the average global temperature from increasing by a dangerous 3°C. No wonder that rich, poor and developing countries failed to agree at the summit on how responsibility for cutting carbon emissions should be shared out.

Peak oil

The causes and nature of peak oil

The term 'peak oil' is not currently as familiar as that of climate change, but it will create just as many changes (Strahan, 2008). The graph in Figure 5.2 illustrates two crucial elements relating to the use of oil – the energy source that underpins every aspect of modern life in the industrialised world. While for the Victorians this source was primarily coal and steam, the early 20th century saw a major shift to oil and electricity. Oil is thus essential to most of our transport systems (road, rail, sea and air), and the production of electricity (and its many uses). Its by-products are central to agriculture and medicine (fertilisers, herbicides, drugs and medicines).

Figure 5.2 – Peak oil

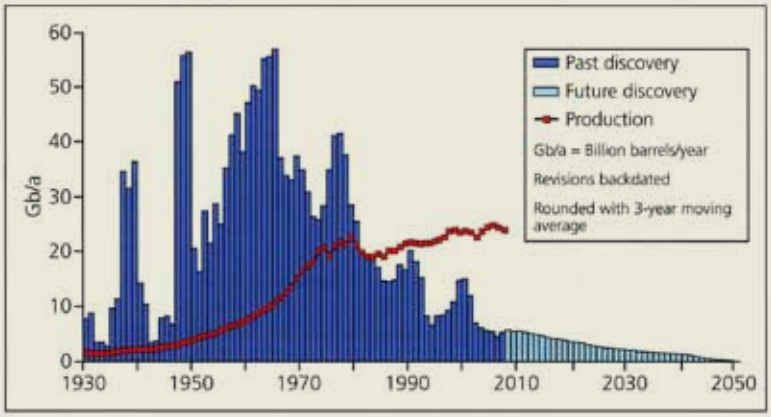


Figure 2. Oil discovery and production: the growing gap. Source: ASPO Ireland Newsletter No. 96, December 2008.

From: *Association for the Study of Peak Oil & Gas (ASPO)*

In this figure, the bar graph shows the rate of global oil discovery since the 1930s when oil began to transform the world energy scene. It shows that discovery peaked in the mid-1960s. Despite improvements in exploration techniques and drilling technology, discovery of new oil reserves then dropped steeply to the present day. If the curve follows the usual track of resource discovery and use, which seems likely, it will decline to nearly zero by mid-century.

The line graph shows the production of oil as a result of that discovery, and of course lags behind the latter. What it also shows, however, is that global production of oil has peaked or is about to do so. Oil production is therefore set to decline quite steeply over the next 50 years. Demand, of course, will continue to rise and therein lies the dilemma: i) the cost of fuel and electricity will increase as oil becomes more scarce; ii) global oil supply will soon be unable to meet demand; and iii) burning what's left will contribute to climate change.

It is interesting that while initially there was resistance to the notion of man-made global warming now there is a scientific consensus. Much of that opposition came from the big fossil fuel companies who felt their vested interests were under threat (Monbiot, 2006). Their resistance and obfuscation delayed both governmental and popular acceptance of global warming and in doing so actually made the problem worse. There is a danger that this could also occur in relation to peak oil. The big oil companies,

such as Shell, BP and ExxonMobil, argue that there is no problem, that developing new sources such as the tar sands in Alberta and the discovery of new fields will put off any problems for the foreseeable future. It is in their interests to do so. Other oil experts, who have now left the industry and broken its rule of silence on this matter, are at the forefront of arguing for a rapid move towards an economy based on renewable sources of energy (Leggett, 2006).

> *We have allowed oil to become vital to virtually everything that we do. Ninety percent of all transportation, whether by land, air or sea, is fuelled by oil. Ninety-five percent of all goods in shops involve the use of oil. Ninety-five percent of all our food products require oil use. Just to farm a single cow and deliver it to market requires six barrels of oil, enough to drive a car from New York to Los Angeles. The world consumes more than 80 million barrels of oil a day (that's 29 billion barrels a year), at the time of writing. This figure is rising fast, as it has done for decades. The almost universal expectation is that it will keep doing so for years to come. [...] Our society is in a state of collective denial that has no precedent in history, in terms of its scale and implications* (Leggett, 2006: 21-22).

Fortunately, some elements of government and business are beginning to face up to this issue, as witnessed by investigations into the impact of peak oil on international development and also into securing the UK's energy future (UK Industry Taskforce on Peak Oil and Energy Security, 2008).

Some of the consequences

The Industry Taskforce sees the risks in terms of three qualitative scenarios: Plateau, Descent and Collapse. In the Plateau scenario, which Shell foresees, global production from conventional sources will level out around 2015 and remain on a plateau till 2020, propped up by oil from unconventional sources such as tar sands. In the Descent scenario global production falls steadily as newer sources fail to replace the depletion of the older oil fields. In a Collapse scenario the steady fall of the Descent scenario steepens due to the collapse of the old giant oilfields. On balance, the taskforce considers the Descent scenario as highly probable and fears the Collapse scenario as possible.

Figure 5.3 – Future Scenarios

David Holmgren (2009), in *Future Scenarios: How communities can adapt to peak oil and climate change*, points out that these two issues are inextricably related and suggest possible scenarios on the basis of two key axes. One runs from slow oil decline to fast oil decline and the other from benign climate change to destructive climate change. The resulting four quadrants suggest four scenarios, which he entitles 'descent' scenarios, as society shifts towards a post-oil/post-carbon future. These are: Green Tech (slow oil decline, slow climate change), Brown Tech (slow oil decline, fast climate change), Earth Steward (fast oil decline, slow climate change) and Lifeboats (fast oil decline, fast climate change). The implications of each scenario and what it could look like are then fleshed out in more detail. Like all scenarios, they are not intended as predictions of the future. They are, rather, illustrations of what could come about under different varying conditions. In particular they are intended to prompt discussion and consideration of the most appropriate ways forward.

Limits to growth

Nature and causes

In chapter 1, it was noted that economists tend to believe that there are no limits to growth while ecologists recognise the finiteness of the biosphere. The sinks into which we put our waste, that is the ground, the ocean and the atmosphere, all have limits to the amount that they can store before being damaged beyond repair. Their capacity is not inexhaustible. Farming can destroy soils, over-fishing can destroy fish stocks, over-population can destroy habitats, and clearance for agriculture can destroy forests. Unless we fully understand the nature of the biosphere and the way it works, we can damage it at every turn. While unsustainable practices ignore the fact that there need to be limits to growth, sustainable practices acknowledge such limits and strive to work with them.

However, we have also come to believe that economic growth is 'good' and that lack of it is 'bad', that progress depends on economic growth and that the more there is of this the more successful our economy will be. Of course this is an over-simplification, but throughout our lives this has been the underlying message of global capitalism and in particular of neo-liberalism (see chapter 1) with its emphasis on free markets and constant consumerism. Our clothes, our phones, our houses, our cars, everything we take as our daily norm, have all come at a cost. Not just the amount we have literally had to pay for them but the cost to the environment and to other people unknown to us. The big transnational companies that meet our wants and needs often set up their businesses in places where labour laws and environmental legislation are weak.

Some of the consequences

Now, however, in the face of the current economic meltdown, all of this is increasingly being called into question. As John Gray (2009) points out, the notion that free market economics would solve all known human problems was fatally flawed from the start since it totally ignores its destructive impact on both society and environment. Take Gross Domestic Product (GDP), for example, which is used as a measure of a country's economic activity and is assumed to tell us something about growth and progress. The sale of arms to another country will increase GDP, as will mining of coal. GDP has nothing to say about the loss of rainforest or industrial dereliction, both of which are considered by economists to be 'externalities', that is, irrelevant. The underlying problem has always been the fixation on growth, the notion that the more an economy grows, the more stuff that is produced, the more we buy, the happier and more secure we will feel.

Even the business section of *The Observer* (2010) has questioned politicians' obsession with economic growth and highlighted alternative measures of human welfare that are more appropriate to our times. Growth, it seems, is no longer making most people happier but rather it generates greater inequality and insecurity globally. This does not mean that growth should be abandoned, since in poorer countries it clearly makes a difference. But in affluent countries the research on happiness and well-being shows that it does not.

> *In the late 19th century, the ratio of the richest 20% in the world to the poorest was somewhere between 3:1 and 10:1. By 1960, the ratio between the richest and poorest had grown to 30:1. By 1997, that had grown to 75:1 [...] now the richest 1% of the world earn as much as the poorest 57% of the world combined. At the same time, the poorest 5% of the world actually lost a quarter of their real income* (Boyle & Simms, 2009: 4).

In contrast to GDP, other quite different measures of human well-being, such as the Happy Planet Index, show that it is not constant consumption that makes people happy but rather family, friendship, health, peer approval, a sense of community and having a purpose in life.

The future only looks alarming in relation to the issues of climate change, peak oil and limits to growth if one thinks of no action being taken at all. But humanity is an inventive species if, on occasions, slow to change. When faced with clear and present danger, major shifts in consciousness and behaviour can occur. The ongoing debate about sustainability is the crucible in which such changes can be discussed and new futures envisioned and enacted. The time is now. That is why international bodies, national governments, non-governmental organisations, local authorities, towns, villages and individuals all have a part to play, and why many are already pointing towards and practising a sustainable way forward.

The transition movement

Figure 5.4 – Transition Handbook

One of the interesting recent developments in relation to the above issues is the Transition Town movement, which is described in detail in *The Transition Handbook* (Hopkins, 2008) and *The Transition Timeline* (Chamberlin, 2009). A transition town or village emerges when a group of people find that they share in common a concern about the impact that climate change and peak oil will have on their local community. What the transition movement offers is a set of participatory procedures for widening that concern to embrace as many people as possible in the community. The intention is to avoid competition and exclusion

between competing interest groups and to create a broad and inclusive base for action. A key element in this is the creation of community scenarios and timelines for a more sustainable future, out of which come specific plans for an 'energy descent'. This refers to the shift that will have to occur from reliance on fossil fuels to renewable sources and greater energy efficiency.

As interest groups emerge on, for example, energy, food, transport and waste, they each set up interrelated action groups. One of the reasons for the success of this movement is that it starts at the grass roots level, with people in their particular community. It aims to be as inclusive as possible and works from the bottom up. In some areas parish councils and local authorities have then asked to work alongside and liaise with transition communities. The emphasis in all cases is on local reliance. Rob Hopkins writes:

> *The concept of resilience is central. [...] In ecology the term resilience refers to an ecosystem's ability to roll with external shocks and attempted enforced changes. [...] In the context of communities and settlements, it refers to their ability to not collapse at first sight of oil or food shortages, and to their ability to respond with adaptability to disturbance. [...]*
>
> *Increased resilience and a stronger local economy do not mean that we put a fence up around our towns and cities. [...] It is not a rejection of commerce or somehow a return to a rose-tinted version of some imagined past. What it does mean is being more prepared for a leaner future, more self-reliant, and prioritising the local over the imported.* (Hopkins, 2008: 54-55).

Of course there are many other local and national initiatives looking at different aspects of sustainability. What the Transition Town movement offers is one avenue for becoming directly engaged in action for sustainable change. Sustainable Schools, and those aspiring to become so, can learn a lot from and contribute a lot to such ventures.

Educational responses

Challenging issues

Many global and local issues may be challenging to young learners and none more so than those to do with sustainability and unsustainability. They can be challenging for a variety of reasons, including that: i) they raise moral and ethical questions for both teachers and learners; ii) people may disagree on the causes, consequences and solutions to the issue; iii) they are deemed controversial issues; iv) teachers are worried about bias; v) teachers are worried about upsetting children. But all of life raises moral and ethical dilemmas; people agree or disagree on many issues; controversy lies in the eye of the beholder; and there is no such thing as a 'neutral' education. For all sorts of interesting ways to explore controversial issues in the classroom, see the work of Cathie Holden (2007) and Claire and Holden (2007). And yes, teachers should consider carefully whether what they do might worry or upset children.

This is not because children shouldn't be worried or get upset, as this is part of the human experience. Teachers need to know how to empathetically deal with this when it occurs. Olwen Goodall (2007), working with young refugees and asylum seekers, stresses the importance of letting children both express their feelings and talk about their experiences. She suggests that when children are confronting difficult issues, they need to explore 'facts, feelings and futures'. This structure allows children to feel supported by adults who, while showing they are affected by the issue, are not overwhelmed by it. While for Goodall this related to traumatic incidents in a child's past, it could also apply to possible future experiences a child is concerned about – such as climate change. The facts can be ascertained by letting the child explore the particular situation they are worried about. The feelings that are associated with this can be explored through discussion, pictures, story writing and drama. The child's need for security can be supported by exploring the action that adults are taking now to ensure their future safety.

I have a sense too that many teaching materials go directly from learning the facts about, say, climate change to the action that is needed in relation to it. But we know that knowledge on its own does not necessarily lead to action. What is needed is recognition

of the need for holistic learning, i.e. acknowledgement of the whole person and their role in the web of life. Table 5.1 is an example of what this might look like in relation to climate change or any other global issue.

Table 5.1 – Four dimensions of global learning

1. **KNOWING** (cognitive)

- What do we know/need to know about climate change?
- What are its symptoms and its causes?
- What are its consequences (probable futures)?

2. **FEELING** (affective)

- What do I/we feel about this situation?
- What are the concerns we wish to share?
- What are the hopes that we might have?

3. **CHOOSING** (ownership)

- What are the options facing us?
- What do I/we want to see happening (preferable futures)?
- Which will I/we choose to work towards?

4. **ACTING** (participation)

- What do I/we need to do?
- Locally, nationally and globally?
- Who is able to support us in this?

The four questions for pupils to explore are: What do I need to know? What do I *feel* about this? What *choices* do I want to make? What can I *do* myself and with others? In my experience it is often the affective element that is omitted in this process, and yet it is the most important. Local and global issues are not just matters of the head but also of the heart. Choosing and acting here are best

seen in relation to what climate change scientists call 'adaptation' (what are the conditions we may have to adapt to?) and 'mitigation' (how can we help lessen the probable impact of climate change?).

Acknowledging and allowing space for pupils' hopes and concerns is crucial. Not least because one finds out that others have the same or similar feelings. But it also demonstrates to children that their feelings about difficult things are welcome in the classroom and accepted by the teacher. Choosing between options is important because it requires analysis and engagement of both head and heart and, most important of all, it results in a sense of ownership. I have decided I want to do this not because I have been told to but because I was allowed to exercise my own judgement. It may well feel a bonus that others have made similar decisions. From this comes shared action, which is always more fun and inspiring than feeling one might have to do things on one's own. (Hicks, D. 2010).

When I taught a module to student teachers on Citizenship, as part of the assessment they had to participate with others in action for change. They engaged with a group of their own choice in the community that was involved with, say, homelessness, care of the elderly or the environment. At the end of the module, when they had to report to the group on their experiences, they universally expressed amazement at the fact there were other people in the community with the same concerns as them, who were doing something about it. One of the legacies of the 1980s, with its excessive emphasis on the individual rather than society, is that people feel they have to solve things on their own rather than working cooperatively with others for change.

In this chapter I have highlighted the key global issues of climate change, peak oil and limits to growth, and indicated some of their impacts on the future. I have also drawn attention to one critical movement for change and how it is engaging with these issues in a positive and creative way. There are a variety of materials for teaching about climate change but few, if any, on peak oil. But both require a holistic approach to learning if positive empowerment is to occur, rather than feelings of disillusionment or despair.

USEFUL STARTING POINTS

- Gabrielle Walker and Sir David King (2009) *The Hot Topic,* London: Bloomsbury.

  This book is a clear and straightforward guide to the science of climate change and some of the possible technological, political and personal solutions. Until 2007, Sir David King was the UK government's chief scientific adviser.

- Worldwatch Institute (2009) *State of the World 2009: Confronting Climate Change,* London: Earthscan.

  All staffrooms and university libraries should regularly obtain this annual publication. The 2009 issue explores in a positive way all aspects of climate change and the ways in which this relates to issues such as biodiversity, security, health, cities, trade and employment.

- Richard Heinberg (2005) *The Party's Over: Oil, War and the Fate of Industrial Societies,* Forest Row, East Sussex: Clairview Books.

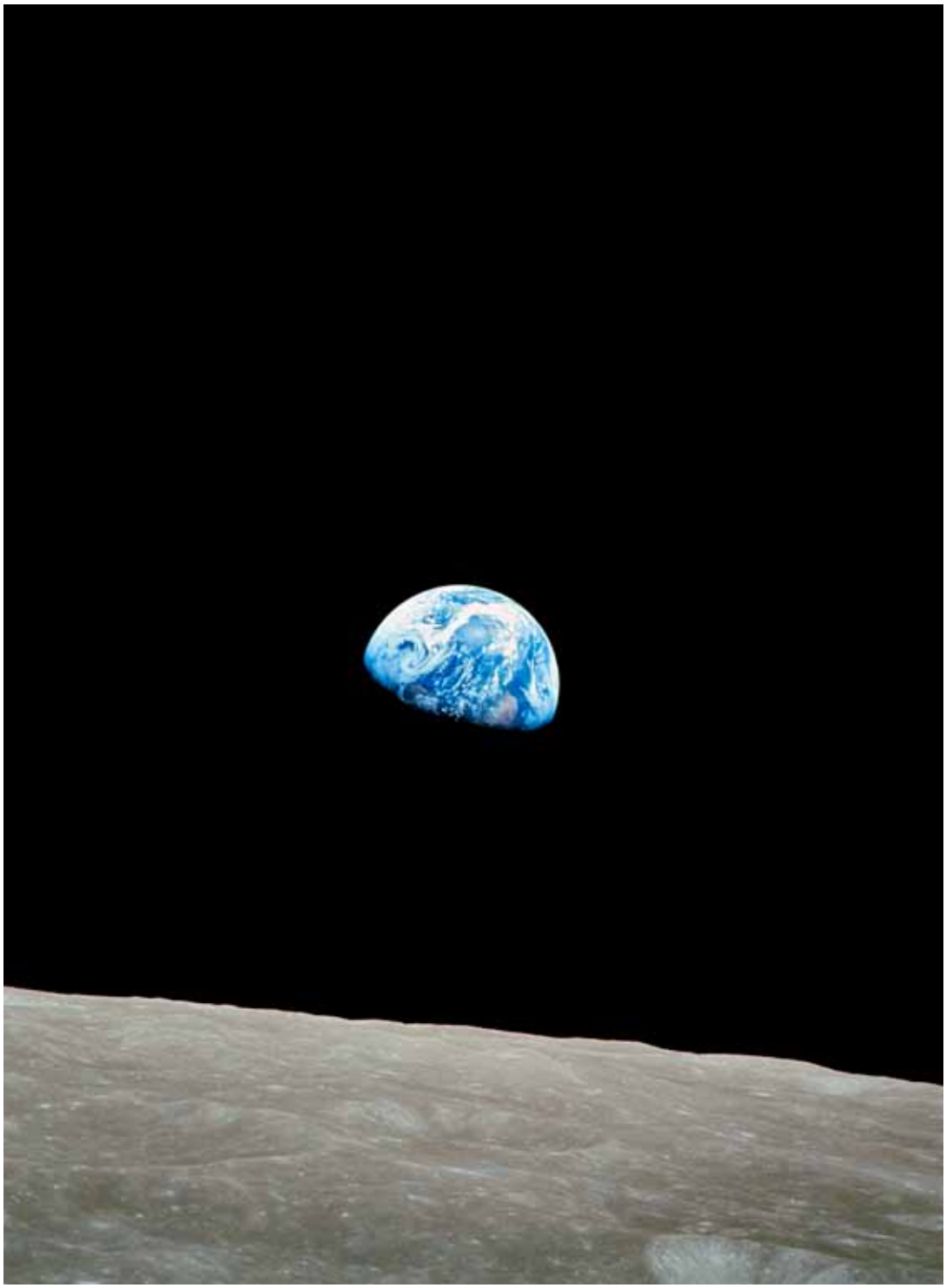
  Explores the decline of cheap oil and stresses the importance of a managed transition to a slower-paced and low-energy sustainable society in the future. A detailed, knowledgeable and clear overview of present and future issues. Essential reading for the road ahead.

- Jeremy Leggett (2006) *Half Gone: Oil, Gas, Hot Air and the Global Energy Crisis,* London: Portobello Books.

  This is an excellent and engaging book which explores the origins and dilemmas of peak oil as well as the renewable alternatives in a clear and insightful way. His 'Story of the Blue Pearl' is a great account of our history and our attitudes towards the planet.

- Rob Hopkins (2008) *The Transition Handbook: From Oil Dependency to Local Resilience,* Dartington: Green Books.

  This book is an excellent introduction to the transition town movement in the UK, its history, principles and procedures for change. It is full of hope and inspiration. See also: *www.transitiontowns.org* and *www.transitionculture.org*



Earthrise over Moon, Apollo 8. This famous image, one of the first of the Earth seen from another world, was taken by US astronauts on board the Apollo 8 spacecraft on 24th December 1968 as they orbited the Moon.

PART 2
STORIES FROM THE FUTURE

The chapters in this section explore in detail each of the 'doorways to sustainability' identified in the previous chapter. The eight themes here are: Food and farming; Energy and water; Travel and transport; Consuming and wasting; Buildings and biodiversity; Inclusion and participation; Local well-being; and Global connections.

Each chapter has the same format: i) Understanding the issues; ii) What are people doing? iii) Stories from the future: classroom activities; and iv) Useful starting points. For each chapter the focal point is a detailed visual scenario of each 'doorway', to show what it could look like in 2050.

Scenarios, it should be noted, are rather like outline sketches or short stories about the future. They are intended to catch the attention and the imagination. They are, of course, hypothetical. They attempt to highlight a particular aspect of the future and are used to illustrate different choices that we may have before us. In each case here, the scenario illustrates what a more sustainable future might look like in relation to the theme of that chapter. Scenarios help to clarify the choices before us and therefore they can enhance necessary decision-making in the present.

It is not expected that one would work through the chapters in sequence, although taken together they do provide a useful overview of key issues relating to sustainability. Rather, readers can draw on specific chapters and scenarios as needed. This is why the activities are the same for each scenario – the difference lies in the aspect of sustainability which each scenario covers.

Industrial scale farming: soybean harvesting in Brazil.

6. FOOD AND FARMING

"Food is an intimate part of our daily lives. It is a biological necessity but it also shapes and is a vehicle for the way we interact with friends, family, work colleagues and ourselves. It is associated with pleasure, seduction, pain, power and caring. As we eat our daily food, bought in the shops that we know, buying brands that we are familiar with, it is hard to imagine that there is such a thing as a global food economy, stretching from the local corner store to the giant food conglomerate, under pressure right from the way food is produced and processed to its impact on our long-term health and well-being."

Lang and Heasman (2004) *Food Wars*

Understanding the issue

For an increasing number of people in the rich world, what they eat is not doing them a lot of good. In 2008, figures released from the Department of Health in the UK showed that nationally 24% of men and women were obese and almost two-thirds (62%) were either overweight or obese. Related health problems cost the National Health Service £4.2 billion in the previous year. It is bad diet and lack of exercise that fuel obesity and which have made the country's future health a major problem. Obesity is linked to a number of preventable illnesses such as diabetes, heart disease and cancer, but many people still seem unaware of the dangers of being overweight.

Researchers have also noted that high rates of obesity in richer countries result in an increase in greenhouse gas emissions, whereas the opposite is true in countries with leaner populations (*Guardian*, 2009a). This is because of the additional food and fuel requirements that overweight people have. Fatter people need more food to meet their energy requirements and their car usage is higher too (*Guardian*, 2009b). In contrast, issues of under-nutrition are more common in developing countries. Globally there are as many overweight people as there are undernourished people.

The campaign by TV chef Jamie Oliver to improve the quality of school meals drew attention to decades of neglect on this topic and led to the publication of new nutritional guidelines by the School Meal Review Panel. However, figures released by the School Food Trust in 2009 showed that although there had been major efforts to improve take-up of healthy meals it had, as yet, only been marginal. Caterers unhelpfully argue that the move

to raise the quality of school food will only turn teenagers off school meals and towards fast foods instead.

Unhealthy food and unhealthy people are only the tip of the iceberg of 'unknowing', since many children still appear to believe that food originates in supermarkets. Without an understanding of how food comes from cultivation of the land, how can young people ever begin to understand the web of life? And understand that what is grown or reared is itself subject to government agricultural policy, European Union regulations, supermarket demand and the power of agribusiness corporations. To really understand issues relating to food and farming today, one needs to be conversant with what is called the 'food supply chain'. See Table 6.1 below.

Table 6.1 – The global food supply chain

1. **Agricultural inputs**
e.g. fertilisers, pesticides, veterinary drugs, seeds

2. **Primary production**
e.g. farmers, fishermen, fish farmers

3. **Primary food processing**
e.g. on-farm, dairies, abattoirs, grain mills

4. **Secondary food processing**
e.g. canning, freezing, drying, brewing

5. **Food distribution**
e.g. national/international, export/import

6. **Food retailing**
e.g. supermarkets, shops

7. **Food catering**
e.g. schools, restaurants, hospitals

8. **Domestic food**
e.g. at home and in the family

From: Lang and Heasman, *Food Wars*

While the dominant mechanistic world view sees these elements as having some influence on each other, it fails to analyse them holistically as part of an interconnected system. Only by beginning to understand how the different elements interact can we understand the detail. The most powerful players in this chain are the agribusiness corporations that supply the initial inputs, and the retailers that control the distribution side. In both cases this involves only a small number of players. For example, in the UK seven supermarket chains sell two-thirds of all the groceries produced.

There is enough food available in the world for everyone to eat adequately, but only if it were shared out equally. The prosperous always eat best, while many others are malnourished. Developing countries often grow cash crops such as tea, coffee and palm oil at the expense of subsistence farming which provides local food. Millstone and Lang (2008) point out that in the UK 'people eat food as though the country had around six times its land and sea space'. Many of the crops grown in rich countries are not consumed directly by people but indirectly as meat, milk and dairy products. Large quantities of grain and beans are used for animal fodder. By contrast, most people in the world eat mainly meat-free diets.

The model of farming used in the UK changed drastically in the mid-20th century. Prior to that period, one of the guiding principles was for farmers to leave the land in better health than when they took it over – meaning that traditional farming practices were essentially sustainable. The increasing mechanisation of agriculture during World War Two and the increasing use of chemical fertilisers, herbicides and pesticides led to a very different view of farming. Yields could now keep on increasing through the application of science; and farms increased in size as, in the face of mechanisation, workers left the land. Biologist Rachel Carson's book *Silent Spring*, published in the early 1960s, was the first to draw attention to the damaging effect of the new pesticides on the environment. She was subsequently denounced by many within the scientific community as an unscientific troublemaker.

In the 21st century this industrial model of farming, now global in its reach, is science-led, relies on intensive chemical inputs

to obtain maximum yields, takes monoculture as the norm, and is designed to produce cheap and convenient food. However, the consequences of this expert, top-down model have been extensive soil degradation, pollution, waste and widespread loss of habitat and biodiversity. More recently, attention has been drawn to the notion of food miles: the realisation that the further food has travelled from its source to the consumer, the greater its contribution to CO2 emissions through the impact of the transport that has brought it to the supermarket.

Issues of fair trade have also come to the fore, with the recognition that food producers in developing countries often receive far less reward for their work than other contributors to the food chain that leads to our plates. What we eat and where it comes from raises issues not only about health and nutrition but ethics, climate change and sustainability.

Currently, there is increasing debate about the need for and nature of food security – the ability of a country to feed its own population. This concern has been highlighted via reports such as those from the Chatham House think-tank: *Food Futures: Rethinking UK strategy* (2009):

> *Over the next few decades, the global food system will come under renewed pressure from the combined effects of seven fundamental factors: population growth, the nutrition transition, energy, land, water, labour and climate change. The combined effects will create constraints on food supply and, if action is not taken, there is a real potential for demand growth to outstrip increases in global food production. Effects on developing countries would be devastating. Developed countries will be affected too. Expectations of abundant and ever cheaper food could come under strain. The UK can no longer afford to take its food supply for granted.*

The notion of cheap and abundant food being available whenever one wants it has, of course, only ever been a reality in the richer countries of the world; it has never been a global norm. Western societies have tended to take their food supply for granted, but this can no longer be the case. Agriculture in the UK will have to change in many ways to meet challenges including the impact of climate change on weather patterns, flora, fauna and land-use. Introducing the *Food 2030* report (Defra, 2010), the former UK environment secretary Hilary Benn said:

> *Last year the world had a wake-up call with the sudden oil and food price rises, but the full environmental costs and the costs to our health remain significant and hidden. [...] We need everyone in the food system to get involved – from farmers and retailers to the health service, schools and consumers. Our strategy needs to cover all aspects of our food – production, processing, distribution, retail, consumption and disposal.* (Guardian, 2009c)

While Hilary Benn envisages food imports playing an important part in the UK's food future, others are discussing whether Britain can and should be moving towards the goal of feeding itself in the face of such global changes (Policy Foresight Programme, 2008).

What are people doing?

The national debate about health and nutrition is an ongoing one, not least in education. With the banning of junk food in school meals, new possibilities have emerged. They are supported by initiatives such as the Health Education Trust, which encourages healthy lifestyles for young people, and the Focus on Food Campaign, which stresses that making and cooking food are key experiences in learning about its social importance. These organisations have come together in the Food for Life Partnership, to create a network of schools and communities across England committed to transforming food culture.

The Partnership works 'to revolutionise school meals, reconnect young people with where their food comes from and inspire families to cook and grow food', and provides an action framework and award scheme to help schools and communities do this (Food for Life Partnership, 2011). To be successful, schools need to demonstrate progress in four important areas:

1. Food leadership (whole school approach and food policy).
2. Food quality and provenance (seasonal, fresh, local and organic ingredients).
3. Food education (cooking, growing and farm links).
4. Food culture and community involvement (dining experience and community links).

At bronze level:

> *Schools serve seasonal school meals with at least 75% of dishes freshly prepared by a well-trained school cook. Pupils and parents are involved in planning improvements to school menus and the dining experience via a school nutrition action group, boosting school meal take-up. Every pupil has the opportunity to visit a farm during his or her time at school, and opportunities are given for groups of pupils to do cooking and food growing activities.*

What is exciting about such an initiative is the way in which it highlights the wider social and ecological context within which issues of food need to be seen.

This is also true of the *Food 2030* reports (*Guardian*, 2009c), which take a more systemic view than usual of food problems. Government departments, policy makers, farmers, activists and householders have begun to recognise the joined-up nature of the problems and the joined-up thinking and action that is needed to resolve them. Professor Tim Lang, who advises the government on food policy, says that 'awesome changes' will be needed in food production. With oil becoming more expensive and its use contributing to climate change, he argues that there needs to be a return to earlier methods of food production, including the re-learning of gardening skills lost a century ago. Extensive orchard planting is needed, as at present 90% of our fruit comes from abroad. Cattle and pigs, he argues, need to be grazed on hillsides instead of consuming 40% of the grain produced in Britain, dependent on oil-based fertilisers. Eating less meat and fewer dairy products will reduce the need for livestock and thus the volume of greenhouse gases associated with rearing and producing them.

Food grown and sold locally means low food miles from field to table, whereas imported food has high food miles. 'Lang and Heasman (2004: 238) give as an example 'a simple dinner at home' which clocked up 30,000 food miles. Ingredients included pepper from India (4,700 miles), cherries from the US (Washington) (4,600 miles) and wine from Australia (10,000 miles). However, local food may have involved significant use of fertilisers and pesticides. Air-freighted beans from Kenya have been fertilised with manure and grown using manual labour.

This does not make one better than the other, but it highlights deeper issues related to sustainability.

While a report funded by the Food Standards Agency argued that organic food is no healthier than conventionally-produced food, it failed to take into account the difference in fertiliser and pesticide residues found in foods. The debate about genetically modified (GM) crops is being revisited as, it is argued, they may become a necessity in the face of possible food shortages. This forms a parallel argument to the one which suggests expanded nuclear power is now a necessity in a post-carbon world. It is part of a technocentric vision which aims at controlling nature, as against an ecocentric approach which focuses on the need for biodiversity, greater local self-reliance and organic principles, i.e. working with nature.

Speakers at a recent symposium on food self-sufficiency recognised that Britain could feed itself if we wished to do so. It was recognised that:

> *The last 60 years of highly-funded government agronomy had focused on producing higher yields in conventional chemical farming. If the funds had been otherwise used to promote a more sustainable system, instead of quick profit, it could have promoted more overall sustainable food systems which would have conserved top soils and maintained something like traditional country life* (Policy Foresight Programme, 2008).

Many of the necessary changes are already being implemented on a growing scale by innumerable national and local organisations and networks, marked by their dedication and expertise. One such long-standing organisation is the Soil Association (2011) which promotes 'planet-friendly food and farming through education, campaigns and community programmes'. It has a 60-year experience of practical research on organic farming and food production (i.e. production free from agro-chemicals), and commissioned its own report on food security by Tim Lang and colleagues at City University, London. One of the things the Association promote is 'transition farming': creating the changes that are needed to shift agriculture from an industrial to a more ecological model.

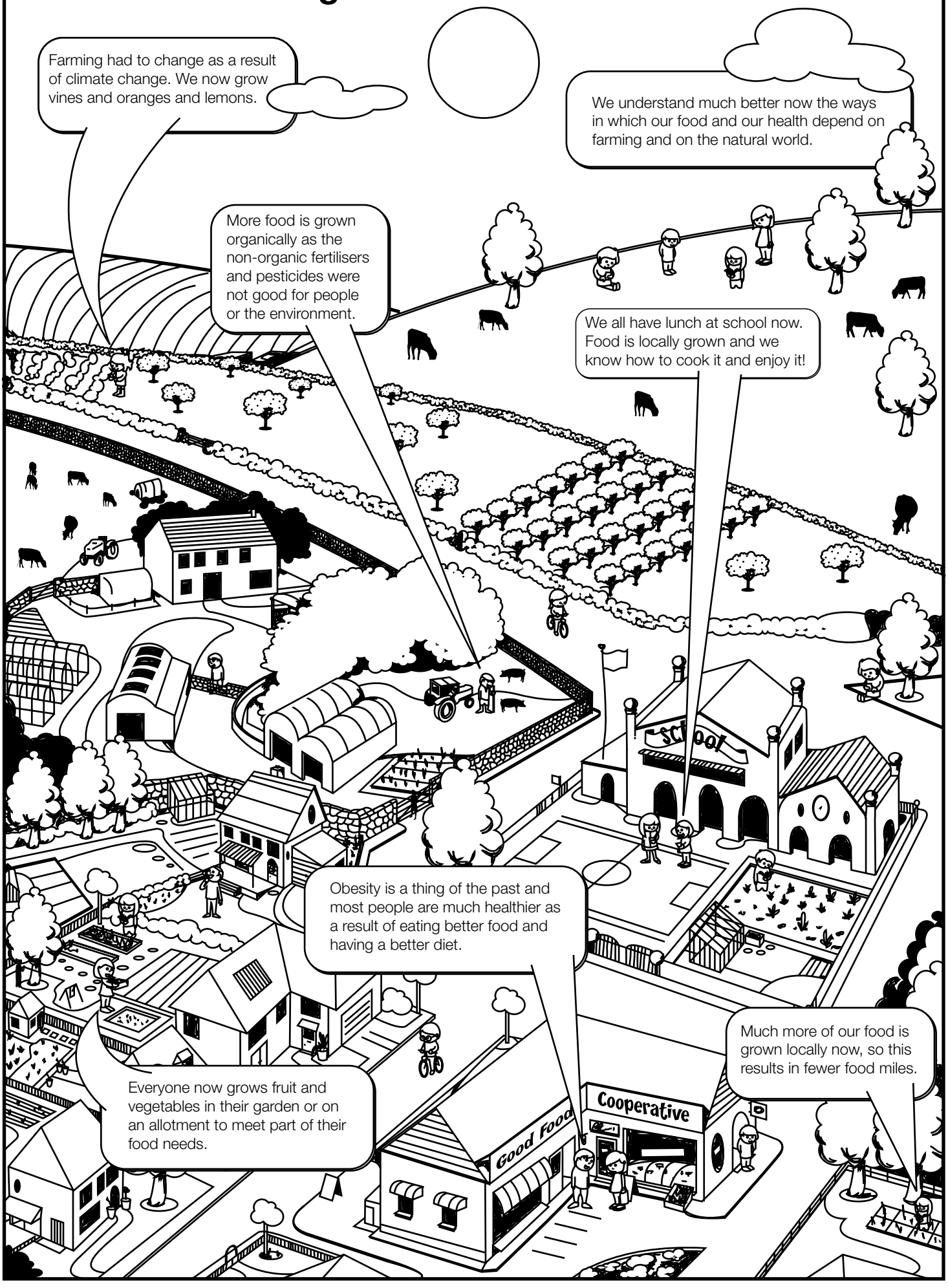
Having observed the damaging effects of European agriculture on the Australian environment, Bill Mollinson and David Holmgren

coined the term 'permaculture' (short for permanent agriculture) to denote a post-carbon way of living that drew its inspiration from the natural world (Holmgren, 2002). After carefully observing nature and natural systems at work they realised that it was possible to apply these organic principles to food production and land use. Instead of monoculture (individual crops grown via intensive use of fertiliser) they came up with a system of multi-cropping and inter-cropping, where plants, bushes, trees and animals coexist and interact to give high food yields while still maintaining soil nutrients. Since its inception in the 1970s, permaculture has developed into a whole design philosophy applicable to gardens, farming, buildings and communities. Its strength lies in its mimicry of sustainable ecological systems and its three-fold focus: on Earth Care, (respecting the Earth as source of all life), People Care (helping each other to live sustainably), and Fair Shares (using the Earth's resources in ways that are equitable and wise).

