

# Sustaining a Healthy Future



Taking action on climate change



**FACULTY OF  
PUBLIC HEALTH**

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**Be the change you want to see in the world.**

Gandhi

# Foreword

The links between health and the environment have never been more clearly defined. Reinforcing the connections can lead to better and more effective public health policies and sustainable development strategies which in turn contribute to better environments. Whilst in England the health impacts of climate change are only just beginning to manifest, a syndemic<sup>1</sup> approach which looks for common solutions to difficult social policy problems offers enormous potential to make a real difference. To take the example of obesity, encouraging people to walk rather than use their cars will not only benefit the health of the public but also has enormous potential to contribute towards our collective action on climate change by reducing carbon emissions.

National policy in the UK reflects this synergy between sustainable development and health. The UK government is fully committed to tackling climate change and to promoting a sustainable, healthy future, encouraging people to live within their environmental limits – protecting valuable resources and ensuring a healthy future for coming generations. Our sustainable development strategy, *Securing the Future*, sets out priorities for action and is described in this guide.

But in order to translate rhetoric into measurable achievements we need to increase our reach outside the traditional health environments, across government, into local government, the voluntary sector, and communities themselves. As *Choosing Health* recognised, government cannot do this alone – a proactive, systemic approach which draws on and promotes effective partnership with others, engages communities in supporting themselves, and provides a supportive environment for individuals to help them make the right choices for themselves will be key to achieving the sustainable future to which we aspire.

We need your support and your commitment if we are to achieve this level of change. *Sustaining a Healthy Future* recognises the critical role you as a public health community, and the NHS as an organisation, can play in highlighting the need for action on climate change. We need to lead by example, and we need to work with the right partners to enable others in our local communities to achieve change too.

Together we can and will make a difference.



**Dr Fiona Adshead**

**Deputy Chief Medical Officer  
Director General for Health Improvement  
Department of Health, England**

<sup>1</sup>Syndemics are epidemics or common health problems which interact synergistically; for example, obesity and climate change are both linked to increased car use. Action to tackle syndemics focuses on identifying common solutions to different policy problems.

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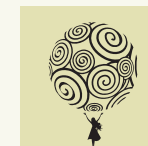
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# Introduction

Climate change or, more accurately, 'climate chaos', has become one of the most important public health challenges of the 21st Century. It threatens the basic elements of our existence – access to water, food production and land use – with huge implications for health and wellbeing.<sup>1</sup> With the global population set to rise to over nine billion by 2050,<sup>2</sup> developing and implementing effective strategies to protect natural resources, promote sustainability, and ensure that our actions today do not compromise the health and wellbeing of future generations has become a public health imperative.

Climate change also encapsulates major issues of inequality and inequity – both in the UK and globally.

Although this guide focuses on the NHS, it is for people working in the health sector in its widest sense – the public health community, the NHS, local authorities and the voluntary sector – and for anyone with an interest in health and the environment. It sets out the scale of the issues, and offers practical information on what you can do as an individual and within your organisation to help protect and sustain the public's health. Through taking practical action *together*, we – and the communities and organisations we live and work in – can become part of a healthy, sustainable, low-carbon future.



**There is still time to avoid the worst impacts of climate change if strong collective action starts now.** Stern Review

# Climate change and health

## The effects of carbon emissions on climate change

Our dependence on fossil fuels such as oil, coal and gas has increased our emissions of greenhouse gases, especially carbon dioxide (which makes up almost two thirds of greenhouse gases). Carbon dioxide (CO<sub>2</sub>) and other gases that cause climate change (methane and nitrous oxide) let in heat from the sun more readily than they let it out, leading to a rise in the earth's temperature – commonly known as global warming or climate change. 'Climate chaos' is used to describe the effects of unpredictable weather with extremes of heat and cold, violent storms, flooding and drought; all of which can destroy crops and livestock, and lead to displacement of whole populations.

It is estimated that, if CO<sub>2</sub> concentrations in the atmosphere remain as high as they are today, the likely result is two degrees centigrade of warming above pre-industrial levels by 2030.<sup>5</sup> It may not seem very much, but an increase by just two degrees is the point beyond which catastrophic – and in some cases irreversible – impacts are likely:

- substantial disintegration of the West Antarctic Ice Sheet, causing rising sea levels and flooding, threatening coastal habitats including in the UK;
- melting of all Arctic sea ice in the summer (resulting in the possible extinction of certain species such as polar bears);
- melting of the permafrost in the far north, releasing methane and raising sea levels (it has been estimated that if all the ice in Greenland melted, there would be a rise in sea levels of over six metres);



### Climate change: what we know

It is widely accepted that climate change and its consequences:<sup>3,4</sup>

- are primarily a result of human activity;
- pose a serious threat to health and the future security of resources;
- will result in a major ecological and humanitarian crisis if they continue unchecked;
- are happening now, both in the UK and worldwide.

- flooding, displacing up to 200 million people;
- drying out of much of the Amazon rainforest, releasing massive amounts of CO<sub>2</sub> from forest fires and tree decay;
- global food insecurity as a consequence of agricultural losses, extending to the world's largest exporters of food including the US;
- water scarcity affecting two billion people (NB: the provision of adequate water supplies is already a problem in parts of England, particularly in the south and east).<sup>6</sup>

These impacts are documented in the report of the United Nations' Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Impacts, Adaptation and Vulnerability*.<sup>7</sup>

## The effects of climate change on health

### Global impacts on health

The health impact of climate change is already being seen around the world. The World Health Organization (WHO)<sup>8</sup> estimated that the climate change that occurred between 1961 and 1990 – a global temperature increase of just 0.6 degrees centigrade – is causing, *each year*, 150,000 deaths and the loss of 5.5 million Disability-Adjusted Life Years. These estimates may not reflect the true scale of the mortality and morbidity as a consequence of climate change.

The IPCC lists the following major health effects of climate change, which are "*likely to affect the health status of millions of people*" across the globe:<sup>9,10</sup>

- Increased risk of:
  - heat-related mortality, especially for older, chronically sick, very young and socially isolated people;
  - food and water shortages;
  - malnutrition;
  - water- and food-borne diseases;
  - deaths and injuries from flooding;
- Migration-related health effects.

## UK impacts on health

The impacts of climate change on health in the UK will be of two major types:

### **Global impacts affecting the UK**

- crop failures causing food insecurity through rising food prices and possibly food shortages;
- armed conflict over water, land and food supplies, and major flooding, leading to mass migration, creating potentially huge numbers of displaced people.