In their book *Food Wars* (2004), Lang and Heasman identify three quite different paradigms for food and farming. The dominant model, as typified by 20th century farming, has focused on chemical inputs, intensification and cheap food. This paradigm, they argue, is increasingly in trouble. The choice to be made now is between food and farming based on science and biotechnology (e.g. GM crops) and one based on organic and ecological principles. The former puts farming in the hands of the agribusiness corporations, while the latter could form the basis of a more decentralised, local and resilient food economy.

Britain needs to grow more of its own food in the future, while facing probable water shortages on a regional basis, needing to reduce greenhouse gas emissions and adapting to climate change. All the examples of positive action for change in relation to food and farming call for a more joined-up form of thinking that emphasises the importance of interconnections and the interdependence of parts which had previously been seen as separate. This vision of wholeness is central to any meaningful notion of sustainability, for the whole is always more than the parts. The scenario that follows shows how such changes could lead to the transformation of our lives, relationships and landscape.

Food and farming 2050



Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for a sustainable food future. Each pupil will need a copy of the scenario and the accompanying questions.

- ✓ Brief the class on the purpose and use of scenarios (see page 55), and go through the five questions below that need to be answered.
- ✓ Pupils work in small groups. First they individually note down their own responses to the questions below and work to create composite small group responses.
- ✓ Groups then take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display.

Scenario questions

Look carefully at the scenario of what a more sustainable food future might look like. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different and also listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Table 6.2 THE STORY: Food and farming 2050

How things have changed

‘The thing is we feel really sorry for you when we look back at the sort of diet you used to eat. Why didn’t it cross your mind that food manufacturers and supermarkets were more interested in your money than your health? Things only began to change when a small number of thoughtful people, who were considered nuisances at the time, began to see the dangers to health that junk food was causing. It is so good now to know that what we eat and drink will do us good – and it tastes good too! We were very surprised to find out how bad some school meals used to be. It’s not surprising children weren’t very interested in school meals. We love it because we help to organise it all now. We find growing things is fun, whether at home or school, and because we know about nutrition we all like cooking things too.

‘One of the other things that really makes a difference is that we regularly visit gardens and farms to find out how they work and how our food gets to us. We know how things are all linked up and that we shouldn’t take them for granted. We have also been involved in helping set up and run various food events. They can be at school, the local market, a shop, an allotment or a farm. Several of our friends want to be involved in food and farming when they leave school. It’s all so much more interesting now!

‘The argument about whether organic or chemically grown food is best has long gone out of the window. As oil prices went up and climate change increased it just made sense to move towards a more organic way of farming. After all, there were plenty of people whose experience could be drawn on. We also learn about permaculture at school, and this is one of the things that some people like to do. We like the idea because it doesn’t harm the Earth and does things in the same way that nature does. Doesn’t that make sense?

‘Every town also tries to get most of its food supply from the local area, so food is fresher and has a low carbon footprint. It was the farmers’ markets back in the early 21st century which were an inspiration for this. Most of our food now comes from

Britain rather than being imported. This means that some foods are now a luxury and others are available on more of a seasonal basis.

'Of course, as a result of climate change, we now grow crops which previously were imported. Southern Britain is now well-known for its wine – there are lots of vineyards. And for growing citrus fruits such as oranges and lemons.

'The rural landscape has changed too, because farmers are as concerned about biodiversity and care of the environment as they are about growing things. We know that the two go together hand in hand and were surprised to learn that some farmers in the last century didn't believe this. Anyway, the countryside looks different. There is more mixed farming going on – crops and animals – rather than farms with just one or the other. There are lots of greenhouses and market gardens which grow fruit and vegetables for urban areas. More land is under crops too.

'Your parents wouldn't recognise the landscape now since it has changed so much. You probably would, because a few of the changes were taking place when you were young. But unless you had good parents or teachers who pointed these things out, you might not have noticed them.'

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate, and to link the food scenario with some of the changes that were required to bring it about. Each pupil needs a copy of the story.

- The story can be read by the teacher to the whole class, by someone in each small group, or individually.
- Discussion then arises from consideration of the three questions below. Pupils individually write down their responses, then take it in turns to share these with the group.
- A spokesperson for each group summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas, and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

CASE STUDY – Food for Life Partnership

Happy Lunchtime Helpers make lunch a special occasion every day

St John's CE VA Primary School

This Flagship School has worked closely with Bath and North East Somerset on improving its school dinners and meal experience. It has reaped the benefits, with a 30% increase in uptake in only one year. It also has a fantastic cooking club for pupils and parents, as well as good links with the local farm.

"Are you enjoying your meal, miss?" asks the 10-year-old Happy Lunchtime Helper. It would be impossible to say anything other than "Yes, it's delicious, thank you!"

The meal is lasagne made from scratch, served with salad, beetroot and carrots from the school garden, with a creamy, organic fruit yoghurt for dessert. There are tablecloths on all the tables in the dining hall and relaxing music flows from the big speakers on the walls.

Pupils, teachers, school cooks and parents at St John's have impressed all by fulfilling the Food for Life Partnership Silver Mark criteria excellently. The headteacher explains that the growing aspect of the Food for Life Partnership has been particularly popular, with the interest spreading. More parents have been getting allotments since they started growing in the school.

But for an outsider, the most impressive feats have to be the dining experience, the Happy Lunchtime Helpers and the Cooking Club.

The Happy Lunchtime Helpers are Years 5 and 6 pupils, who make sure everybody is enjoying their school dinner, get their dessert, that there is water on the tables and that nobody shouts and runs around Purple Planet, which the pupils named their hugely improved dining hall.

The Happy Lunchtime Helpers were introduced after a survey investigated what pupils would change to create a good lunchtime experience. The children suggested making the dining hall nicer, and having happy lunchtime supervisors – rather than grumpy grown-up ones.

“We didn’t realise the children didn’t like the hustle and bustle at lunchtime,” says headteacher Carolyn Banfield. To begin with, it didn’t run smoothly. One Happy Lunchtime Helper was blackmailed into giving one of his classmates two desserts. But now there is a great respect for them, and all pupils have improved their social skills.

“It’s been hard work and nobody should go into this just wanting the award, you have to be committed. But everybody has been involved here and there is nothing we have done I wouldn’t do again,” adds Carolyn. “It’s been a wonderful journey and it’s when I look back I realise how far we have come.”

Teaching assistant, Alison Jukes, has pioneered another successful interpretation of the Silver Mark criteria – the Cooking Club. After a couple of sessions on the Food for Life Partnership Cooking Bus, she came up with the idea of organising a cooking club for parents as well as children. She borrows the kitchen of the neighbouring secondary school. This not only solves the problem of not having a teaching kitchen, but also establishes a very healthy link between the two schools.

The Cooking Club cooks with organic ingredients from St John’s link farm, Farrington Farm, the local market and Alison’s allotment. The parent/child teams always cook enough food to take home with them after the session. George, 11, says: “My mum couldn’t bake before, and now she bakes a lot better.”

FACTS:

- The school provides free fruit as snacks for KS1 pupils.
- St John's organises an annual farmers' market, where pupils sell their garden produce and excess plants alongside local businesses.

Find out more about what schools round the country are doing at the Food for Life Partnership website: *www.foodforlife.org.uk*

YOUR LOCAL AREA – Food and Farming

Local research

There are three elements of the local area to be considered here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together, these make up the local community. Below are some key questions that need to be researched in relation to food and farming in the local area. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column will become the basis for school and community enquiry.

1. Where does your food come from, and how many miles has it travelled?
2. How can you eat more healthily and learn more about the food you eat?
3. Where is the nearest farm to you, and what sort of things does it grow or rear?
4. What is the nearest source of organic food to you, and how is this produced?
5. What would you like to know more about, to help you grow and cook for yourself?
6. What evidence have you found in your school and community of changes already happening that will help to create a more sustainable food future?

Final questions

On finishing the work you have done on sustainable food and farming, spend some time on your own thinking about how you would like to complete the following sentences.

As a result of exploring this issue:

i) I have learned...

ii) I now feel...

iii) I personally intend to...

iv) With others I would like to...

v) I think that the school should...

USEFUL STARTING POINTS

- Food for Life Partnership.
  Available at: www.foodforlife.org.uk

  This is a really exciting initiative to transform food culture by three national organisations: the Soil Association, Focus on Food Campaign and Health Education Trust. An inspiring website, which gives detailed guidance on the award scheme, lists participating schools by region, and offers school case studies including short films and information on up-and-coming events

- The Soil Association. Available at: www.soilassociation.org

  Set up in 1946, the Soil Association has more than 60 years of experience in the theory and practice of organic gardening/farming and is one of the leading organisations in the campaign for a more sustainable food future. It offers primary and secondary teaching resources, as well as details on visiting an organic farm and how to buy organic on a budget.

- Erik Millstone and Tim Lang (2008)
  The Atlas of Food: Who Eats What, Where and Why, Earthscan.

  An excellent resource containing maps, figures and diagrams which elaborate on topics such as: food prices and shortages, malnutrition, dietary changes and increasing obesity, climate change and its impacts, industrial farming, live animal trade, GM crops, fertilisers and pesticides, organic farming, land rights, trade justice, fast food and additives.

- Tamzin Pinkerton and Rob Hopkins (2009) *Local Food: How to Make it Happen in Your Community,* Dartington: Green Books.

  This book 'offers an inspiring and practical guide to what can be achieved if you get together with the people on your street, in your village, town or city. It explores a huge range of initiatives for rebuilding a diverse, resilient local food network – including community gardens, farmers' markets, community-supported agriculture schemes and projects in schools – and includes all the information you need to get off the ground.'

Tim Lang and Michael Heasman (2004) *Food Wars: The Global Battle for Mouths, Minds and Markets,* London: Earthscan.

This is one of the most important books on the crisis in global food and farming. The authors argue that two conflicting paradigms are competing to replace the dominant industrial model of food production from the 20th century: one based on high-tech solutions and the other on ecological principles. Both will profoundly affect our lives, but in very different ways.

7. ENERGY AND WATER

"Britain is currently 'energy obese': far more is used than is actually required to deliver well-being. Years of cheap, abundant petrochemicals have led to highly wasteful practices and attitudes. Powering down does not mean deprivation, or a return to hardships of the past. It does however entail a thorough overhaul of attitudes to energy consumption."

Centre for Alternative Technology (2009) *Zero Carbon Britain*

Understanding the issue

Energy

Most societies need sources of energy in order to accomplish the everyday tasks of cooking, heating, travelling and manufacturing. For thousands of years, energy needs were achieved through 'manpower' – human energy and people's ability to make tools and use fire. Later this was augmented by the use of animals such as horses (horsepower) and oxen to pull ploughs. For millennia, the only sources of energy available were human and animal. Add in slavery and wealth, and the availability of energy becomes more unequally distributed.

The scientific and industrial revolutions drastically changed the nature of everyday life through the large-scale use of coal and steam power. It was coal and coal gas that fuelled the rapid industrial growth of the 19th century, providing the energy for lighting, steam trains, ships and manufacturing. The widespread use of coal as a source of energy totally transformed society.

So did the increasing importance of oil in the early 20th century, which allowed the growth of the automobile industry and international flights, and a new and cleaner fuel for heating, lighting and transportation. It also provided raw materials for the creation of chemicals, agrochemicals and innumerable items vital to daily life, such as aspirins, plastic bottles, electric sockets, coats and DVDs. The dilemma, however, with using coal, oil and gas to provide the energy we have come to need – and to help create the wealth of advanced industrial societies – is that burning such fossil fuels contributes to climate change. In addition, as pointed out in chapter 5, we now face the prospect of peak oil and its probable disappearance as our main source of energy at some point during the 21st century. Could this be a blessing in disguise, given its contribution to climate change?

The difficulty is that we have become addicted to oil, taking it for granted that there will always be energy to fuel our cars, provide electricity and contribute towards our general comfort. Richard Heinberg writes:

> *If we were to add together the power of all the fuel-fed machines that we rely on to light and heat our homes, transport us, and otherwise keep us in the style to which we are accustomed, and then compare that total with the amount of power that can be generated by the human body, we would find that each American has the equivalent of 150 'energy slaves' working for us 24 hours each day* (Heinberg, 2005:30).

Coal supplies, on the other hand, are plentiful. But it is the most controversial of the fossil fuels because of the environmental destruction caused by opencast mining, its CO2 emissions which contribute to climate change, and its inefficiency as an energy source. Coal-fired generators have an efficiency of about 40%. Coal producers are also noted for their resistance to regulating emissions or increasing efficiency. Fossil fuel enthusiasts argue that carbon capture and storage will resolve many of these problems. This is a system whereby CO2 is separated out of the coal either before or after it is burnt and then pumped underground for storage. It is, however, a technology which has yet to be proven on a large scale.

Nuclear power, which uses uranium as its fuel, is seen by some as the answer to climate change since no CO2 is produced by this process. After a number of serious accidents last century, and the rising costs of decommissioning, the number of nuclear power stations being built went into decline but the industry now sees the possibility of a renaissance thanks to climate change. The central dilemma, however, stays the same – the storage of nuclear waste. Nuclear power stations routinely emit low-level radiation into the air and sea and, at Sellafield and Dounreay in the UK, for example, there have regularly been cover-ups relating to leaks and storage (*Glasgow Herald*, 2005). Nevertheless both Labour and Conservatives see nuclear power as playing a significant part in Britain's energy future. The fact remains that high-level nuclear waste needs to be stored safely for thousands of years. This is not something that anyone in the industry or the government is able to guarantee, so it's hardly a sustainable practice.

Natural gas produces much less CO2 than coal and is thus seen by some as an interim source of energy until more renewable energy comes on-line. However, the era of North Sea gas is nearly over, so the UK is now increasingly dependent on overseas gas supplies. Much of Europe's gas comes from Russia but, given the political disagreements it has with some of its neighbours, this source may not be as reliable as it needs to be and possible shortages in the UK have already been predicted for future winters. Although coal, gas and nuclear will continue to be significant energy sources in the immediate future, all three pose problems. Coal and gas still contribute to climate change, and nuclear waste creates an unwanted legacy that future generations would not thank us for.

Water

More than 97% of the world's water is salt water, and much of the rest is locked up in the Greenland and Antarctic ice sheets. What is left – found in evaporation, precipitation, rivers, lakes and underground aquifers – is what the natural world and human life depends on. As with oil, available freshwater is a relatively finite resource – but at least it is renewable. The average European uses 200 litres of water every day and a North American uses 400 litres. (The 'water footprint' – the water tied up indirectly in growing and producing many of the products and foods we take for granted – is an order of magnitude greater.) The average person in the developing world uses 10 litres a day for everything: drinking, cooking and washing (Water Aid International, 2011). A dripping tap can waste much more than this – as much as 5,500 litres of water over the course of a year. While in principle there is enough water for everyone on the planet, much of it is 'in the wrong place at the wrong time and in the wrong amount' (de Villiers, 2001). In the future, therefore, there are likely to be serious conflicts over access to water.

> *The UN says individuals need five litres of water a day simply to survive in a moderate climate, and at least 50 litres a day for drinking and cooking, bathing and sanitation. Industry accounts for about double the average domestic use. But agriculture needs much, much more – in fact, 90% of all water used by humans* (Jowitt, 2008).

It is the latter that is really the problem – although today 70% is the generally accepted figure. It takes 1,000 litres of water to grow a kilo of wheat, 20,000 litres for a kilo jar of coffee and 24,000 litres to grow the feed for a cow to produce a kilo of beef (Pearce, 2007). 'Water footprint' is the term used to encapsulate our hidden indirect use of water. It shows that, far from being something we need mainly for drinking and washing, water is implicated in every aspect of our lives – particularly food. Little wonder that the UK has become the sixth-largest net 'importer' of water in the world, with only 38% of its total water use coming from its own resources. In that sense we have a water shortage of our own and we take water from others who may need it more. As with oil, it is vital that we now learn to: i) use less water than we did before; ii) use that water more efficiently; iii) find ways of meeting our own water needs ourselves.

But water also has another major impact on our lives. Climate change in the UK is leading to more severe weather conditions, including storms and drought. Add to that the numbers of developments on floodplains and associated 'hard engineering', and we have a situation where flooding is now a more regular phenomenon in many river valleys, with settlements on floodplains being particularly at risk. The result is that hundreds (and sometimes thousands) of people have to evacuate their homes – in the worst cases for up to a year.

Some coastal areas are also increasingly prone to flooding and erosion by the sea, and with forecasts that sea level is rising faster than previously expected this may eventually cause serious problems for cities such as London and New York. Conversely, with changing climate patterns, some places will also be faced with hotter and drier conditions. While this may seem attractive to some in the UK, it will also result in reduced river flow, emptier reservoirs and the rationing of water, as well as uncomfortable living conditions in houses not designed for high temperatures. In Australia, the River Murray was close to running dry after six years of severe drought, and Adelaide's water supply seriously threatened.

In the case of both energy and water, we have been living beyond our means – or unsustainably – in the rich world. This requires that we re-conceptualise our need for and use of both

energy and water. A tap can no longer be seen as a source of inexhaustible water. Neither can an electric socket be seen as an inexhaustible supply of electricity. What is exciting rather than alarming about this is that a growing number of people are already rising to these challenges.

What are people doing?

Energy

One of the most useful ways for exploring the contribution of a family, school or business to climate change is the notion of a 'carbon footprint'. This is defined as the total volume of greenhouse gases produced to directly and indirectly support human activity. It is usually expressed in equivalent tonnes of carbon dioxide (CO2). This is a good starting point for analysing one's energy impact and setting targets to reduce it (Carbon Detectives, 2011).

In broad terms, personal and institutional action falls into three main categories: i) using less energy; ii) using energy more efficiently; iii) using energy from renewable sources. Many people have now developed the habit of switching off lights, heat, computers and stand-by mode on electrical appliances. This makes good economic sense. Most electrical goods, from washing machines to boilers, now have an energy rating, and this should be taken into account in all purchases. There are also many schemes for insulating lofts, roofs and walls. Energy meters can be used to identify just how much electricity different appliances use.

Table 7.1 below outlines the main sources of renewable energy that are now available:

Wave power. Wave breaking on rock along coast on a windy day, Benijo, Anaga Peninsula, North East Tenerife, Canary Islands, Spain

Table 7.1 – Sources of renewable energy

Solar photovoltaic cells ~ more electricity than the UK already uses could be generated by putting photovoltaic roof tiles on all suitable roofs.

Solar thermal technology ~ uses collectors to absorb sunlight and then to heat a liquid which can be used for both electricity and heating.

Wind power ~ only a fraction of the suitable offshore sites would be needed to meet the UK's total current demand.

Tidal power ~ gates and turbines are installed along a barrage across an estuary or bay using the power of the rising and falling tide.

Wave power ~ a variety of devices have been designed using turbines near the shore or offshore to tap the energy of the waves.

Micro-hydropower ~ uses river currents. Former mill sites in the UK could together generate as much electricity as one or even two nuclear or coal plants.

Biomass ~ burning waste from agriculture (straw) and forestry, energy crops (fast growing willow) and processed fuels (wood pellets made from sawdust).

Combined heat and power ~ produces heat as well as electricity and works at 80% efficiency as against the 30-40% of normal power plants.

These examples of renewable sources of energy are at various stages of development, and are increasingly being taken up by families, schools and businesses. Their take-up depends not only on individual enthusiasm but also on government support and grants to prime the necessary changes. Look out for both solar thermal and solar photovoltaic cells on existing house roofs and also on new buildings. Look out for offshore and onshore wind generation, and beware of those who oppose them as 'unsightly' or inappropriate. Tidal and wave power are at an earlier stage of development largely as a result of insufficient government support.

Such changes need to occur, and are occurring, at individual, local, regional and national levels. Woking, a small town in Surrey, for example, has cut its CO2 emissions by 77% through development of a combined heat and power (CHP) scheme, which supplies electricity through its own wires at a cheaper rate than the big utilities. Sweden has stated its intention to become the world's first oil-free economy by 2020.

Leggett (2006) and others argue that this family of renewables can provide most of the energy that the UK needs, although this would necessarily require major accompanying changes to the grid (*Guardian*, 2010). Others argue that coal and nuclear power still have a major part to play in this energy transition. Globally there are still significant reserves of coal available but it is recognised that new technologies to capture and store the subsequent carbon emissions have yet to be proven and developed. There is debate about whether such technologies should only be fitted to new coal-fired power stations, or existing ones as well. The nuclear industry is also arguing that only it can save the world, since uranium does not cause CO2 emissions. However, there are still ongoing concerns about the safety of nuclear plants and their ability to store high-level nuclear waste safely for 250,000 years.

This, together with the problem of peak oil, means it is vital that we learn to: i) waste less energy; ii) use the energy that we do need more efficiently; iii) develop renewable sources of energy that do not contribute to climate change. The energy transition is already under way; there will certainly be shortages, debates and disagreements but increasingly individuals, organisations, business and government are moving (though some would say too slowly) towards a zero-carbon future (Energy Saving Trust, 2011). This is not something needed for some distant future but for the near-term future, as set out in *Zero Carbon Britain: An Alternative Energy Strategy* (CAT, 2010).

Water

First must come water conservation and many householders, gardeners and others are beginning to realise the benefits of this. While the availability of water, like oil, is something we have taken for granted, people are beginning to realise that it is also

a resource which should not be wasted. We therefore need to use water more efficiently and also to collect more water at the local level. Water meters are likely to become more common in order to make consumers more aware of how much they use and how much water costs. Using less water for washing, cooking and cleaning is the first step, along with observing when taps are left running, or when inefficient washing machines need replacing. Grey water, from washing machines and baths, can also be used to flush toilets. Rainwater can be harvested via water butts, ponds, ditches and reservoirs so that less goes to waste. Plants and crops that require less rather than more water are becoming important too. The likelihood of increased periods of drought due to climate change also make wider take-up of these measures more urgent.

Some businesses are beginning to take their water consumption seriously too. A factory in Scotland which washes and packs tonnes of vegetables each year for major supermarkets now harvests rainwater from its vast roof and recycles the water used in its giant washing machines through a water treatment plant. In so doing it has drastically cut its water consumption and saved thousands of pounds in water bills. Other businesses are beginning to follow suit.

This, however, is only the beginning, since our water footprint also includes the water we use indirectly through the large volumes required in the processing of food and textile fibres both at home and abroad. This is known as virtual water or embedded water. Organisations concerned about global water scarcity have begun to argue that food and drink products should carry a new label to give consumers more information about their water footprint. Some of this virtual water is drawn from areas which are themselves beginning to suffer from water scarcity.

Awareness is also now growing about the danger of increased flooding, whether in river valleys, on the coast or through flash floods. People are beginning to consider more carefully where they live and what precautions they need to take. Sustainable Drainage Systems (SuDS) which use ‘natural’ methods to disperse surface water after heavy rainfall are being incorporated into some new developments. Local authorities and government agencies with responsibility for these matters

Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for a sustainable energy future. Each pupil will need a copy of the scenario and the accompanying questions.

Brief the class on the purpose and use of scenarios (see page 55) and go through the five questions that need to be answered.

Pupils work in small groups. First they individually note down their own responses to the questions below and then work to create composite small group responses.

Groups then take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display

Scenario questions

Look carefully at the scenario of what a more sustainable energy future might look like. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different and also listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Energy and water 2050

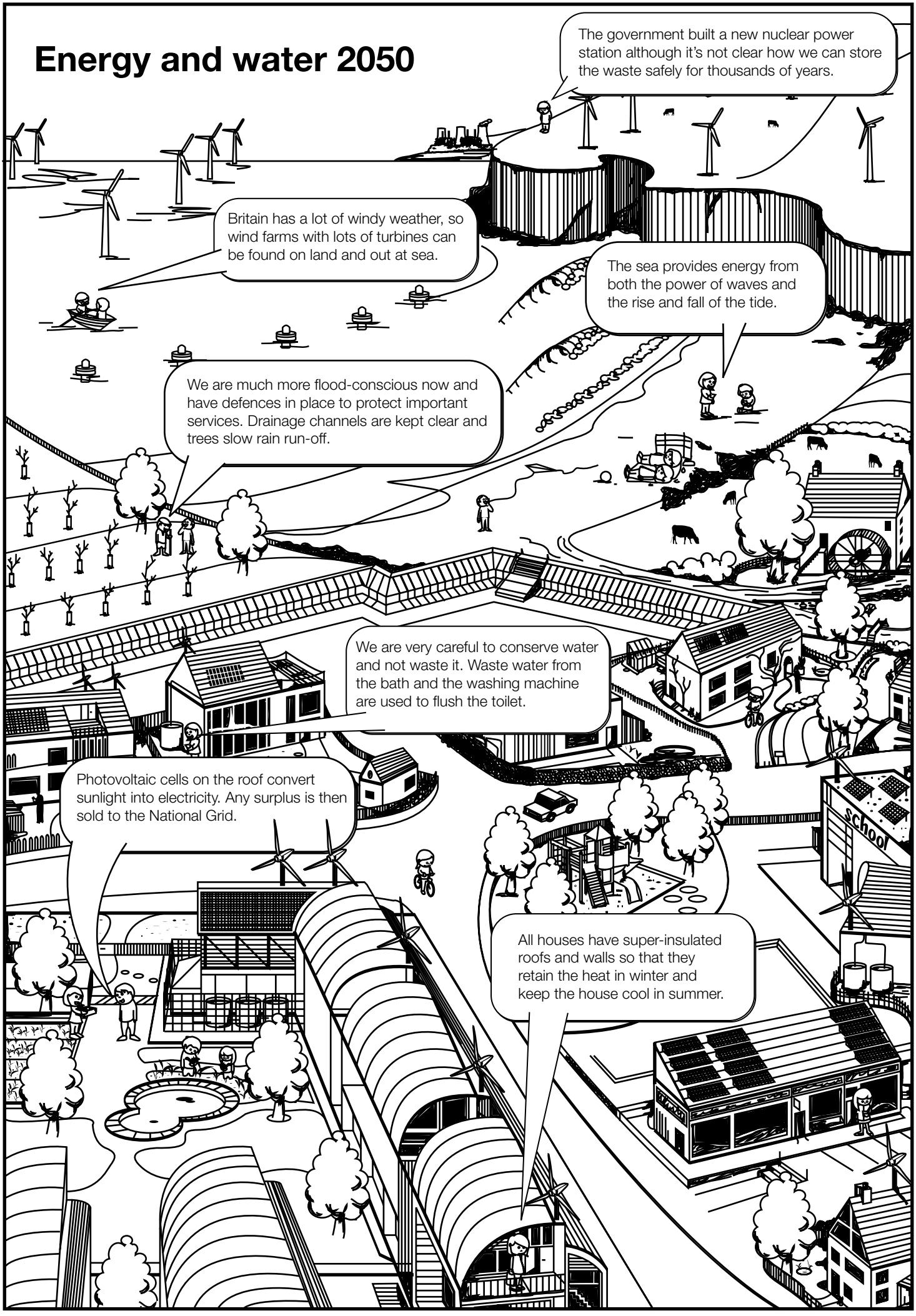


Table 7.2 THE STORY: Energy and water 2050

How things have changed

‘I expect you think our lives are very different from yours back in the early 21st century. We, of course, take everything you can see here for granted. It is our parents and grandparents who remember what it used to be like. This is normal for us. We hear that you were very thoughtless back then in your use of energy, that you wasted it and did not see any reason to change. We are glad that you did choose to change because we are the ones who have benefited.

‘At first it was a few far-thinking people who saw that things needed to be different. They saw that much of the energy and water was being wasted and that using these resources more efficiently would cost them less and help protect the planet too. And once people realised that using fossil fuels like coal, oil and gas contributed to global warming and climate change they wanted to know what safer sources of energy there were. This is when they looked to nature for solutions and realised that water, wind and sun provided more energy than we could ever use. Clever scientists knew that sunlight, the wind, waves and tides could all be used to create clean electricity.

‘Gradually, governments and businesses began to realise this was the way ahead. Houses began to have solar panels on their roofs, wind farms were built in windy places on the land and out at sea, and the waves and tides were used to create energy too. Some people, who didn’t understand the need for change, complained that wind farms spoilt the view. But they were missing the point, because things couldn’t go on the way they had been. Individuals and schools could apply to the council for grants to improve their homes and buildings, so people gradually set about improving their roof and wall insulation to avoid loss of heat, put solar panels on the roof, and used wood-burning stoves. Once people’s gas and electricity bills began to go down, more and more people decided to do this. Some people even generated a surplus of electricity and were able to sell it back to the National Grid.

‘People realised that water was becoming a vital resource too, and that it should never be wasted. When water meters became more

common in houses, the value of water was soon appreciated. Nobody left taps running any longer or used more water for cooking, washing or cleaning than they needed to. Water from the bath or washing machine was recycled to flush toilets. Water butts in the garden collected rainwater from roofs. It was lucky that we made these changes as summer droughts and water shortages became more common due to climate change.

'The other thing that people began to realise was just how much water was needed in the growing of food crops. It didn't seem to make sense to use three litres of water to make a litre of bottled water! We became more conscious that we each have a 'water footprint' as well as a carbon footprint. If we wasted water it meant other people elsewhere in the world had less, or none. We think it's much better this way, don't you?'

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate and to link the energy scenario with some of the changes that were required to bring it about. Copies of the story are needed for each pupil.

The story can be read by the teacher to the whole class, by someone in each small group, or individually.

Discussion then arises from consideration of the three questions below. Pupils first individually write down their responses and then take it in turns to share these with the group.

A spokesperson for each group then summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

CASE STUDY – The Ashden Awards for Sustainable Energy

Head's Antarctic trip inspires energy-savings drive

Ashley Primary School

Following an expedition to see the effects of climate change in the Antarctic, the head teacher of Ashley Primary School in Walton-on-Thames initiated an ambitious programme of sustainable energy work in the school, with active support from the governing body. Pupils are actively engaged in efforts to reduce energy consumption at school and at home, and participate in the promotion of the energy activities through film and case study material.

In 2009, Ashley Primary School was joint first prize winner of a UK award for developing the use of sustainable energy in schools. Here are some of the things that it has done.

- Pupils monitor electricity consumption in each building using data provided by ecoDriver, a powerful online tool which captures real time data on for example, energy or water use. This data can be viewed half-hourly, daily, weekly and monthly, so that pupils can see the impact of their actions.
- The three school buildings are set weekly electricity consumption targets, with a collective target of less than 100kWh per day. Energy monitors share the data every Friday and the pupils are financially rewarded if targets are met. The school council decides how the money is spent.
- 71 staff, and governors' and pupils' families have joined a carbon countdown challenge to use less than 100kWh of electricity per week in their homes.
- Fluorescent lamps in the old school building are being replaced by more efficient T5 versions, installed in existing fittings using an adaptor. Efficient IT equipment has been chosen and wasteful appliances eliminated.
- Light sensors with an override facility have been installed in the cloakrooms and toilets of the new building. This building has solar tubes in classrooms, corridors and cloakrooms to bring daylight into dark areas.

- A 35kW biomass boiler that burns wood pellets sourced locally has been installed in the original school building. Double-glazing has reduced heat loss from the building.
- There is a 4.2kWp photovoltaic array on the roof of the new teaching block, along with a bank of eight solar thermal evacuated tubes (11 kW).
- The ecoDriver software system is used to monitor electricity consumption and the electricity generated by the PV array.
- £154,000 has been spent on sustainable energy measures, over half from the school's own resources and the rest from grants.
- An impressive 51% reduction in electricity use and 18% reduction in gas use occurred between 2007 and 2008, saving about 14 tonnes of CO2 per year. Use continues to fall. There have been similar percentages of reductions in some of the carbon challenge homes.
- There are plans for energy efficiency, passive solar heating, natural lighting, a green roof and a PV array in a £3 million new school build.

www.ashden.org/files/Ashley%20school%20case%20study.pdf

YOUR LOCAL AREA – Energy and Water

Local research

There are three elements of the local area to be considered here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together these make up the local community. Below are some key questions that need to be researched in relation to energy and water in the local area. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column then becomes the basis for school and community enquiry.

1. Where does your water supply come from and how much do you use?
2. How can you waste less water each day in the things that you do?
3. Where does your electricity come from, and how is it produced?
4. In how many different ways do you use oil to supply your needs?
5. How much money can you save by using less electricity?
6. What evidence have you found in your school and community of change already happening that will help to create a more sustainable energy future?

Final questions

On finishing the work you have done on sustainable energy, spend some time on your own thinking about how you would like to complete the following sentences.

As a result of exploring this issue:

i) I have learned...

ii) I now feel...

iii) I personally intend to...

iv) With others I would like to...

v) I think that the school should...

USEFUL STARTING POINTS

- *Schools' Global Footprint (2010)*
  WWF/ Learning and Teaching Scotland.
  Available at *www.ltscotland.org.uk/sustainabledevelopment/findresources/globalfootprint/teachers/index.asp*

  This exciting resource from WWF makes it possible for a school to calculate its ecological footprint, a measure of the mark that we leave on the natural world that sustains us. The six areas of the Schools' Global Footprint correspond with many of the Sustainable Schools 'doorways'.

- *Carbon Detectives Kit.*
  Available at: www.carbondetectives.org.uk

  The Carbon Detectives Kit was produced as part of the DCSF's Sustainable Schools initiative and has been designed to help pupils understand some of the key issues relating to climate change. The kit helps pupils to explore what can be done at an individual and school level to help reduce the predicted impacts of climate change. The kit is accessible to both pupils and teachers and helps schools to explore and measure their own CO2 emissions, identify where the biggest impacts are, and plan for improvements.

- Carbon Trust. Available at: www.carbontrust.co.uk

  The Carbon Trust's mission is to accelerate the move to a low-carbon economy now, and develop low-carbon technologies for the future. Enter 'schools' in the search box to be taken to details of whole school approaches to carbon reduction, financial support for energy-saving products, an energy-savings fact sheet for schools, and a school sector walk-around checklist.

- Chris Goodall (2008) *Ten Technologies to Save the Planet,* London: Profile Books.

  In this book, Chris Goodall shows how scientists and entrepreneurs around the world are making rapid progress in developing and disseminating technologies which have a major part to play in reducing carbon emissions. Chapters include: wind farms, solar energy, wave and tidal power, combined heat and power, super-efficient homes, electric cars and capturing carbon. It is clear and readable, and provides essential background information on the new technologies of the 21st century.

- Waterwise – *Reducing water wastage in the UK.* Available at: www.waterwise.org.uk/reducing_water_wastage_in_the_uk

  This looks at all aspects of water usage in the UK – including why water is an issue, facts and figures about why water needs to be conserved, and information on embedded water and thus on our true consumption of this threatened global resource.

- Environment Agency – *Flood Map.* Available at: www.environment-agency.gov.uk/homeandleisure/floods/31656.aspx

  These maps show the areas that could be flooded by sea or river if there were no flood defences. By entering a postcode it is possible to see what could occur in that area. This does not include flash flooding as a result of extreme weather conditions that could occur anytime and anywhere.

Traffic jam on dual carriageway A3 Surrey UK.

8. TRAVEL AND TRANSPORT

"Nearly 20% of all car journeys are under a mile – about a 20-minute walk – so by walking you can arrive at your destination before you've found your car keys, navigated the busy streets and found a parking place half a mile away from where you want to get to anyway."

Sustrans (2009) *Do Humans Dream of Electric Cars?*

Understanding the issues

In some ways our attitudes to travel are the same as those towards food: we take it for granted that we can go where we like, when we like, how we like and as cheaply as possible. But it doesn't work that way – or rather it does work, but we are now beginning to realise the drawbacks this brings to ourselves, the planet and future generations. Human beings have always travelled, for many different reasons: in pursuit of trade, wishing to explore, going to war, on pilgrimages, seeing friends, visiting other places, enjoying a holiday, going shopping and going to work.

There are, of course, all sorts of ways by which one might choose to travel on such journeys and these have changed over time. When journeys had to be on foot, or by horse, cart or carriage, only the wealthy were able to travel long distances. Sea voyages were often long and difficult, but paid off if crews returned with valuable cargoes.

In the 18th century, canals were the first breakthrough for the quicker and safer carriage of goods. Then, in the early 19th century, the steam locomotive changed everything. It connected places that had not been connected before, and drastically cut the duration of journeys, until the country was covered with a network of railways large and small. In a sense Britain had begun to shrink.

Both urban and rural landscapes were drastically altered by this shift away from roads and canals. Everyone began to travel more, both rich and poor, to get to work and for leisure. At the end of the 19th century horse-drawn buses began to be replaced by motor buses and cars. The growth of sprawling urban suburbs began as the better-off could now live further away from their workplace. The car began to alter the layout and appearance of towns.

As the previous chapter showed, the discovery of cheap oil and its use as a fuel for cars, lorries, buses, ships and aircraft shrank the

world even further. But with the convenience that this brought came a new problem – the contribution that transport has made to climate change. As long as we rely on oil to move us from A to B, our unprecedented mobility will continue to have a profound effect on the environment. Transport accounts for nearly three-quarters of UK oil consumption.

Globally, vehicle production is rising sharply as developing countries also wish to share in the fruits of this transport revolution. Yet pollution, road congestion, road deaths and CO2 emissions increase. The number of UK deaths caused by cars since 1945 now outnumber the deaths of British soldiers in World War Two (Hickman, 2005). Despite all of this, transport policy in the UK has always accepted that the growth in private motor transport is inevitable. Yet the more roads that are built, the more the volume of traffic increases. Nearly a quarter of the UK's carbon emissions come from transport and 90% of this is produced on the road. George Monbiot, writing about our love affair with the car, notes that:

> *... [the] growth in driving is one of the primary reasons for the libertarianism now sweeping through parts of the rich world. When you drive, society becomes an obstacle. Pedestrians, bicycles, traffic calming and speed limits become a nuisance to be wished away. The more you drive, the more you seek the freedom that the road promises but always denies* (Monbiot, 2006).

However, since peak oil will gradually push fuel prices up, the petrol driven car will eventually become a rarity and something that only the rich can afford.

The number of global passengers travelling on scheduled airlines continues to increase, making air travel one of the other main contributors to climate change. This is because of the distances travelled and because aircraft emit other greenhouse gases in addition to CO2. Aviation is the fastest-growing source of such emissions. As with cars, the freedom to fly around the globe is something that many people take for granted. But Monbiot notes that this freedom has now often become an obligation. Having relationships with people in other countries, whether family or friends, results in the accumulation of what he calls 'love miles'. One needs to travel to see loved ones, but in so doing one

contributes significantly to climate change. But again, increasing oil prices will push fares up and make such international travel more difficult.

While issues of food and energy, the subject of the previous two chapters, are of immediate importance to all schools, transport may seem to have less impact. Yet in many ways the school as a community is a microcosm of the whole. Children have to get to school, and some may travel a considerable distance to do this. The school run, something that was unknown in my own childhood, has become synonymous with traffic congestion and bad parking. The school run also contributes to CO2 emissions. It is said that children are too lazy to walk to school or, more seriously, that the roads are less safe due to the volume of traffic and the pavements due to number of strangers. Unless children are getting regular exercise elsewhere, and often they are not, this will contribute to less healthy pupils.

What are people doing?

Sustainable transport is a term used to describe modes of travel that have little or no detrimental effect, socially or environmentally. It describes modes of transport and types of transport planning that are both affordable and meet users' needs. For this to be achieved, current attitudes to travel need to change and there is evidence that this is already beginning to occur. Sustrans (2004) carried out a survey for the Department of Trade and Industry in Darlington, Worcester and Peterborough, which showed that the majority of people are concerned about traffic growth. Around 90% would like to see improvements to support walking, cycling and public transport, even if this caused disadvantages to car users. Some 47% of car journeys in each town could equally well be made on foot, cycle or public transport. Cycling is a viable choice for 39% of trips in all three towns but is only taken up by 3% of the population.

While cars have a part to play in a more sustainable future they will be very different from today. Three main types of alternative fuel are being considered: hydrogen fuel cells, biofuels and electricity – and several major car manufacturers have developed prototypes.

At present, there are unresolved problems with cars powered by hydrogen fuel cells, both in relation to the technology and a network for distributing such a fuel.

While biofuels may be important on a local scale, any widespread use of oil-producing crops such as rape and palm oil will result in fewer food crops being grown. According to a confidential World Bank report obtained by the *Guardian* (2008) the new emphasis on biofuels forced global food prices up by 75%. Also, when palm oil plantations replace peatland swamp forest, huge CO2 emissions occur which biofuels can in no way make up for.

The design and production of electric cars is increasing as is the distance they are able to travel before recharging. In Barcelona, the authorities are thinking of turning unused telephone boxes into charging points; and Newcastle is set to be one of the first UK cities with a network of charging points. For electric cars to be sustainable, the electricity they use must, of course, come from renewable sources.

Trains and coaches emit seven times less CO2 than cars and are thus central to any notion of a more sustainable transport future. Rail electrification and new high speed trains are planned for the UK but will take some time to develop. Ongoing pressure on the private railway companies is also needed to ensure a rail network that gives customer satisfaction. George Monbiot (2006) argues that long-distance coaches could play a much bigger part in cross-country travel if coach stations were moved from city centres to nearby motorway junctions. Much of the time spent on a coach journey is the taken up getting in and out of cities – a service that buses can provide. In terms of road haulage, one major company has already switched to the European rail network to bring its fruit and vegetables from Spain (*Guardian*, 2009).

Within cities, attention is increasingly being paid to limiting the number of cars in use. Paris, for example, has begun a programme of traffic-calming (slowing cars down), dedicated bike lanes, a new light-rail transit system, dedicated bus lanes, removing on-street parking, putting the ring road underground, and creating a bike share programme (Newman et al., 2009). In Bogota, Colombia, and other developing cities around the world,

public transportation systems called bus rapid transport (BRT) have been developed. This is like an above-ground subway system with long, segmented low-emission buses that improve traffic flow and reduce smog. This has also removed many smaller buses from the roads.

In the UK, the government has invited some of the country's largest urban areas to bid for up to £29 million to become the first 'sustainable travel city'. The Department for Transport wants the chosen cities to build on existing and innovative new strategies to reduce carbon emissions, ease congestion and increase levels of physical activity (eg walking and cycling) in the area. Visionary green transport requires local government, citizens and businesses to come up with their own peak oil and climate change plans. The cities that are best at creating regional transit systems – Zurich, Munich, Hong Kong, Singapore and Tokyo – also have active local transport planning processes.

Cities are shaped by their transport systems, and any consideration of greener transport needs to be set in the wider context of sustainable cities. A sustainable city is also a resilient one that can face challenges and survive.

> *What does a resilient city look like? Bike paths and virtually car-free streets that lead from solar homes to grocery stores, recreation areas, parks, or a free tram to reach places too far to walk or bike. A solar office block filled with new (sustainable orientated) businesses. Schools with parents lined up on bikes to pick up kids instead of waiting in idling cars. A local farmers' market for buying bioregional produce* (Newman et al., 2009).

This, says Peter Newman, is what Vauban in Germany looks like. Vauban is a model ecological community where car ownership is 150 vehicles per 1,000 inhabitants (the US average is 640 vehicles per 1,000 residents). Incentives such as free tram passes and car pooling, together with disincentives such as expensive parking only on the edge of town, encourage people to live car free.

A growing number of schools in the UK have turned their attention to transportation within the school catchment area. Three of the most popular travel initiatives are cycling skills, walking buses and yellow buses. Bikeability (2011) is a training scheme which has been adopted by half the local authorities in

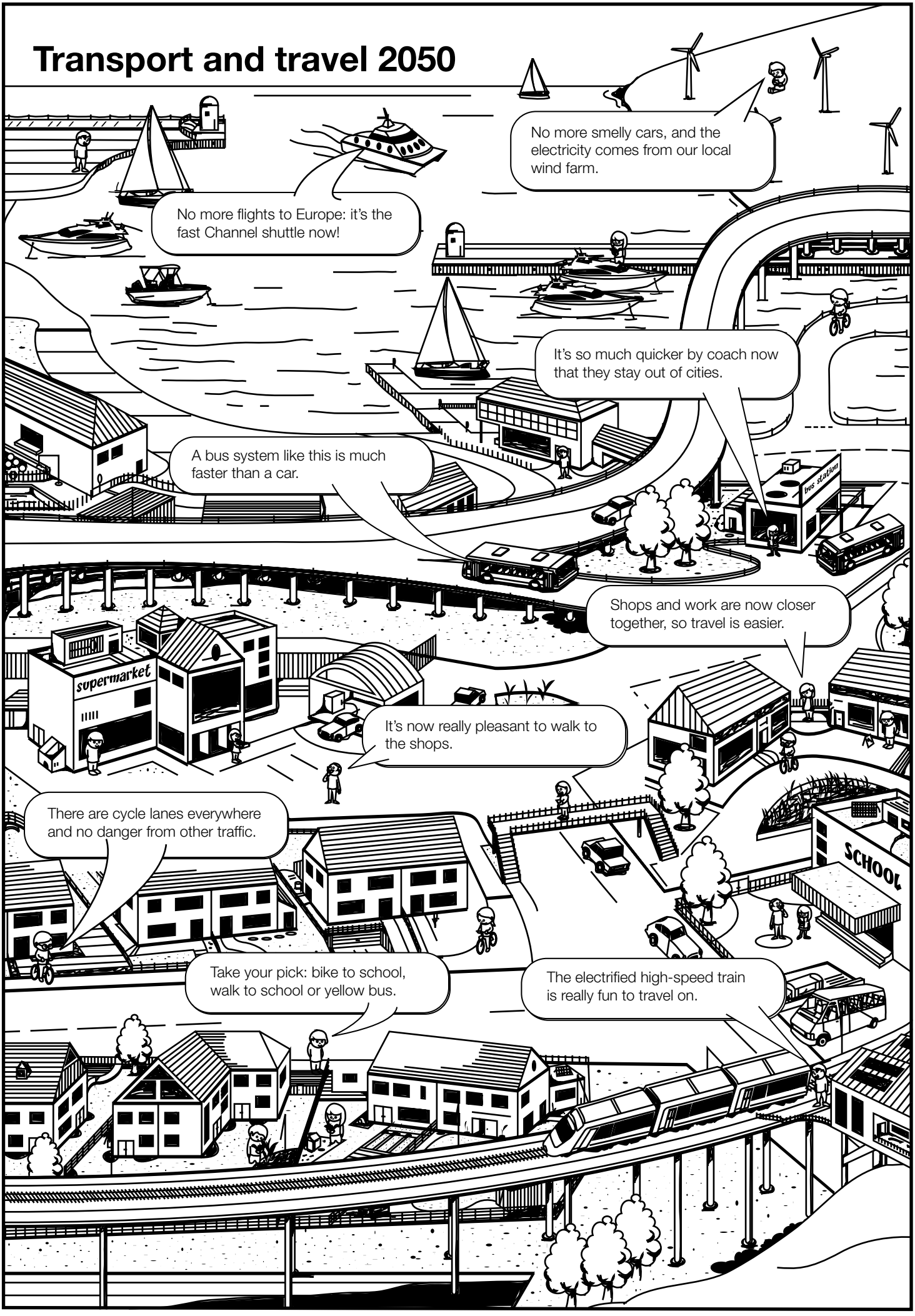
England to 'rescue a 'lost generation' of children who would otherwise miss out on the opportunity to learn to cycle safely and responsibly'. There are three levels and awards which cover basic skills and bike handling, skills for cycling safely to school on quiet roads, and cycling in more complicated traffic environments. What is excellent about such schemes is their retrieval of skills which only a generation or two ago would have been much more common. A new generation with these skills will be ready for and prepared to campaign for a more bike-orientated future.

Yellow buses are modelled on the eye-catching American yellow school bus, and run by local authorities or private bus companies. The way in which they are run is designed to overcome many of the problems associated with previous school buses, including bullying and bad behaviour. In a typical scheme each pupil has their own dedicated seat with appropriate seat belt, dedicated and vetted drivers, on-board registers, CCTV and codes of conduct, and dedicated single-deck vehicles (Yellow School Bus Commission, 2008). In this way, issues can be raised and dealt with in a way which ensures a safe and pleasant journey to school.

Walking buses are a way of encouraging children to walk to school with parent volunteers. There is always a 'driver' at the front and a 'conductor' at the rear. The more children involved, the more adults are required. This way children can: i) get plenty of regular exercise; ii) chat with friends; iii) arrive at school more alert and ready to work; iv) feel they are doing their bit for the environment. Parents know that their children will arrive safely at school, and the school has helped to reduce traffic congestion in its vicinity (Cheshire East Council (2008).

Issues of traffic and transport have a global reach, but children learn about them directly in their own local community. If schools act in ways that encourage a more sustainable approach to travel in their immediate catchment area, and then relate this in the classroom to wider issues of traffic and transport, they are laying the foundations for a more transport literate eco-generation.

Transport and travel 2050



Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for a sustainable transport future. Each pupil will need a copy of the scenario and the accompanying questions.

- ✓ Brief the class on the purpose and use of scenarios (see page 55) and go through the five questions that need to be answered.
- ✓ Pupils work in small groups. First they individually note down their own responses to the questions below and then work to create composite small group responses.
- ✓ Groups then take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display

Scenario questions

Look carefully at the scenario of what a more sustainable transport future might look like. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different, and listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Table 8.1 THE STORY: Travel and transport 2050

How things have changed

‘We can’t imagine how you managed life back in your times, with so many vehicles on the road and taking up all the parking spaces. We’re glad your scientists realised how traffic was contributing to climate change. We understand all about this now, but it must have been difficult for you then. We heard that nearly every house had a car or even more than one. They must have ruled your lives and, of course, at first you didn’t understand the damage that cars were causing to the atmosphere. We are very grateful to your generation for beginning to see that things really had to change.

‘At first it was through trying to use the car a bit less or sharing a car journey with someone else. Then rising petrol prices meant fewer cars were on the road. But new greener cars were coming in, and gradually the idea of having an electric car became popular, especially when it was possible to charge the battery up at home or at work. The idea of sustainable travel cities caught on too, as towns realised they needed to rethink their whole approach to transport. Most places now have plenty of cycle paths and pedestrian routes so you can easily get to school, shops, restaurants and cinemas without needing a car. Town planners began to mix new houses, offices and shops together so you didn’t have to drive out of town to the supermarket or into town to go to work.

‘People also began to think more carefully about whether the journey they wanted to make was really essential. As a result of public pressure, coach and rail services are now much more practical and efficient, so lots of people use them. At the other end of a long journey you can hire an electric car quite cheaply if you need to. All rail routes are electrified so that diesel engines are a thing of the past. All long-distance trains are high-speed ones, and they’re as good as any in the world.

‘Air travel to European countries has been greatly reduced because fast and efficient trains can now get you quickly to any destination. Where once people might have flown to Australia they now take advantage of fast shipping routes, as people don’t feel they need to be in quite so much of a hurry these days.

‘We don’t have school-run problems any more like you used to. Yellow buses and walking buses are normal now and we don’t think anything of it. Everyone owns a bike and uses it for shorter journeys. Bike repair centres and secure places to leave your bike at the railway station or bus station are also common. People walk more, both in the country and in the town, and as a result they enjoy the environment more and are healthier. Of course older towns still have work to do in order to improve their sustainable transport systems. They get their inspiration from newer developments where planners have been able to design everything on sustainable principles right from the start. We do think the world is a better place to live in now that much more thought goes into carbon-free travel and transport.’

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate and to link the transport scenario with some of the changes that were required to bring it about. Copies of the story are needed for each pupil.

- The story can be read by the teacher to the whole class, by someone in each small group or individually.
- Discussion then arises from consideration of the three questions below, with pupils first individually writing down their responses and then taking it in turns to share these with the group.
- A spokesperson for each group then summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas, and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

CASE STUDY – Sustrans Bike It School Mark

First Sustrans Bike It School Mark in London

Devonshire Hill Primary School in Tottenham has become the first London school to be awarded the Sustrans Bike It School Mark (Bronze), having increased cycling levels from 2% to 17% within a year.

Pupils at Devonshire Hill have transformed the school run in London by creating their own events to encourage classmates onto their bikes. These included an end of term water fight, where teachers were pelted with water balloons and wet sponges as they cycled around the playground.

The six officers of the Bike It scheme typically manage to double cycling levels through events such as Bling Your Bike challenges, free bike breakfasts, and basic mechanic sessions to repair punctured tyres.

They engaged with nearly 20,000 pupils in the last academic year. And the results are impressive:

- 8% of children said they now cycle to school every day, up from 4% before Bike It.
- 22% of children said they now cycle to school at least once or twice a week, compared to 12% beforehand.
- The percentage of children who said they never cycle to school dropped from 78% to 63%.

Each Bike It officer works with up to 12 schools each year, and provide ongoing support as required.

Nearly half of children say they want to cycle to school, and Bike It officers work to overcome the barriers that prevent them doing so. These can include low levels of bike ownership, cultural norms, fear of busy roads, restrictive school policies, and issues over bike crime and theft.

Sustrans, which launched Bike It in London in 2006, is piloting the School Mark this year to ensure the newly-created cycling culture continues long after the Bike It officer moves on.

YOUR LOCAL AREA – Transport and travel

Local research

There are three elements of the local area to consider here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together these make up the local community. Below are some key questions that need to be researched in relation to travel and transport in the local area. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column then becomes the basis for school and community enquiry.

1. What sort of changes would people like to see in relation to transport?
2. What examples of lower emission cars or lower car use can be found?
3. How easy is it to walk and cycle from place to place in your locality?
4. What changes would be needed to make walking and cycling easier?
5. What would make it easier to take longer journeys by rail or coach?
6. What evidence have you found in your school and community of the changes happening that will help to create a future with more sustainable transport?

Final questions

On finishing the work you have done on sustainable energy, spend some time on your own thinking about how you would like to complete the following sentences.

As a result of exploring this issue:

i) I have learned...

ii) I now feel...

iii) I personally intend to...

iv) With others I would like to...

v) I think that the school should...

USEFUL STARTING POINTS

- George Monbiot (2006)
  Heat: How to Stop the Planet Burning, Allen Lane.

  George Monbiot is one of the world's most influential radical thinkers and an authority on all issues relating to sustainability. This excellent book is filled with sharp insights backed by careful research on the need for a 90% cut in carbon emissions by 2030. Both energy and transport are discussed in detail.

- Sustrans (2010) *Low carbon travel: reducing the climate change impact of road transport.* Information sheet.
  Available at: www.sustrans.org.uk

  This document is a useful and informative summary of what is being done in the UK to move towards a future with more sustainable transport. Sustrans is the UK's leading sustainable transport charity and works to reduce the environmental and resource impacts of transport.

- Sustrans (2009) *Do Humans Dream of Electric Cars? Your Journey to Sustainable Travel,* Bristol: Alastair Sawday Publishing.

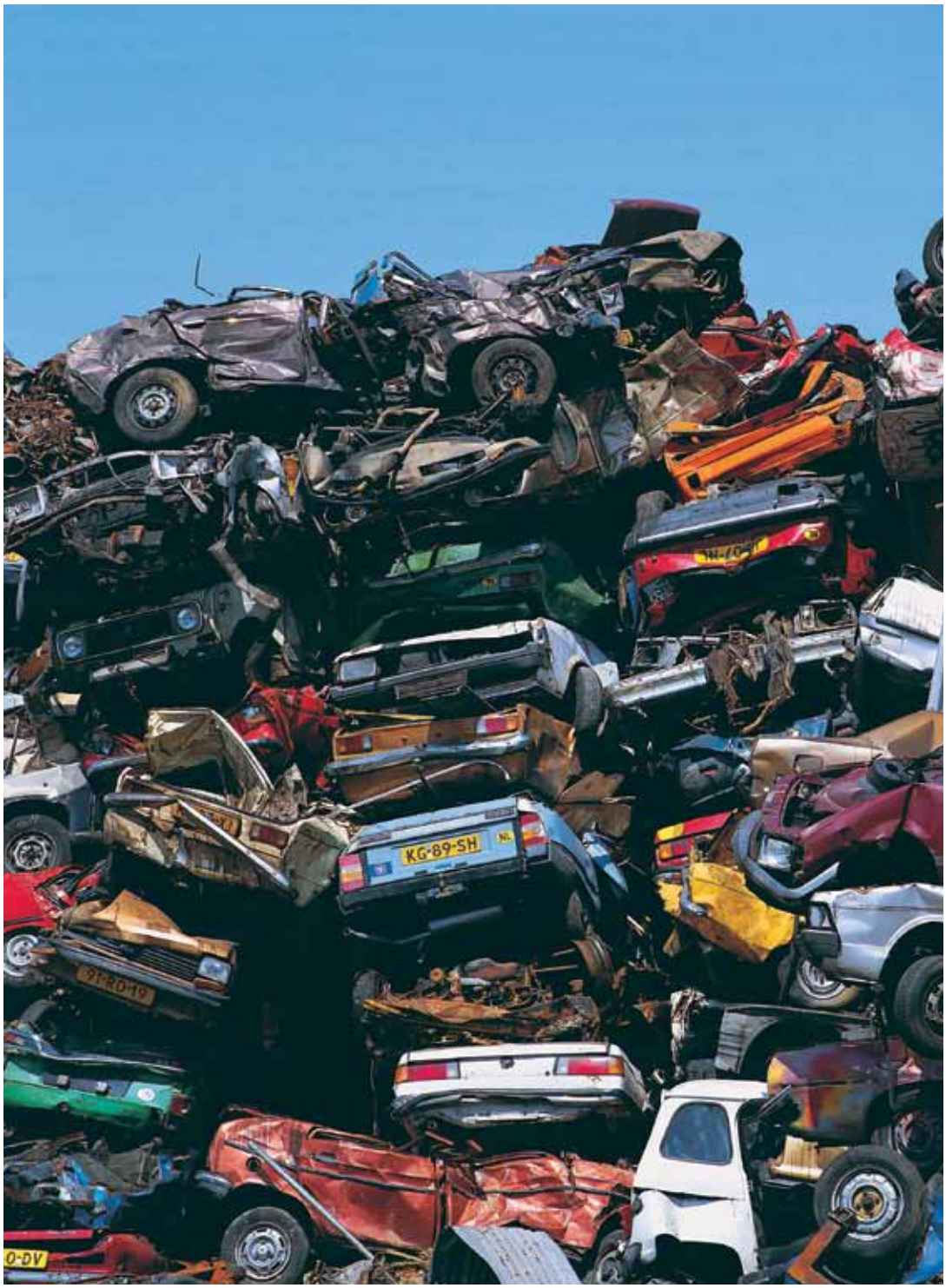
  'A no-nonsense approach to sustainable travel that outlines the simple steps needed to achieve a low-carbon future. Packed with statistics and facts and information on how to travel more sustainably and create a culture that sees this as a good thing.'

- Yellow Bus Commission (2008)
  Report and recommendation. Online.
  Available at: www.ysbcommission.com/research/index.html

  The Yellow School Bus Commission was set up in order to examine and quantify the environmental, social and educational benefits of a nationwide network of dedicated home-to-school transport. This report reviews existing yellow school bus initiatives operating in Britain. The Commission lobbies politicians to support a national network of such buses.

Cheshire County Council (2010) *Walking Bus Best Practice Guidelines*. See under *Walking Buses*.
Available at: www.cheshireeast.gov.uk/transport_and_travel/sustainable_school_travel.aspx

This is an excellent example of guidance and support for schools wishing to set up a walking bus scheme. A most useful document that covers: preparation, children, ratios, routes, timetable, registers and risk-assessment.



Car scrap yard, Amsterdam, Netherlands.

9. CONSUMING AND WASTING

"Over the last three decades we shifted from being consumers to being turbo-consumers. In that time our consuming addiction raced away with us – gratification could no longer be deferred, it had to be instant [...] throughout the 1980s and 1990s what we bought became solidly entwined with our identity. Now we are what we buy. "

Neal Lawson (2009) *All Consuming*

Understanding the issues

Everything that we buy, use and then dispose of has a major impact on the lives of others and on the healthy functioning of the planet. For most of human history, people made do with the basics of life or, when some wealth had been accumulated, extra comforts and even luxuries. The poet William Wordsworth was already concerned about such things in 1807 when he wrote:

The world is too much with us; late and soon,
Getting and spending, we lay waste our powers;
Little we see in Nature that is ours;
We have given our hearts away, a sordid boon.

Things did not begin to change on a large scale until the late 19th and early 20th century when industrialisation, cheap raw materials from colonised countries, and rising wages began to create a surfeit of goods and the beginning of a mass consumption society in Europe and America. From the 1950s onwards, the breadth of choice for consumers over a wide range of products brought increasing choice to people's lives. This applied to the richer industrialised countries of the world and to rich enclaves in poorer countries, but not to most of the world's population.

What have been some of the consequences of such mass consumerism? Today, drinking a cup of coffee or buying a pair of trainers connects us instantly to a global marketplace. Most of our food, clothes and electrical goods, for example, come from far distant places and from unknown people. In the contemporary world we have a surfeit of goods available to us and in some ways consumption has become like a religion, giving meaning to life as we shop at the great malls specifically designed to be temples of consumerism. While this may sound

like a bit of an exaggeration, Neal Lawson in *All Consuming* (2009) sets out the many consequences of mass production and mass consumption. In particular, he argues that the pace and ferocity of consumption today has made us into 'turbo-consumers'. One consequence of this has been widespread interest in the notion of measuring our ecological footprint, ie. the impact we each have on the planet (WWF, 2011).

Increasingly, we wish to be recognised by what we have bought – whether our clothes, mobile phones, cars or houses. Central to this process is the world of advertising, which is willing to sell us everything. Among Neal Lawson's examples are: 'Without others I am nothing' (Orange), 'Life is better if lived together' (Volvo), and 'It's your watch that says the most about who you are' (Seiko). Consumerism has become a social phenomenon, the primary means through which many people now understand themselves and others. Capitalist consumerism of the last 30 years gave people what they wanted but it also made them want what it had to offer. It created both dissatisfaction and its apparent cure. The global crash of 2008 had its origins in over-consumption and greed, when loans that could never be repaid were made in the US sub-prime housing market. Greedy bankers and desperate would-be homeowners make a fatal combination.

One of the reasons why the world is awash with cheap consumer goods is because global labour is cheap. Production always moves to the places in the world where labour laws and environmental legislation are the weakest, as Naomi Klein showed in her powerful book *No Logo* (2010). The creation of many products still often involves the sweat shop labour of young people (UNICEF, 2010). And the disposal of these products creates enormous waste. Overfull wheelie bins and council efforts to increase recycling are but one symptom of the social impact of gross consumption.

Whereas previous generations took it for granted that one would 'make do and mend', the average life of most products, from PCs and mobiles to shoes and clothes, has become shorter and shorter due to their built-in obsolescence or their becoming unfashionable. So we create more and more consumer effluence and increasingly find there are fewer and fewer places to hide it.

The consumer industrial complex, with its constant manufacture of desire that can never be fulfilled, is inherently unsustainable and yet our belief in it has become essential to our being – a global addiction that we cannot afford. Through failing to distinguish between wants and needs, middle-class lifestyles in the rich countries of the world require more resources than the planet can equitably provide and create more damage than the environment can sustain. Our ecological footprint at individual, local and national levels thus urgently needs to be reduced.

What lies behind this giant social and economic shift is neo-liberal ideology, discussed in chapter 1, which became dominant in the 1970s – an ideology which stresses that everyone, from individuals to corporations, should act to maximise their own personal benefits.

> *In the 1980s a perfect storm came together to unleash the all-consuming society. We were sold not just abundance but eventually super-abundance. A consumer industrial complex was built up to produce more and to persuade us to buy more. Eventually it was given official political sanction and was encouraged to expand and dominate our world. Our emotions were to be utilised as economic functions, our habits, desires, dreams and anxieties to be mined for the profit of retailers and big business* (Lawson, 2009).

This is also why education itself over this period became more competitive and business-orientated with, for example, the introduction of SATs and league tables and the creation of a centralised national curriculum in England. Teachers and teacher trainers were not seen as trusted professionals but rather as potential dissenters who might offer pupils and students dangerous alternative views of the world. Thus in the 1980s, educators who felt that global issues such as peace and conflict or race and gender should be part of the curriculum were pilloried in the right-wing press. If they were not prepared to be included in the neo-liberal fold then they should be cast out. Fortunately, New Labour, while still neo-liberal in intent, believed that education should have a wider remit and thus encouraged the development of citizenship, the global dimension and education for sustainable development.

What are people doing?

As with other issues contributing to unsustainable lifestyles, outlined in previous chapters, there is also opposition to the global spending and wasting that occurs as a result of current consumerism. The global recession shows just how vulnerable societies are in the face of economic greed. So should we get back to unsustainable spending as soon as we can, or are there other more sustainable ways forward?

The goal here is not to stop spending and consuming, for we will always need to do this in some way. We need rather to create lives in which we are not consumed by consuming, but balance this with other elements of fulfilment – good friends, supportive families, stimulating work, a caring community. An increasing number of people are shifting their values away from a consumerist lifestyle. They want to be more self-reliant, more green, more ethically aware, more local, more conscious of their community.

Globally, there is an anti-consumerism movement that refuses to let happiness be equated with consumption (Maiteny, 2009). It is a movement with many faces and many concerns, but which opposes economic materialism and the power of the industrial consumer complex to invade every aspect of our lives. Naomi Klein (2001) gives all sorts of examples of the ways in which the branding of everything is being challenged through consumer boycotts of particular products, anti-corporate activism, and attacks against advertising.

One valuable source on behind-the-scenes product information is the magazine *Ethical Consumer* (2010), which has just celebrated its 20th birthday. Its research reports cover everything from baked beans, beer and lager to school uniform, travel and banking. Each product investigation is accompanied by a buyer's guide, with an analysis and commentary on each brand name and its associated company. While we recognise the brand names, we are often not aware of the companies that own them. Each item and company group is scored against 19 comprehensive criteria relating to differing ethical issues. These are shown in Table 9.1 below.

Table 9.1 Criteria for ethical consuming

- **Environment:** environmental reporting; nuclear power; climate change; pollution and toxics; habitats and resources.
- **Animals:** animal testing; factory farming; animal rights.
- **People:** human rights; workers' rights; supply chain policy; irresponsible marketing; arms and military supply.
- **Politics:** genetic engineering; boycott call; political activity; anti-social finance.
- **Positive ratings:** company ethos; product sustainability.

From: *Ethical Consumer*

When looking at product ratings, consumers can focus on whichever area of concern interests them most, or indeed all criteria, in making a purchasing decision. While this may make decision-making seem more complex, it is rather an indication of the many ways in which the everyday products we use may be unethically sourced.

There are many books and websites available on ethical consumerism, including *The Rough Guide to Ethical Living* (Clark, 2006) and *The Good Shopping Guide 2008/9* (ECO, 2008). Both contain an impressive level of expertise and investigate a wide range of products. There is an exciting 'Ethical Detective' project in there for older pupils.

Many schools are already involved in fair trade projects as, increasingly, are some shopping chains and retailers. Is this in addition to their other ethical policies, I wonder, or to divert attention away from other unethical practices? Fair trade is an organised social movement in its own right, with the twin aims of giving greater support to producers in developing countries and promoting sustainability. This involves the payment of higher and fairer prices to otherwise marginalised producers, and insistence on high social and environmental standards particularly in relation to crops such as coffee, tea, sugar, bananas, cotton, wine, fruit and flowers.

There is plenty of possibility for pupil involvement here. One of my students, exploring fair trade as part of a Citizenship assignment, challenged the catering manager to change the

university's procedures, and he did so. What the student went away with was the knowledge that action for sustainable change can be both exciting and empowering.

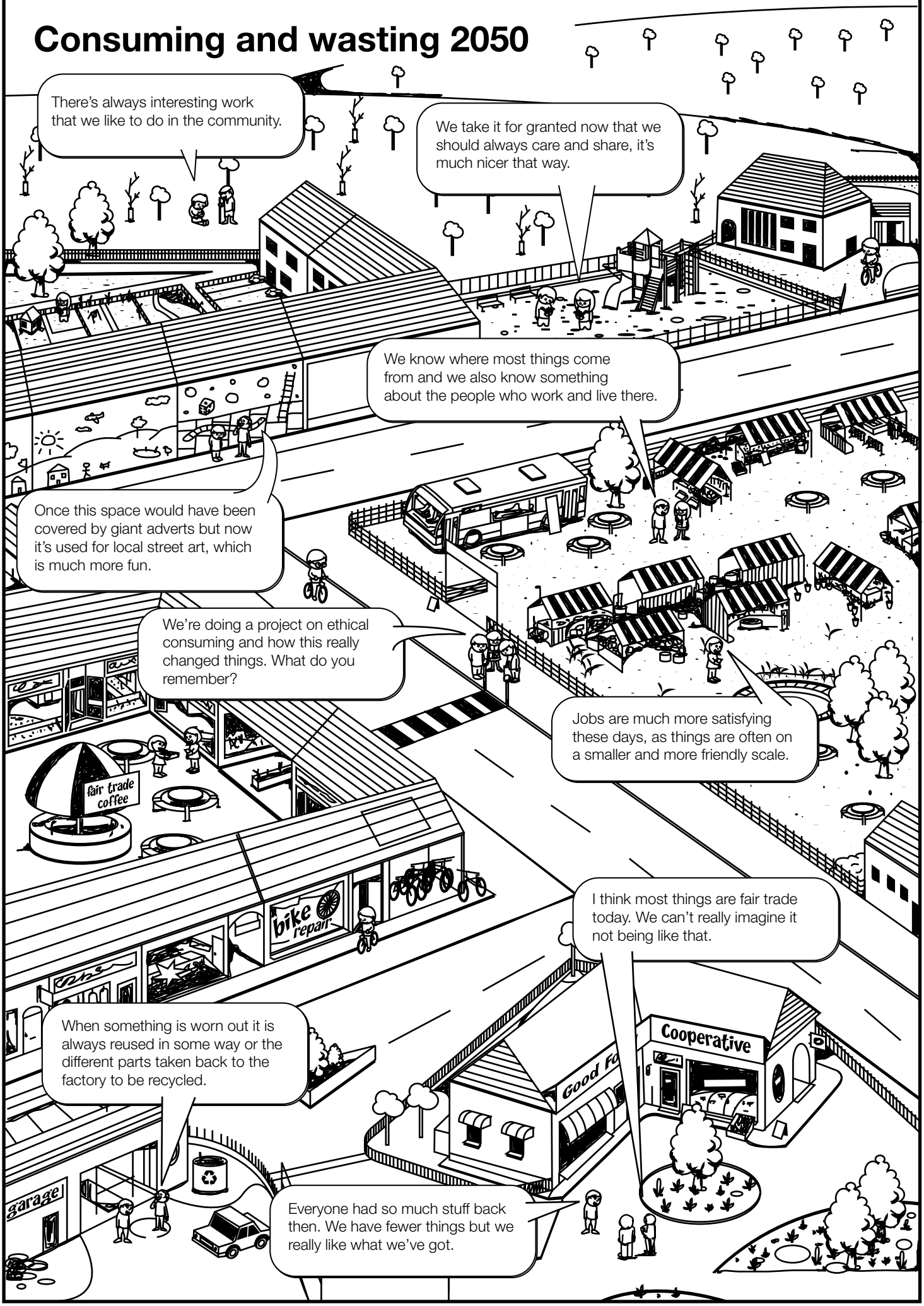
Coming from a quite different direction is the research on the nature of human happiness, which exposes the paradox of well-being. As Jackson (2008) reports, the conventional wisdom is that the more people consume the happier they are; but reported happiness seems to depend on quite different factors. Thus when the World Values Survey cross-referenced national income per head with reported levels of happiness, it found little correlation. While income per head in the United States has tripled since 1950, the proportion of people reporting themselves as happy has declined since the 1970s. This research shows that striving for self-esteem through material wealth is not the answer, but other vital factors are.

> *Subjective well-being depends critically on family stability, friendship and the strength of community. But these aspects of life have suffered in the consumer society. Family breakdown, for example, has increased by almost 400% in the United Kingdom since 1950. […] In other words, there appears to be a correlation between rising consumption and the erosion of things that make people happy – particularly social relationships* (Jackson, 2008).

So there are growing numbers of people across the world striving with others to rebuild a sense of community in their local area and to live better by consuming less. They will probably be engaged in some, perhaps all, of the aspects of sustainability explored in this book. The Transition movement described in chapter 5 is one example, and there are many others.

Schools are a microcosm of society, and what children learn or fail to learn there will deeply influence their attitude to the future. It is not enough any longer for a school to say that it recycles most of its waste. Issues of ethics and sustainability demand much more than this and pupils, staff and governors need to become knowledgeable about these matters. What the school purchases, from energy, furniture and food to materials, equipment and computers, needs to be subject to debate. Sustainable schools are beginning to lead the way in sustainable consumption.

Consuming and wasting 2050



Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for a future where consumption is more sustainable. Each pupil will need a copy of the scenario and the accompanying questions.