### **Direct impacts within the UK**

The Department of Health and the Health Protection Agency published a draft report on the *Health Effects of Climate Change in the UK*.<sup>11</sup> From this and other sources, climate change can be expected to cause the following impacts on UK health:

- an increase in deaths, disability and injury from:
  - extremes of heat and cold;
  - floods and storms, including health hazards from chemical and sewage pollution;
  - food poisoning;
  - respiratory problems from the damaging effects of surface ozone during the summer and mould growth in housing;
  - skin cancer and cataracts;
  - insect-borne disease from increases in flies and fleas (although malaria outbreaks are likely to be rare).

In 2003, the major heatwave in Europe caused more than 23,000 premature deaths, including almost 11,500 in France alone.<sup>12</sup>



**An average temperature rise of just two degrees centigrade will have a catastrophic impact on human health. This makes tackling climate change at all levels – individually, organisationally, locally, regionally and globally – a public health imperative, as it will be the most vulnerable societies, and the most vulnerable people within societies, that will suffer the most.**

## Carbon emissions – the causes

### The UK's 'big hitters'

Each of the following accounts for about one quarter of the UK's greenhouse gas emissions and are therefore the obvious priorities for action:<sup>13</sup>

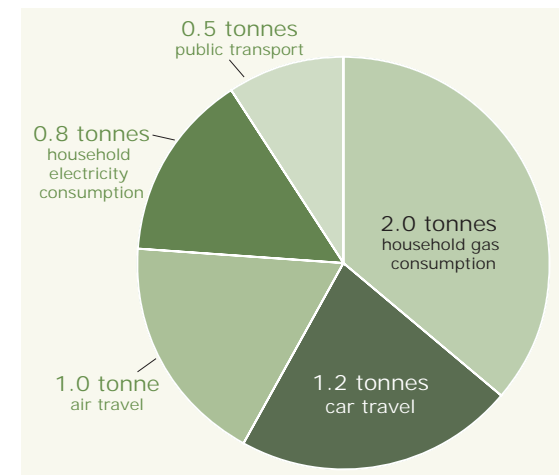
- the energy used to heat, light and run our homes and workplaces;
- transport for shopping and leisure, at work and to distribute goods;
- the food industry – production, transportation and retail;
- production of all other goods and services (excluding food).

### Individual carbon emissions

Although estimates vary,<sup>14</sup> we can say in simple terms that each person in the UK, on average, is responsible for approximately 10 tonnes of carbon emissions.

**Just over half is from our personal travel and household energy needs – see Fig 1.**

**Fig 1: Individual carbon emissions – personal**



<sup>14</sup> Estimates of annual average UK per capita carbon emissions vary from 9 tonnes to 12 tonnes. The Marches Energy Agency, using World Bank 2005 figures, gives the UK as 9 tonnes, the USA as 20 tonnes, France 6 tonnes, India 1 tonne, China 3 tonnes, and the world average as 4 tonnes. See also: Lynas M. 2007. *Carbon counter: calculate your carbon footprint*, Collins Gem; Goodall C. 2007. *How to live a low-carbon life: the individual's guide to stopping climate change*, Earthscan; and Monbiot G. 2006. *Heat: how to stop the planet burning*, Penguin Books, Allen Lane.

On average, just under half of each person's carbon emissions is our individual share of the emissions resulting from the production of goods and services, and national infrastructure which we use – see Fig 2.

Between 1990 and 2004, household emissions increased by 12%, and emissions from transport by 9%.<sup>14</sup> Carbon dioxide emissions from cars make up 13% of the UK total by source, and if there is no change, transport CO<sub>2</sub> emissions would be expected to rise by 35% between 1990 and 2030.<sup>15</sup>

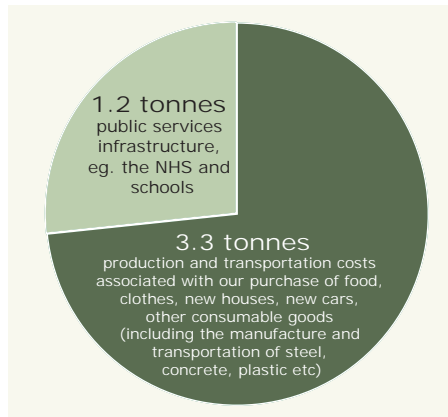
### NHS carbon emissions

As holder of the biggest property portfolio in Europe and employer of over one million people, the NHS has a considerable carbon footprint – emitting around one million tonnes of carbon each year,<sup>iii</sup> with an annual energy bill of over £300 million.<sup>16</sup> In addition, 5% of all the UK's emissions from road transport are attributable to NHS-related journeys.<sup>17</sup>

**We're facing a global public health catastrophe.  
It's up to all of us to use our collective  
knowledge and skills to lead the change to a  
healthy, sustainable future.**

Professor Alan Maryon-Davis, President, Faculty of Public Health

**Fig 2: Individual carbon emissions – share of infrastructure**



## Cutting the carbon

### National targets

The 2007 *Energy White Paper*<sup>18</sup> and the draft *Climate Change Bill*<sup>19</sup> commit the UK to reducing carbon dioxide emissions by 60% by 2050 and 26-32% by 2020 against a 1990 baseline.

The Scottish Government's<sup>v</sup> draft *Climate Change Bill*<sup>20</sup> sets a more ambitious target of cutting emissions by 80% by 2050, equivalent to emissions reductions of 3% each year. Consultation includes proposals for targets based on average annual reductions over a five year period.

### Individual targets

A sustainable carbon footprint<sup>v</sup> for each person on the globe has been estimated at no more than two tonnes each year.<sup>21</sup> (This calculation is based on a complex analysis of consumption of natural resources in different countries around the world.) As described on page 7, the average UK citizen uses approximately 10 tonnes per year – that is, about five times what is sustainable for the planet. Experts also suggest that we may need to cut our carbon emissions by as much as 80% or 90%, by 2030<sup>22</sup> (rather than 2050) in order to prevent the catastrophic consequences of climate change above two degrees centigrade.

*A ten per cent reduction by 2010 would be a reasonable short-term target for individuals and organisations to set themselves.*

We will need to continue to press local and national governments for resolute action to tackle climate change. However, each of us has a responsibility to reflect on our own activities and to take action to reduce our own carbon emissions – including being prepared to accept a 'rationing' of access to carbon.

<sup>iv</sup> Previously the Scottish Executive.

<sup>v</sup> A **carbon footprint** is a measure of the impact that human activities have on the amount of carbon dioxide produced through the combustion of fossil fuels, expressed as weight of carbon dioxide emissions, usually in tonnes. An **ecological footprint** is a measure of resource consumption and environmental impact, expressed as land usage in global hectares (gha) per person per year. Resources are consumed globally, so hectares may be from any part of the world. The ecological footprint can be measured for an individual, organisation, region or event. A fair 'earthshare' has been estimated to be an annual footprint of around 1.8 gha for each person on the planet. In the UK the actual average annual footprint has been calculated to be three times this at 5.4 gha.

<sup>iii</sup> This figure excludes GP practices.

## NHS targets and performance

The 2007 *Energy White Paper*<sup>23</sup> targets of reducing CO<sub>2</sub> emissions to 26-32% below 1990 levels by 2020 and by 60% by 2050 also apply to the NHS. The NHS is also subject to mandatory climate change-related targets, set by the UK Departments of Health. Energy consumption is a key target. For example, the NHS in England has been set a target of reducing primary energy consumption by 15% (or cutting carbon emissions by 0.15 million tonnes) against 2000 levels by 2010.<sup>24</sup> In addition, all NHS buildings in England have been set specific energy-efficiency targets – which have also been adopted by the NHS in Wales. The Scottish Government has also committed the NHS in Scotland to a 2% reduction in energy consumption per year until 2010.<sup>25</sup>

However, it is unlikely that the NHS in both England and Wales will be able to achieve the 15% emissions-reduction target. In fact, absolute energy consumption (and therefore emissions) is still rising; energy consumption has increased by over 8% since 1999-2000 in England – despite over 70% of English NHS trusts meeting the mandatory target of 55-65 GJ/100m<sup>3</sup>. This discrepancy is due to the increase in the number of healthcare buildings.<sup>26</sup> To meet these targets, the NHS in England and Wales will need to reduce energy consumption by between 6% and 8% each year. The NHS in Scotland, in contrast, has made significant strides in reducing energy consumption – down by nearly 36% in the past 20 years. Carbon dioxide emissions have also fallen by almost 39%.<sup>27</sup>

Both the Department of Health in England and the Scottish Government have set up funds to help the NHS in these countries make energy savings and meet its targets.

Beyond all these targets, however, the seriousness of the situation means that, ultimately, the NHS should aim to be **carbon neutral**. The Sustainable Development Commission wants national and local government, healthcare facilities, schools, prisons and the rest of the public sector to make zero contribution to climate change.<sup>28</sup>



**It has been said that we are at an historical and ecological crossroads.<sup>29</sup> If we continue as we are – with CO<sub>2</sub> outputs five times what is sustainable – we face a dangerously uncertain future for health and wellbeing. We need to implement strategies that will effect real and lasting change. The most widely accepted strategy is *sustainable development*.**

# On the path to a sustainable future

## What is sustainable development?

**A**lthough it appears to be big on government agendas, fewer than one in three people have heard of the term 'sustainable development', and even fewer can explain what it means.<sup>30</sup>

In the business community, the language of 'corporate social responsibility' or 'corporate citizenship' is often used to describe social and environmental objectives. In local government, the term 'wellbeing' is frequently linked to sustainable development. The meaning, generally speaking, is the same.

In this guide, we define sustainable development as the integration of environmental, social, political and economic considerations and impacts within decision-making. It also includes notions of social justice and equity. Plans and decisions should meet the needs of the present without compromising the ability of future generations to meet their needs. (This was the definition first fully articulated in 1987 by Dr Gro Harlem Brundtland, who chaired the World Commission on Environment and Development.<sup>31</sup>)

Sustainable development means that we have to start 'living within our means' with regard to natural resources. We must avoid putting unbearable stress on environmental systems and thereby endangering the health and wellbeing of future generations.

## The UK's sustainable development strategy

*Securing the Future* is the UK government's strategy for sustainable development and an important public health strategy.<sup>32</sup> Its aims are "*to live within environmental limits and achieve a just society.*" The government believes that this can only be achieved through a sustainable economy, by using sound science responsibly and through promoting good governance.

The strategy identifies four priority areas:

- sustainable consumption and production;
- climate change and energy;
- protecting natural resources and enhancing the environment;
- creating sustainable communities and a fairer world.

## Sustainable consumption and production

In order to protect our rapidly dwindling natural resources<sup>vi</sup> (such as fossil fuels), and to reduce the damaging impact of material goods on the environment and our health, a fundamental shift in the way we produce, consume and dispose of goods and services is urgently required. This means:

- consuming fewer material goods;
- using locally-produced goods and services to reduce the carbon emissions from their transportation – this will also contribute to the economic sustainability of local communities;
- ensuring that goods and services are produced in as energy-efficient a way as possible with minimal waste (which is recycled), and
- ensuring material goods are themselves energy efficient (such as washing machines, TVs, fridges etc).

The UK is increasingly dependent on imported food. Our self-sufficiency is now 27% lower than in 1990, with a drop of 7% since 2002.<sup>33</sup> It has been estimated that the environmental, social and economic costs of 'food miles' – including greenhouse gas emissions, air pollution, congestion and accidents – is over £9 billion.<sup>34</sup>

## Climate change and energy

The impact of climate change on health has already been outlined. We need to move to healthier, low-carbon lifestyles, change to low-carbon travel habits, use only the most energy-efficient goods and services, and invest in energy from sustainable sources. The UK is no longer an energy-independent nation, relying increasingly on imports of gas and electricity to balance supply and demand.<sup>35</sup> The Department of Trade and Industry's 2006 *Energy Review*<sup>36</sup> states that the UK could be importing as much as 90% of gas needs by 2020, compared with only 10% currently. Even though the country has huge untapped renewable energy sources, from wind energy in particular, our dependence on energy imports is increasing.

## Protecting natural resources and the environment

Air, water, soil and biological (such as plants and animals) resources are essential to our survival and our quality of life. There are many indicators of the health of our natural environment, such as the quality of water in rivers, the conservation of a wide range of plant and animal species (biodiversity), the maintenance of healthy fish stocks in our seas, and bird population levels.<sup>37</sup> A few of these indicators have shown some improvement in recent years, for example the quality of water in rivers. Others have shown little change, for example farmland and woodland bird populations, whilst now stable, have not increased following the substantial declines of the 1970s and 1980s.

However, due to combined human pressures – including global warming (as described in this guide) – we are at an ecological crossroads, facing potential global environmental catastrophe, with the number of species nearing extinction increasing at alarming rates.