- Brief the class on the purpose and use of scenarios (see page 55) and go through the five questions that need to be answered.
- Pupils work in small groups. First they individually note down their own responses to the questions and then work together to create a composite group response.
- Groups then take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display

Scenario questions

Look carefully at this illustration of what a future where consumption is more sustainable might look like. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different and also listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Table 9.2 THE STORY: Consuming and wasting 2050

How things have changed

‘We really don’t know how you managed! We’ve watched films about how you used to live before the changes and it looks really mad to us. How come you hadn’t got anything better to do than shop, shop, shop all the time? All those great shopping malls with hundreds of shops, each shop with hundreds of things to buy in it, thousands of choices to make all the time. When we learned about how other people were still poor in the world, we couldn’t work out why you were so greedy. Our gran says it hurt her feet something wicked having to walk around all the shops with everyone in such a rush. It’s all a lot simpler now of course.

‘First of all we live in a simpler way, but we don’t have to go without anything that really matters. There aren’t all those adverts telling us what we should buy; there are fewer brands of everything, but they are all good quality and most come from not too far away. We don’t have to ask whether something we buy might have damaged the environment or not been good for people somewhere else in the world because no one would make such things now. Think about the planet and think about other people, that’s what we believe. We learn these things at home and at school. We can’t believe that there were once schools and teachers that didn’t think these things were important.

‘Our mum says things aren’t as mad as they used to be. She always goes on about how everybody rushed everywhere and there was never time to sit down with her friends. I think we have a slower way of doing things now. It doesn’t mean we are lazy or that we don’t get things done, there’s just more time – we don’t have to rush. Why did you do that all the time? It doesn’t make sense to us. Things like Christmas and Easter have changed too. We don’t measure Christmas by how much money people spend on us or how many presents we get. And we don’t measure Easter by how much chocolate we can eat. We enjoy both festivals but celebrate them more simply, enjoying being with our families.

‘We did a really good project in school called Ethical Detectives, where we had to find out about what people used to buy and how they didn’t know whether those things were sustainable or not. Then along came people called ethical consumers who looked at why things weren’t fair for other people and for the environment. They were like detectives really, because they investigated where things had come from and how they had been made, and whether the company making them had done bad things but not told anybody. We think they were very brave to do that, but without them and what they found out people might not have bothered to change their ways.

‘We take more care of each other these days too. Just because someone is different doesn’t mean you shouldn’t take care of them or share things with them. How come in those days some schools let children be really nasty to each other when they hadn’t done anything wrong? We shouldn’t always think we’re better than someone else because that doesn’t get things done. Working cooperatively together does.’

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate and to link the sustainable consumer scenario with some of the changes that were required to bring it about. Each pupil needs a copy of the story.

- The story can be read by the teacher to the whole class, by someone in each small group or individually.
- Discussion then arises from consideration of the three questions below, with pupils first individually writing down their responses and then taking it in turns to share these with the group.
- A spokesperson for each group then summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

CASE STUDY – The Story of Stuff

Anti-consumerist video divides parents and teachers

In 2007, Annie Leonard created The Story of Stuff, a short, child-friendly video that explains the problems with consumer culture. Teachers love it because of its straightforward format, but many parents aren't so happy.

The Story of Stuff is narrated by Leonard, who also stars as the sole human figure. Behind her, black line drawings of factories, waste, pollution and the big gold 'arrow of consumption' play across a white background. She describes the process of environmental degradation, the problems of capitalism, and the exploitation of developing world nations, while maintaining a cheerful tone. Leonard makes it clear to kids that excessive consumption has led to our forests being felled, rivers polluted, and animals becoming extinct.

The *New York Times* reports that teachers across America have begun to include The Story of Stuff in their curriculum. Hundreds of teachers have written to Leonard to say they assigned the video as homework for their class (it can be watched on Youtube and at storyofstuff.com). Over 7,000 schools, churches and others have ordered a DVD copy of the short film. Kids are reportedly responding well to the video: the *New York Times* mentions several students who have become young environmentalists thanks to Leonard's persuasive video.

However, not all parents are happy about the pervasiveness of the film. As Mark Zuber, a parent from Missoula County, notes that there is 'not one positive thing about capitalism in the whole thing'. He went before the school board to argue that since the video does not present an alternative perspective, it violated the board's standard on bias. Indeed, Leonard's Stuff

is not exactly unbiased. At times, the video can come across as preachy and one-sided. She depicts the cartoon character that symbolises the government shining the shoes of the bloated figure of capitalism. “Our primary identity has become that of being consumers, not mothers, teachers, farmers, but consumers,” she says. Throughout the video, Leonard, who describes herself as an “unapologetic activist”, voices her criticisms of capitalism, the US government, and the fashion industry.

Despite some parents’ worries about the overtly political nature of the film, The Story of Stuff is a growing phenomenon. Leonard hopes that the video will make its way around the world. “I’ve heard from teachers in Palestine and Papua New Guinea,” she says. “It is just spreading and spreading.”

Source: Posted 12 May 2009 at *http//jezebel.com/*

NB. The rest of this site appears to typify turbo-consumerism.

The video (21 minutes) is at:
www.storyofstuff.com/downloads.html

YOUR LOCAL AREA – Consuming and wasting

Local research

There are three elements of the local area to be considered here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together these make up the local community. Below are some key questions that need to be researched in relation to consuming and wasting in the local area. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column then becomes the basis for school and community enquiry.

1. What sort of changes would people like to see in relation to consumerism?
2. What examples of ethical consumerism and fair trade can be found?
3. If you ask people what makes them happy, what sort of things do they mention?
4. What changes would be needed to help reduce the amount of waste produced?
5. Where does waste currently go to, and how does it affect the environment?
6. What evidence have you found in your school and community of the changes that will help to create a future where consumption is more sustainable?

Final questions

On finishing the work you have done on sustainable energy, spend some time on your own thinking about how you would like to complete the following sentences.

As a result of exploring this issue:

i) I have learned...

ii) I now feel...

iii) I personally intend to...

iv) With others I would like to...

v) I think that the school should...

USEFUL STARTING POINTS

- Neal Lawson (2009) *All Consuming,* London: Penguin.

  The subtitle of this book is 'How shopping got us into this mess and how we can find our way out'. This is a most readable, up-to-date and informative investigation into what went wrong, why it happened, what the consequences are, and the vital alternatives.

- *Ethical Consumer* (2011) Six editions a year.
  See: www.ethicalconsumer.org

  This is one of the most informative and regular publications on all matters relating to ethical consumerism. It's always a fascinating read and provides the full story behind everything from your favourite shampoo and toilet paper to PCs and mobiles.

- Ethical Company Organisation (2008) *The Good Shopping Guide 2008/9,* London: Ethical Company Organisation.

  The seventh edition of this annual publication is also an excellent guide to ethical consuming. It gives comparative ethical shopping rankings for over 700 companies and brands, scoring each out of 100.

- Richard Layard (2006) *Happiness: Lessons From a New Science,* London: Penguin.

  A useful review of some of the research on happiness and well-being. The book explores the main causes of happiness, which of them matter most, what we can do to live more happily, and why helping others makes us happier too.

- *Fairtrade Schools.* See: www.fairtrade.org.uk/schools

  This is the Fairtrade Foundation's site for schools. It provides resources and support, a new DVD, news of what other schools are doing, and details of how to apply for fair-trade schools status. In particular, look out for the 'Fairtrade Schools Action Guide: Everything you need to know about becoming a fair-trade school'.

Solar installers on house.

10. BUILDINGS AND BIODIVERSITY

"Code homes are built to standards set in the Code for Sustainable Homes. They are more energy and water-efficient, produce fewer carbon emissions and are better for the environment. Code homes also encourage their owners to live a more sustainable lifestyle and are built in a more efficient way, using materials from sustainable sources. This creates less waste and also means Code homes have lower running costs. There are nine categories in the Code covering energy, water, the materials used in the home through to health and well-being and pollution, with points assigned to each category. […] All new homes from 2016 must be built to zero carbon standards."

Department for Communities and Local Government (2008) *Greener Homes for the Future*

Understanding the issues

Buildings

Most buildings in the UK, including schools, were built for a previous age. Or, if they were designed for the future, it was not one that included climate change. Before the 1970s, therefore, most buildings would not have been designed and built according to ecological principles.

With the awareness that we now have of the need for green design in materials and energy use, let alone buildings that can survive flood and drought, we can see more clearly the inadequacies of the country's building stock. Although over the last 30 years many new buildings have won awards for their architectural design, is this now enough? In the future, should a building that fails to incorporate green design win any award? Some critics have argued that there are still not enough architects who know how to design zero-carbon buildings.

So the issue is that most schools, homes, offices, commercial and industrial buildings are not of the standard required if they are to contribute to a more sustainable future. They were not designed to minimise heat loss or to use less energy. They were not designed to keep occupants cool in hot summers. And even if they did have air-conditioning, that would simply add to energy costs and CO_2 emissions.

Neither were buildings designed to withstand periodic flooding, something which will now occur more often in the UK. In the past and even today there has been extensive building on river floodplains and in coastal areas that are now at risk. If geography were a compulsory subject in the curriculum, more people would

grasp the fact that floodplains are exactly what they say. Where we build, as well as how we build, is now an issue.

People flooded out of their homes have always complained that the authorities do not do enough to prevent this from happening, and that they receive insufficient support afterwards. But at least in the past, such flooding was much rarer. As flooding becomes more frequent, there is an increased need for more integrated flood protection and flood relief schemes, nationally and locall,y to meet the hazards ahead.

At the household level many people are beginning to take responsibility for limiting their energy use through loft insulation, switching lights off when not needed, not leaving items on standby, buying appliances with a good energy rating, and switching to a green energy supplier. This is a significant and vital change in behaviour. However, much more support and direction will be needed from local, regional and national authorities to improve the national housing and commercial stock to the standards now required. Many builders and building companies will only change their habits as stricter green regulations and stricter building inspection comes in.

New Labour's ambitious Building Schools for the Future programme (DFES, 2006) had the potential to make a real difference to green school design, but it faced a number of difficulties.These included unsuccessful local authority submissions, issues around predicting how schools might need to evolve, and the fact that new building initiatives were privately funded – before being scrapped in 2010.

Biodiversity

Since many schools occupy quite large sites, their grounds provide substantial habitat for flora and fauna both wild and domestic. There are many opportunities for children to learn at first-hand about plants, soil and creatures, and to relate these to wider issues of biodiversity that they learn about in the curriculum.

The central issue in relation to biodiversity (short for biological diversity) is the increasing loss of species and habitats globally. The biosphere is that narrow layer of rock, soils, water and atmosphere which surrounds the planet. Relatively speaking, it is no thicker

than the skin on an apple. And all life depends on it. The air we breathe, the water we drink, the food we eat and the mineral resources we need are all here, brought alive by the sun. The greater the biodiversity, the richer and more stable the system. The value of biodiversity for humans lies in its life-giving systems, its provision of food, fuels, medicines, beauty and pleasure. Biodiversity should also be recognised in its own right, as part and parcel of a fully functioning, healthy and thriving planet.

Humans have demonstrated a devastating ability to damage biodiversity. Such threats fall into two main categories: habitat degradation and over-exploitation. John Sale, an international biodiversity consultant, writes:

> *The greatest threat is the loss and fragmentation of natural habitats. This includes clearing forests for timber or plantations, overgrazing, draining wetlands and the destruction of heathlands and coral reefs. Pollution also degrades habitats. Pesticides, sewage, oil, combustion emissions and acid rain contaminate soils, fresh water, oceans and air. […] Excessive exploitation has pushed some species to the verge of extinction. Included are the tiger, giant panda, black rhinoceros, cod and several whale species. […] Resulting from this array of human threats, rates of extinction are now estimated to be between 1,000 and 10,000 times greater than in the recent past* (Sale, 2010).

Climate change, as reported in *The Atlas of Climate Change* (Dow and Downing, 2007), will speed up the extinction or the displacement of a wide range of species. Even small changes in average temperature, let alone drought or rises in sea level, can disrupt ecosystems that rely on the interdependency of thousands of species. While grasslands and deserts can spread fairly quickly to match climate change, slower-growing forests cannot. As these ecosystems move or die out, so will the innumerable species that inhabit them. Human settlement and intensive farming will make it difficult for European birds and plants to migrate in the face of climate change.

Some of the changes relating to climate change in the UK include the following. Butterflies can only shift their range at about 1km a year, but the nation's temperature gradient is moving northwards at a rate of about 4km per year. Birds found in Scotland, such as

the snow bunting and Scottish crossbill, will become extinct because there is nowhere further for them to go. Birds such as the hoopoe and serin, more usually associated with the European mainland, will colonise southern England and become regular breeders here. Exceptionally mild winters mean that migrants from the Arctic stay put, as there is still plenty of food where they are. Conservationists fear that breeding seasons will fall out of synch with available food. EU farming policy has also had its effect. Farmland that was once left uncultivated, and thus a haven for wildlife, is now planted and, partly as a result of this, skylark numbers nearly halved between 1970 and 2006.

Britain's traditional countryside is also under threat as a result of new disease attacking trees. Native trees are being threatened by microbes, pests and environmental stresses that were never expected to take hold here. All originated from far away and only began spreading here recently. The factor that stands out as the cause is climate change. With frequent droughts and wetter winters, new pests and diseases, the trees taken as typically English will begin to disappear. Native trees threatened include the beech, yew and oak but also the non native horse chestnut and Corsican pine.

As the dominant trees change, so will the look and feel of our forests. One farmer has already planted Britain's first olive grove in Devon. The seasons too are changing, with signs of spring occurring anything between five days and three weeks ahead of schedule. As the seasons get out of kilter the links between plants, insects and wild creatures that depend on them may get lost. So climate change will bring changes, both disappearances and appearances, until a new but different balance is arrived at. Our familiar environment is changing before our eyes.

What are people doing?

Buildings

Eco-housing, or houses built according to green and sustainable principles, is a fast developing industry in the UK and other countries, whether as individual projects or new housing estates (English Partnerships, 2010). It is not a new idea – it has been around since the 1970s. Some of the key features of an eco-home or other eco-building are shown in Table 10.1 below.

Table 10.1 – Some key features of an eco-house

Location

- Building south-facing homes maximises what is called ‘passive solar gain’, using the sun to heat rooms wherever possible.
- Spaces prone to over-heating, like offices, can be built with a north-facing aspect to reduce the need for air conditioning.

Materials

- Wherever possible, eco-homes are built using natural, recycled or reclaimed materials.
- Any wood should be from a sustainable source and approved by the Forest Stewardship Council or a similar organisation.
- Materials should have a low ‘embodied energy’ (the amount of energy required to manufacture them) and be sourced as locally as possible.

Energy

- Energy should come from renewable sources and, wherever possible, be generated on site.
- Solar panels on the roof can provide all heating and hot water needs in the summer. Photovoltaic cells on the roof will generate electricity too.
- Eco-friendly energy can also come from the earth by using a ground source heat pump to warm water and contribute to central heating.

Lighting and appliances

- Low-energy lighting and energy efficient appliances are vital in cutting back on household carbon emissions.
- Fridges use a lot of energy, so they need to be as efficient as possible. Plasma screen televisions should be avoided for the same reason.
- The average household has up to 12 gadgets left on stand-by or charging, so everything needs to be turned off and unplugged.

Water

- Water use can be cut in half by using more efficient appliances such as washing machines and using rainwater to flush toilets.
- A water butt can be used to supply the garden.

Transport

- There is no point in saving energy in the home if one then gets into a car every time one wants to go shopping.
- Look for a location which is well served by bus routes and cycle lanes and set up a car pool with neighbours.

From: 'Making your home a green house', BBC News

One of the best examples of eco-housing is what is known in Germany as the Passive House. This is a clearly defined standard across most of Europe for energy efficient buildings, whether schools, houses or offices. Although mainly used for new buildings, the Passive House approach is also used for retrofitting of older houses and in Germany there is a rolling programme to retrofit all old housing stock. Buildings built to Passive House standards are highly insulated and very air-tight so that there is no heat loss. Insulation levels are very thick, windows are triple-glazed, and they include many of the other features listed in Table 10.1. Such buildings are comfortable to live in and use very little energy for heating and cooling, resulting in energy savings of over 80%.

In 2008, the UK government's Code for Sustainable Homes came into force. This measured the sustainability of new homes against nine categories of sustainable design: energy and CO2 emissions; water; materials; surface water run-off; waste; pollution; health and well-being; management; and ecology. Points are assigned to each category which, when added together, give a star rating system from 1-6. A level 6 home will have achieved the highest rating. By 2010, all newly-built homes in England were to have achieved level 3 (a 25% improvement in energy efficiency), by 2013, new homes must achieve level 4 (a 44% improvement in energy efficiency), and by 2016, all new homes must achieve level 6 (zero carbon). At one point,

government were proposing energy efficiency makeovers for existing (old) housing stock. The Coalition government is also investigating sustainable homes, but in a way that seems more low key.

As well as individual sustainable homes being built, there is a growing network of sustainable communities. For example, One Planet Communities (2010) is an international venture committed to creating 'neighbourhoods across the world that strengthen community, provide a healthier quality of life, and restore nature with an 80% ecological footprint reduction'. BedZED (Beddington Zero Energy Development) in south London is the UK's largest eco-village, where residents have been living since 2002. This award-winning community comprises 100 homes that make sustainable living attractive and affordable. Heat, electricity, water, waste and car use are all greatly reduced (BedZED, 2011). With the Code for Sustainable Homes on the one hand, and exemplar communities like this on the other, the built landscape will gradually be transformed.

Biodiversity

The protection of biodiversity, as with many other issues discussed in this book, requires action by individuals, government, local, national and international organisations. While the protection of species that are already endangered is a vital task, in some ways this is shutting the stable door after the horse has gone. A sustainable approach to biodiversity must look and plan ahead in order to ensure that no species or habitat 'accidentally' finds itself on the endangered list in the first place.

The last 10,000 years have been a period of unusually stable climate, and the world's ecosystems have really adjusted to this. Studies of past responses to a changing climate, such as major glaciations, suggest that when individual species find themselves under threat they move in the direction that they need and 'after tracking their required conditions, the surviving species will assemble into novel ecosystems the likes of which are difficult to anticipate' (Lovejoy, 2010).

While some of the changes in biodiversity that we are facing will be slow, others are likely to be more abrupt. Ecologists and others are thus tracking these changes and hoping to anticipate

their possible impact. In a largely urban landscape it is vital to have 'green corridors' so that migrating species at least have the opportunity to move on, if that is a possibility open to them.

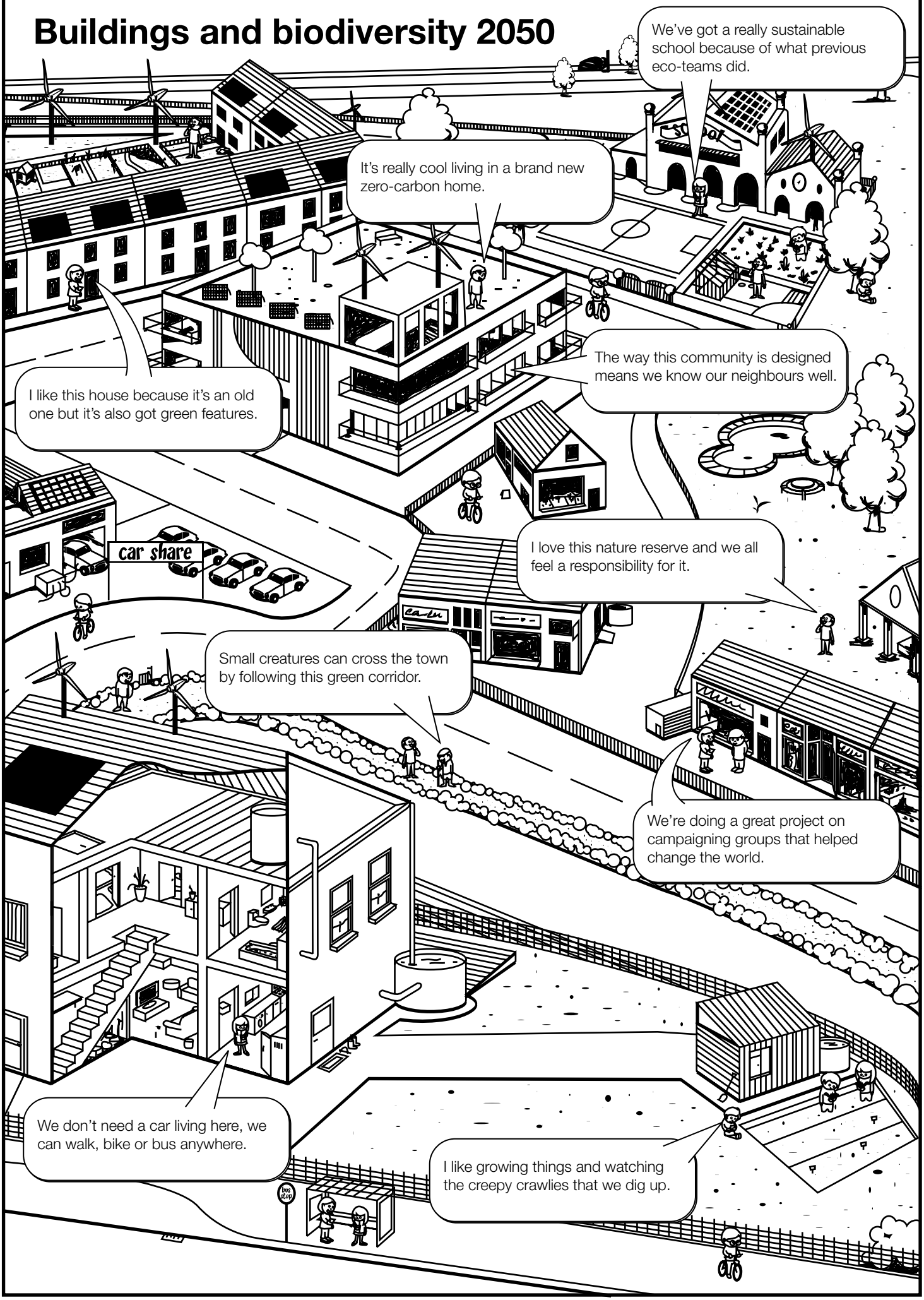
Overall, the natural environment needs to be seen as even more important and valuable than it has been hitherto. While current changes are to do with climate change, much of the damage to habitats and loss of biodiversity has come about as a result of farming methods, urban expansion and wilful ignorance. The UK Biodiversity Action Plan, with its regional and local programmes, came about as a result of the 1992 Earth Summit. Most environmental organisations, many of which date back to the early 70s, have now widened their remit to include different aspects of sustainability, including biodiversity. WWF-UK (2011), for example, has programmes of work relating to forests, oceans and freshwater (visit www.wwf.org.uk)

In the UK, all county councils have a biodiversity brief : this is an actual duty in England and Wales. One of their tasks is to prevent further fragmentation of habitats by safeguarding existing areas and improving links between them to help maintain the current range and diversity of flora and fauna. Where the biodiversity potential is greatest, local organisations look to maintain, enhance and reverse fragmentation. Crucially, part of the task is to monitor all developments in the region that may threaten biodiversity, and seek to minimise them wherever possible.

School grounds can offer infinite possibilities for the enhancement of biodiversity. First an ecological survey should be carried out to identify existing plants and animals so that they can be documented and safeguarded. After this, all sorts of measures can be taken to create and improve biodiversity – from window boxes, hanging gardens, shrubs and hedges to native flowers, ponds and bird boxes.

This benefits both local biodiversity and the children involved in such programmes. A survey of 700 schools that improved their outdoor space with the help of the charity Learning Through Landscape (2011) reported that 73% had seen improved pupil behaviour, 64% had seen a reduction in bullying, 65% had seen improved attitudes to learning, 84% had seen better social interaction and 66% said the school ground improvements had increased parental and community involvement.

Buildings and biodiversity 2050



Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for a future with sustainable buildings and biodiversity. Each pupil will need a copy of the scenario and the accompanying questions.

- ✓ Brief the class on the purpose and use of scenarios (see page 55) and go through the five questions that need to be answered.
- ✓ Pupils work in small groups. First they individually note down their own responses to the questions and then work together to create a composite group response.
- ✓ Groups then take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display

Scenario questions

Look carefully at this illustration of what a more sustainable future might look like for buildings and biodiversity. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different and also listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Table 10.2 THE STORY: Buildings and biodiversity 2050

How things have changed

‘Things have changed a lot here as you can see, although some things still look the same. The older buildings don’t look very different from the outside, but they’re very different inside. They are properly insulated, energy-efficient and use much less water – the same as the newer houses do. If you look, you

can see that they have solar PV panels on the roof in order to produce their own electricity. Some people like these homes best because they combine many of the nice things about old houses with sustainable technology. The newer houses were designed to be sustainable right from the start and so they look rather different. Some people prefer these and others don't mind which sort of house they live in!

'At first, people thought sustainable houses were just about using less energy and water, but other people realised it was about more than that. Sustainability isn't about changing just some bits in life, it's about how everything is joined up to everything else. This is why some planners built brand new eco-communities where everything is linked up. Much of the community's electricity and heating comes from what's called a combined heat and power plant (CHP) which runs on local waste wood. The community works together to produce as little waste as possible and it also has a car share scheme to limit the number of cars. Most people can walk, bike and bus to the places they need to go to. The town really works better now because everything about it, including the buildings, works in a sustainable way.

'As you can see, our town also has lots of open spaces and it's easy to get into the country too. In our school grounds we learn all about plants, crops and trees, as well as the local animals and birds. They are part of our community too. We understand now that town and country go together and that biodiversity needs to be protected. That means looking after all the creatures – from butterflies to birds and flowers to woods. So whether it is our local nature reserve, farmland or wilder countryside we always look carefully to find out what lives there and how it can be protected. We learn about all sorts of habitats in school and everyone has their favourite. Some like the parks and green spaces in towns, others like the coastline, hills, woods
zor mountains. I like visiting all of them because they are so much fun when you have learned in school about how interesting they are.

‘We don’t learn just about habitats in this country but also about what is happening in other parts of the world. We also learn about how things used to be before the great change came about. It was only because lots of people who worried about doing things in an unsustainable way got together that this happened. Once, people caught too many fish from the sea until nearly none were left. Other people kept cutting down trees and forests, although most people knew this was not a good idea. They were the people who helped change things because governments and big organisations just had to listen. Today we feel very grateful for everything they did.’

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate and to link the sustainable buildings and biodiversity scenario with some of the changes that were required to bring it about. Each pupil needs a copy of the story.

- ✓ The story can be read by the teacher to the whole class, by someone in each small group or individually.
- ✓ Discussion then arises from consideration of the three questions below, with pupils first individually writing down their responses and then taking it in turns to share these with the group.
- ✓ A spokesperson for each group then summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

CASE STUDY – An eco-community in south London

BioRegional
solutions for sustainability

BedZED - the UK's largest mixed use zero carbon community

Beddington Zero Energy Development is the UK's largest mixed use sustainable community. It was designed to create a thriving community in which ordinary people could enjoy a high quality of life, while living within their fair share of the Earth's resources.

Key achivements:

1. Higher reported quality of life, with a strong sense of community
2. Keen resident reduces ecological footprint by 43% (average reduction is 11%)
3. Significant behaviour change amongst average UK citizens

From BedZED we developed the 10 One Planet Living Principles:

1. Zero Carbon
2. Zero Waste
3. Sustainable Transport
4. Local and Sustainable Materials
5. Local and Sustainable Food
6. Sustainable Water
7. Natural Habitats and Wildlife
8. Culture and Heritage
9. Equity and Fairtrade
10. Health and Happiness

BedZED was initiated by BioRegional and ZEDfactory, and developed by the Peabody Trust. It was completed and occupied in 2002. The community comprises 50% housing for sale, 25% key worker shared ownership and 25% social housing for rent.

People move to BedZED with typical lifestyles, and over the years change their behaviour significantly. The holistic design works on three levels:

1. the design solves problems such as heating and water usage;
2. the design and services offered help people make sustainable choices such as walking rather than driving; and
3. the community have created their own facilities and groups to improve quality of life and reduce their environmental impact.

Reducing energy demand

- *81% reduction in energy use for heating* ***5.2kWh/person/day***
- *45% reduction in electricity use* ***3.4 kWh/person/day***

BedZED homes are kept at comfortable temperatures with fresh air using simple passive architectural techniques rather than high tech solutions. Energy efficient appliances, good daylighting and visible meters have led to behaviour changes.

Zero carbon energy provision

- *Local waste wood CHP (efficient and zero carbon) and solar PV*

Solar PV panels provide 20% of the electrical demand. The combined heat and power plant (CHP) delivers the remaining electricity and all the hot water through a district heating system, using local waste wood from our Croydon TreeStation. The company operating the CHP ceased trading in 2005, so the CHP isn't currently in use.

Sustainable transport

- *64% reduction in car mileage* **2,318km/year**

A comprehensive transport plan reduced car parking spaces; introduced London's first car club; provides free electric car charging points; uses a living streets / home zone layout to de-prioritise cars; located BedZED with good public transport links; and made ample provision for cyclists.

Water

- *58% reduction in water use* **72 litres/person/day**

Sustainable drainage systems (SUDS) reduced flooding whilst boosting biodiversity. Waste water recycling and efficient fixtures and fittings reduced mains water consumption.

Waste

- *60% waste recycled*

Recycling and composting is made easy, but the biggest increase has come from community initiatives, peer pressure and education.

Food

- *86% of residents buy organic food*

Allotments and a vegetable box scheme were provided; the community has initiated a local, seasonal organic vegetable market and regular cafes.

The community

- *Residents know 20 neighbours by name on average*

Good place making and community-managed facilities made the strong community the most popular aspect of BedZED for residents and workers.

Lessons for local authorities

Ensure that Local Development Frameworks go beyond PPS guidelines and the Code for Sustainable Homes, to adequately cover energy demand and provision, waste, construction materials, transport, food, water, natural habitats and the social aspects of a thriving community.

Lessons for developers

Engage partners and stakeholders to develop a shared vision of how One Planet Living can be achieved on your projects, and create a sustainability action plan together based on the ten One Planet Living principles to back this up.

Further reading

Toolkits: Part 1 – reducing the impact of construction materials; Part 2 – designing cost-effective zero carbon, sustainable communities with monitoring data.

Monitoring: 2003 data in Toolkit Part 2; updated 2007 data in special monitoring report. All reports available at www.bioregional.com

"We wake up every morning and think we're on holiday. The heat pours through the windows into the light, airy rooms. We have the sitting room upstairs to make access to the garden across the bridge easy. It's very flexible"

- Steve Tabard, a BedZED resident

BioRegional Development Group BedZED Centre, 24 Helios Road, Wallington, Surrey, SM6 7BZ, UK tel: +44 (0)20 8404 4880 fax: +44 (0)20 8404 4893
email: info@bioregional.com website: www.bioregional.com
Registered charity no. 1041466

YOUR LOCAL AREA – Buildings and biodiversity

Local research

There are three elements of the local area to be considered here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together these make up the local community. Below are some key questions that need to be researched in relation to buildings and biodiversity in the local area. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column then becomes the basis for school and community enquiry.

1. What sort of changes would you like to see in relation to buildings?
2. Where are the nearest new buildings and what Code rating do they have?
3. Where are the nearest examples of older buildings being retrofitted?
4. What plans are there in the community for future building changes?
5. What sort of changes would you like to see in relation to biodiversity?
6. What evidence have you found in your school and community of changes that will help to create more sustainable buildings and greater biodiversity?

Final questions

On finishing the work you have done on buildings and biodiversity, spend some time on your own thinking about how you would like to complete the following sentences.

As a result of exploring this issue:

i) I have learned...

ii) I now feel...

iii) I personally intend to...

iv) With others I would like to...

v) I think that the school should...

USEFUL STARTING POINTS

- One Planet Communities.
  See: http://oneplanetcommunities.org

  This inspired organisation is committed to creating a network of sustainable communities across the world. Case studies of existing and emergent communities are given, as well as the 10 guiding principles of sustainable living.

- WWF International in association with Zoological Society of London and Global Footprint Network (2010) *Living Planet Report: WWF-World Wide Fund for Nature,* Gland, Switzerland

  This is WWF's periodic update on the state of the world's ecosystems. It describes the changing state of global biodiversity arising from human consumption of natural resources and draws on two key indicators: the Living Planet Index and Ecological Footprint.

- *Schools for the Future: Design of Sustainable Schools, Case Studies* (2006) HMSO.
  www.partnershipsforschools.org.uk/documents/Design/SustainableschoolsCasestudies.pdf

  This DfES publication contains detailed case studies of 12 schools that have been designed according to sustainable principles. Plans, illustrations and comment make for interesting and thought-provoking reading.

- Peacock, A (2004)
  Eco-Literacy for Primary Schools, Trentham Books.

  A readable and helpful book for teachers, which explains the meaning of 'eco-literacy' and how this can be promoted through the existing curriculum. It includes exploration of connections, cycles in nature, how to convince others, and using without using up.

- Bird, C. (2010) *Local Sustainable Homes: How to make them happen in your community,* Dartington: Transition Books.

  "While politicians talk about sustainable housing, thousands of individuals, groups and organisations are busy putting ideas into practice now – pushing the boundaries to cut carbon emissions far beyond government targets." A book packed with inspiring case studies of new, low carbon building and imaginative retro fitting.

Bullying in the playground.

11. INCLUSION AND PARTICIPATION

"It is a remarkable paradox that, at the pinnacle of human material and technical achievement, we find ourselves anxiety-ridden, prone to depression, worried about how others see us, unsure of our friendships, driven to consume and with little or no community life. Lacking the relaxed social contact and emotional satisfaction we all need, we seek comfort in over-eating, obsessive shopping and spending, or become prey to excessive alcohol, psychoactive medicines and illegal drugs."

Wilkinson and Pickett (2009) *The Spirit Level*

Understanding the issues

Some people still think that issues of sustainability only relate to the environment. However, as this book makes clear, sustainability is about the welfare of both people and planet. This chapter looks at some of the ways that people relate to each other in society. In this context, a sustainable society would be one in which there is more rather than less equality, justice, peace and participation. A less sustainable society would be marked by more inequality, injustice, conflict and discrimination.

What do we know about people's lives in the UK today? How well do people relate to each other? How well do they resolve conflicts? How are prejudice and discrimination handled? And to what extent do people feel their voice is heard?

The research on many of these issues has recently been analysed by Richard Wilkinson and Kate Pickett (2009). Several of the examples given here are from their work. Take, for example, social relations and the levels of trust that exist between people in society. It turns out that this varies enormously between countries, with high levels of trust between people in Scandinavia but much lower levels of trust in Britain. People who trust are more likely to be optimists than those who don't. When there are higher levels of trust in a society people feel more secure and see others as more likely to be cooperative rather than competitive.

Some of the key skills in social relating are those to do with self-esteem, openness, tolerance, the ability to listen and not to judge too quickly. If people have not learned about these matters in school, nor begun to develop these skills of social interaction, it will naturally be reflected in wider society. If the cultural climate stresses the value of individualism and competition, rather than

caring relationships and the ability to cooperate on shared tasks, our sense of safety and well-being will decrease.

While many people feel that conflict is 'bad' it is nevertheless an essential part of the human condition. People will always disagree on the best way to do things, the best way of solving a problem, or what is right in a particular context. People hold differing and conflicting ideologies, whether economic, political or religious. There will always be differences of interest.

The issue here, however, is not conflict itself but the ways in which we respond to conflict. Conflict can be resolved peacefully, through negotiation, it can also be resolved through struggle, violence or even fighting. If children have not been introduced to the skills of conflict resolution at home or in school then their ability as adults to handle conflict at work or in the community will be greatly impaired. Developing the skills of conflict resolution makes it easier to resolve conflicts of interest.

While there is widespread fear of violence in UK society, this disproportionately affects the vulnerable: the poor, women and minority groups. Violence is seen by many young men as an appropriate response to actual or perceived threats to their pride. The UK is quite a violent society compared to many others across the world. In part, the triggers for this are to do with parental modelling, notions of masculinity, inequality and status. Prison data from across the world shows that more unequal societies tend also to be most punitive, and Britain comes in this category.

Issues of prejudice and discrimination also cause disproportionate damage in society, affecting those who are construed as 'different', not worthy of respect, or excluded. Prejudice and discrimination can be both overt and covert, conscious and unconscious. In particular it occurs in relation to age, class, gender, disability, ethnicity, faith and sexuality. In an untrusting society such differences often become perceived as a threat, which leads to the creation of prejudices. If such prejudices are acted on, it leads to discrimination. Those who label such matters in a derogatory way as 'politically correct' merely demonstrate their misunderstanding and insensitivity. Britain is not a happy place for many people because they feel excluded by others as a result of being elderly, disabled, poor or 'foreign'.

Most recently, attention has been drawn (again) to the high incidence of bullying in schools. Leading educational lawyers and charities are calling for a change in the law to protect vulnerable young people. This call came about after the government launched a campaign to help tackle bullying against children with special needs. As a grandparent and former teacher I am shocked to think of what is *not* happening in schools, to allow such behaviour.

Clearly, many schools adhere to a set of anti-bullying guidelines. But equally, there are teachers who turn a blind eye, who don't want to know, who don't know what to do, or are too scared to do anything about such bullying. Is it perhaps because we think 'children will be children', and it's not really a big thing anyway? Is it just one more thing to do when we've got too much to do already? Or is it that we don't really care enough? It is quite easy to create an uncaring society, harder perhaps to help turn that society around.