## Creating sustainable communities and a fairer world

### *Creating sustainable communities*

We can all recognise a sustainable community:

- well-designed public places;
- accessible public services and recreational resources;
- green spaces and access to nature;
- public transportation, pavements and paths, cycle lanes;<sup>vii</sup>
- well-planned use of land, and connections between roads and streets;
- attention to public safety and social support networks;
- easily-accessible and competitively-priced food shops, stocking as much locally-sourced food as possible.

**If we are going to manage a sustainable future, we need nothing less than a total cultural change.**

Sir David King,  
Government Chief Scientific Adviser,  
Royal Society of Health Lecture,  
FPH Conference, June 2007

<sup>vi</sup> Oil is a finite resource and we are either at or very close to the peak of production of conventional oil, which is creating difficult issues of energy security for governments.

<sup>vii</sup> Sustrans has found that 90% of people favour measures to improve conditions for walking, cycling and public transport. See *Low Carbon Travel Information Sheet FF44* available from: [www.sustrans.org.uk](http://www.sustrans.org.uk)

### ***A fairer world***

As well as health, social, economic and environmental inequalities within the UK, there are also inequalities between 'developed' (eg. industrialised) countries and 'developing' countries (eg. those undergoing industrialisation, or whose economies are primarily rural). A global framework is needed for sustainable development, so that those experiencing disadvantage – particularly in developing countries – have access to some of the health, social, economic and environmental benefits enjoyed by richer countries. Developing countries must also be able to use their natural resources, such as trees, soil and water, in sustainable ways that will ensure that those resources are available for future generations. One such framework is 'Contraction and Convergence' (see *A brief word on other strategies*, p19).

## **Sustainable development and health**

Increases in major long-term conditions such as asthma, obesity, diabetes, high blood pressure and heart disease are partly caused by environmental factors such as poor air quality, poor quality food, a badly-designed environment and over-reliance on the car, limiting physical exercise through walking and cycling. These factors are closely linked to inequalities in health.

The links between health and sustainable development can be described at three different levels: the positive effects of nature on health, the impact of the built environment, and health inequalities.<sup>38</sup>

### ***The positive effects of nature on health***

The Sustainable Development Commission has reviewed the importance of the natural environment – everything from open countryside to parks and gardens – to promoting good health. Research shows that contact with the natural environment can help prevent both physical and mental ill-health, and facilitate recovery by:<sup>39</sup>

- improving mood eg. through walks in green spaces;
- promoting physical activity and health, eg. through 'green' exercise programmes;
- increasing social contact and building social capital by using green space;

**Sustainable  
development  
is the supreme  
test of  
partnership.**

Neil McKay, Chief  
Executive, NHS East  
of England

- assisting recovery from stress, eg. by gardening;
- contributing to children's development; eg. outdoor activities can improve symptoms of Attention Deficit Hyperactivity Disorder;
- assisting personal development, resilience and sense of purpose;
- assisting patient recovery following health service procedures, such as surgery, through a view of gardens or trees;
- improving the care of older people, including those with mental health problems (through increased social interaction) and with dementia (by helping to reduce agitation).

### ***The impact of the built environment on health***

The way the built environment around us is planned and designed can help or hinder our ability to lead active, healthy lives. In a poorly-designed environment access to services such as healthcare facilities, schools and food shops (eg. in large complexes on the edge of town) may necessitate journeys by car. People may be more exposed to crime, fear of crime, violence and social isolation which are linked to poorer health, especially mental health.

In a well-designed environment, pedestrians and cyclists (and their safety) have priority, and there is a good public transport infrastructure, making it easier for us to be physically active – helping to reduce obesity, diabetes and heart disease, and promote mental health. Local and accessible services can make it easier for people to be involved in their local communities and develop social networks.

Housing is also critical to health. Many people live in sub-standard, energy-inefficient housing which causes: high carbon emissions, 'fuel poverty' (ie. spending more than 10% of income on heating the home),<sup>40</sup> and an increased risk of cardiovascular disease and other health problems (and even mortality) from cold and damp.



**British Trust for  
Conservation Volunteers  
(BTCV)**

[www2.btcv.org.uk/display/greengym](http://www2.btcv.org.uk/display/greengym)

There are over 90 Green Gyms located across the UK, supported by BTCV. Their aim is to improve the physical and mental health of communities, including those living in areas of social, economic and environmental deprivation, by enabling them to improve their local green environment, including parks, school grounds and derelict grounds, through practical conservation activities. They provide opportunities for social networking and can also act as a stepping stone to employment.



**Kirklees Metropolitan Council**  
www.kirklees.gov.uk

SunCities was a European partnership project which enabled the installation of solar panels on 268 council-owned homes and six care homes in the Kirklees district. SunCities is the largest domestic project in the UK to date. Through SunCities and other council-backed programmes, Kirklees had, by 2005, installed over 5% of the total UK solar energy capacity. The programme alone is expected to save about 110 tonnes of CO<sub>2</sub> per year from domestic properties.

Well-designed environments require a co-ordinated, joined-up approach between the NHS, the business community, non-governmental organisations and local authorities, through Local Strategic Partnerships, Local Area Agreements and direct engagement in the local planning system. Health impact assessments should be integrated into environmental impact assessments, which are carried out on all proposed developments to ensure that local communities are health promoting, accessible and environmentally sustainable.

### Environmental and health inequalities

Environmental justice means that everyone has a right to live and work in a health-promoting environment. Poor quality environments and ill-health are found disproportionately amongst the disadvantaged in society, and contribute to health inequalities. Disadvantaged communities are more exposed to hazards, such as pollution and poor air quality, and will often lack access to safe green spaces.<sup>41</sup> Factory emissions, high traffic levels and consequent respiratory problems are more prevalent in disadvantaged areas. Environmental problems impact most heavily on the most vulnerable members of society, including older people, children and people on low incomes.

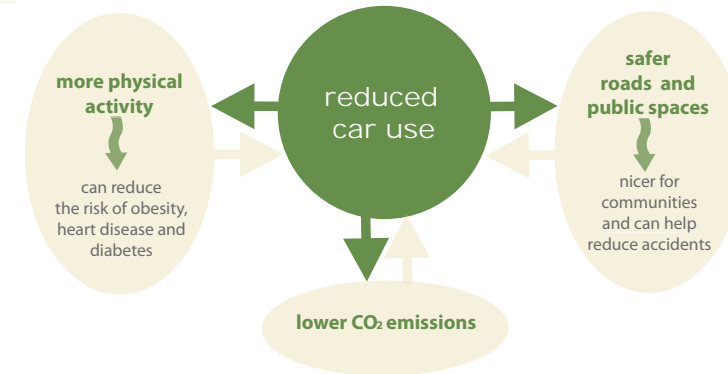


**The four priority areas in the government's sustainable development strategy (sustainable consumption and production, climate change and energy, protecting natural resources and enhancing the environment, and creating sustainable communities and a fairer world) are closely interconnected.**

### It's all joined up...

Some see climate change and obesity as the two most important policy issues for the 21st Century. Shifting travel patterns from the car to walking and cycling addresses both issues as shown in Fig 3.<sup>42</sup>

Fig 3:



### The NHS – leading by example

The NHS is the largest single organisation in the UK, representing on average 10% of regional economies in England alone.<sup>43</sup> Its purchasing power is vast – with an annual budget of around £17 billion.<sup>44</sup> The NHS is therefore in a powerful position to lead the sustainable development agenda. As Anna Coote, Commissioner for Health at the Sustainable Development Commission, states:

*"The NHS is a huge and powerful buyer of goods and services. As a consumer of energy, a producer of waste, a cause of travel and a commissioner of building works, its potential impact on health, on the environment, and on the social and economic fabric of our lives is without parallel...The NHS has formidable powers at its disposal arising from its size, from the fact that it reaches into almost every corner of the country and touches almost everybody's lives, and from the scale of its resources – not just money, but people, land, facilities, reputation and influence."<sup>45</sup>*

<sup>44</sup> The government wants the NHS to be a leader in sustainable procurement across EU member states by 2009.<sup>44</sup>

We need the same level of passion and commitment from the public health community in support of sustainable development as was secured on smoking in public places.

Jonathon Porritt,  
ph.com, March 2006

By embracing the principles of sustainable development, and acting as a good corporate citizen, the NHS will help to create a virtuous circle – because actions that benefit the local community, economy and environment will also tend to improve public health, reduce inequalities in health, lower demand for services and improve the NHS's capacity to be a health-enhancing organisation.

There is a strong 'business case' for NHS involvement in sustainable development. Implementing just some of the strategies outlined in this document would ultimately lead to faster patient recovery rates, improved staff morale, and financial savings – all of which contribute to a healthier local population.

**Because it is directly responsible for the health of the population, the NHS can provide a powerful example for other organisations to follow.** The NHS is in prime position to act as a force for change through promoting sustainable consumption, combating climate change, protecting natural resources and enhancing the environment, and working in partnership with others to create sustainable communities.



#### Access to Addenbrooke's - Hospital Travel Plan [www.addenbrookes.org.uk](http://www.addenbrookes.org.uk)

This strategy aims to promote more sustainable and healthy methods of transport to the hospital: with over 18,000 traffic movements each day, Addenbrooke's is reported to be the largest single generator of traffic in Cambridgeshire. At peak times more than 60 buses stop at Addenbrooke's per hour, including the first NHS-commissioned public bus service. There are 1,300 bicycle parking spaces. The Trust offers interest-free loans for bicycle purchase, and discounted weekly bus tickets. It has 16 pool cars and a car-share scheme. Staff car use has fallen by 22% since 1999. 25% of staff now commute by bus, and a further 25% by bike.



#### Cornwall Food Programme [www.cornwallfoodprogramme.co.uk](http://www.cornwallfoodprogramme.co.uk)

Run by the NHS in Cornwall in partnership with the Soil Association. Sourcing of local, fresh and organic food has resulted in a two-thirds cut in carbon emissions from road transportation of food to local healthcare facilities, and a boost to patient recovery, the local economy and the environment. Over 80% of the Trust's food budget is now spent through Cornish companies, and over 40% goes on Cornish produce.

## A brief word on other strategies

The focus of this document is on sustainable development. Other strategies often discussed in relation to climate change include:

### Contraction and convergence

Contraction and convergence is a global framework – not yet adopted by the UK government – for tackling climate change through the equitable allocation of carbon rations. The 'contraction' component entails setting a global carbon budget, reducing or 'capping' this annually to an agreed level so that the planet's climate once again gains equilibrium. 'Convergence' entails giving an equal entitlement of the capped carbon to each of the four billion or so adult inhabitants of the globe. The disadvantaged – generally low carbon emitters – will have entitlements which would allow for economic and social development or which they could sell to high carbon emitters ie. richer, developed countries. The framework implies both carbon rationing and carbon trading. Contraction and convergence is viewed by many as central to discussions on tackling climate change and sustainable development because of its focus on equity. (See: [www.gci.org.uk](http://www.gci.org.uk))

### Carbon offsetting schemes

The Sustainable Development Commission has adopted the Carbon Trust's definition of carbon offsets ie: carbon offsets are generated from projects that avoid or

absorb/sequester carbon dioxide, or any of the other main greenhouse gases. These projects can take various forms, including renewable power, energy efficiency, fuel switching (eg. from oil to natural gas), reforestation, or destruction of greenhouse gases.<sup>46</sup> Carbon offsetting schemes are not generally seen as a long-term solution to reducing carbon emissions because:

- they may disguise or delay the urgent need for behaviour and policy change;
- some schemes might have been implemented anyway.

If you do purchase offsets, it is recommended that you buy credits which have been certified by the Gold Standard (for example, energy efficiency or renewable energy projects). For further information visit the Gold Standard website: [www.cdmgoldstandard.org](http://www.cdmgoldstandard.org).

The government has also consulted on establishing a voluntary code of best practice for carbon offsetting schemes, to enable people to make informed choices about the most effective products on the market.

### Mitigation and Adaptation

Mitigation strategies are aimed at tackling the causes of climate change, and seek to permanently eradicate and/or reduce the threats to life and ecological stability posed by it, through, for example, enhancing sinks.<sup>48</sup> As this document briefly describes, climate change is already happening and (whilst we seek solutions to mitigate climate change) we therefore need strategies to help us adapt to these changes and which reduce our vulnerability to them. The greater the mitigation of climate change, the less we need to adapt to it. Successful mitigation and adaptation strategies are dependent on technological advances, institutional arrangements, availability of funds and the exchange of information.<sup>47</sup>



**This brief overview has put forward the arguments for prioritising climate change and for implementing sustainable development strategies in the health sector. The following pages set out some practical steps we can all take – individually and organisationally – to join the transition to a healthy, sustainable, low-carbon future.**

<sup>48</sup> Natural [carbon/greenhouse gas] sinks are 'reservoirs', such as oceans, soils and forests which remove greenhouse gases from the atmosphere through, for example, the process of photosynthesis in plants. In 2005, it was reported that soils in England and Wales - previously carbon sinks - have already become carbon sources because of the rise in temperature.<sup>48</sup>

## What you can do

### Tools for challenging climate change



**We want to show that if we all make small changes, together we can make a big difference.**

John Grimshaw, Chief Executive, Sustrans

## Action checklist 1: individuals

There are lots of practical steps we can take that can, straight away, make a contribution to tackling climate change. Some ideas are set out in this action checklist.