Wilkinson and Pickett (2009) also show from extensive international data that some societies are more equitable than others and that this does not necessarily relate to a country's overall wealth or poverty. The UK and the USA, rich countries in global terms, are among the most inequitable – in other words they have the biggest income differences internally. But what the research shows, for any country, is that the more inequitable it is, the more everyone suffers – not just the poor.

> *Across* whole *populations, rates of mental illness are five times higher in the most unequal compared to the least unequal societies. Similarly, in more unequal societies people are five times as likely to be imprisoned, six times as likely to be clinically obese, and murder rates may be 10 times higher. The reason why these differences are so big is, quite simply, because the effects of inequality are not confined just to the least well-off: instead they affect the vast majority of the population* (Wilkinson and Pickett, 2009:181).

Whether this feels like a counter-intuitive finding or not, it provides a vital insight into the processes involved in creating, in terms of human welfare, a more or a less sustainable society

What are people doing?

Since schools are a microcosm of wider society, it is important to consider the contribution they can make to social and cultural change.

This section highlights four interrelated educational initiatives that help promote inclusion and participation: emotional literacy, conflict resolution, anti-bullying, and cohesion.

Traditionally, mainstream education – particularly at secondary level – has emphasised the cognitive (head) at the expense of the affective (heart), yet both are equally important in education. Many of the hazards outlined in the first part of this chapter arise through a lack of emotional literacy – the ability to recognise one's own emotions, to own them, to express them appropriately and to allow others to do the same. For many people this is not something they are used to doing or indeed want to do. As a result, feelings are repressed or projected onto other people – a sure recipe for chaos in the classroom and elsewhere.

In a school that seeks to foster emotional literacy, young people:

- Are given the opportunity to explore the emotions they are experiencing in school.
- Are engaged in actively building collaborative relationships with their peers.
- Have people they can talk to when they are in distress or find themselves caught up in conflicts with others.
- Are encouraged to be open with their teachers about how they experience lessons and other aspects of school life (Antidote, 2003:3).

The difficulty, of course, is that teachers themselves may not have such skills. Both pupils and teachers need to feel capable, listened to, accepted, safe and included.

The DCSF (2010a) has particularly promoted social and emotional aspects of learning (SEAL) in schools which, if well done, has been shown to greatly enhance behaviour and learning (Park and Tew, 2007). It is crucial to note, however, that this involves much more than just being nice to one another or being a good listener. People's personal and professional lives can become more open and enjoyable if, as adults, we also are prepared to engage in this journey.

In an emotionally literate school or community there will be less conflict because students will be able to communicate their needs

and feelings more clearly with each other. When I used to tell my student teachers that they would need to be good at conflict resolution they always looked shocked, as if this had never crossed their minds. But conflict is an inescapable part of the classroom, playground and human condition because children and adults differ in their wants and needs, purposes and goals. All teachers would find life easier if their pupils had been taught some creative and non-violent ways of handling conflict. One such process is peer mediation, which can be taught to children to resolve disputes between pupils.

> *Mediation is a process whereby people involved in a dispute enter into a voluntary agreement to resolve the problem collaboratively. By establishing agreed ground rules for the conduct of the mediation, a neutral mediator enables the participants to identify the issues by talking about the situation from their own point of view, to be heard by the other participant(s), and to say what their preferred outcome would be* (Baginsky, 2004).

In school this consists of four elements: agreeing ground rules, communicating clearly, looking for common ground, and resolving the conflict, as shown in Table 11.1 below.

Table 11.1 – Key steps in peer mediation

1. Agreeing ground rules

- No name calling
- No interrupting each other
- Telling the truth
- Abiding by the final decision

2. Communicating clearly

- Using 'I' statements – 'I felt hurt when you said…'. NB. This is the opposite of a 'You' statement where one blames the other person
- Using active listening – this is really listening, not just pretending to listen
- Understanding the other person's point of view

3. Looking for common ground

- Brainstorming several possible solutions
- Thinking as creatively as possible
- Looking for and identifying common ground

4. Resolving the conflict

- Finding a win-win solution – one that is acceptable to both parties as opposed to merely creating a winner and a loser
- Clarifying the details of this for each party
- Agreeing to abide by the decision that has been made

Clearly schools need support in developing their own programmes of conflict resolution and Belinda Hughes' book *Just Schools* (2004) is a valuable resource in this respect.

In an emotionally literate school there will also be a considered approach to the issue of pupil participation. Of course 'pupil voice' and pupil participation can sometimes be a sham: as one student recently told me: 'Yes, we have a school council, but the head vetoes decisions she doesn't agree with'. Such notions of participation are manipulative, and what students learn is that it's not worth getting involved. Higher order participation is a competence which needs careful developing and nurturing. Chris Gayford's research (WWF, 2010) shows how well-run school councils can be vehicles for genuine pupil consultation, offering the opportunity for participation in decision- making, planning and carrying out action in a variety of different ways.

While the DCSF (2010b) is quite clear about the need for anti-bullying programmes in school, children's charities argue that much more needs to be done about this issue. Perhaps, like emotional literacy, the issue of bullying makes some teachers uncomfortable.

Robin Richardson (2008), in his excellent book *Racist Incidences and Bullying in Schools*, shares the thoughts and experiences of children who have been on the receiving end of such hurtful behaviour. He points out that all bullying normally

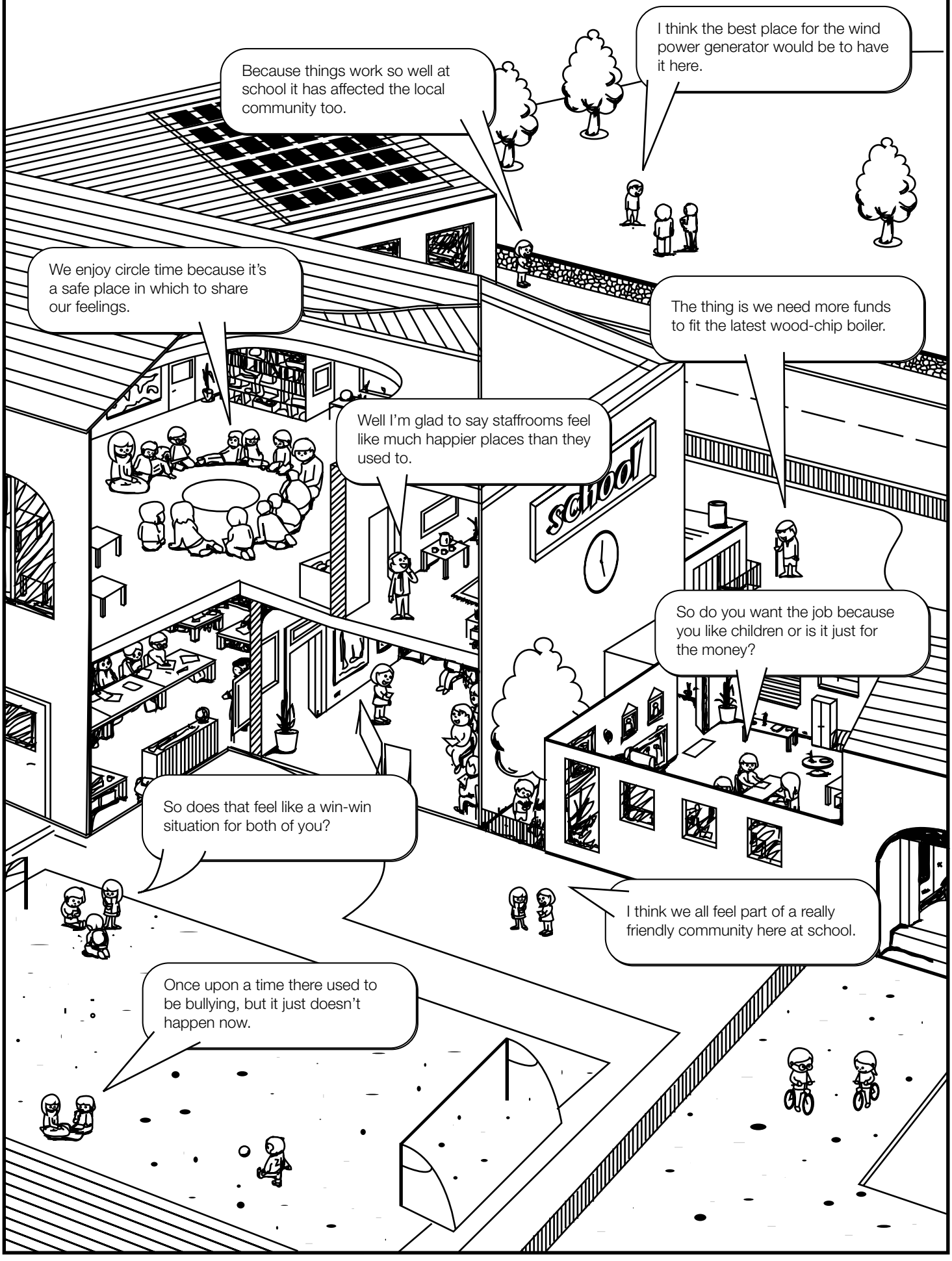
has the following features: i) it is repetitive and persistent; ii) it is intentionally hurtful; iii) it involves an imbalance of power, leaving someone feeling helpless to stop it; iv) it causes feelings of distress, fear, loneliness and lack of confidence in those on the receiving end. When teachers refuse to see the occurrence of bullying it is often because they have not actively listened to the child's feelings.

The title of Richardson's chapter on the ways teachers respond to bullying is 'Oh, just call them something back', an all too frequent comment from teachers. He identifies four main types of response. These are *dismissive*, in which the teacher makes light of the incident, thereby tacitly condoning the behaviour; *punitive*, administering punishment but without any explanation about why bullying is wrong; *corrective*, telling the children it's wrong and just filling in the forms; *restorative* and *transformative*, which enables offenders to take active responsibility for their actions. It is the latter approach that is now attracting the most interest and attention in youth work and school contexts (Hughes, 2010).

Richardson has also written clearly and insightfully on issues of inclusion and community. In his book *Holding Together – Equalities, difference and cohesion* (2009) he offers invaluable guidance on how schools can model equality and justice by fulfilling statutory requirements on disability, gender, religion, sexuality, ethnicity and community cohesion. For each of these strands he explains their importance for school policy and their implications for the curriculum, and gives practical guidance on legal frameworks and relevant organisations. As always, Richardson's writing on such matters is a model of clarity which always inspires one to think and act more critically and creatively on matters in hand.

If schools wish to offer young people an experience of sustainability, this cannot just be about environmental responsibility (welfare of the planet) but also about personal and institutional responsibility (welfare of people). For a school or community to be truly inclusive, participative, resilient and sustainable, initiatives such as those described here need to be equally integral to school life.

Inclusion and participation 2050



Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for a more inclusive and participatory sustainable future. Each pupil will need a copy of the scenario and the accompanying question.

- ✓ Brief the class on the purpose and use of scenarios (see page 55) and go through the five questions that need to be answered.
- ✓ Pupils work in small groups. First they individually note down their own responses to the questions and then work together to create a composite group response.
- ✓ Groups take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display.

Scenario questions

Look carefully at this illustration of what a scenario for a more inclusive and participatory sustainable future might look like. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different and also listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Table 11.2 THE STORY: Inclusion and participation 2050

How things have changed

‘Things are probably very different from what you experienced in school. Everything works much better now, especially the way we get on with each other and with teachers. When you were at school there were some teachers and some schools that were beginning to work in a much more friendly way. This is now what happens in all schools.

‘What really changed was that teachers decided they should listen to what we’d got to say, and that this didn’t mean we would mess up their world. After all, without children there wouldn’t be any schools! We knew when things were working well and also when they weren’t.

‘Of course we wanted to learn but not always in the way that teachers thought we should. In particular we wanted to find out how to get on better with each other and how to get our voices heard. We knew that some teachers didn’t really want to hear how we felt, but when they began to listen this made all the difference.

‘Once teachers discovered that really listening to us wasn’t that scary it made more sense of the way we behaved in school. They also realised that they needed to listen to each other more carefully and talk about what they were feeling, as well as about what they knew. What a change that was! I think it was originally called emotional literacy, a rather posh term for what we now take for granted.

‘We start by talking about and dealing with what we are feeling! This helps us to settle down better to the work we need to do. It brings you closer to other people, including your teachers. What we also liked was that this led on to all sorts of other things. Once you begin to listen carefully to other people and they listen to you, there are all sorts of things one can talk about.

‘For example, it’s easier to sort out differences and possible quarrels by not attacking the other person but realising that they may have an important point of view too. The idea that

one can sort things out and have a win-win situation is great. Children used to think it was about being a winner or a loser, so no wonder it was difficult to sort things out.

‘This helped make bullying become a thing of the past, because if you listened properly to other people you found out that they weren’t necessarily threatening you at all. So we learned to work together to resolve things. It really made a difference when those who were bullies had to look at how the things they’d done affected other people. This helped them see that what they did was not always a good thing.

‘As for all the other things that people used to think made them ‘different’ from each other like gender, ethnicity, religion and disability, well it didn’t seem to matter any more. We are all the same underneath, and this is the most important thing to remember. Of course there are differences, but we don’t see why anyone ever thought this was a problem in the first place. We wish you could come and join us here.’

CASE STUDY – from Antidote

Making schools even better

Development director **Marilyn Tew** describes Antidote's approach to getting staff and students to work together on shaping an even better environment for learning

Imagine a school where student behaviour is under control; no serious bullying has been reported; academic results are above the national average. Should staff and students spend time thinking about how the school could improve the quality of communication and relationships? You might argue that there is no point in stirring the pot.

An alternative view would be that schools are like any other organisation: cliques form; taboos develop; conflicts bubble up; resentments simmer. Despite good academic results and the lack of any pressing 'problems', improving the emotional environment might well be the key to making teaching and learning even better.

Antidote approach

It was this perspective that inspired the development of Antidote's process for:

- promoting the wellbeing of everyone in the school community
- increasing their engagement in learning and school life
- enhancing the quality of learning.

The approach is built around the School Emotional Environment for Learning Survey (SEELS), an online survey designed to discover how far staff and students feel capable, listened to, accepted, safe and included (CLASI).

Our research showed that feeling CLASI enabled members of the school community to speak in an open way about the things that affect their ability to teach and learn, and to evolve through this conversation strategies for making things even better.

There are three important points to make about this process:

- The survey is anonymous. By persuading staff and students that there is no possibility of judgement or recrimination, we enable them to say precisely what they think and feel.
- What they say may appear to some as nothing other than 'whinging' and 'sounding off', but this may be what they need to do in order to reach a place where they can engage constructively in the search for creative ways of making things better.
- Hearing this information may not be a comfortable experience for senior leaders, and yet it will take them part of the way to finding how to address the issues that emerge.

One school

One of the schools that recently engaged in the Antidote process was a fairly typical inner-city primary with 350 students from many different ethnic backgrounds. The first impression one receives when visiting the school is of somewhat cramped conditions: a narrow corridor passes through the reception office; the walls are painted in dark colours. Yet there is a buzz about the place: parents sit on chairs inside the front door waiting to be seen; confident children walk sensibly from one part of the school to another – carrying messages, running errands. All around productive, calm, engaged children are being looked after by adults who evidently enjoy their work.

All around productive, calm, engaged children are being looked after by adults who evidently enjoy their work

The survey confirmed that children did indeed love their school and their teachers.

Many said that they:

- experienced the school as a supportive place where they were listened to and encouraged to do their best
- felt physically and emotionally safe in every part of the school
- had a sense of connection to adults, other children and their special friends
- felt positive about coming into school.

Others, though, described:

- children being nasty to them
- the playground feeling unsafe
- a feeling that nobody listened to them and that they did not matter in the school community.

A full picture of what was going on for students needed to incorporate both perspectives. It turned out that there was a lot of conflict in the playground. Although some clearly coped better with this than others, the impact on learning was negative for everyone. All the students were aware that the school would be an even better place if they could develop good strategies for getting on with one another.

Adult realities

It was equally true for the staff that building a full picture of what was going on required people to think about different sets of experience. Many said that they felt:

- satisfied by their work
- positive about the children and their colleagues
- able to speak their mind.

However, they could quickly understand why others felt disconnected from their colleagues and lacking in the sort of support they needed, leading them to say things like:

- 'there is a feeling of people being in isolated groups and not being part of the whole'
- 'people are not always willing to share with and support others'
- 'you can be made to feel belittled because of your position and qualifications'.

It was clear that the main issue sapping wellbeing and job satisfaction was lack of time for meaningful communication with relevant people. Ideas, resources and talents were not being fully used, resulting in frustrated professionals and an impoverished experience for children.

Defensive positions

We sometimes find that senior managers respond to these sort of findings by:

- trying to fix things as quickly as possible
- expressing shock that people have spoken in this way
- trying to argue away negative reports as the views of a minority
- putting the blame on people's lack of professionalism or maturity.

By presenting these findings to staff and students as a series of charts, SEELS makes it possible for the findings to be discussed in a more open way. Our role is to stimulate people's curiosity. Why do particular groups in the school experience things so differently? What explains why particular issues have come up? By enabling people to see the school through the eyes of others, we try to ensure that the conversation leads to shared understanding both of what is going on, and what needs to be done about it.

Consultation

In this particular primary school, we found it helpful to discuss with staff and students some open-ended questions arising out of the original data.

Students were asked to think about:

- what contributed to children not feeling safe outside classrooms
- what explained the difference in how boys and girls experienced the school.

Staff were asked to think about:

- why so few people felt there was a sense of common purpose
- why non-teaching staff did not feel sufficiently listened to and enabled to realise their potential.

The information that came out of people's thinking about these issues was collated and put into a second survey. Like the first, this was confidential and carried out online. This time, though, it:

- was specific to the school
- enabled people to give their own account of what was going on – informed by their group discussions
- provided an opportunity for exploring whether particular views were shared by many or only a few.

Strategy meetings

We developed a diagram based on the new findings to show how the different elements in the school impacted on one another. By the time we came to present this to staff and students, we had been working with them for three months. By avoiding premature conclusions about what needed to happen, we had started to build people's trust in the process. Seeing that we were really interested in what they had to say, they also became more confident that the process could make things even better for them. This helped them to be more thoughtful, constructive and creative in what they put forward.

What followed was a series of strategy meetings, bringing together teachers, support staff and student councillors in separate groups to look at how things could be improved. As a result of these meetings, they groups produced:

- a series of strategies they wanted to share with the senior team and other staff
- an account of how each strategy could be implemented and resourced
- suggestions for tackling time and training implications.

Simplicity

Although teaching and non-teaching staff met separately, they discovered that they had very similar issues. Unsurprisingly, therefore, they came up with complementary sets of strategies that included:

- daily, funded time for teachers and teaching assistants to meet together
- better use of noticeboards, newsletters and information files
- a daily staff briefing.

For the children, the strategies were focused on building better relationships and gaining a strong sense of connection to one another. They included:

- developing common rules for the different lunchtime games
- trained student referees
- circle time three times a week
- peer mentors, trained in conflict resolution.

These strategies are, of course, striking in their simplicity. You may look at the list and shake your head in disbelief. How could any school not already have these things in place?

These strategies are, of course, striking in their simplicity. You may look at the list and shake your head in disbelief. How could any school not already have these things in place? Yet this is the sort of picture we find wherever we work. The result is that staff feel less capable, less supported and increasingly out of control – firefighting behavioural issues rather than working together in a sustained, strategic way.

Also, as important as the strategies themselves was the experience of the whole school in working together on their development. They had learned to listen more attentively to each other and to take a greater interest in other people's experiences. They felt sufficient ownership of the strategies to get behind them, and to call their peers to account when things were dropped. And they had learned to engage in ongoing conversations with their colleagues about how to make things even better. Our ongoing role with the school is to ensure that these conversations continue.

marilyn@antidote.org.uk

To find out more about the School Emotional Environment for Learning Survey (SEELS) and the Antidote process, go to www.antidote.org.uk, e-mail emotional.literacy@antidote.org.uk or phone 020 7247 3355.

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate and to link the inclusion and participation scenario with some of the changes that were required to bring it about. Each pupil needs a copy of the story.

- The story can be read by the teacher to the whole class, by someone in each small group or individually.
- Discussion then arises from consideration of the three questions below, with pupils first individually writing down their responses and then taking it in turns to share these with the group.
- A spokesperson for each group then summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

YOUR LOCAL AREA – Inclusion and participation

Local research

There are three elements of the local area to be considered here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together these make up the local community. Below are some key questions that need to be researched in relation to inclusion and participation in the local area. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column then becomes the basis for school and community enquiry.

1. What changes would you like to see in relation to inclusion and participation?
2. What is happening in relation to learning the skills of emotional literacy?
3. Where can you go to learn about ways of resolving conflicts peacefully?
4. What help do you need in relation to issues of bullying?
5. Where is discrimination occurring and how can you help change this?
6. What evidence have you found in your school and community of changes that will help to create a more inclusive and participatory future?

Final questions

On finishing the work you have done on inclusion and participation, spend some time on your own thinking about how you would like to complete the following sentences.

As a result of exploring this issue:

i) I have learned...

ii) I now feel...

iii) I personally intend to...

iv) With others I would like to...

v) I think that the school should...

USEFUL STARTING POINTS

- Antidote. See: www.antidote.org.uk

  This is one of the leading organisations for supporting schools in becoming more emotionally literate. It provides quality resources, advice, evaluation tools and conferences for educators and is widely respected by all those who come into contact with it.

- James Park and Marilyn Tew (2007)
  The Emotional Literacy Pocketbook, Teachers' Pocket Books.

  An invaluable resource which contains just about everything you need to know about using emotional literacy to make teaching and learning even more enjoyable in your class or school.

- Chris Gayford (2010) *School councils and eco-councils: involving pupils in decisions and action for sustainability*

  A heartening report on a small-scale enquiry into school councils and eco councils. Key findings and case studies capture effective means of involving pupils in consultation and action, particularly in relation to education for sustainability, as well as showing the benefits – to individuals, the school community and the school environment.

- Robin Richardson (2009) *Holding Together – Equalities, Difference and Cohesion,* Trentham Books.

  This is a definitive resource that offers clear and invaluable guidance on the school's legal responsibilities to promote equality in relation to ethnicity and gender and to promote community cohesion.

- Robin Richardson and Berenice Miles (2008) *Racist Incidents and Bullying in Schools: How to Prevent Them and How to Respond When They Happen,* Trentham Books.

  Another key resource for teachers, which explores and explains the origins and nature of racist incidents and bullying, why they must be addressed, and how they can be resolved in ways that will help create a more just and peaceful school.

© AFP / GETTY

A resident fills a reusable plastic bottle from a new public drinking fountain on the first day of a locally agreed bottled water ban in Bundanoon, Australia.

12. LOCAL WELL-BEING

"Communities generate an often unappreciated asset called social capital, the relational glue that holds communities together, or as political scientist Robert Putnam describes it, 'connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them'. As individuals in a community interact, work together and trade favours, a level of trust and feelings of reciprocity form. This is what makes a community a community rather than just people living near each other."

Erik Assadourian (2008) *State of the World 2008*

Understanding the issues

Whether you live in a city, a town or the countryside, you can begin to assess the well-being, or lack of it, of your local community by looking back at the previous chapters in Part 2 of this book. Drawing these strands together will help to provide a composite picture of communities today. In this case the yardstick is not just how happy people are within their communities, but rather how sustainable our existing communities might be.

Chapter 6 draws attention to aspects of the nation's health, such as obesity, and the role that agribusiness corporations, food processing companies and supermarkets play in supplying the sort of food that we eat. It notes that the 20th century industrial model of farming has caused extensive environmental damage and prompted debates on topics such as food miles. Climate change and peak oil will lead to significant changes in food supply and availability, so food security could become a major issue in some communities.

Chapter 7 highlights our dependence on fossil fuels as our main source of energy, and the wasteful ways in which it is used. As oil becomes more expensive and reserves are depleted, communities may be faced with energy shortages. The availability of clean water, which we also take for granted and use wastefully, is not the global norm. Climate change in the UK will lead to more frequent storms and floods, but also droughts when water shortages will become more common.

Chapter 8 shows that the present forms of transport we use – whether on land, sea or air – and the distances that we travel all contribute to climate change. The more roads that are built, the more traffic increases. Since most transport depends on oil and

its by-products for fuel there will be major difficulties ahead as peak oil is reached. The forms of transport that we use in our communities will therefore need to change drastically.

Chapter 9 focuses on the ways in which consumerism has become seen as the ultimate sign of success in richer countries. While this has led to the production and owning of more 'stuff', it has not led to greater levels of happiness in society. Rather it has led to excessive use of the world's resources and the creation of vast amounts of waste, which most people feel no responsibility for. The 'status' of many communities is now measured by the shopping mall and its contents.

Chapter 10 looks at the sorts of buildings we live in and the fact that these were designed for a previous age, prior to climate change. Most of the housing stock in our communities is wasteful of energy and water and is not designed to cope with flood or drought. Locally and nationally, biodiversity has diminished as a result of urban development, industrial enterprises and high-tech farming. As a result of climate change, existing patterns of land use, flora and fauna are also beginning to change, with further threats to the biodiversity on which all life depends.

Chapter 11 remarks on the levels of stress, violence and inequality found in many communities and the prejudice, discrimination and consequent exclusion often experienced as a result of age, class, gender, disability and ethnicity. Although Britain is one of the richer countries in the world, it is nevertheless one of the most inequitable. Such inequity affects everyone in society such that all indicators of well-being are lower than those of more equitable countries such as those in Scandinavia.

Taken together, these thumbnail sketches highlight the unsustainable nature of most communities in terms of both environmental and human welfare. This is not to condemn those who built them or those who live in them because these communities, our local communities, were built for another time, another age. But the fruits of 'progress', it turns out, have been mixed and inadvertently led to climate change. Our communities must adapt to this and also work to mitigate the impact of climate change.

Education must change too. I recall a well-known classroom activity entitled 'Bristol in the world, the world in Bristol' (you can insert the name of your own community here). It was about exploring the nature of global interconnections. Children would explore, for example, where the contents of different shops had come from across the world. They would also look at the connections their community had with distant places, such as holiday journeys or family members living far away. Marking all these links on a map of the world created a graphic illustration of our local-global interdependence. In the face of climate change and peak oil, such links take on new meanings with new implications.

It is important here to note two major traditions within citizenship (Heater, 2002). The oldest is the civic tradition, which goes back to ancient Greece where the city-states of Athens and Sparta saw citizenship as involving civic duties and responsibilities. The more recent tradition in citizenship is the liberal tradition, which has become dominant over the last two centuries. In the late 17th century, John Locke developed the theory of 'natural rights' – the right to preserve one's life, freedom and property. The liberal tradition (see chapter 1) thus came to believe in a separation between private and public life. What came first was the pursuit of self-interest, with citizens having no particular obligation to their fellows or to the state. This notion of citizenship was particularly emphasised in the Thatcher years of the 1980s and underpins the consumerism of today. It puts the individual before community, self before society, and is still a powerful current in the UK and our own communities.

In many ways these features of life today go back to the rise of neo-liberal ideology in the 1970s when the post-war notion of a welfare state was abandoned. Neo-liberalism has unquestionably helped create a more individualistic, selfish and competitive society (Gray, 2009). We are thus somewhat unready for a future which requires more socially responsible and cooperative ways of being.

What are people doing?

What people are doing in their communities in the face of these problems can also be summarised by reference to previous chapters. Chapter 6 refers to the national debate about food and health and the important role that schools have to play in this. The Food for Life Partnership is cited as an exciting initiative linking school food policy, local and organic food, growing and cooking food, community and farm links. The government's Food 2030 initiative has begun to take a more holistic view of food and farming in the light of climate change and peak oil. The interest in organic and local growing is a vital element in creating greater food security for local communities as well as the UK nationally.

Chapter 7 highlights the sources of renewable energy that are now coming on-stream and which require local as well as national support. These are being taken up by families, schools and businesses, often with the support of government grants. Peak oil and climate change make this energy transition the most fundamental one of all. People are also beginning to conserve water and are seeing this as a resource that needs to be harvested and reused. The notion of a water footprint is beginning to take hold and is vital at individual, local and global levels.

Chapter 8 shows the ways in which transport is beginning to change to become more sustainable and less dependent on oil. Much of the shift towards more sustainable transport is visible at the local level where walkways, bikeways, bus lanes and new tram systems are increasingly emphasised. Transport in major cities is being rethought and the promotion of Sustainable Travel Cities as models of a greener approach to transport is now beginning. Schools are also increasingly taking responsibility for transport issues in their own catchment area, and this too needs local support.

Chapter 9 stresses various initiatives that challenge the values of 'turbo-consumerism'. All of these oppose the economic materialism of our times, and the power of big retailers to invade our dreams. International surveys of well-being show that human happiness does not correlate with wealth but depends more on family, work, friendship and a sense of community.

Ethical consumerism increasingly challenges all aspects of daily life and exposes the unsustainable practices of many producers while highlighting more ethical and sustainable sources and products.

Chapter 10 looks at the characteristics of eco-housing and projects that are beginning to model this type of dwelling. In particular, the government's Code for Sustainable Homes will ensure that all new housing is eventually zero carbon. As with transport, local initiatives and developments are the most visible and should be used to encourage wider public and business involvement in such ventures. While biodiversity has been decreasing globally there are many local and regional protection initiatives that require encouragement and support.

Chapter 11 highlights crucial ways in which schools and the wider community can become more inclusive and participatory places that lead to greater trust, respect and quality of learning. Programmes relating to emotional literacy, conflict resolution, anti-bullying and community cohesion are gradually becoming more common in schools, and teachers have a particular responsibility for their initiation and furtherance. They are also programmes which can be effective at the community level in both youth and adult contexts.

Taken together these are some of the key features of a more sustainable community and of local well-being. They mark out the territory ahead, the territory that needs planning and building now. Communities will not adapt to or mitigate climate change without concerted action at the local level, and this is where we all have responsibility.

The classroom activity to illustrate the nature of global interdependence now needs to have a different emphasis. Rather than celebrating the distance that products have travelled to reach us, we need to celebrate the local links that support and sustain us. Other links will still connect us around the globe but those that damage people or the environment need challenging and changing.

So too do our notions of local citizenship need to change. Aristotle believed that all citizens should be publicly active and committed to the common good of society. Only by looking to the

well-being of others as well as themselves, he argued, can human beings become morally mature people. The Roman philosopher Cicero argued that if a person refuses to contribute to the life of a community, he betrays the very essence of his nature as a social animal. Derek Heater (2002:55) writes:

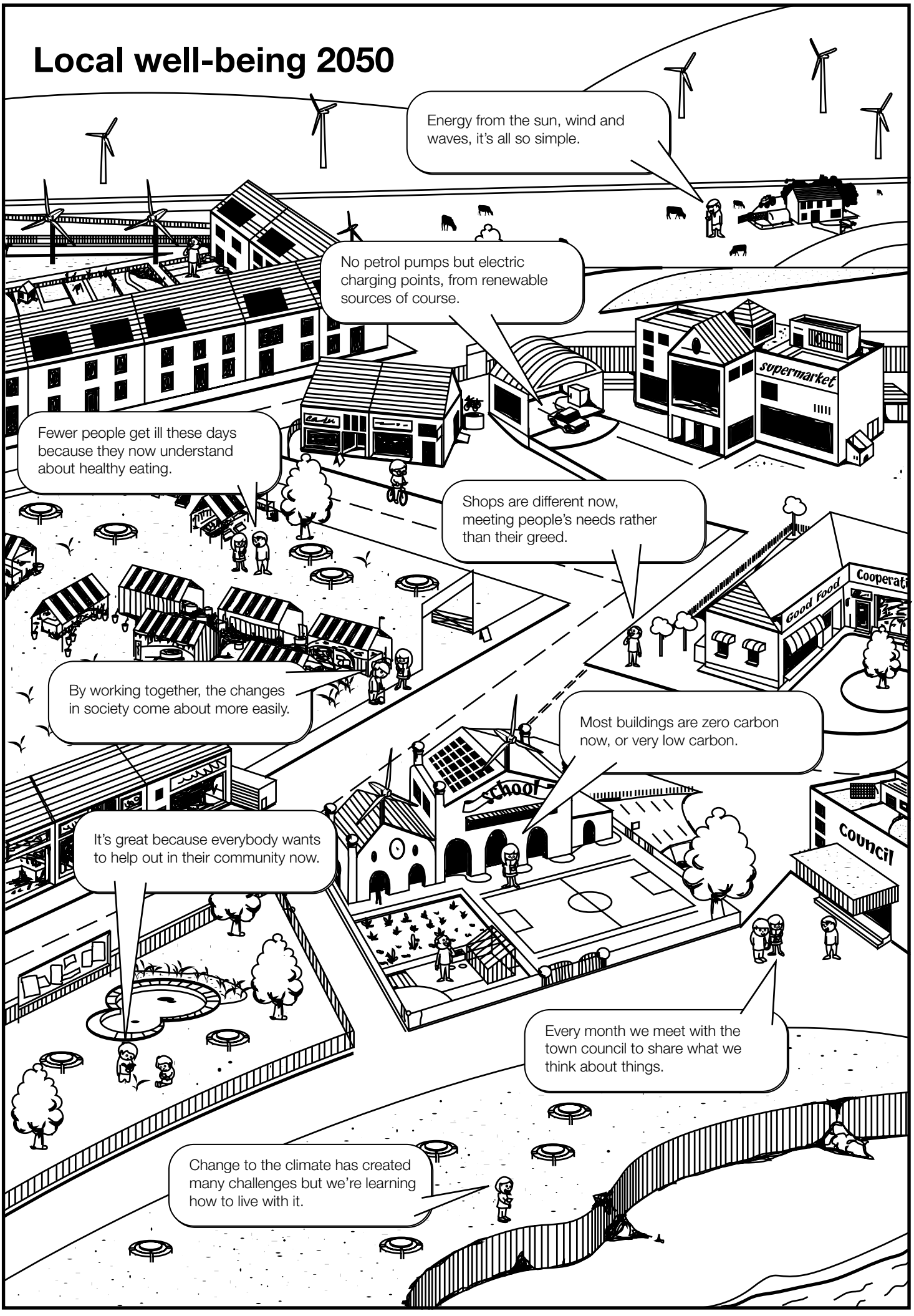
> *The republican style of political thinking places great emphasis above all on the necessity for the state and its citizens to be a community, an organic society, not merely a collection of individuals.*

It is this tradition that needs reawakening at local and national levels if we are going to create a more just and sustainable future.

The Transition Town movement is one example of how this can work in practice, with its emphasis on issues of climate change and peak oil. Their focus is on how the community can become more resilient and sustainable in the face of these twin challenges. Rather than going their own way, the initiators work to raise awareness across the community and to draw in as many people as possible to create a wider forum for debate. The process is inclusive, equitable and participatory. The initial goal is to organise a Great Unleashing, which propels the initiative into its next phase: identification of interest groups that will draw up practical plans for issues such as food, energy and transport. As these groups accumulate experience an Energy Descent Plan is drawn up to guide the community towards a low carbon future (Hopkins, 2008; Chamberlin, 2009).

Schools have a vital part to play in this discussion of local well-being. It might be that people in the local community encourage a school to set up its own eco-team and to look at issues of sustainability in the curriculum. Or it might well be a sustainable school that reaches out into the local community to show just what can be done. Either way, the school community is vital in modelling positive ways forward.

Local well-being 2050



Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for local well-being in a sustainable future. Each pupil will need a copy of the scenario and the accompanying questions.

- ✓ Brief the class on the purpose and use of scenarios (see page 55) and go through the five questions that need to be answered.
- ✓ Pupils work in small groups. First they individually note down their own responses to the questions and then work together to create a composite group response.
- ✓ Groups take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display.

Scenario questions

Look carefully at this illustration of what a scenario for local well-being in a sustainable future might look like. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different and also listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Table 12.1 THE STORY: Local well-being 2050

How things have changed

'You probably wouldn't recognise your local community today because so many things have changed. The well-being bit just means how happy people are with the community that they live in. In your day a lot of people used to complain about how things weren't like they used to be – the local area didn't feel as safe, people weren't as friendly, you couldn't leave your door unlocked. Well, you'll be glad to know that things are now more like they used to be, for your grandparents anyway. Today most communities do feel like safer places, we know our neighbours better, we do things together, and people trust each other more. It's difficult to say how this change came about but I'll try to explain.

'In your day, people weren't very good at helping each other except in relation to family and friends. Then, as people realised that climate change was really going to change things in a big way, it seemed to make more sense to work together to get things done and to look out for each other. Maybe you can't see this yet but it will have to happen. At first people were only looking after themselves, being more careful about what they chose to eat, deciding they needed to buy more carefully or waste less energy. But as people realised they were not the only ones doing this, they began to join up with others who had similar interests. For some this was about using wind power or solar power to create electricity. For others it was about healthy eating and using food that had been grown as locally as possible. So all sorts of interest groups grew up and this encouraged others to join in.