**Talk to people** – family, friends, colleagues – about the importance of climate change, sustainable development and health. Give them a copy of this guide to help explain things.

### Carry out a carbon audit

Carbon calculators help you to work out just how much carbon dioxide you're emitting (your 'carbon footprint'). Key online calculators include:

**Act On CO<sub>2</sub>** (<http://actonco2.direct.gov.uk>)

Government calculator measuring home energy, appliances and transport. Provides action plans to cut CO<sub>2</sub> emissions.

**World Wildlife Fund** ([www.footprint.wwf.org.uk](http://www.footprint.wwf.org.uk))

Uses data modelling provided by the respected Stockholm Environment Institute. Linked to WWF 'One Planet Future' campaign.

**Learning and Teaching Scotland**

([www.ltscotland.org.uk/sustainabledevelopment](http://www.ltscotland.org.uk/sustainabledevelopment))

Although developed for schools, it can readily translate to the workplace. Includes detailed action checklists.

### Develop an action plan

Once you've worked out your carbon footprint, develop an action plan. Here are some ideas on what to include:



## Energy

- Use energy-efficient light bulbs and appliances. (Appliances such as washing machines, fridges etc now have energy efficiency ratings.)\*
- Turn off appliances (eg. TVs, computers) – leaving them on standby uses more energy than actually using them!
- Wash your clothes at 30°C – it uses less energy and your clothes will be just as clean! Avoid tumble drying.
- Insulation (eg. cavity wall and loft insulation of at least 270mm thickness) and simple draught-proofing measures (such as heavy curtains, double glazing) can really make a difference – and could save you money.
- Turn down the thermostat – even by just one degree Celsius – which not only cuts carbon emissions but also saves money on fuel bills. Just make sure you wear an extra jumper!†
- Switch to an energy provider that uses renewable resources such as solar and wind energy.
- Replace open fires with wood burning stoves, and burn waste wood.
- Generate your own energy using, for example, solar panels for heating water, and if you can afford them, solar photovoltaic cells.

! If everyone in the UK installed one energy saving light bulb, we'd save enough CO<sub>2</sub> to fill the Albert Hall nearly 1,200 times.<sup>49</sup>

## Check out

**Your local council** to find out if grants are available to help improve the energy efficiency of your home.

**Energy Saving Trust** ([www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)) can carry out a home energy check.

**Carbon Trust** ([www.carbontrust.co.uk](http://www.carbontrust.co.uk)) for practical advice for organisations.

\* DEFRA produce a guide to energy efficiency ratings: [www.defra.gov.uk/environment/consumerprod/energylabels/energylabel.pdf](http://www.defra.gov.uk/environment/consumerprod/energylabels/energylabel.pdf)

† Vulnerable groups such as older people, people with ill-health, and young children are at risk from the cold. Seek further advice if you're not sure.



## Travel

- Walking or cycling whenever and wherever you can cuts carbon emissions and is also good for your health!
- Use public transport rather than the car.
- Try to avoid flying – particularly short-haul air travel. Take the train in the UK and to Europe.
- Try videoconferencing and teleconferencing – it could also save you valuable travelling time.
- Join or start a car-sharing scheme.
- If your organisation has a home-working scheme, give it a try.



### Carbon-conscious driving:

- drive as small and as energy-efficient a car as possible
- limit your speed - it uses up to 25% more fuel to drive at 70mph than at 50mph
- limit the use of air conditioning - it uses up more fuel
- drive with the windows up
- keep luggage to a minimum
- keep tyres properly inflated (for every 6psi that a tyre is under-inflated, the fuel consumption increases by 1%)
- remove roof racks if not needed as they create drag and use more fuel.

### Check out

**Sustrans** ([www.sustrans.org.uk](http://www.sustrans.org.uk)) for lots of walking and cycling initiatives, including the Safe Routes to Schools and the National Cycle Network.

**Your local school** to see if they are involved in a 'walking bus' scheme.

**Seat 61** ([www.Seat61.com](http://www.Seat61.com)) for rail travel in Europe and beyond.

**Walking the Way to Health** scheme ([www.whi.org.uk](http://www.whi.org.uk)).



## Food

- A healthy diet is good for the environment! Reducing consumption of animal products (meat and dairy) can also cut methane levels (produced by animals) which contribute to global warming (and it's also good for your health as you'll reduce your intake of saturated fat).
- Fresh, locally-produced, seasonal products generally use less energy to produce. Local produce also burns up fewer 'food miles' – the distance food has travelled – requiring less fuel.
- Try not to waste food – only buy (or order in restaurants) what you need.
- Try to avoid drinking bottled water – it has huge environmental costs from plastic bottles and transportation.



## Waste

### Reduce, reuse, recycle

- Purchase fewer new goods for the office and home – only buy energy-efficient electrical goods; get your supplier to recycle your old equipment; try buying second-hand items.
- Print as little as possible. If you do, print two pages to one sheet/double-sided and use scrap paper where possible.
- Compost as much waste as you can – you'll be surprised at what you can compost.
- Recycle (including printer cartridges, mobile phones) – although recycling also consumes energy, it's better than sending waste to landfill!



You can also compost shredded newspaper, leather shoes, wool clothes, and even vacuum dust.

### Check out

**Sustain** ([www.sustainweb.org](http://www.sustainweb.org)) the alliance for food and farming.

**Recyclenow** ([www.recyclenow.com](http://www.recyclenow.com)) for advice on recycling and composting.

**Freecycle** ([www.freecycle.org](http://www.freecycle.org)) where people swap and give away items they no longer need.

**Your local council policies** on recycling, including garden waste, paper etc.

## Action checklist 2: organisations<sup>50</sup>

As well as making changes to reduce our own carbon emissions, we can help the organisations we work for to implement simple strategies to help them move towards a sustainable, low-carbon future.