'Then more and more people realised that their particular interest was related to other people's interests – transport needed to be looked at differently, and biodiversity too. Sustainable schools played a really important part in this because children learned that all these things were interrelated, and they went home and explained this to their families. They also pointed out that school was often much more fun than what went on in the local community. This was because schools were really listening to what pupils were feeling and realised that no

one should be left out of things and that everyone should have a say. School councils and eco-teams began to be recognised and listened to. It was not always easy for more 'traditional' teachers who weren't used to this. However, listening to pupils began to be much more normal and so schools became happier places because everyone felt that they were playing a part.

'This also began to have an effect at home and in the local community. At first, grown-ups could not believe that young people really understood the issues. But they did, because of what they had learned in schools. So, young and older people together began to improve their community, making it a more sustainable place where people realised all the separate bits actually went together to make up the whole. In working together for a better future everyone felt happier about things, so local well-being became something that everyone really wanted to contribute to. That's another name for being a good citizen.'

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate and to link the local well-being scenario with some of the changes that were required to bring it about. Each pupil needs a copy of the story.

- ✓ The story can be read by the teacher to the whole class, by someone in each small group or individually.
- ✓ Discussion then arises from consideration of the three questions below, with pupils first individually writing down their responses and then taking it in turns to share these with the group.
- ✓ A spokesperson for each group then summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

CASE STUDY – Transition Network

The Principles and Purpose of Transitions

We begin this document with a redefining and a clarification of both the Transition movement's Purpose and its Principles. These set out the common motivations for the entire Network.

The Purpose of Transition

"To support community-led responses to peak oil and climate change, building resilience and happiness".

The 7 Principles of Transition

Positive Visioning

- Transition Initiatives are based on a dedication to the creation of tangible, clearly expressed and practical visions of the community in question beyond its present-day dependence on fossil fuels. Our primary focus is not campaigning *against* things, but rather on positive, empowering possibilities and opportunities. The generation of new stories and myths are central to this visioning work.

Help People Access Good Information and Trust Them to Make Good Decisions

- Transition initiatives dedicate themselves, through all aspects of their work, to raising awareness of peak oil and climate change and related issues such as critiquing economic growth. In doing so they recognise the responsibility to present this information in ways which are playful, articulate, accessible and engaging, and which enable people to feel enthused and empowered rather than powerless.
- Transition initiatives focus on telling people the closest version of the truth that we know in times when the information available is deeply contradictory.
- The messages are non-directive, respecting each person's ability to make a response that is appropriate to their situation.

"Power is shifting from institutions that have always been run top-down, hoarding information at the top, telling us how to run our lives, to a new paradigm of power that is democratically distributed and shared by us all".

Trippi, J. (2004) *The Revolution Will Not Be Televised.* Harper Collins.

Inclusion and Openness

- Successful Transition Initiatives need an unprecedented coming together of the broad diversity of society. They dedicate themselves to ensuring that their decision making processes and their working groups embody principles of openness and inclusion.
- This principle also refers to the principle of each initiative reaching the community in its entirety, and endeavouring, from an early stage, to engage their local business community, the diversity of community groups and local authorities.
- It makes explicit the principle that there is, in the challenge of energy descent, no room for 'them and us' thinking.

Enable Sharing and Networking

- Transition Initiatives dedicate themselves to sharing their successes, failures, insights and connections at the various scales across the Transition network, so as to more widely build up a collective body of experience.

Build Resilience

- This stresses the fundamental importance of building resilience, that is, the capacity of our businesses, communities and settlements to deal as well as possible with shock. Transition initiatives commit to building resilience across a wide range of areas (food, economics, energy etc) and also on a range of scales (from the local to the national) as seems appropriate - and to setting them within an overall context of the need to do all we can to ensure general environmental resilience.

Inner *and* Outer Transition

- The challenges we face are not just caused by a mistake in our technologies but as a direct result of our world view and belief system. The impact of the information about the state of our planet can generate fear and grief - which may underlie the state of denial that many people are caught in. Psychological models can help us understand what is really happening and avoid unconscious processes sabotaging change. E.g. addictions models, models for behavioural change. This principle also honours the fact that Transition thrives because it enables and supports people to do what they are passionate about, what they feel called to do.

Subsidiarity: self-organisation and decision making at the appropriate level

- This final principle enshrines the idea that the intention of the Transition model is not to centralise or control decision making, but rather to work with everyone so that it is practiced at the most appropriate, practical and empowering level, and in such a way that it models the ability of natural systems to self organise.

YOUR LOCAL AREA – Local well-being

Local research

There are three elements of the local area to be considered here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together these make up the local community. Below are some key questions that need to be researched in relation to local well-being. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column then becomes the basis for school and community enquiry.

1. What sort of changes would you like to see in relation to local well-being?
2. What is happening in relation to climate change locally?
3. What is happening in relation to peak oil locally?
4. What is happening in relation to building local resilience?
5. What is happening that helps develop a real sense of community?
6. What evidence have you found in your school and community of changes that will help to create a greater sense of well-being?

Final questions

On finishing the work you have done on local well-being, spend some time on your own thinking about how you would like to complete the following sentences.

As a result of exploring this issue:

i) I have learned...

ii) I now feel...

iii) I personally intend to...

iv) With others I would like to...

v) I think that the school should...

USEFUL STARTING POINTS

✓ Marguerite Heath, Don Row and Tony Breslin (2008) *Citizenship Education in the Primary Curriculum.* Available at: www.justice.gov.uk/reviews/docs/citizenship-education.pdf

This report argues that since the primary years are crucial in the development of healthy attitudes towards others and the community, citizenship should be granted the same foundation subject status in the primary school as in the secondary.

✓ Hilary Claire (2004) *Teaching Citizenship in Primary Schools,* Trentham Books.

This book gives a clear overview of citizenship education from early years to top primary. It sets out the concepts and processes that underpin citizenship and provides activities and ideas for classroom use, both stand-alone and integrated with other subject areas.

Peter Newman, Timothy Beatley and Heather Boyer (2009) *Resilient Cities: Responding to Peak Oil and Climate Change,* Island Press.

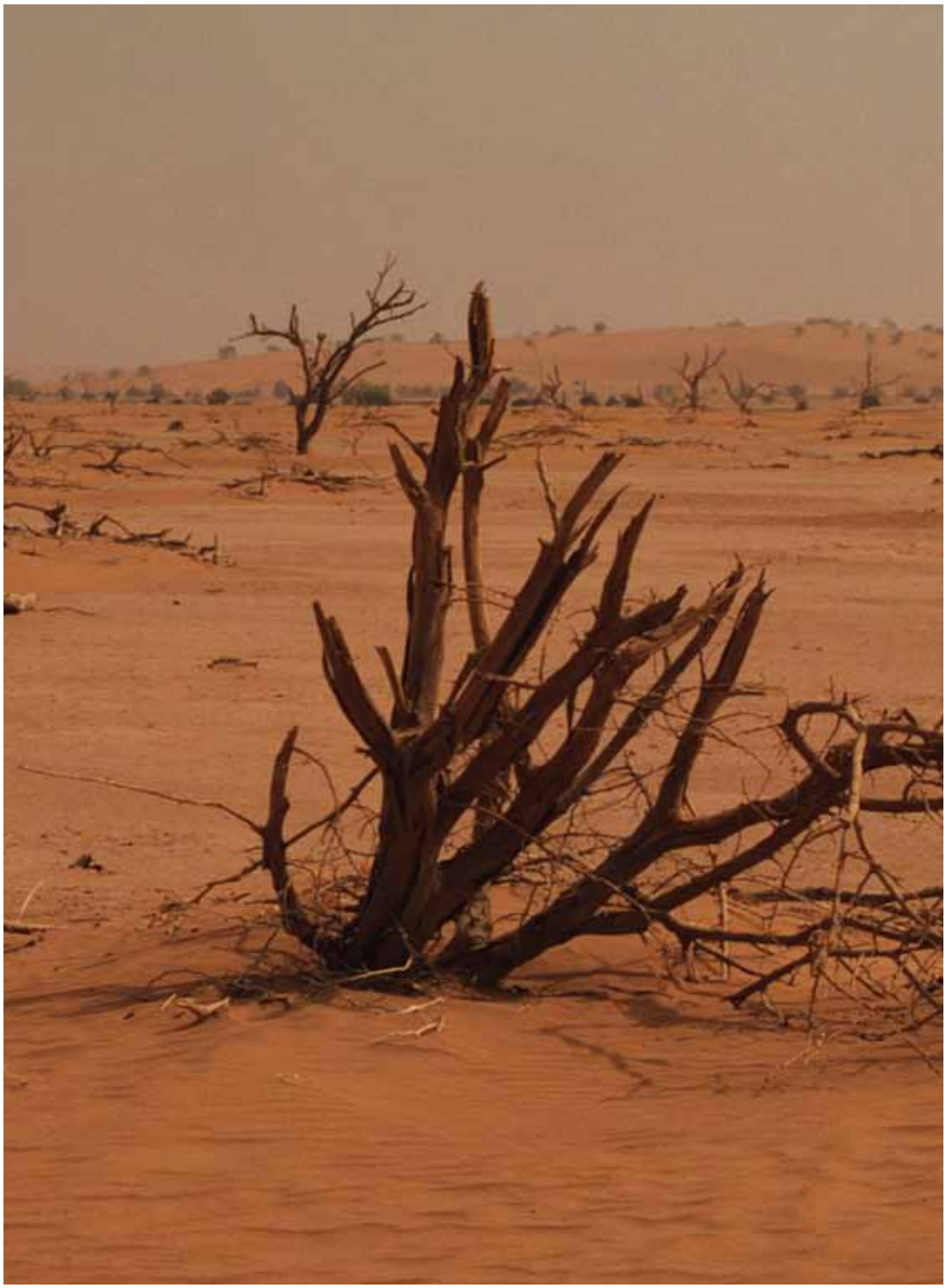
Since many cities have inefficient transport systems and badly designed buildings, they also have high volumes of greenhouse gas emissions. This book draws on existing initiatives from around the world to show how, in the face of climate change and peak oil, urban resilience can be developed through intelligent planning and visionary leadership.

Ben Brangwyn and Rob Hopkins (2011) *Transition Initiatives Primer,* Transition Nework. Available at: www.transitionnetwork.org/sites/default/files/TransitionInitiativesPrimer%283%29.pdf

This document sets out the Transition Network's purpose for communities to significantly rebuild resilience (in response to peak oil) and drastically reduce carbon emissions (in response to climate change). A visionary and inspiring document on how to become a Transition Town, City, District, Village, Community or even an island.

Shaun Chamberlin (2009) *The Transition Timeline: For a Local, Resilient Future,* Green Books.

What are the options for communities wishing to work towards a more sustainable future? This book offers four possible futures for the UK including a transition vision which sees a shift in cultural assumptions and movement towards a more fulfilling, lower-energy world.



A forest of Acacia trees destroyed by drought and desertification, Mali.

13. GLOBAL CONNECTIONS

"Living Geography is: directly relevant to people's lives and the world of work; is about change – recognises that the past helps explain the present, but is current and futures orientated; has a scale 'zoom' lens, so that the local is always set in a global context; is 'deeply observant' – it looks beneath the surface to identify the mechanisms that change environments and societies; encourages a critical understanding of big ideas like 'sustainable development', 'interdependence' and 'globalisation'."

Geographical Association (2009) *A Different View*

Understanding the issues

Each year the New Economics Foundation (2011) and WWF (2011) monitor world consumption of resources to see when the world as a whole goes into 'ecological debt'. This is the point in the year when the world has consumed more resources and generated more waste than ecosystems can produce and absorb.

In 2009 that day was 25 September. Each year we get into ecological debt a little earlier. Of course we are not all equally responsible for that debt: there are major differences around the world in relation to the environmental impact each person has. For example, by 7pm on 4 January a UK citizen would have contributed as much CO2 emissions to climate change as someone living in Tanzania would have done in a whole year. We are connected in that both countries contribute to climate change, but there is a gross imbalance of responsibility.

As previous chapters have stressed, the local and the global are inextricably linked, whether through the food we eat, the clothes we wear or the energy we use. Yet many people still seem unaware of this. In the early 21st century, particularly in the rich world, we have come to take it for granted that all the necessities of life – and more – will be instantly (and cheaply) available. If we do not acknowledge the true costs of our activities, and if we fail to act on this knowledge, we do immeasurable damage.

Who grew that crop, where and how do they live? Under what conditions do they work and what do they earn for this? Does the growing of this crop and its transportation cause damage to the environment? Who in the growing and distribution chain makes the most profit, and who the least? A bunch of flowers, a pair of jeans, a mobile phone, all are often inextricably related to issues

of inequality and injustice somewhere in the world. So, yes, we are all interdependent but in very different ways because many people and countries are in fact dependent on rich world desires (rather than needs) but poorly rewarded for their efforts.

It may be that people are not just unaware of these interconnections and their nature, but that they are oblivious of and uninterested in the global scene more generally. What goes on in other parts of the world may seem irrelevant to life here in the UK, too difficult to understand or too painful to watch. Yet once the notion of local–global connections has been grasped, one comes to understand that everything really is connected to everything else: people, environment and planet. Then the world gets more interesting, but also more uncomfortable.

The DCSF guidance on ensuring that there is a global dimension in the curriculum (see chapter 2) highlights eight key concepts that the global citizen needs to be familiar with. Part of the problem, however, is that many adults may never have been introduced to issues of human rights, social justice, interdependence, conflict resolution, diversity, values and perceptions, sustainable development or global citizenship. There can be global illiteracy in the rich world in the sense of people not knowing or wanting to know about the wider world.

If people are unacquainted with such issues then they are not in a position to act in relation to them. Of course, even if they did know about such issues they might still choose not to act. But choosing to do nothing is not a statement of neutrality but rather assenting to an unjust status quo. This is one of the reasons why citizenship was introduced into the curriculum, and as part of that the notion of global citizenship. The well-being of others in the global community should be of interest and concern in the same way as the well-being of one's local community.

A growing number of schools feel that a good way of making children more aware of others' lives and needs is through linking up with a school somewhere else in the world. However, while this should be a positive learning experience for all involved it is often done badly or inadequately because the enthusiasm of UK schools is not underpinned by the requisite insight and understanding. In a nutshell, what can happen if one is not careful is that the link becomes one of dependency rather than

interdependency. It is thus all too easy for schools in the rich world that make a link with a school in Africa, for example, to see the relationship as one of advantage and disadvantage. Framing a link in this way, even if unconsciously, means that the exchange is not one of equals but of donor and recipient. It then becomes a charitable act rather than a sharing between equals.

Julia Tanner writes:

> *A damaging school link is one which fuels negative stereotypes. In exchanging information about their lives, UK pupils may focus on their possessions and consumer lifestyle, and develop a sense of material/economic superiority, which can easily transmute into feelings of intellectual or moral superiority. This, of course, is counterproductive to the aims of education for global citizenship. […]*
>
> *Experience suggests that school linking arrangements falter if the partners do not spend enough time considering or sharing their motives with one another, or fail to work through practical issues such as how to secure the resources (human, financial and other) to set up and sustain the link long term* (Tanner, 2007).

The dilemma identified in the first paragraph above is one that is always potentially there when teaching about countries and cultures other than one's own. Britain's imperial heritage, while long ago, can still influence our images of the world. Unless given guidance, it is easy for children to slip into negative stereotypes as a result of uncritical exposure to images of others. Those who look and sound different to 'us' can all too easily be cast as the 'them', from which we then wish to distance ourselves. Cues are picked up in conversation at home and in the community, through newspaper headlines and through lack of critical interrogation of such images in the classroom. Without a sense of global citizenship, young people may choose to be a nationalistic citizen of indeed a citizen of nowhere.

What are people doing?

Both adults and young people can engage in global citizenship. It draws on the distinction made in the previous chapter between a rights-based notion of citizenship and one based on commitment

to the common good of society. The common good requires that people have the fundamental rights and freedoms that they need but that they can also think more widely about the local and global community of which they are a part. In the adult world the opportunities to engage in working for sustainable change locally, nationally and globally are numerous. All of the issues discussed in this book are the focus of lively campaigns, many of which are set within the wider context of working towards a more sustainable future.

Many campaigning groups that focus on issues of environment and development had their origins in the 1960s and '70s and thus have now had some 40 plus years' experience of successful campaigning. Friends of the Earth (2011), for example, has projects on climate change, energy efficiency, wasting less, and genetically modified food. WWF (2011) is working on climate change, food, transport, and housing in addition to its biodiversity focussed projects. Both groups lobby government and MPs, resulting in significant policy changes and the tightening of national legislation. WWF also works with business and acts in a convenor role, brining major stakeholders together to create practical solutions to complex sustainability dilemnas.

The World Development Movement (2011) is particularly concerned with the fight against world poverty. Campaigns include greening the banks, stopping Europe's unfair trade deal with Central America, and climate justice. Up-to-date analyses of the news are available on the financial crisis, trade and climate change.

Among Oxfam's (2011) several campaigns is one on climate change which stresses that the poor across the world are suffering the effects of this here and now. Information is available on what Oxfam is doing to tackle climate change, what one can do to help right now, a climate change blog, and FAQs on climate change. Other campaigns include the global food crisis and AIDS.

Campaigns such as these are based on a deep understanding of our global connections and how these affect people differently around the world. They analyse and challenge unfair practices and highlight equitable solutions to which everyone can contribute. They model through practical action the central

concern of global citizenship: the well-being of the global community.

Such concerns are also central to education, as the initiatives explored in chapters 2-4 demonstrate. Whether starting with the global dimension in the curriculum, or wishing to help pupils develop a futures perspective or to be a more sustainable school, the local and global are always present and always interrelated; two sides of the same coin. Many NGOs provide useful resources for the classroom which have been designed by educators with school experience.

The eight key concepts underlying global citizenship are each explored in detail, together with illustrative classroom activities, in *Teaching the Global Dimension* (Hicks and Holden, 2007) as well as in *Global Citizenship: The Handbook for Primary Teaching* (Young and Commins, 2002). Journals such as *Primary Geographer* and *Teaching Geography* (Geographical Association, 2011) also contain a wealth of practical material on many of the themes explored in this book.

While some of the hazards associated with school linking have been described, it is also important to identify some of the crucial elements of good practice (Burr and Andreotti, 2008). In its section on 'Why link?', the UK One World Linking Association begins with the following reminders:

> *Global interdependence is a reality today. However the asymmetrical and complex nature of interdependence with the imbalance in the distribution of power, wealth and resources has to be recognised. Linking can help to promote genuine understanding and respect for each other's society and culture and can lead to greater international understanding and justice for all provided. […]*
>
> *However such benefits are not automatic. Linking is a complicated and time-consuming process. Without careful planning and consideration, linking can be patronising, reinforce racism and stereotypes on both sides, compound differences and result in a negative experience for participants. The Principles of Linking leaflet outlines issues such as inclusivity, collaboration, transparency and equality that need to be considered for a successful link. […]*

> *For those who understand the commitment necessary to establish a successful partnership, linking is a life-enhancing experience which can benefit all and even be of fun. Successful linking can provide a fresh and vital new outlook on life and how we understand the world* (UKOWLA, 2011).

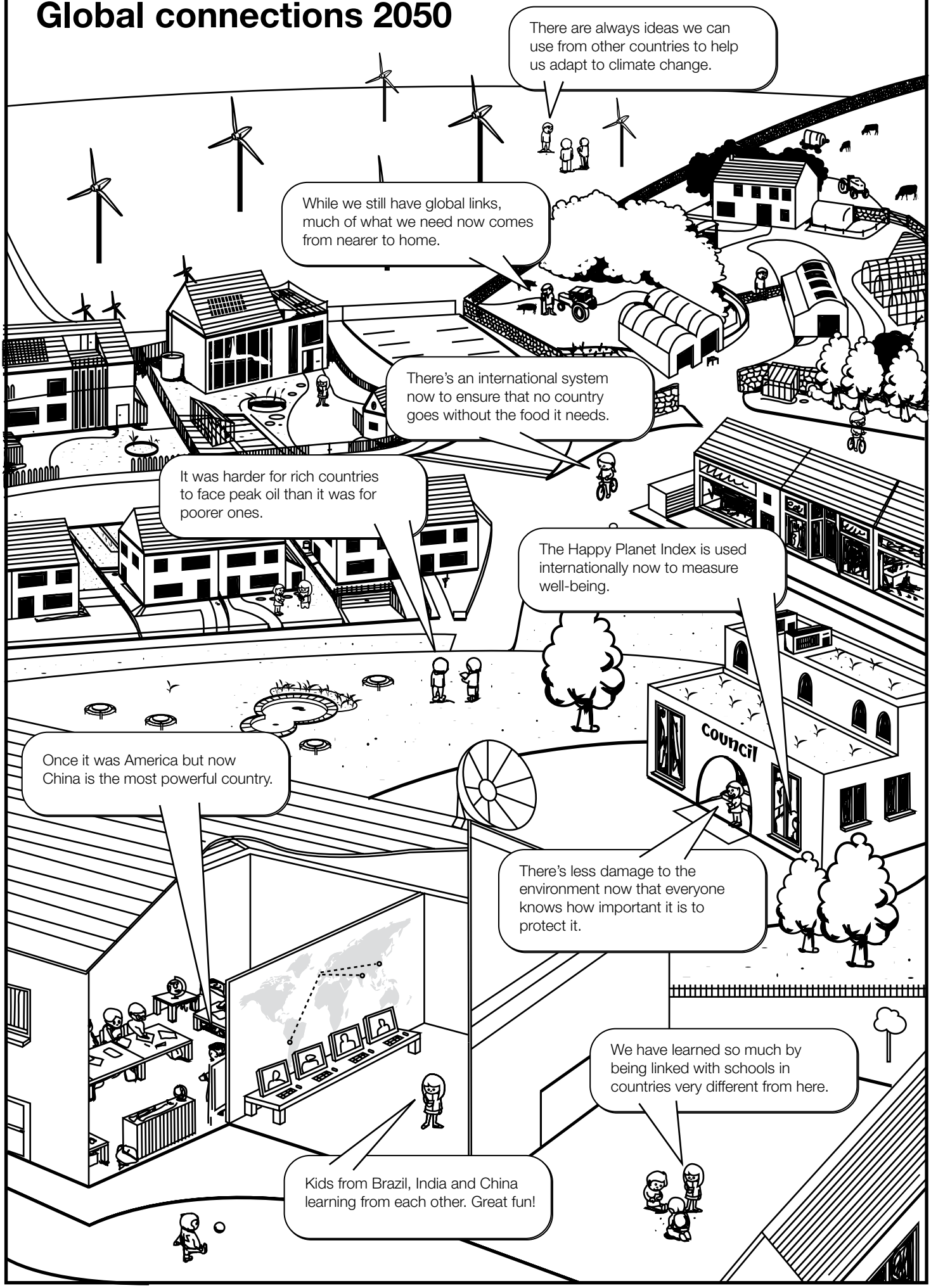
The best forms of global citizenship I think embrace all the concerns of this book. They consider issues of local–global interdependence and the nature of both probable and preferable futures through the lenses of sustainability and unsustainability. They should also include exploration of the social and environmental impacts of climate change and peak oil.

The field of global citizenship will constantly evolve as the needs of people and the planet change. For example, while climate change has largely been seen as a matter of scientific evidence up until now, Mike Hulme (2009) argues that it is much more than that – it has become a social, cultural, economic, political, existential and spiritual issue.

How is society changing and how will it change as the nature and implications of global warming become ever present in daily life? How will people's thinking change and how will this vary across societies and cultures? How will it vary in relation to gender, ethnicity and disability, for example? How will it change our perception of education? Should sustainability be an optional add-on for schools or should all schools, both primary and secondary become sustainable schools?

The change in educational emphasis that is required to help shift society towards a zero-carbon future is unlike any previous educational challenge. However, the examples and case studies contained within this book demonstrate that teachers are increasingly up to this challenge. While the broad parameters have been sketched out in this and other publications, the details now need to be elaborated in more detail. This is the ongoing challenge.

Global connections 2050



Scenario activity

The purpose of this activity is for pupils to explore, debate and discuss this scenario for global connections in a sustainable future. Each pupil will need a copy of the scenario and the accompanying questions.

- Brief the class on the purpose and use of scenarios (see page 55) and go through the five questions that need to be answered.
- Pupils work in small groups. First they individually note down their own responses to the questions and then work together to create a composite group response.
- Groups take it in turns to share their response with the rest of the class. Either the group responses or a composite class response to each question should be put up for display.

Scenario questions

Look carefully at this illustration of what a scenario for global connections in a sustainable future might look like. Imagine that you are visiting this future with a group of friends to gather information about it. You can look around to see how things are different and also listen to what people are saying about life in this future.

1. What are the first three things you notice about this future?
2. In what ways is this future different from today?
3. What are people doing and saying that is different?
4. What are the advantages of living in this future?
5. What questions do you have about this future?

Table 13.1 THE STORY: Global connections 2050

How things have changed

‘Well, the main thing is that it’s all a lot more interesting now. We find it difficult to imagine how some children just weren’t so interested in global connections in your day. We don’t just learn from books, a lot of what we do is online and we can talk face-to-face with the friends we have around the world. Each small group in my class has a group of friends from several different countries. We talk to each other at least once a week and often more, about what we are doing in our lives, what is happening in our schools, our communities and the world. Without having to think about it, we know what life looks and feels like in countries that are different to our own.

‘America is no longer the top country in the world but China is. It’s interesting to see how these two very different countries are trying to understand and get on with each other. Learning as much as you can about China is all the rage these days: books, films, stories and virtual visits are all very popular. So too is the China football league and its star players. We do have actual links with a number of other schools but they are closer to us in Britain and Europe, so we can have zero carbon exchange visits. Flying is expensive and not many people use this form of transport now.

‘It’s not just us that have links with other communities round the world. It’s much more common for other people too. Anyone involved in food or farming knows more about the global scene now. Most countries now grow as much of their own food as they can and try to trade with their nearer neighbours for what they still need.

‘The problem of climate change and peak oil also led to much more global cooperation. People like town councillors, farmers, transport specialists and builders all realised they could learn a lot from people’s experiences in other countries. So there are a lot more immediate links now. If there’s a problem with drought, for example, you talk to someone in a country where they have lots of experience of dealing with this. Then you get helpful ideas to solve your own problem.

‘I expect what you would miss most is flying off on holiday to all those distant places with hot and sandy beaches. It doesn’t happen any more for several reasons. One is that air travel is much less common because of its contribution to climate change. Another is that we now have a Mediterranean climate in the south of England. The other is that virtual reality technology is so advanced now that we can ‘visit’ other places almost as if we were really there. Don’t get me wrong, we’d like to travel round the world but at present that is not something we can easily do with all the other changes that have happened.’

Story activity

The purpose of this activity is to use the story as a stimulus for discussion and debate and to link the global connections scenario with some of the changes that were required to bring it about. Each pupil needs a copy of the story.

- The story can be read by the teacher to the whole class, by someone in each small group or individually.
- Discussion then arises from consideration of the three questions below, with pupils first individually writing down their responses and then taking it in turns to share these with the group.
- A spokesperson for each group then summarises responses for the whole class. The teacher needs to stress the positive nature of such changes in the light of present dilemmas and the benefits they would bring to the children in the future.

Story questions

1. What feelings did you have when you were listening to this story?
2. What questions arose for you when listening to this story?
3. What sort of story would you like to tell your own children?

Multiple perspectives, profound understandings

Stephen Scoffham and Peter Dorman

Learning about different people and cultures is an excellent way to explore some key ESD concepts such as interdependence, citizenship, diversity and quality of life. In this article Stephen Scoffham and Peter Dorman report on the educational links they have developed with schools and colleges in south India. They consider how working with schools in different parts of the world can help us to challenge our own practices and assumptions and conclude that multiple perspectives promote more profound understandings.

A few years ago there was an interesting report on a project about using the internet to encourage a dialogue between pupils in different countries (Shaw, 2003). On the face of it this seems a relatively straightforward exercise. However, it is actually much more complicated than it appears because often the questions themselves are as revealing as the answers. For example, one of the questions which UK pupils frequently asked their American counterparts was whether their family 'carried guns'. Conversely, the American pupils wanted to know if it was constantly 'foggy' in Britain. What was particularly revealing was that these preconceptions persisted for many months after the project had started and long after the pupils had begun e-mailing each other. Here was a clear example of the way stereotypes and pre-existing images tend to linger and affect our perceptions.

The questions

Our work with students at Canterbury Christ Church University has confirmed the importance of having an open mind. Recently we took a group of students to south India to work with primary school pupils and find out about their education system. Before setting out we visited a year 4 class in a Kent village school. The pupils there had recently completed a project on India so they were already quite well-informed. We asked them if they had any questions which they would us like us to investigate while we were abroad. A short class discussion ensued which generated a

Figure 1: There was a marked difference in the things which the Indian girls and boys valued in their school environment.

surprisingly long list, which included:

- Do you have clean water?
- What do you learn at school?
- What is the value of your house?
- Do Indian children eat sweets?
- What kind of sacred animals do you have?
- What do you have for dinner?

We asked ourselves why the pupils raised these particular questions. Apart from the obvious human interest in food and everyday life, we suspected that they had been heavily influenced by their previous teaching programme. It was as if they wanted to check on what they had learnt at school. The questions about house prices and clean water in particular seemed prompted by images of poverty. They fall neatly into the major categories suggested by Disney (2004) who suggests children start with stereotypes of traditional life, then form exotic and undifferentiated images before developing a more complex and mature understanding.

Once in India, we reversed the exercise and asked Indian pupils of approximately the same age what they would like to find out from their English counterparts. The things which they asked revealed a strong emphasis on personal and human issues. Typical questions included:

- What makes you proud of your school?
- How many friends do you have?
- What type of friends do you have?

In pondering the questions it is important to remember that the Indian pupils, although they were talking in English, had no formal instruction about England and had been taught very little geography. A study by Scoffham (2004) confirms that Indian pupils sometimes have little knowledge about the UK, associating it chiefly with cold weather, fast food, a few famous people and some London landmarks featured in nursery rhymes. However, what unites both the Indian and the UK pupils is their interest in the quality and diversity of human experiences.

Gender differences

In a further investigation we asked the Indian pupils what they would most like pupils in the UK to see about their school and its environment. In this exercise a very marked gender difference emerged. The boys concentrated on buildings and hard spaces such as classrooms, offices and parking facilities. Indeed, the first place they selected was the finance office where they paid their fees! By contrast, the girls focussed on places where they could do things. They drew attention to plants and birds in the school grounds and the 'softer' things in life. Nowhere was this contrast more apparent than when visiting the school hall. The boys declared this to be the place where they could play football. The girls immediately pointed to the stage used for dance and celebrations (Figure 1).

Common interests

Returning to the UK, we asked some of the pupils in the Kent school to take a photograph of somewhere that was precious to them. After some time a year 5 boy took us to what appeared to be an insignificant corner of the school grounds. Pointing to a worn out patch of grass he said: 'See those marks on the ground? That's where the little ones kick their feet when they are playing. I used to do that'.

Student reflections

The conversations and informal chats between the UK Canterbury students and their Indian counterparts also revealed much about pre-existing perceptions, common interests and cultural differences. One topic which attracted a great deal of attention, perhaps understandably for a largely female group in their early twenties, was the issue of choosing a partner. Some of the group were surprised to learn that many Indian girls are happy to accept an arranged marriage. They discovered how the system contributes to social cohesion. They also learnt how it can be manipulated to give girls a great deal more freedom in selecting a partner than is apparent to outsiders.

Figure 2: Some practices in Indian schools, such as taking the national oath at assembly, seem very old-fashioned.

As they began to recognise some of the subtleties of Indian life, the students started to reflect on differing educational practices (Figure 2). Many Indian schools place considerable reliance on rote learning and memory work. Whether or not a pupil is able to proceed with their education often depends on how many marks they obtain in their exams. How can we make sense of practices such as these which dropped out of use in the UK many decades ago? Initially the students were highly critical. As one of them reported:

'The main things that struck me were the lack of input and teacher-pupil interaction, the apparent lack of differentiation and the fact that there seemed to be no sign of any assessment for learning. All these things are drilled into us at university as being crucial, yet the Indian schools did not seem to be doing any of them' (Di Stefano, 2007).

Figure 3: When they reflected on their visits students found they viewed the UK educational system differently.

> 'Indian children appear to really value the chance to be educated. This has led me to question why education is not necessarily viewed this way in Britain' Sally Alford.
>
> 'The Indian education system is in stark contrast to all I have experienced. I do not view it as less successful. Instead it raises further questions as to how and why we teach as we do in the United Kingdom. Reflecting on these issues will certainly serve to enrich my teaching career' Emma Kerr.

Over a period of time the students reflected more deeply on their experiences and began to question some of their own assumptions about education. For example, is group work necessarily the best model for learning? What evidence supports this approach and does the context make a difference? Equally, if we really believe in collaborative learning, what does this say about the UK SATs and testing regime? Some even began to question whether, given the enormous cultural and social differences, it is possible to make any comparisons between Indian and UK schooling at all (Figure 3). These are issues which go right to the heart of our notions about schooling and learning. They also raise questions which geographers need to consider as they explore diversity and the quality of life of pupils in different countries.

ESD and overseas localities

The geography National Curriculum requires pupils at key stage 2 to study a locality in a country that is less economically developed. The locality is defined as a small area and the accepted principles of good practice involve focussing on named individuals and details of their everyday life (Weldon, 2004). This advice is reflected in the Scheme of Work (DfES, 2000). For example, one of the topics in Unit 10: A Village in India is based on the question 'What is the school in Chembakolli like?'. There are natural opportunities to combine this work with an ESD perspective. After all, one of the main reasons for the overseas locality study is to help pupils understand how our lives are linked to those of others around the world.

Being overseas and viewing the UK from a different cultural setting raises deeper questions about our own practice and ideas about learning. At the same time, the questions asked by pupils in both India and the UK revealed hidden assumptions and bias. Gender differences were particularly apparent. If overseas locality studies are not to become simplistic it is important that we find ways of challenging our own assumptions and acknowledging multiple perspectives. First-hand experiences and e-mail exchanges are a valuable way of doing this but be careful when it comes to making comparisons. Initially at least it is best not to make judgements and to have a completely open mind.

At its heart, education for sustainable development is about making connections. It is about recognising the way nature, society, the economy and politics are linked holistically. It also involves understanding how we can take action to change our lives and work together for the benefit of people and the planet, both now and in the future. Making overseas educational links and finding out about the lives of other people is one way of doing this. For those fortunate enough to travel abroad, interacting with different people, places and cultures at first-hand can be an intense learning experience. This involves not only the acquisition of new knowledge, but also an investigation of those beliefs and assumptions which form part of our inner selves. Surely, this must be sustainable development at the most profound level.

References

DfES/QCA (2000) *Geography: A scheme of work for key stages 1 and 2. Update.* London: DfES/QCA.

Di Stefano, F. (2007) *Learning to Question.* Unpublished BA Ed assignment, Canterbury Christ Church University.

Disney, A. (2004) 'Children's Developing Images and Representations of the School Link Environment' in Catling, S. and Martin, F. (eds) *Researching Primary Geography.* London: Register of Research in Primary Geography.

Scoffham, S. (2004) 'Indian Children's Images of England' in Bowles, R. (ed) *Place and Space.* London: Register of Research in Primary Geography.

Shaw, M. (2004) 'E It's Foggy in London Town', *Times Educational Supplement,* 20 January.

Weldon, M. (2004) 'The Wider World' in Scoffham, S. (ed) *Primary Geography Handbook.* Sheffield: Geographical Association.

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YOUR LOCAL AREA – Global connections

Local research

There are three elements of the local area to be considered here: i) the school; ii) the neighbourhood, village or town; iii) the home. Together these make up the local community. Below are some key questions that need to be researched in relation to local–global connections. These questions should first be applied to the *school* and then to the *local community* as part of discrete or ongoing research projects. Children may then want to apply some of the questions at home. For each question there initially need to be two

response columns: 'What we already know' and 'What we need to find out about'. What is written in the second column then becomes the basis for school and community enquiry.

1. What sort of changes would you like to see over global connections?
2. What is happening in relation to connections over climate change?
3. What is happening in relation to connections over peak oil?
4. What is happening in relation to building resilient connections?
5. What is happening that develops a sense of being part of the global community?
6. What evidence have you found in your school and community of changes that will help create a greater sense of global connection?

USEFUL STARTING POINTS

- David Hick and Cathie Holden (eds) (2007) *Teaching the Global Dimension: Key Principles and Effective Practice,* Routledge.

  This book draws together much of the information needed in order to feel confident about teaching the global dimension. It includes a framework for understanding global issues, insight into young people's concerns for the future, strategies for handling controversial issues in the classroom, and practical activities on each of the eight key concepts.

- UK One World Linking Association (UKOWLA). *Toolkit of Good Practices – Opportunities and Challenges*. Available online at: www.ukowla.org.uk

  UKOWLA was set up in 1984 to support, promote and encourage schools and communities in the UK to develop partnership links with communities in the South (Africa, Asia, Latin America and the Caribbean). The toolkit covers every aspect of appropriate school linking and is a model of its kind.

- Global Dimension.
  Available online at: www.globaldimension.org.uk

  This website for teachers is a very useful guide to books, DVDs, posters and websites which contribute to a global dimension in the curriculum. Resources are listed for all age groups and all subject areas on topics such as climate change, poverty, water and fair trade. Classroom ideas, speakers and helpful organisations are all listed here.

- Oxfam Education. *Global Citizenship.*
  Available online at: *www.oxfam.org.uk/education/gc*

  What is Education for Global Citizenship? Who is it for? Why is it essential education? And how does it help teachers of all ages and subjects to develop their practice and meet national educational requirements? See in particular *Education for Global Citizenship: A Guide for Schools*. Information, support and ideas for developing a global citizenship approach in your school.

- WaterAid International.
  Available at: www.wateraid.org/international/What_we_do/default.asp

  The mission of this international charity is to overcome poverty by enabling the world's poorest people to gain access to safe water, sanitation and hygiene education. Provides a stark contrast to the UK water situation and provides useful facts and figures about access to water, sanitation and hygiene. Describes how an agency such as Water Aid works with local communities and the sustainable technologies they use.

- WWF International (2010) *Living Planet Report. In association with Zoological Society of London and the Global Footprint Network*. Visit wwf.panda.org/about_our_earth/all_publications/living_planet_report/

  The Living Planet Report is WWF's periodic update on the state of the world's ecosystems. It describes the changing state of global biodiversity using the Living Planet Index, and the pressure on the biosphere arising from human consumption of natural resources (ecological footprint).

PART 3
A JOURNEY OF HOPE

These final chapters return to the overarching themes of this book by reflecting again on some of the features of a more sustainable future and of more sustainable schools. What part do our very ways of thinking play in affecting our views of the world? If modernist ways of thinking mean that we tend to see the world as made up of separate parts, is it not time to explore the processes of ecological thinking that focus on how the parts are all interrelated and contribute to the whole?

There are also further thoughts on the value of scenarios in helping one contemplate the changes needed in these times, specifically in relation to the 'long transition' that lies ahead. Of the many purposes that education may have, the times demand that the focus now be on creating more sustainable ways of living and being. Unless these concerns are at the forefront of young people's educational experience they will be ill-equipped for the changes that they have to face and which will require new and original thinking in the future.

The emphasis in turbulent times always needs to be on how one can teach in a spirit of optimism and hope. Education as it has been has helped contribute to the dilemmas that now lie ahead of us. Education as it needs to be must have a positive vision of where society should be heading and an understanding of the sources of hope and inspiration we can draw on. We need success stories that keep hope alive and that will inspire us to work for the changes that future generations would certainly expect us to contribute to on their behalf.

14. TOWARDS A SUSTAINABLE FUTURE

"Sustainability is a new idea to many people, and many find it hard to understand. But all over the world there are people who have entered into the exercise of imagining and bringing into being a sustainable world. They see it as a world to move towards not reluctantly, but joyfully, not with a sense of sacrifice, but a sense of adventure. A sustainable world could be very much better than the one we live in today."

Meadows, D, et al. (2005) *Limits to Growth: The 30-Year Update*

What do we need to know?

The nature of the current crisis

Each of the previous eight chapters dealt with a particular aspect of sustainability, highlighting both the nature of the problems and the ways in which people are working to resolve them. Quite clearly the different aspects of sustainability are all interrelated, as are the problems that have led to the crisis of unsustainability. The purpose of this chapter is to draw some of these threads together, for both the problems and solutions are inextricably interconnected. It is also vital that, as a teacher, one is able to take an overview of the whole in order both to explain this bigger picture to colleagues and to see how the different themes in this book fit together.

Put succinctly, at the end of the first decade of the 21st century we are in trouble, because the way in which we have lived for the last 200 years can no longer be sustained. The credit crunch and financial crash of 2008 were salutary reminders that all is not well in the world of finance and economics. Indeed, one veteran financier described the activities of major investment banks and multinational corporations as 'financial weapons of mass destruction'. The resulting global recession was a direct consequence of the greed inherent in global financial networks with their never-ending search for higher gain and profits. Fritjof Capra (2003) points out that 'The so-called 'global market', strictly speaking, is not a market at all but a network of machines programmed according to a single value – money-making for the sake of making money – to the exclusion of all other values.'

Nearly 300 years of rapid material growth has also caused untold damage to the biosphere on which all life depends – through digging up raw materials, building over natural habitats, and

the constant dumping of waste. For example, every year we dig up, process, manufacture and throw away half a trillion tonnes of stuff. Less than 1% of this material is embodied in a product and still there six months later – the rest is waste. Bill McKibben (2009) points out that one of the biggest mistakes we have made as a species is the widespread and long-lasting destruction of the Earth's ecosystems. The problem, he argues, is that we kept doing something well after the point at which it worked. More of the same brought us to our present state.

Climate change and peak oil are both consequences of this blindness to the limits to growth. Rather than trying to work with the Earth's natural systems it was presumed that we could override them without any ill effect. Thus the atmosphere and the seas warm, the glaciers and permafrost melt and sea levels gradually rise. And one of the biggest contributors to this process has been our addiction to oil, which made life so much easier and pleasant for just a few generations.

Ways of thinking

Human values, behaviour and action are driven by the cultural and political world views that different groups of people hold in society. It is generally the world view held by the dominant group in society that becomes most deeply ingrained. In chapter 1 we saw that the Western world view was deeply influenced in the 18th and 19th centuries by the Enlightenment and the Scientific and Industrial Revolutions. Our dominant way of thinking, particularly for men, draws on processes that have been very valuable in the past, but which can now seriously hinder the new thinking that is needed in order to create a more sustainable society. Stephen Sterling (2009) summarises some of the assumptions of this modernist world view, as shown in Table 14.1.

Table 14.1 – Modernist thinking

1. To every problem, there's a solution.
2. We can understand something by breaking it down into its component parts.
3. The whole (of something) is no more than the sum of its parts.
4. Most processes are linear and characterised by cause and effect.
5. Most issues and events are fundamentally discrete or may be regarded as such, and may be dealt with adequately in a segregated way.
6. It is ethically acceptable to draw your circle of attention or concern quite tightly, as in 'that's not my concern'.
7. Objectivity is both possible and necessary to understand issues.
8. We can define or value something by distinguishing it from what it is not, or from its opposite.
9. We can understand things best through a rational response. Any other approach is irrational.
10. If we know what the state of something is now, we can usually predict future outcomes.

From: Sterling (2009) in Stibbe (ed)

I was certainly brought up to think this way by my parents, teachers at primary and secondary school, and at university. After all, these ways of working were at the heart of the scientific method and had led to all the amazing breakthroughs made by our recent ancestors. But this framework also helped lead us into the dilemmas that we now face. Many writers therefore have proposed that we need a more holistic way of thinking to respond to the present and future challenges we face. Stephen Sterling (2009) describes this as 'ecological intelligence', since it looks to the natural world for its way of thinking. NB. The numbers in these two tables are matched.

Table 14.2 – Ecological thinking

1. Some solutions just produce more problems. Instead, we need to develop 'solutions that generate further solutions' (these are sometimes called 'positive synergies').
2. We often need to look at the whole, and at the larger context.
3. Complex systems show emergent properties; i.e. additional qualities that emerge from the interaction of the parts – e.g. health in a human body.
4. We need to attempt to look at all the influences at the 'start', all the knock-on effects at the 'finish' and any feedback loops. This complexity is characteristic of most human and environmental systems.
5. Most issues/events are related to other issues/events and can be better understood in the light of this interrelated reality.
6. Complexity means that we need to expand our view of the world and be more aware of the boundaries of concern we set ourselves.
7. So-called opposites are in relationship. We tend to devalue one side against the other (ecology against economics, nature against people, values against facts, etc.), and instead, need to see them as in relationship rather than in opposition.
8. The decision to try to be objective is a value judgement. Total objectivity is impossible. Better to recognise how our subjective self is involved in perception and interpretation of the world.
9. Intellect needs to be balanced with intuition, and rationality with non-rational ways of knowing: spiritual and aesthetic knowing (balancing our left brain with our right brain).
10. In human and most natural systems (that is, those systems which are not mechanical) it is impossible to predict outcomes. We need to be more flexible, accept uncertainty, and not try to control everything but participate in and learn from change.

From: Sterling (2009) in Stibbe (ed)

It is not, of course, that modernist thinking should be rejected, but rather that ecological thinking is more appropriate to the dilemmas of these times. And this is simply because it draws its inspiration from the interrelated systems of the web of life itself (Sterling, 2001). It should be stressed that the notion of holistic learning, which takes account of the whole person (Chapter 5) must also include ecological thinking which embraces and draws insight from the web of life itself of which we are a part. This is the way of thinking that our children and future generations need to learn and which lies at the heart of education for sustainability. It might be useful here to ponder how you saw each of the issues dealt with in the last eight chapters. Did you approach these primarily with a modernist way of thinking? What happens if you look at each of them from an ecological perspective?

A choice of scenarios

Chapter 3, on developing a futures perspective, introduced a set of future scenarios often used by futurists in their work and by teachers in the classroom. They are 'classic' in that they offer four quite different views of the future: i) that it will be *similar* to today; ii) that it will be *worse* than today; iii) that *technology* will solve everything; iv) that society will have been *transformed* in some way. These categories have proved useful in some form or another over at least the last 40 years. The classroom titles I used for these a decade ago were: 'More of the same', 'Edge of disaster', 'Technological fix', and 'Sustainable development'. But since then, things have changed to such an extent that these options are now less useful – if not severely compromised.

More of the same and business as usual are no longer options. Where we stand at present is on the edge of disaster, or at least on the edge of major change. While there is much discussion about a technological fix scenario in relation to both climate change and peak oil, there are major debates about the viability of this as the main solution. Certainly technology has a significant part to play in a sustainable future, but so too have changes in human behaviour and lifestyle.

Technology tends to be modernist in assumption, although eco-design does draw on the principles of ecological thinking

discussed above. As chapter 1 pointed out, there is an ongoing debate about the relative importance of technocentric and ecocentric views of sustainability. Given the need for ecocentric as against mechanistic thinking in a sustainable future, I believe that technocentric solutions need to be rigorously evaluated lest they simply endorse a business as usual view of the future, with all its attendant problems.

Scenarios have also been used by the Transition movement (see chapter 5) to look at possible responses to the impact of climate change and peak oil on society. This focus sharpens the use of scenarios, in that the options are now specifically related to current crises. The four scenarios are: 'Denial', 'Hitting the wall', the 'Impossible dream' and the 'Transition vision'. The first two scenarios share in common a desire for business as usual over the years ahead. The latter two scenarios share in common a wish to change our 'cultural stories' away from the old patterns that have brought us to this difficult place in the present. Each of these scenarios is summarised briefly below. A longer elaboration can be found in Shaun Chamberlin's *The Transition Timeline* (2009).

Figure 14.1 – Transition scenarios

Denial ~ Business as usual/ignoring evidence

In this possible future, we failed to heed the ever-stronger evidence that we were facing a sustainability emergency until the consequences of our choices became overwhelmingly clear. As a result, we missed the opportunities to take action to prepare for the coming shocks, and our fragile globalised structures were found wanting when the shocks came.

- Ever more desperate measures employed in the name of maintaining a growing economy.
- Environmentally destructive energy sources like tar sands and 'coal to liquids' exploited.
- IPCC announcement in 2019 that climate change is now unstoppable met with anger and disbelief.

Hitting the wall ~ Business as usual/acknowledging challenges

In this vision of the future, we confronted the full reality of climate change and peak oil, but attempted to deal with them without fundamental change in our cultural stories. Acknowledgement of the challenges we face led to some action, but it was unable to be sufficiently effective within our existing frameworks.

- Recognition of environmental challenges, but the dominant mindset states that 'there is no alternative' to business as usual.

- Underlying trends like exponential growth of populations and economies go essentially unchallenged.
- 'Realism' about whether fundamental change in society is achievable leads to widespread despair and inaction.

The impossible dream ~ Cultural shift/ignoring evidence

The visions we have examined so far have largely been of the type we hear from environmentalists – miserable and doom-laden. The impossible dream begins far more appealingly – but ultimately suffers the consequences of failing to acknowledge scientific reality.

- Dominant story that 'renewable energy technology will solve climate change and peak oil for us'.
- A lack of recognition of the full scale of the problem.
- Minimal reduction in energy usage due to widespread expectation that a new energy source will emerge 'just in time'

The transition vision ~ Cultural shift/acknowledging challenges

The transition vision is of a resilient, more localised society in which we faced the consequences of our former cultural stories honestly, heard the lessons they brought us and moved into a thriving, satisfying future.

- Acceptance of scientific evidence leads to fundamental changes in cultural assumptions.
- Dominant sense that 'there must be another way to live', given the unacceptable consequences of business as usual.
- New social and economic models developed to fit new paradigm.
- Recognition of the need to drastically and sustainably reduce energy consumption.
- Widespread sense of hope, determination and common purpose.

From: Shaun Chamberlin (2009) *The Transition Timeline*

It is important to recall that scenarios such as these are not reality, but they are about possible realities that we might wish to avoid or work towards. Given the focus of this book, the transition vision needs further exploration since it makes a significant and practical contribution to the discussion on how to build a more sustainable future (Transition Network, 2011).

When Shaun Chamberlin talks about the need for a 'cultural shift', he is referring to the stories we tell ourselves about how the world works and how this now needs to change. This takes us back to the 'modernist' and 'ecological' ways of thinking discussed above, the former reflecting the mechanistic age in which it developed (taking things apart) and now needing to be replaced by the latter in a time when more holistic thinking is needed (putting things back together).

The features of ecological thinking set out in Table 14.2 are not new but have been marginalised by the dominant mechanistic world view. This has served us well but also brought us to the present impasse. Part of the cultural shift that needs to take place in order to build a more a sustainable future is a fundamental change in our way of thinking. As teachers, we now need to be able to think in an ecological fashion and model this in a way that helps our pupils to do the same.

Living sustainably

Many of the features of a more sustainable society have been described in the pages of this book, particularly in Part 2. Here I would like to stress three particular aspects of a sustainable society: ecological limits, well-being, and community.

First, any vision of a sustainable future has to recognise the ecological limits we must now keep to.

> *These [...] include the obvious material ones: fossil fuels, minerals, timber, water, land and so on. They also include the regenerative capacity of ecosystems, the diversity of species and the integrity of the atmosphere, the soils and the oceans. None of these resources is infinite. Each stands in a complex relationship to the web of life on Earth. We may not yet know exactly where all the limits lie. But we know enough to be absolutely sure that, in most cases, even the current level of*

> *economic activity is destroying ecological integrity and threatening ecosystem functioning, perhaps irreversibly. To ignore these natural bounds to flourishing is to condemn our descendants – and our fellow creatures – to an impoverished planet* (Jackson, 2009: 45).

Living within these limits means that life will be simpler, more thoughtful and more ethical. Care for the Earth, ourselves and others, both present and future, will become accepted as part of everyday life at home, in school and at work. But, second, our view of economics has to change.

Capitalism depends on continuous innovation, with new technologies and products continually replacing each other. Quality is sacrificed for volume, and novelty is everything. But our identification with material possessions – clothes, cars, DVDs, phones and games – has gone deep and become part of what one might call the 'extended self'. Items such as these carry symbolic meaning, establishing our social position and often our very identity. The restless desire to have more matches the constant innovation demanded by the economics of growth, and so our search for meaning and purpose is played out through consumerism. Yet this is only a relatively recent phenomenon in social history, and not one your grandparents or great-grandparents would recognise.

The factors influencing our sense of subjective well-being, however, are markedly different as numerous surveys have shown. For example, partner/spouse and family relationships are by far the major factor, followed by health and then money and financial situation, a nice place to live, community and friends, work fulfilment, and religious/spiritual life. Prosperity is therefore not synonymous with material wealth, but goes beyond material sustenance.

> *Rather, prosperity has to do with our ability to flourish: physically, psychologically and socially. Beyond mere subsistence, prosperity hangs crucially on our ability to participate meaningfully in the life of society* (Jackson, 2009: 143).

Third, meaningful participation can only occur within a community of people, whether family, friends, school or

workplace. One of the constant themes throughout discussion on sustainability is that of the importance of community. If food needs to be grown more locally and energy produced nearer the home, then the immediate community becomes a more vital, lively and responsible place. A more participative and inclusive community, whether in a street, village or town becomes a good place to be. To belong and to contribute to the social life of one's community is at the heart of active citizenship. This is where new alternatives are created and where citizens can share in a common venture that brings new meaning to life.

The manifold tasks required to create a sustainable and resilient community are highlighted in previous chapters and cover every aspect of human life. Some of the building blocks for a new vision of community are green spaces, parks, museums, public transport, local markets, quiet places, sports facilities, libraries and festivals. A more sustainable future should be celebratory and fun as well as a place of commitment and shared endeavour.

Sustainable schools

The chapters in Part 1 of this book all point towards the need for more sustainable schools – schools that are rooted in both the local and global community, as well as looking critically and creatively towards the future. While the first part of this chapter is concerned with sustainable futures, this latter part focuses on sustainable schools.

The purpose of education

I begin with David Orr, whose books on education for sustainability have inspired many a young and older educator. He is one of the godfathers of the movement, and I love his work for a variety of reasons. It is rooted in ecological awareness, it is inspirational, and it comes with the wisdom of both scholarship and experience. In *Earth in Mind: On Education, Environment, and the Human Prospect* (2004), Orr reflects on the nature and purposes of education. The opening page begins with a list of apparently random environmental dilemmas on which he then comments:

> *In reality there is no such thing as a 'side effect' or an 'externality.' These things are threads of a whole cloth. The fact that we see them as disconnected events or fail to see*

> *them at all is, I believe, evidence of a considerable failure that we have yet to acknowledge as an educational failure. It is a failure to educate people to think broadly, to perceive systems and patterns, and to live as whole persons. […] We continue to educate the young for the most part as if there were no planetary emergency* (Orr, 2004).

Later he writes about six myths which provided, he argues, the foundations of modern education:

> *Firstly, there is the myth that ignorance is a solvable problem. Ignorance is not a solvable problem; it is rather an inescapable part of the human condition. […] A second myth is that with enough knowledge and technology, we can, in the words of* Scientific American*, 'manage planet Earth'. […] A third myth is that knowledge, and by implication human goodness, is increasing. An information explosion […] is taking place. But this explosion should not be mistaken for an increase in knowledge and wisdom. […] A fourth myth of higher education is that we can adequately restore that which we have dismantled. I am referring to the modern curriculum. We have fragmented the world into bits and pieces called disciplines […] hermetically sealed from other such disciplines. As a result […] most students graduate without any broad, integrated sense of the unity of things. […] Fifth, there is the myth that the purpose of education is to give students the means for upward mobility and success. […] The plain fact is that the planet does not need more successful people. But it does desperately need more peacemakers, healers, restorers, storytellers, and lovers of every kind. It needs people who live well in their places. It needs people of moral courage willing to join the fight to make the world habitable and humane. […] Finally, there is a myth that our culture represents the pinnacle of human achievement. This, of course, represents cultural arrogance of the worst sort and a gross misreading of history and anthropology.* (Orr, 2004).

I used to set my Education Studies students the task of explaining each of these myths and the way in which they had influenced their own education. In so doing, they uncomfortably began to realise that education is never neutral, that it conveys the beliefs and values of dominant neo-liberal ideology, and that in many cases it had had nothing to say about environmental matters.

The practice of ecological literacy

Two of my favourite books on education for sustainability come from the Center for Ecoliteracy in Berkeley, California (2010). *Ecological Literacy: Educating Our Children for a Sustainable World* (Stone and Barlow, 2005) is a wonderful compendium of practical insights and experiences with teachers and classrooms in mind. It includes contributions from David Orr, Fritjof Capra and Wendell Berry. The book is divided into four parts which respectively explore: vision, tradition/place, relationship and action.

In particular, the center draws on the insights of native peoples. Zenobia Barlow recalls when Jeannette Armstrong, an Okanagan Indian, introduced herself at a meeting of native and non-native activists and thinkers:

> *In the way that she introduced herself and engaged other people to deepen and shift the way that they communicated, I knew that she was viewing the world in a powerful way that I wanted to learn more about.*
>
> *When she introduced herself, she talked about her heritage and what she was responsible for, and challenged everyone to say authentically who they were. 'Don't tell me what books you've written or what your accomplishments are,' she said. 'Tell me who your grandparents were' – because it was through her grandparents, the names they had given her, and the meaning of those names, that she understood her responsibilities for taking care of other people and all life forms. She wanted to know where we'd come from, who our elders were, what we had inherited, and what our responsibilities were. She changed the dynamic of that meeting. Many of the participants [...] who had known each other for a long time, introduced themselves to one another as if for the first time and began to communicate with each other in a much deeper way* (Stone and Barlow, 2005: 11).

Another book for teachers from the center is *Smart by Nature: Schooling for Sustainability* (Stone, 2009). The preface states:

> *This book represents a radical vision for education – radical in the sense of being essential, fundamental, and deeply rooted. It is founded on the conviction that the best hope for learning to live sustainably lies in schooling that returns to the real basics:*

> *experiencing the natural world; understanding how nature sustains life; nurturing healthy communities; recognising the consequences of how we feed ourselves and provision our institutions; knowing well the places where we live, work, and learn* (Barlow, 2009).

The case studies in this book, from both primary and secondary level, offer striking examples of how schools can become beacons of sustainability. The practical and inspiring case studies illustrate four main themes: i) It's Lunchtime at School: What in Health is Going on Here? ii) The 'Smart by Nature' Campus, iii) Sustainability: A Community Practice, and iv) Where Teaching and Learning Come Alive. At the end of each of these sections is a 'lessons learned' page and a 'what you can do' page. For a good example, see Table 14.4 below.

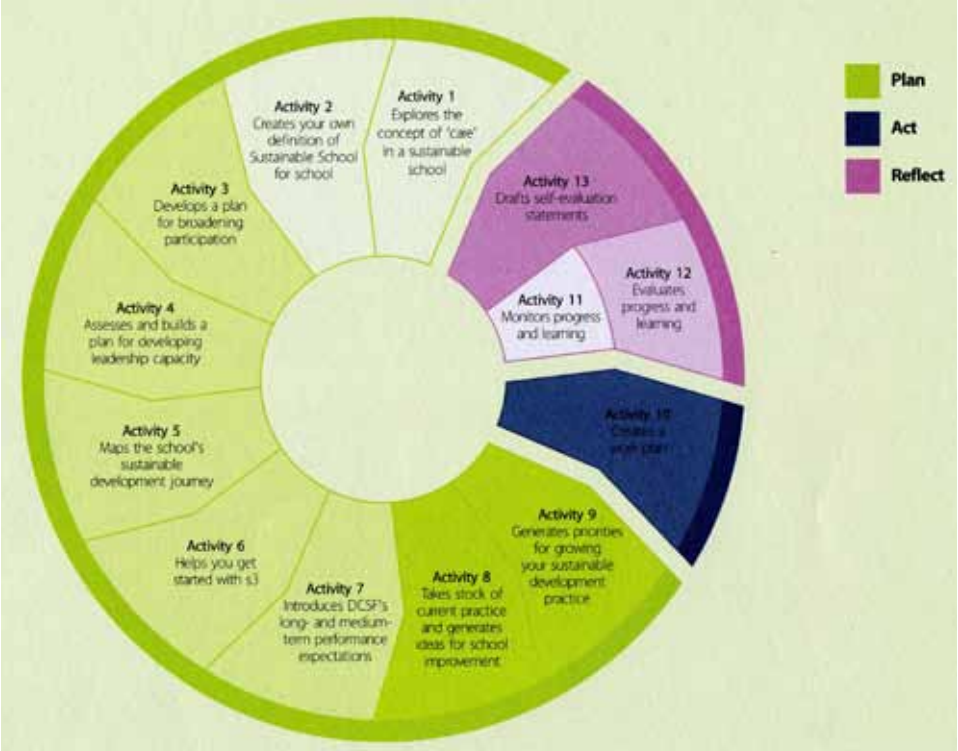
Table 14.4 – Lessons learned from campus practices

- Language matters. Some audiences who find sustainability too distant a concept became engaged by talking about health, student performance, savings, or whatever addressed their deepest desires and concerns.
- Kids love clipboards and happily participate in sustainability audits, goal setting, and monitoring progress toward sustainability goals.
- Students can be the most effective ambassadors, tour guides, and interpreters for green campuses. They learn the most that way too.
- Trustees and boards of education can be moved by well-prepared, informed presentations by children.
- People are more likely to recycle when recycling containers are placed next to trash receptacles then when they're in separate locations.
- Changing ingrained habits and mind-sets – of students, staff, parents and citizens – often requires nudging, cajoling, repeating the same thoughts and reminders. It's like any other kind of teaching: the lesson probably won't take the first time.
- The easiest money to 'raise' for campus greening is the money that's not spent. Address energy and resource conservation before looking for technological solutions.
- Emphasising low initial costs and quick paybacks can result in lower quality, less satisfaction, and much higher long-term costs for campus projects.
- On a large project, employing a commissioning agent can save time and expense in the short term, and prevent much grief in the long term.
- Fun is good. Games and competitions often work where moral suasion and invocation of responsibility don't.

From: Michael Stone (2009) *Smart By Nature*

Some of the existing UK sources on education for sustainability have already been listed in chapter 4. Among the most important, I believe, is the documentation from the DCSF (2008a) *Planning a Sustainable School*, which provides a practical ground plan for heads, teachers, governors and local authorities wishing to embark on this journey. A comprehensive set of participatory activities supports four key questions: 1. Does my school know why we're interested in using sustainable development to help us achieve our school development and improvement objectives and what a sustainable school might look like? 2. Does my school understand where it is in its process of becoming a sustainable school? 3. Does my school have strategic plans for using sustainable development to help realise its school development and improvement objectives? 4. Does my school have tools for planning a new project or initiative and capturing learning during and after, so that lessons can inform future activities? See Figure 14.1 below.

Figure 14.3 – Activities for developing a Sustainable School



Source: *Planning a Sustainable School* DCSF (2008a)

While detailed planning is a prerequisite for any major new initiative in school, this does come across as a somewhat linear and mechanistic process here – which is not to say it is not important and useful. It is important to note, however, that its intention seems somewhat distant from the ecological and holistic approaches discussed above in this chapter.

The stress here seems to be more on what the process can do for school improvement, rather than what the school can do to help create a more sustainable community. One should perhaps see the process above as the 'official' doorway for becoming a sustainable school. The other DCSF (2008b) publication, *s3: Sustainable School Self-Evaluation*, should be seen in the same spirit – a useful tool for evaluating progress in relation to each of the eight 'doorways'. Who knows what adventures in sustainability may follow from this initial process? Pupils who have learned the skills promoted in a sustainable school will be much clearer about what needs to be done and how to do it in the years ahead.

GOING FURTHER

✓ Michael Stone (2009) *Smart by Nature: Schooling for Sustainability,* Healdsburg, CA*:* Watershed Media.

Across America, a movement of educators, parents and students is re-fashioning education to prepare students for the challenges of 21st century. This book documents inspiring success stories of school and community transformation, together with practical 'what you can do' checklists. This is a valuable resource for all teachers interested in sustainability education.

✓ Bill McKibben (2009) *Deep Economy: Economics as if the World Mattered,* Oxford: Oneworld Publications.

In this powerful manifesto, Bill McKibben issues a call to arms for an economy that will strengthen communities and enrich our lives. Confronting head-on the prevailing view of our economy – that growth is good – the author shows that there are other routes to prosperity and quality of life which respect ecological limits.

David Boyle and Andrew Simms (2009)
The New Economics: A Bigger Picture, London: Earthscan.

'This book is the first accessible and straightforward guide to the new economics. It describes the problems and bizarre contradictions in conventional economics as well as the principles of the emerging new economics, and it tells the real-world stories of how new economics is successfully being put into practice around the world.'

Jackson, T. (2009) *Prosperity Without Growth: Economics for a Finite Planet,* London: Earthscan.

"Is more economic growth the solution? Will it deliver prosperity and wellbeing for a population projected to reach nine million? Tim Jackson – a top UK government – makes a compelling case against continued economic growth in developed nations."

A young child helps out on an allotment.

15. TEACHING IN A SPIRIT OF OPTIMISM

"Resilience in our personal lives is about lasting, about making it through crises, about inner strength and strong physical constitution. Resilience is destroyed by fear, which causes us to panic, reduces our inner resolve, and eventually debilitates our bodies. Resilience is built on hope, which gives us confidence and strength. Hope is not blind to the possibility of everything getting worse, but it is a choice we make when faced with challenges. Hope brings health to our souls and bodies."

Peter Newman et al. (2009) *Resilient Cities*

The heart of the dilemma

So where does this leave us? Well, the short answer is that the 21st century will look very different from the one that we were born into. There will be major changes ahead both locally and globally, changes that will significantly alter our inner and outer landscapes. Change can often be destabilising but it can also be exciting. In part this depends on whether one sees change as a problem or an opportunity.

Fritjof Capra (2003) points out that creativity, learning, change and development are inherent in all living systems and that a key characteristic of life is the spontaneous emergence of new order. When instability arises in a system, as it always will at some point, it can be experienced as tension, uncertainty, chaos or crisis. However, the experience of critical instability can lead to the emergence of a new order which in turn brings with it powerful emotions such as fear, confusion, self-doubt and pain. As artists, scientists and others know, out of such a messy, chaotic state new ideas and solutions are often born. In the second decade of the 21st century we live in just such times.

So what should be the role of education in these times? It must surely be about changing both self and society (chapter 1) in ways that support the flourishing of both society and environment. Karen Blincoe writes:

> *We could start by rethinking our educational platform to include intuition, imagining, wisdom, spirituality and holism, as well as basic knowledge of the interdependence and interconnectedness of all things. We could teach the next generation of learners skills on how to relate to other people, how to be part of a community, how to go beyond winning or being first. We could help them gain the attributes of being*

> *true, authentic and content with who they are, at any time and in any place* (Blincoe, 2009: 206).

One thing that is clear is that educators should not create fear or feelings of helplessness among students, as this only leads to the disempowerment of both teacher and taught. The crucial task is how, in turbulent times, to inspire students in such a way that they feel empowered to take on the challenges they find around them and gain insight and fulfilment from this. Whether we like it or not, the crucial question may now be how do we educate for upheaval?

The nature of the changes

This section summarises some of the possible changes we face in relation to climate change and peak oil – two of the major hazards facing educators and citizens today.

Until recently, most discussion about CO2 emissions and climate change focused on the need to keep the average global temperature from increasing by more than 2°C. At an international conference in Oxford in 2009, however, climate change scientists looked at the possible consequences of a 4°C average temperature rise, which is now considered possible. It could lead to runaway warming unless there is strong and committed action on carbon emissions.

A study by the UK's Meteorological Office for the Department of Energy and Climate Change challenged the assumption that severe warming will only be a problem for future generations. It stated that, if unchecked, climate change could cause an average temperature rise of 4°C by 2055. This is because ongoing temperature increases caused by greenhouse gas emissions could trigger dangerous feedback loops, which would then release further gases.

Should this occur, the *New Scientist* (2009a) reports that deforestation and fires could destroy vast areas of the Amazon rainforest. In southern China and northern India the monsoon rains that supply water for drinking and for crops could cease. Two hundred million people could become refugees as a result of rising sea levels, lack of water and crop failure. And the number of uncontrollable fires in Australia could treble. It should be noted that 4°C of warming averaged over the globe means even higher

temperature rises in the Arctic and west and southern Africa. If this scenario were to come about, the overall consequences for food, security, water and health would be enormous.

While President Obama still faces opposition to cutting carbon emissions from Republicans and fossil fuel industries (both of whom support business as usual), the scientific debate as to whether climate change is occurring is now over. There is a consensus among climate scientists over the seriousness of climate change, and there needs to be a similar international consensus among politicians about the major emission cuts that need to be made. The time lag between emissions and impact is about 30 years, so we are currently experiencing the effect of greenhouse gas emissions from the 1980s. In his excellent book, *Why We Disagree About Climate Change*, Mike Hulme (2009) argues that this no longer just a problem for scientists but rather it is an 'environmental, cultural and political phenomenon which is reshaping the way we think about ourselves, our societies and humanity's place on the Earth'.

The immediate tasks at personal, local and international levels remain the same: adaptation and mitigation. Adaptation refers to all the changes that need to be made to cope with the changes in climate that are already occurring and will continue to occur. These may be in relation to building construction, farming, flood defences or water supplies. Mitigation refers to the action that needs to be taken now and in the future to lessen the impact of climate change on both society and environment. Schools are a prime place for modelling what individuals and communities can do for themselves, and how they can lobby government, business and industry to move rapidly to a zero-carbon economy.

A report by the UK Energy Research Council in 2009 said that there is 'significant risk' that global oil production will begin to decline in the next decade (*Guardian*, 2009). It argued that worldwide production of oil from conventional wells (i.e. not sources such as tar sands) is likely to peak and go into terminal decline by 2020, which will lead to higher and more volatile prices. The report predicted that there would not be a sudden decline in oil production after the peak but that rather it would be a 'bumpy plateau' with a downward trend. Suggestions that the peak would not occur before 2030 were seen as at best optimistic and at worst as implausible.

References to peak oil are now just beginning to enter official as opposed to environmental literature. But, as the UK Energy Research Council's report shows, such references are framed in the context of energy supply rather than the wider post-oil picture. That wider, more holistic picture, would also highlight the crucial role of oil-based products in everyday life, as shown in Table 15.1 below.

Table 15.1 – Things made from oil

Aspirins, sticky tape, trainer shoes, lycra socks, glue, paints, varnish, foam mattresses, carpets, nylon, polyester, CDs, DVDs, plastic bottles, contact lenses, hair gel, rubber gloves, washing-up bowls, electric sockets, plugs, shoe polish, furniture wax, computers, printers, candles, bags, coats, bubble wrap, bicycle pumps, fruit juice containers, rawlplugs, credit cards, loft insulation, PVC windows, shopping bags, lipstick…

Rob Hopkins (2008) *The Transition Handbook*

No doubt human ingenuity and traditional methods of manufacture will be able produce many of these items in a new guise – but this list also highlights the major changes that lie ahead in the transition to a post-oil world.

I have used climate change and peak oil here as representative of the wider dilemmas related to achieving a more sustainable future. In education, it seems to me, there are four different ways in which schools may approach the crisis which society now faces.

1. Business as usual – with no particular reference to the crisis of sustainability.
2. Token gesture – occasional lessons on climate change as one issue among many.
3. Doing our bit – teaching about sustainability but not facing up to the task ahead.
4. Committed action – developing the skills and qualities needed for the long transition.

But maybe this is all too overwhelming for teachers and educators, let alone students, as the choices that have to be made and the changes that are coming about anyway all feel too much.

Dealing with despair

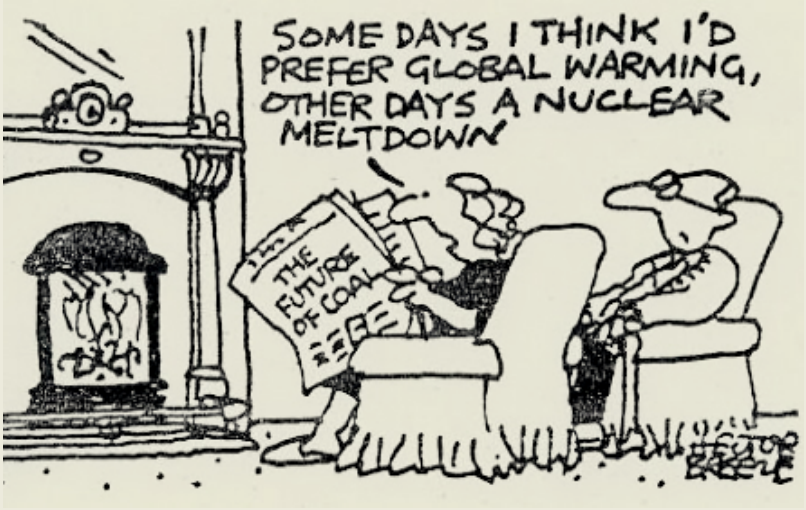
Teachers don't talk much about despair, but at times it lurks behind the door and in the staffroom. Teaching is a vital and crucially important profession but it is often not easy. Unhelpful colleagues, difficult pupils, new legislation, changing practices, the sheer commitment that is needed to keep everything going – all take their toll. All of these may at some point make one feel moments of despair.

I once ran a session for a group of PGCE students on the need for a global dimension in the curriculum. Not all were convinced that this related to their particular subject area. One student exclaimed: 'I've just spent three years learning all about my specialist subject and now you want me worry about the whole world!' He had a point but, as all students learn, becoming a graduate is only the beginning of the journey.