**Undertake a carbon audit** (see *Action checklist 1*) – strongly recommended for organisations by the Carbon Trust.<sup>xii</sup>

**Set up a staff group**, identifying departmental or team 'champions' to develop an action plan which could include:

- **reducing energy consumption** – fit energy-efficient appliances and lightbulbs, switch to an energy supply from renewable sources. Seek advice from the Carbon Trust – see *Further Information*;
- **setting an organisational recycling target** – at least 60% for non-clinical waste;
- **reducing water consumption** – fit water-efficient taps, toilets etc;
- **implementing a travel plan** to include initiatives, incentives and targets to promote walking and cycling; using public transport; car sharing and car pools;<sup>xiii</sup>
- **using teleconferencing and videoconferencing** wherever possible – increasing flexibility, saving travelling time and money;
- **procuring locally-produced and environmentally-sound products** – it can stimulate the local economy, reduce 'food miles' and carbon emissions;
- **staff training on local and national sustainable development and climate change strategies** eg. in continuing professional development programmes, staff induction programmes (which could also include organisational information on walking, cycling, recycling, energy-saving etc);
- **increasing biodiversity** eg. mixed drought-resistant planting (even in the smallest of areas) can provide valuable habitats for insects and birds, and, if on NHS premises, can also improve patient recovery and staff wellbeing;

- **asking for a sustainability health check to be included** in organisational, local, regional and national policy and strategy documents (see *Action checklist 5*);
- **lobbying for implementation of the recommendations in *Action checklist 3***;
- **including information on the socially responsible use of natural resources** and tackling climate change in workplace health programmes.

**And if you are feeling really ambitious...**



**Aim to be carbon neutral within a defined period of time.**

It can be done!



You don't need to wait to form a staff group or formal action plan - there's lots of things you can do to reduce your carbon emissions in the workplace - see *Action checklist 1: individuals*.

There are also lots of things we can do to ensure sustainable development becomes an integral part of our organisation's strategic planning and business processes - see *Action checklist 3: organisational strategies* for some ideas on how.

<sup>xii</sup> The Carbon Trust provides practical information on carbon reduction and sustainable development in the NHS.  
<sup>xiii</sup> Case studies have shown [eg. Addenbrooke's, p18] that the NHS and other organisations really can achieve a shift in travel behaviour – for the NHS this is particularly important, as nearly one in 20 journeys in the UK is associated with it.

## Action checklist 3: organisational strategies

By making sustainable development an integral part of strategic planning and business processes, we can develop organisations that will lead the transition to a healthy, sustainable, low-carbon future.

### Become a Good Corporate Citizen

See [www.corporatecitizen.nhs.uk](http://www.corporatecitizen.nhs.uk) for a web-based self-assessment model (developed by the Sustainable Development Commission and funded by the Department of Health) providing support for NHS organisations to embrace sustainable development and tackle health inequalities through their daily activities. It shows why sustainable behaviour makes business sense: it saves money; improves staff wellbeing and productivity; reduces demand for health services; and provides guidance on six key areas: transport, procurement, facilities management, employment and skills, community engagement, and new buildings.

**Identify a Non-executive Director or a Trustee to become a 'Good Corporate Citizen' champion.** Set up a Corporate Citizenship or Sustainable Development Committee or Task Force.

**Develop a Board strategy on sustainable development**, which could cover the key areas in the action plan suggested in *Action checklist 2*, and include targets and dates for monitoring progress.

**Include action on sustainable development and climate change in:**

- **organisational business plans;**
- **annual reports;**
- **Director of Public Health annual reports** (highlighting the links with reducing inequalities);

- **service specifications** eg. between commissioners in NHS organisations and health and social care providers;
- **the redesign of patient care and treatment pathways** eg. reducing the number of visits required will also reduce carbon emissions.

✓ **Incorporate environmental improvement** (ie. those ideas listed in each of the action checklists) into the design of new buildings and refurbishments.

✓ **Undertake health and environmental impact assessments or**, better still, **an integrated appraisal** routinely on all plans and developments.<sup>xiv</sup>

✓ **Include sustainable development in the competences for knowledge and practice of any courses and qualifications** run by the organisation, or with which it is involved.

✓ **Work in partnership with others** – the NHS, local authorities, voluntary groups and communities – to create momentum for change, including through:

- **Local Strategic Partnerships** and **Local Area Agreements;**
- **regional strategies and initiatives**, eg. through the Government Office, Regional Director of Public Health or Regional Development Agency;
- **local community groups.**

(See also *Action checklist 4: the local community*.)

<sup>xiv</sup> Examples of the application of different types of appraisal can be found at: [www.londonhealth.gov.uk/hia.htm](http://www.londonhealth.gov.uk/hia.htm). The Strategic Environmental Assessment Directive came into force across the European Union in 2004. The Department of Health in England, in association with the Health Protection Agency, has published draft guidance on its implementation.

## Action checklist 4: the local community

The following ideas will take your action out to people in the local community.

**Talk to people about the benefits of a healthy, low-carbon lifestyle.** Your own changes in behaviour can influence behaviour in wider society. Involve other groups, such as health trainers and health visitors, community groups and leaders, to promote sustainable living as part of a healthier lifestyle.

**Work with local authorities** to:

- **plan, design and manage sustainable communities** (eg. through Local Strategic Partnerships and Local Area Agreements). *A Guide to Town Planning for NHS Staff*<sup>vi</sup> provides a useful summary of the planning system.
- **ensure that transport and planning are better integrated**, so that people can travel to healthcare facilities, work, shops and schools by walking, cycling or using public transport.
- **produce a fuel poverty and household energy efficiency strategy** – damp and cold housing causes many unnecessary deaths, and improving the energy efficiency of houses will reduce carbon emissions.

**Include messages about locally-produced, seasonal food, and reducing consumption of animal products and processed food in nutrition and obesity programmes and initiatives** – and inform people that a healthy diet produces less methane and carbon dioxide (see *Action checklist 1*).

**Promote the links between physical activity, health and combating climate change** – as outlined in this guide.

✓ **Link mental health promotion with access to nature and physical activity** – both of which have a positive effect on mental health (see *Sustainable development and health*, p14).

✓ **Bring together the ideas in the eco-schools programme** ([www.eco-schools.org.uk](http://www.eco-schools.org.uk)) **and healthy schools programmes**,<sup>xvi</sup> into an integrated programme encompassing health and the environment in schools.