There is a more serious point to be made here, about how we face up to major difficulties, whether in our own lives or in the world around us. Some people would like to deny the existence or seriousness of global issues because they are often painful and can make one feel very uncomfortable. The process of denial is one of the ways in which we deal with things that we don't like: in ourselves, our family, or our relationships. 'He likes a drink but, no, he's not an alcoholic.' 'He does hit me sometimes, but he's a good man really.' We often prefer not to know things that it could be painful to deal with. One of the consequences of denial, of course, is that it creates blind-spots and zones of self-deception.

The same mechanisms are at work on institutional, national and global scales, for example in relation to war zones, starvation, refugees and climate change. This 'psychic numbing' denies the importance or severity of different threats: it's not that bad; scientists will find a way to sort it out; there's nothing I can do about it anyway; it's the government's problem, not mine. What this process saves one from having to do is looking squarely at a problem, feeling any sense of responsibility, thinking about the consequences of one's actions or inaction. But this is not to belittle the problems that arise through despair and denial.

Figure 15.1 – Some days



For example, it has been noted that when conversations occur about climate change, they often feel emotionally charged and are punctuated with awkward pauses. In discussion about this, it was revealed that people felt insecure, guilty, helpless and 'bad' for not doing anything about climate change.

What was also observed was that this was often about socially organised denial, i.e. that individual denial about something is often reinforced by social norms, such as not showing emotions, being in control or, for the young, being cool. It was noted that such norms are often strongly promoted by men, public figures and educators. Non-participation in action to mitigate climate change doesn't just happen by chance but is often the active result of unspoken collusion by social groups.

Some time ago I carried out an investigation into educators' sources of hope in troubled times (Hicks, 2006a). This was with teachers who, in different forms of educational work, had to teach about global issues that were often difficult and painful. How, I wondered, did such educators keep going? If as a matter of course one always taught about environmental problems, denial of human rights or world poverty, whether for an NGO, in school or at university, how did one stay sane? Most of my participants, it turned out, had neatly separated the cognitive and the affective and didn't really want to acknowledge the feelings brought up by such issues. They worked from the head only, rather than also from the heart.

What we looked at in particular were the sources of hope that one can draw on in difficult times, whether personal or professional, and which help us to keep going. Individually and in small groups, participants were given time to reflect on what their sources of hope were. By the end of the residential weekend the group came up with the following.

Table 15.2 – Sources of hope in troubled times

- ***The natural world*** – a source of beauty, wonder and inspiration which ever renews itself and ever refreshes the heart and mind
- ***Other people's lives*** – the way in which both ordinary and extraordinary people manage difficult life situations with dignity
- ***Collective struggles*** – groups in the past and present who have fought to achieve the equality and justice that is rightfully theirs
- **Visionaries** – those who offer visions of an Earth transformed and who work to help bring this about in different ways
- ***Relationships*** – being loved by partners, friends and family, which nourishes and sustains us in our lives
- ***Faith and belief*** – which may be spiritual or political and which offers a framework of meaning in both good times and bad
- ***A sense of self*** – being aware of one's self-worth and secure in one's own identity, which leads to a sense of connectedness and belonging
- ***Human creativity*** – the constant awe-inspiring upwelling of music, poetry and the arts, an essential element of the human condition
- ***Mentors and colleagues*** – at work and at home, who offer inspiration by their deeds and encouragement with their words
- ***Humour*** – seeing the funny side of things, being able to laugh in adversity, having fun, celebrating together
- ***Roots*** – links with the past, history, previous generations, ancestors, the need to honour continuity

Cynicism about hope is one element in the psychology of despair. By hope here I do not mean optimism or 'wishing that' something will come about. Hope doesn't guarantee that things will happen or turn out for the best. Hope involves risk, disappointment and surprise. As the theologian Jurgen Moltmann once said: "The experiment of hope is neither a certain nor an easy way, but it is the way of life in the midst of death. Not entering into it would mean not being ready to live at all in order to avoid the pain of disappointment as well as the happiness of love."

Engaging in transition

'Once the inevitabilities are challenged, we begin gathering our resources for a journey of hope', wrote Raymond Williams. This book challenges the inevitability of 'business as usual' and the psychology of despair. It challenges the unsustainable practices that have brought us to this place and highlights the many ways in which educators are working and can work for a more sustainable future. Here are some of them.

Envisioning the future

Chapter 3 stressed the importance of imaging or envisioning: the ability to hold clearly in mind the goal that one wishes to achieve in a given situation. Sports people and others, for example, use this as part of their training. Having a clear, as against a hazy, vision of the future clarifies the direction one wishes to go in. This may be personal or professional. If I have a clear image of myself as a positive and vibrant teacher, I have a goal to achieve which requires that I identify the appropriate action needed to become that. If I want my school to be a sustainable school, if I want my community to be a sustainable community, then I have to identify with others what the elements of such a community might be. With that as a guiding star I can then work out the steps that I with others need to take in order to reach that place.

In chapter 1, I shared some of the work that has been done on envisioning preferable futures. In particular, I looked at what a sample of undergraduate and post-graduate students considered the vital elements of such a future to be. It is worth looking back at that (page 22) before considering the findings of similar work carried out with educators from a variety of fields (Hicks, 2006b).

Before this weekend event, participants had been asked to ponder what the elements of their preferred social future might be, and to make a record of them. Later, this was shared with others in small groups and a composite picture gradually built up of their preferred future (see table 15.3 below). This was not based on any prior experience of discussing alternative futures but rather on whatever participants brought from their personal and professional lives. What the group had in common was that they were all educators.

Table 15.3 – Educators' preferred futures, 2025

Conviviality Calmer pace of life - less stress - smiling, energetic people - time to talk - more joy, but also sadness - richer quality of relationships - no rush, people relaxing - comfortable and colourful clothes - lots of laughter

Community Locally-produced goods - more jobs based at home - doors open, no burglar alarms - recycling schemes - groups open and welcoming to others - bartering and skills exchange – ease between the generations - digitally interactive noticeboards for voting on local issues - unhurried and more reflective people - music and street theatre – alternative schooling

Towns Human scale - clean and healthy - trees, gardens, fountains - energy efficient buildings - renewable energy - no supermarkets - small shops and market stalls - vibrant cultural centre – multicultural - people and children in spacious streets – sculptures, frescoes and public spaces - absence of mechanical noise - bustle of activity - no beggars or homeless - no cars - bike routes, trams and trains - organic gardening - easy access to countryside

Environment A green manifesto - sunshine - birdsong; clean air; calm and beautiful countryside - forests, valleys, hills and lakes - flowers and animals - brightness and light - closer relationship with and greater respect for nature

Three things strike me about this. First, that both the students' and the teachers' preferred futures share much in common. Second, that none of these activities were about sustainability as such but more generally about preferred futures. Third, in both cases the future that these groups described contained many of the elements of a more sustainable future.

Rather than being the result of an 'overactive imagination', as one of my students once claimed, what I think the envisioning process does is tap into our deeper desires for a future that is less violent, more fair, more caring and more respectful of the planet. In fact, it is about the deepest of human needs. I do not doubt, however, that venture capitalists, tobacco barons and coal moguls, for example, may have quite different wishes for the future.

Success stories

Whenever we introduce children to a problem, whether hurtful behaviour in the playground or the loss of endangered species, it is vital that we also introduce them to relevant success stories: this is how one playground conflict was successfully resolved; this is how one protected species has now greatly increased its numbers. But why stop at one success story? Why not find several – locally and from around the world?

One reason that people often give for failing to take action is that the problem feels too large, and what the individual can do is so small. I imagine this response comes about as a result of the individualisation of society that has taken place over the last 30 years under neo-liberal policies. If we see ourselves primarily as 'individuals' rather than part of a collective, be it a family, school or community, it is little wonder one feels that one cannot do much. But when did major change, good or bad, come about as a result of one individual?

An individual may have a powerful idea but, until others buy into it and work together on it, little changes. The abolition of slavery, the emancipation of women, the UN Declaration of Human Rights – these only came about because people joined with others to change things.

How could something so simple have been forgotten? It is our ancestors we have to thank for their visions of a preferred future,

not that they would have used that term. What they did work for in the 19th and 20th centuries was to create a better world, for their children and grandchildren – better working conditions, education for all, universal suffrage, a national health service.

We benefit so much from their endeavours, as well as having to live with their mistakes which often they could not have known about at the time. We need success stories therefore from past and present to inspire us; success stories that we can relate to and become involved in for our own children, our grandchildren and generations yet to be born. The case studies in Part 2 of this book are all illustrative of this. Other thumbnail sketches of success of success stories to follow-up can be found in Table 15.4.

Table 15.4 – Sustainable success stories

Fisheries success – North Atlantic

In 2000, north Atlantic albacore tuna stocks were only half of what could be considered sustainable. Then the International Commission for the Conservation of Atlantic Tunas took the advice of its scientific advisers and radically cut quotas in the region. Stocks have since recovered to within 20% of sustainable levels.

Energy sharing – Samso, Denmark

The small Danish island of Samso has become the model for community energy generation. Almost every household owns shares in the local wind farm, and the 4,300 residents produce their own heat by burning locally-grown straw in community heating plants. They also run their vehicles on rapeseed oil. The island's 21 wind turbines generate more electricity than the residents need, allowing them to sell the excess to the mainland

The good life – Todmorden, West Yorkshire, UK

The community in this small town has embarked on a mission to transform every bit of green space into a communal larder. Its schools and public parks are bursting with vegetable plots; there's a 200-tree orchard in the town centre; and crops are even sprouting in the town's cemetery. Residents can harvest this public produce for free. Todmorden hopes to be fully self-sufficient in fruit, vegetables and eggs by 2018.

Sun, not coal – Rizhao, China

In Rizhao, 99% of all households use solar power to heat their water – the result of a decade of government subsidies for solar research and development, financial incentives, education programmes and building regulations. The Worldwatch Institute, a research organisation based in Washington DC, calculates that it saves families 3%-6% of their income compared with electrical heating. Air quality in the region has also improved.

Rainwater harvesting – Rural India

Water tables across India are falling fast, threatening crops. Some rural areas have bucked the trend by re-embracing the art of rainwater harvesting. Residents of the village of Limbadia in western Gujarat have built small dams on local rivers, allowing monsoon run-off to seep into underground reservoirs. The village's wells now leak at the surface and long-dried steams have reappeared.

Bottled-water ban – Bundanoon, New South Wales, Australia

In July, the residents of Bundanoon voted to ban the sale of bottled water. The vote came after a company announced plans to tap the local aquifer, bottle the water in Sydney and sell it back to the town. Locals can now pay to refill their bottles with chilled, filtered tap water, or fill up for free at public water fountains – saving 200 millilitres of oil for every litre of bottled water not produced.

From: *New Scientist (2009b)* 'It's a green world after all'

The journey ahead

We are in a place where education has never been before. But we are not alone in the collective endeavour that this requires. David Orr (2009) talks about the 'long emergency': the time that lies ahead in which we must strive to create a zero-carbon society, a challenge both daunting and exciting. As educators, we are exactly in the right place at the right time to really make a difference.

At a day conference recently on sustainable schools, I was deeply impressed by two school eco-teams that spoke to the audience of primary head teachers. This is what I wrote to them afterwards:

> *Dear Eco-Team*
>
> *Having been at the recent Heads' conference on Sustainable Schools, what I enjoyed most that day was your contribution. I was most impressed by the way in which you stood up in front of a large and important audience and coolly gave your presentation as if it was something you did every day! Many of my students would not have spoken as clearly as you did, so I really liked the way in which you gave your presentation.*
>
> *But I also equally enjoyed, and was impressed by, all the things that you have been doing on sustainability at your school. When I watched you, I realised how knowledgeable you were about these things and what excellent activists you are for a more sustainable future. Well done! I hope you will persuade lots of other people about the importance of what you are doing because you really inspired me* (Hicks, 2009).

It was a small group of children that moved me most at that conference, lifted my spirits and made the world feel a brighter place. They spoke thoughtfully and with enthusiasm about their wind generator, solar panels and learning how to grow their own food. They knew the vocabulary of sustainability and were beginning to develop some of the skills needed to live in a future which will be very different from today – a more sustainable future. They may not know yet just how long the journey is that they have embarked on, but I guess some of their teachers do.

What I hope this book will give you and your students is some understanding, insight and practical guidance towards creating more sustainable schools, fit for the long transition that lies ahead.

In particular, you should gain from this book an understanding of:

- The unsustainable times that we live in and the route that has brought us to this place.
- The need for a global dimension in the curriculum that will help to illustrate our interconnections and interdependence.
- The importance of helping young people to think more critically and creatively about the future.
- What it means to be a sustainable school, and knowledge of how to move that process forward in your community.
- The Transition movement and its many local initiatives in relation to peak oil and climate change.
- Issues relating to health, food, farming and sustainability, and the ways in which they are interrelated.
- Issues relating to sustainable use of energy and water and the need to move towards a zero-carbon economy.
- Issues relating to sustainable travel and transport and the ways in which these need to change.
- The ways in which consuming and wasting materials contributes to the state we are now in.
- The way in which buildings need to be more sustainable and biodiversity more protected.
- How and why inclusion and participation are central to any notion of a more sustainable school.
- The elements that contribute to local well-being and the creation of a resilient community.
- How local and global are interdependent, and thus our responsibility to the global community.
- The broader field of sustainability both in relation to society and education and the ability to convey this to others.
- The need to teach in a spirit of hope and optimism that will empower young people in their own transition journey.
- Some of the resources that are available for use in the classroom and for your own professional development.

One final task, after carrying out some of the activities in Part 2, would be for the class to create their own composite scenario reflecting all of the issues they have studied and how they could look in a sustainable 2050. Do let me know what happens.

Figure 15.2 – Is she learning

A sustainable future?

- Is she learning how to think critically and creatively about the world and her future?
- Is she learning about probable and preferable futures for herself and others?
- Is she learning how to make wiser choices in the present and for the future?
- Is she learning about what grown-ups are doing to protect her world?
- Is she learning about all the things she and her friends can do in the community?
- Is she feeling optimistic about her future and the future of her world?
- If not, then the school and its teachers are failing in their duty to her generation.

GOING FURTHER

- Great Turning Times.
  Available online at: www.greatturningtimes.org

  An inspiring e-mail newsletter about finding our power to respond to global crises – bringing together ecology, psychology, spirituality and global issues. It lists events, news and resources to support the shift towards a life-sustaining society. It provides information on i) campaigns and acts of protest to counter the destruction; ii) building positive alternatives and sustainable ways of living; iii) the deeper shift in values, thinking and culture that will support this.

- Bill McKibben (2010) *Eaarth: Making a Life on a Tough New Planet,* New York Times Books.

  Our old familiar, McKibben argues, has gone as a result of our treatment of the biosphere. We have created a new and different planet which we might as well cal Eaarth. In this worled everything has changed and old habits will be of little use. Whether we like it or not, we must now learn to live within limits. A graphic scenario of the long transition.

- Mike Hulme (2009) *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity,* Oxford: Oxford University Press.

  A groundbreaking book that sets climate change in its wider social and cultural context by exploring the nature of science, the endowment of value, the things we believe, the things we fear, the communication of risk, and the way we govern. A startling and revealing examination of the deeper implications of climate change

- CAT (2007) *Zero Carbon Britain: An Alternative Energy Strategy,* Machynlleth: Centre for Alternative Technology.

  This is a step-by-step account from leading energy experts into why and how we need to move towards a zero-carbon society. It is the authors' belief that if society were motivated to do so, an emergency action plan could achieve this globally within 20 years.

- Worldwatch Institute (2010) *State of the World 2010: Transforming Cultures from Consumerism to Sustainability,* Washington, DC: Worldwatch Institute.

  This book paints 'a picture of what a sustainability culture could look like, how it differs from the current consumer culture and why we urgently need to make this shift and, most important, how we can and already are making the shift'. Full of illuminating and inspiring case studies.

- Tom Cromton and Tim Kasser (2009), *Meeting Environmental Challenges: The Role of Human Identity* W*WF-UK*

  One of a series of publications produced as part of WWF-UK's Strategies for Change Project, which examines the empirical basis for today's dominant approaches to environmental communications and campaigns, and to ask why these are failing to create the level of change that is needed . The report suggests that the two dominant approaches of focussing on organisations and on behaviours is not enough, but that we must seek to understand and reach out to people's deeper motivations and sense of self-identity.

- WWF Scotland (2009)
  Natural Change: Pyschology and Sustainability

  The first report from The Natural Change Project – part of the wider WWF-UK 'Strategies for Change' project (see above). Through an eco-pyschology approach, the project enabled a group of seven diverse individuals from the business, charitable, arts, public health and education sectors in Scotland to think deeply about sustainability, and to share the changes in their thoughts and attitudes more widely through social media and professional networks.

REFERENCES

Introduction

Guardian (2009) World faces 'perfect storm' of problems by 2030, chief scientist to warn, 18 March

Chapter 1

Apple, M. (2006) *Educating the 'Right' Way: Markets, Standards, God and Inequality,* 2nd edition, New York: RoutledgeFalmer

Boulding, E. (1994) Cited in: Hicks, D. (2006) *Lessons for the Future: The Missing Dimension in Education,* Victoria BC: Trafford Publishing

Gardner, G. & Prugh, T. (2008) Seeding the sustainable economy, chapter 1 in: Worldwatch Institute, *State of the World 2008*, London: Earthscan Publications

Goodwin, B. (2007) *Using Political Ideas*, 5th edition, Chichester: John Wiley

Harvey, D. (2007) *A Brief History of Neoliberalism*, Oxford: Oxford University Press

Hicks, D. (2004) Radical education, chapter 4 in: S. Ward (ed) *Education Studies*, London: RoutledgeFalmer. Also at: *http://www.teaching4abetterworld.co.uk/docs/download9.pdf*

Hicks, D. (2006) Retrieving the dream: how students envision their preferable futures, chapter 6 in: *Lessons for the Future*, Victoria BC: Trafford Publishing

Meadows, D., Randers, J. & Meadows, D. (2005) *Limits to Growth: The 30-Year Update*, London: Earthscan

Meighan, R. & Harber, C. (2007) *A Sociology of Educating*, London: Continuum

Richardson, R. (1991) *Daring to be a Teacher*, Stoke-on-Trent: Trentham Books

Chapter 2

Clark, D. (2009) *The Rough Guide to Green Living*, London: Rough Guides

DEA/Ipsos MORI (2009a) *Young People's Experiences of Global Learning*, London: DEA/Ipsos MORI

DEA/Ipsos MORI (2009b) *Teachers Attitudes to Global Learning*, London: DEA/Ipsos MORI

DfES (2005) *Developing the Global Dimension in the School Curriculum*, London: Department for Education and Skills

GA/Ipsos MORI (2009) *World Issues Survey*, Sheffield: Geographical Association/London: Ipsos MORI

Hicks, D. (2008) Ways of seeing: the origins of global education in the UK. Online. Available at: *http://www.teaching4abetterworld.co.uk/docs/download2.pdf*

Hogg, M. (2010) Global learning in schools: a review of what works, London: Think Global. Available at: *http://www.think-global.org.uk/resources/item.asp?d=4308*

QCA (2007) *The Global Dimension in Action: A Curriculum Planning Guide for Schools*, London: Qualifications and Curriculum Authority

QCA (2009) *Cross-Curriculum Dimensions: A Planning Guide for Schools*, London: Qualifications and Curriculum Authority

Chapter 3

Bell, W. (1997) *Foundations of Futures Studies*, Vol. 1, New Brunswick: Transaction Publishers

Carnegie UK Trust (2007) *The Shape of Civil Society to Come and Scenarios for Civil Society*, Dunfermline: Carnegie UK Trust. Also available online at *http://www.carnegieuktrust.org.uk*

Dator, J. (2005) Foreword, *Knowledge Base of Futures Studies*, CD-Rom, Brisbane:Foresight International

DCSF (2009) Beyond Current Horizons. At: *http://www.beyondcurrenthorizons.org.uk*

Hicks, D. (2001) *Citizenship for the Future: A Practical Classroom Guide*, Godalming: World Wide Fund for Nature UK

Hicks, D. (2006) *Lessons for the Future: The Missing Dimension in Education*, Victoria BC: Trafford Publishing

Hicks, D. (2007) Lessons for the future: a geographical contribution, *Geography*, 92 (3): 179-188

McHale, J. (1978) The emergence of futures research, in: J. Fowles (ed) *Handbook of Futures Research*, Westport, CT: Greenwood Press

Morgan, A. (2006) Teaching geography for a sustainable future, chapter 23 in: D. Balderstone (ed) *Secondary Geography Handbook*, Sheffield: Geographical Association

Chapter 4

DCSF (2008) *Planning a Sustainable School: Driving School Improvement Through Sustainable Development*, London: Department for Children, Schools and Families. Available at: *https://www.education.gov.uk/publications/standard/_arc_SOP/Page10/DCSF-00245-2008*

DCSF (2009) s3: *Sustainable School Self-Evaluation: Driving School Improvement Through Sustainable Development*, London: Department for Children, Schools and Families. Available at: *http://www.se-ed.co.uk/sites/default/files/resources/S3_Local_Authorities_Who_Support_Sustainable_Schools.pdf*

DFES (2006) *Sustainable Schools: For Pupils, Communities and the Environment*, London: Department for Education and Skills

DEFRA (2009) *Sustainable Development,* London: Department for Environment, Food and Rural Affairs.

Gayford, C. (2010) *Learning for Sustainability in Schools: Effective Pedagogy*, Godalming: World Wide Fund for Nature UK

Groundwork (2009) *Progress Summary for Mainstreaming Sustainable Schools*, Birmingham: Groundwork UK

Hicks, D. (2008) Education for sustainability, chapter 11 in: S. Ward (ed) *A Student's Guide to Education Studies*, 2nd edition, Abingdon: Routledge

Jackson, L. (2007) *Leading Sustainable Schools: What the Research Tells Us*, Nottingham: National College for School Leadership

Manteaw, B. O. (2009) People, places and cultures: education and the cultural politics of sustainable development, *International Journal of Development Education and Global Leaning*, 1 (2): 5-24

NCSL (no date) *Valuing Our Future Toolkit*, Nottingham: National College for School Leadership

Ofsted (2009) *Educating for Sustainable Development*, London: Ofsted

Porritt, J., Hopkins, D., Birney, A. and Reed, J. (2009) *Every Child's Future: Leading the Way*, Nottingham: National College for Leadership of Schools and Children's Services

Symons, G. (2008) *Practice, Barriers and Enablers in ESD and EE: A Review of the Research*, Preston Montford, Shrewsbury: SEED

Teachernet (2010) Sustainable Schools. Available at: *https://www.education.gov.uk/publications/eOrderingDownload/brief_introduction_to_sustainable_schools.pdf*

Chapter 5

Boyle, D. and Simms, A. (2009) *The New Economics: A Bigger Picture*, London: Earthscan

Chamberlin, S. (2009) *The Transition Timeline: For a Local, Resilient Future*, Dartington: Green Books

Claire, H. & Holden, C. (eds) (2007) *The Challenge of Teaching Controversial Issues*, Stoke-on-Trent: Trentham Books

Goodall, O. (2007) War and peace with young children, chapter in: H. Claire and C. Holden (eds) *The Challenge of Teaching Controversial Issues*, Stoke-on-Trent: Trentham Books

Hicks, D. (2009) Naturally resourceful: could your school be a Transition School? *Primary Geographer*, No. 70: 19-21

Hicks, D. (2010) A sustainable future: four challenges for geographers, *Teaching Geography*, 36 (1): 9-11

Holden, C. (2007) Teaching controversial issues, chapter 5 in: D. Hicks & C. Holden (eds) *Teaching the Global Dimension: Key Principles and Effective Practice*, London: Routledge

Gray, J. (2009) *False Dawn: The Delusions of Global Capitalism*, London: Granta

Holmgren, D. (2009) *Future Scenarios: How Communities Can Adapt to Peak Oil and Climate Change*, Dartington: Green Books

Hopkins, R. (2008) *The Transition Handbook: From Oil Dependency to Local Resilience*, Dartington: Green Books. See also: *http://www.transitionnetwork.org/*

ITPOES (2008) *The Oil Crunch: Securing the UK's Energy Future*, London: Industry Taskforce on Peak Oil & Energy Security

Leggett, J. (2006) *Half Gone: Oil, Gas, Hot Air and the Global Energy Crisis*, London: Portobello Books

Meadows, D., Randers, J. & Meadows, D. (2005) *Limits to Growth: The 30-year Update*, London: Earthscan

Monbiot, G. (2006) Chapter 2 in: *Heat: How to Stop the Planet Burning*, London: Allen Lane

Observer, The (2010) 'Growth loses its place in the pursuit of happiness', Business section, 10 January

Strahan, D. (2008) *The Last Oil Shock: A Survival Guide to the Imminent Extinction of Petroleum Man*, London: John Murray; see also: *www.lastoilshock.com*

Chapter 6

Chatham House (2009) *Food Futures: Rethinking UK Strategy*, London: Chatham House Food for Life Partnership (2010) Online. Available at: *http://www.foodforlife.org.uk*

Guardian, The (2009a) Carbon emissions fuelled by high rates of obesity, 20 April

Guardian, The (2009b) Goodbye to 'bogof'... ministers plan to keep Britain fed for the next 40 years, 11 August

Holmgren, D. (2002) *Permaculture: Principles and Pathways Beyond Sustainability*, Hepburn, Vic: Holmgren Design Services

Lang, T. and Heasman, M. (2004) *Food Wars: The Global Battle for Mouths, Minds and Markets*, London: Earthscan

Millstone, E. and Lang, T. (2008) *The Atlas of Food: Who Eats What, Where, and Why*, London: Earthscan

Policy Foresight Programme (2008) Record of the Symposium on 'Can Britain Feed Itself? Should Britain Feed Itself?' Oxford: The James Martin Institute, University of Oxford

Soil Association (2010) Available at: *http://www.soilassociation.org/*

Chapter 7

Carbon Detectives Kit (2010) On-line. Available at: *http://www.carbondetectives.org.uk/content/home/index.html*

CAT (2010) *Zero Carbon Britain, Machynlleth*: Centre for Alternative Technology. Available at ~ *www.zerocarbonbritain.com*

de Villiers, M. (2001) *Water Wars: Is the World's Water Running out?* London: Phoenix Press

Energy Saving Trust (2010) On-line. Available at: *http://www.energysavingtrust.org.uk/*

Glasgow Herald, The (2005) Ex-safety officer at Dounreay claims cover-up, 7 March

Guardian, The (2010) Sun, wind and wave-powered: Europe unites to build renewables 'supergrid.' 4 January

Heinberg, R. (2005) *The Party's Over: Oil, War and the Fate of Industrial Societies,* Forest Row, East Sussex: Clairview Books

Jowitt, J. (2008) Is water the new oil? *The Observer Magazine*, 2 November

Leggett, J. (2006) *Half Gone: Oil, Gas, Hot Air and the Global Energy Crisis*, London: Portobello Books

Pearce, F. (2007) *When the Rivers Run Dry: What Happens When our Water Runs Out?* London: Eden Project Books/Transworld Publishers

Water Aid (2010). Available at: *http://www.wateraid.org/*

Chapter 8

Bikeability (2010) Available at: *http://www.bikeability.org.uk*

Cheshire East Council (2010) Sustainable school travel. Available at: *http://www.cheshireeast.gov.uk/transport_and_travel/school_and_college_transport/sustainable_school_travel.aspx*

Guardian, The (2009) Stobart to go green with food deliveries by eco-train, 25 October

Guardian, The (2008) Secret report: biofuel caused food crisis, 6 July

Hickman, L. (2005) *A Good Life: The Guide to Ethical Living*, London: Eden Project Books

Monbiot, G. (2006) *Heat: How to Stop the Planet Burning*, London: Allen Lane

Newman, P., Beatley, T. and Boyer, H. (2009) *Resilient Cities: Responding to Peak Oil and Climate Change*, Washington: Island Press

Sustrans (2009) *Do Humans Dream of Electric Cars? Your Journey to Sustainable Travel*, Bristol: Sustrans

Sustrans (2010) Travel Behaviour Research. Available at: *www.sustrans.org.uk/resources/publications/information-sheets.*

Yellow School Bus Commission (2008) Report and Recommendations. Available at: *http://www.ysbcommission.com/reports/YSB_Report.pdf*

Chapter 9

Clark, D. (2006) *The Rough Guide to Ethical Living*, London: Rough Guides

ECO (2008) *The Good Shopping Guide 2008/9*, London: Ethical Company Organisation

Ethical Consumer (2011). Details available at: *http://www.ethicalconsumer.org*

Jackson, T. (2008) The challenge of sustainable lifestyles, chapter 4 in: Worldwatch Institute (ed) *State of the World 2008: Ideas and Opportunities for Sustainable Economies*, London: Earthscan

Klein, N. (2010) *No Logo*, 10th anniversary edition, London: Fourth Estate

Lawson, N. (2009) *All Consuming*, London: Penguin

Maiteny, P. (2009) Finding meaning without consuming, chapter 26 in: A. Stibbe (ed) *The Handbook of Sustainability Literacy: Skills for a Changing World*, Dartington: Green Books

UNICEF (2011) Child protection from violence, exploitation and abuse. Available at: *http://www.unicef.org/protection/*

World Wide Fund for Nature UK (2011) Footprint calculator. Available at: *http://footprint.wwf.org.uk/*

Chapter 10

BedZED (2011) The prototype for One Planet Communities. Available at: *http://www.bioregional.com/what-we-do/our-work/bedzed/*

Department for Communities and Local Government (2008) Greener Homes for the Future. Available at: *http://www.communities.gov.uk/documents/planningandbuilding/pdf/803784.pdf*

Department for Education and Schools (2006) *Schools for the Future: Design of Sustainable Schools*, London: HMSO

Dow, K. and Downing, T. (2007) *The Atlas of Climate Change*, London: Earthscan

English Partnerships (2010) The carbon challenge. Available at: *http://collections.europarchive.org/tna/20100911035042/http://englishpartnerships.co.uk/carbonchallenge.htm*

Greenpeace (2009) Available at: *http://www.greenpeace.org/*

Learning Through Landscapes. Available at: *http://www.ltl.org.uk/*

Lovejoy, T. (2008) Climate change's pressures on biodiversity, in: Worldwatch Institute, *State of the World 2009*, London: Earthscan

One Planet Communities. Available at: *http://oneplanetcommunities.org/*

Sale, J. (2010) Biodiversity loss. Available at: *http://www.jri.org.uk/brief/biodiversity.htm*

Chapter 11

Antidote (2003) *The Emotional Literacy Handbook: Promoting Whole-school Strategies*, London: David Fulton

Park, J. and Tew, M. (2007) *The Emotional Literacy Pocketbook*, London: David Fulton

Baginsky, W. (2004) *Peer Mediation in the UK: A guide for schools*, London: NSPCC.

DCSF (2010) Tackling school bullying. Available at: *http://webarchive.nationalarchives.gov.uk/20100512160025/teachernet.gov.uk/wholeschool/behaviour/tacklingbullying/*

Hughes, B. (2010) Transforming Conflict. Available at: *http://www.transformingconflict.org/*

Hughes, B. (2004) Just Schools: *A Whole-school Approach to Restorative Justice*, London: Jessica Kingsley

Park, J. and Tew, M. (2007) Shaping an emotionally literate curriculum. Available at: *http://www.antidote.org.uk/*

Richardson, R. (2009) *Holding Together – Equalities, Difference and Cohesion*, Stoke-on-Trent: Trentham Books

Richardson, R. and Miles, B. (2008) *Racist Incidents and Bullying in Schools: How to Prevent Them and How to Respond When They Happen*, Stoke-on-Trent: Trentham Books

Wilkinson, R. and Pickett, K. (2009) The Spirit Level: *Why More Equal Societies Almost Always Do Better*, London: Allen Lane

Chapter 12

Assadourian, E. (2008) Engaging communities for a sustainable world, chapter 11 in: Worldwatch Institute, *State of the World 2008*, London: Earthwatch

Chamberlin, S. (2009) *The Transition Timeline: for a local, resilient future*, Dartington: Green Books

Gray, J. (2009) *False Dawn: The Delusions of Global Capitalism*, London: Granta

Heater, D. (2002) *What is Citizenship?* Cambridge: Polity Press

Hopkins, R. (2008) *The Transition Handbook: From Oil Dependency to Local Resilience*, Dartington: Green Books

Chapter 13

Burr, M. & Andreotti, V. (2008) *Thinking Things Through: Linking*. Available at: *http://www.oneworldlink.org.uk/primary_1/Thinking%20things%20through.pdf*

Friends of the Earth (2010) Available at: *http://www.foe.co.uk*

Geographical Association. Available at: *http://geography.org.uk/aboutus*

Geographical Association (2009) *A Different View: A Manifesto from the Geographical Association*, Sheffield: Geographical Association.

Hicks, D. & Holden, C. (eds) (2007) *Teaching the Global Dimension: Key Principles and Effective Practice*, London: Routledge

Hulme, M. (2009) *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity*, Cambridge: Cambridge University Press

New Economics Foundation (2010) Available at: *http://www.neweconomics.org/*

Oxfam (2010) Available at: *http://oxfam.org.uk*

Tanner, J. (2007) Global citizenship, chapter 13 in: D. Hicks & C. Holden (eds) *Teaching the Global Dimension: Key Principles and Effective Practice*, London: Routledge

World Development Movement (2010) Available at: *http://wdm.org.uk/*

Young, M. & Commins, E. (2002) *Global Citizenship: The Handbook for Primary Teaching*, Cambridge: Chris Kington/Oxford: Oxfam

UKLOWA (2010) Toolkit for Linking. Available at: *http://www.ukowla.org.uk/toolkitmain/toolkit.asp*

Chapter 14

Barlow, Z. (2009) Preface in: M. Stone, *Smart by Nature: Schooling for Sustainability*, Healdsburg, CA: Watershed Media

Capra, F. (2003) *The Hidden Connections: A Science for Sustainable Living*, London: Flamingo

Center for Ecoliteracy (2010) On-line. At: *http://www.ecoliteracy.org*

Chamberlin, S. (2009) *The Transition Timeline: For a Local, Resilient Future*, Dartington: Green Books

DCSF (2008a) P*lanning a Sustainable School: Driving School Improvement Through Sustainable Development*, London: Department for Children, Schools and Families

DCSF (2008b) s3: *Sustainable School Self-Evaluation*, London: Department for Children, Schools and Families

Jackson, T. (2009) *Prosperity Without Growth: Economics for a Finite Planet*, London: Earthscan

McKibben, B. (2009) *Deep Economy: Economics as if the World Mattered*, Oxford: Oneworld Publications

Meadows, D. et al. (2005) *Limits to Growth: The 30-year Update*, London: Earthscan

Orr, D. (2004) *Earth in Mind: On Education, Environment, and the Human Prospect*, 10th anniversary edition, Island Press: Washington, DC

Sterling, S. (2009) Ecological intelligence: viewing the world relationally, chapter 10 in: A. Stibbe (ed) *The Handbook of Sustainability Literacy: Skills for a Changing World*, Dartington: Green Books

Sterling, S. (2001) *Sustainable Education: Re-visioning Learning and Change*, Dartington: Green Books

Stone, M. & Barlow, Z. (ed) (2005) *Ecological Literacy: Educating Our Children for a Sustainable World*, San Francisco, CA: Sierra Club Books

Stone, M. (2009) *Smart by Nature: Schooling for Sustainability*, Healdsburg, CA: Watershed Media

Transition Network (2011) Available at: *http://www.transitionnetwork.org/*

Chapter 15

Blincoe, K. (2009) Re-educating the person, chapter 30 in: A. Stibbe (ed) *The Handbook of Sustainability Literacy: Skills For a Changing World*, Dartington: Green Books

Capra, F. (2003) *The Hidden Connections: A Science for Sustainable Living*, London: Flamingo

Guardian, The (2009) Oil production peak could be reached before 2020, 9 October

Hicks, D. (2010) The Long Transition: Educating for optimism and hope in trouble times. Available at: *http://www.teaching4abetterworld.co.uk/docs/download13.pdf*

Hicks, D. (2009) Naturally resourceful: could your school be a Transition School? *Primary Geographer*, No. 70, Autumn

Hicks, D. (2006a) Stories of hope: a response to the psychology of despair, chapter 7 in: *Lessons for the Future: The Missing Dimension in Education*, Victoria, BC: Trafford Publishing

Hicks, D. (2006b) Always coming home: identifying educators' desirable futures, chapter 8 in: *Lessons for the Future: The Missing Dimension in Education*, Victoria, BC: Trafford Publishing

Hopkins, R. (2008) *The Transition Handbook: From Oil Dependency to Local Resilience*, Dartington: Green Books

Hulme, M. (2009) *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity*, Oxford: Oxford University Press

Newman, P., Beatley, T. and Boyer, H. (2009) *resilient Cities: Responding to Peak Oil and Climate Change*, Washington: Island Press

New Scientist (2009a) A world 4C warmer, 3 October

New Scientist (2009b) It's a green world after all, 26 September

Orr, D. (2009) *Down to the Wire: Confronting Climate Collapse*, New York: Oxford University Press

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1,500

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11,000

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