✓ **Consider becoming a 'Transition Town'**. This initiative seeks to build local self-reliance to prepare for the future, meet the challenges posed by 'peak oil' and climate change, and reduce carbon emissions. There are already over 20 transition towns/cities/areas in the UK and Ireland. Visit: <http://transitiontowns.org/>

<sup>vi</sup> Available from: [www.dh.gov.uk](http://www.dh.gov.uk)

<sup>xvi</sup> For **England** visit: [www.healthyschools.gov.uk](http://www.healthyschools.gov.uk); **Scotland**: [www.healthpromotingschools.co.uk](http://www.healthpromotingschools.co.uk); **Northern Ireland**: [www.healthpromotionagency.org.uk/work/hpschools/menu.htm](http://www.healthpromotionagency.org.uk/work/hpschools/menu.htm), and **Wales**: <http://new.wales.gov.uk/topics/health/improvement/children/schools/wnhss/?lang=en>

## Action checklist 5: sustainability and health-check tool for policies and strategies

This tool helps assess whether plans and projects (either proposed or implemented) will take forward sustainable development. Initiatives should have at least one 'tick' under each of the headings: environmental, social and economic. To combat climate change, it's important to have as many ticks as possible under the 'environmental' heading.

### Environmental

- Will the initiative minimise the use of energy, especially from fossil fuels?
- Will the initiative encourage walking, cycling and use of public transport?
- Will the initiative protect and enhance green space and biodiversity (including wildlife)?
- Will the initiative minimise the production of waste, and increase the re-use and recycling of materials?
- Will the initiative encourage the careful use of water resources?

### Social

- Will the initiative reduce crime and fear of crime, and improve public safety?
- Will the initiative encourage social networks and social inclusion?

### Economic

- Will the initiative improve local conditions, especially in disadvantaged areas, eg. develop business and social enterprise, or develop the workforce and labour market?
- Will the initiative help to alleviate poverty, and therefore reduce social and health inequalities?
- Will the initiative improve housing (quality, affordability, energy efficiency)?

## Further information

### Health networks

#### *Sustainable Development Network Group*

<http://new.fph-groups.org.uk>

Email discussion group hosted by FPH, providing a forum for debate, knowledge sharing and networking with others interested in the sustainable development agenda.

#### *Convergence of Health & Sustainable Development Network*

[www.healthandsustainability.net](http://www.healthandsustainability.net)

Contact Jenny Griffiths: [GriffHobbs@aol.com](mailto:GriffHobbs@aol.com)

The Network aims to enable people and organisations in the health community to support each other to give sustainable development a much higher priority; network members commit to the implementation, over time, of a manifesto.

#### *Climate and Health Council*

[www.climateandhealth.org](http://www.climateandhealth.org)

For health professionals interested in fighting climate change and promoting sustainable development.

### Key organisations and resources

#### **Association of Directors of Public Health**

[www.adph.org.uk](http://www.adph.org.uk)

#### **BTCV**

[www2.btcv.org.uk](http://www2.btcv.org.uk)

#### **CABE**

[www.cabe.org.uk](http://www.cabe.org.uk)

#### **Carbon Trust**

[www.carbontrust.co.uk](http://www.carbontrust.co.uk)

#### **Chartered Institute of Environmental Health**

[www.cieh.org](http://www.cieh.org)

#### **Climate Challenge**

[www.climatechallenge.gov.uk](http://www.climatechallenge.gov.uk)

#### **Department of Health**

[www.dh.gov.uk](http://www.dh.gov.uk)

#### **Energy Saving Trust**

[www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)

#### **Good Corporate Citizen**

[www.corporatecitizen.nhs.uk](http://www.corporatecitizen.nhs.uk)

#### **Every Action Counts**

<http://everyactioncounts.org.uk>

#### **Institute of Public Health in Ireland**

[www.publichealth.ie](http://www.publichealth.ie)

#### **Intergovernmental Panel on Climate Change**

[www.ipcc.ch](http://www.ipcc.ch)

#### **Local Government Association**

[www.lga.gov.uk](http://www.lga.gov.uk)

#### **National Heart Forum**

[www.heartforum.org.uk](http://www.heartforum.org.uk)

#### **Natural England**

[www.naturalengland.org.uk](http://www.naturalengland.org.uk)

#### **NHS Confederation**

[www.nhsconfed.org](http://www.nhsconfed.org)

#### Northern Ireland Executive

[www.northernireland.gov.uk](http://www.northernireland.gov.uk)

#### Royal College of Physicians (Edinburgh)

[www.rcpe.ac.uk](http://www.rcpe.ac.uk)

#### Royal College of Physicians (London)

[www.rcplondon.ac.uk](http://www.rcplondon.ac.uk)

#### Royal Institute of Public Health

[www.riph.org.uk](http://www.riph.org.uk)

#### Royal Society of Health

[www.rsph.org](http://www.rsph.org)

#### Scottish Government

[www.scotland.gov.uk](http://www.scotland.gov.uk)

#### Scottish Environment Protection Agency

[www.sepa.org.uk](http://www.sepa.org.uk)

#### Scottish Healthy Environment Network

[www.healthscotland.com](http://www.healthscotland.com)

#### Sustain

[www.sustainweb.org](http://www.sustainweb.org)

#### Sustainable Development Commission

[www.sd-commission.org.uk](http://www.sd-commission.org.uk)

#### Sustainable Development

(Government website)

[www.sustainable-development.gov.uk](http://www.sustainable-development.gov.uk)

#### Sustrans

[www.sustrans.org.uk](http://www.sustrans.org.uk)

#### UK Public Health Association

[www.ukpha.org.uk](http://www.ukpha.org.uk)

#### Welsh Assembly Government

[www.wales.gov.uk](http://www.wales.gov.uk)

#### Other publications

##### **Summary for Policymakers of the Synthesis Report of the IPCC Fourth Assessment Report** (2007)

Intergovernmental Panel on Climate Change

[www.ipcc.ch](http://www.ipcc.ch)

##### **Building Health: Creating and Enhancing Places for Healthy, Active Lives.**

##### **Blueprint for Action** (2007)

National Heart Forum, Living Streets, CABE

[www.heartforum.org.uk](http://www.heartforum.org.uk)

##### **Climates and Change – the Urgent Need to Connect Health & Sustainable Development** (2007)

UK Public Health Association

[www.ukpha.org.uk](http://www.ukpha.org.uk)

##### **Taking the Temperature: Towards a Response to Global Warming** (2007)

NHS Confederation

[www.nhsconfed.org](http://www.nhsconfed.org)

##### **Sustainable Development: Environmental Strategy for the National Health Service** (2005)

NHS Estates

[www.dh.gov.uk](http://www.dh.gov.uk)

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