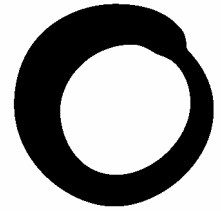


November 2003



**Friends of  
the Earth**

# Briefing

# Impacts of climate change

## A beginners guide

### **Firstly, are we sure that climate change is happening?**

Yes. The most recent report from the United Nations committee of independent experts on climate change, states that:

- the average global temperature has risen by between 0.4 and 0.8°C since the late 19<sup>th</sup> century.
- The 1990s was the hottest ever decade in the Northern Hemisphere, and 1998 was the warmest year, since records began.
- Global average sea level has risen at a rate of 1 to 2 mm a year.
- Snow cover has fallen by 10 per cent since the 1960s and Arctic sea ice has decreased by a similar amount.

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**Friends of the Earth is:**

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- **the most extensive environmental network in the world, with almost one million supporters across five continents and over 60 national organisations worldwide**
- **a unique network of campaigning local groups, working in over 200 communities throughout England, Wales and Northern Ireland**
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## Impacts of climate change

### Why is this happening?

These changes can all be explained by the greenhouse effect.

Life on earth is dependant on solar radiation from the sun. Much of this energy is emitted back into space but some is trapped in the atmosphere by a blanket of 'greenhouse gases' – so called because they trap heat like the glass of a greenhouse.

Atmospheric concentrations of the greenhouse gases, carbon dioxide, methane and nitrous oxide remained relatively stable between the last Ice Age and the mid 18<sup>th</sup> century. Plants and animals exchanged carbon dioxide with the atmosphere in a carbon cycle that remained in balance for the last 10 000 years.

However since the industrial revolution human activities have disturbed this balance – mainly through burning fossil fuels (oil, coal and gas) which produce carbon dioxide; by the destruction of forests, which releases stored carbon; and through intensive cattle rearing and large scale rice plantation which produce methane.

The panel of scientists that reports on climate change to the international governments thinks that the warming over the last 50 years is mainly man-made.

### So what?

We can expect climate change to continue. Globally the average surface temperature is projected to increase by between 1.4 and 5.8 ° C from 1990 to 2100.

Warmer weather might sound great but the consequences would be disastrous.

### Global Impacts

<b>In Africa</b>	<ul style="list-style-type: none"><li>• Rising sea levels will cause large problems for coastal settlements particularly in the West African countries.</li><li>• Increases in droughts, floods and other extreme weather events will add to the current stress on water resources, food production and human health.</li></ul>
<b>In Asia</b>	<ul style="list-style-type: none"><li>• Tens of millions of people will be displaced as sea levels rise and if cyclone risk increases in low lying coastal areas.</li><li>• Forest fires, flooding and droughts could become more frequent.</li></ul>
<b>In Australia and New Zealand</b>	<ul style="list-style-type: none"><li>• Fragile ecosystems such as coral reefs and alpine habitats could be destroyed.</li></ul>
<b>In Latin America</b>	<ul style="list-style-type: none"><li>• Cycles of floods and droughts could become more frequent, degrading water quality.</li><li>• Stronger cyclones would destroy property and livelihoods.</li><li>• In new climatic conditions, deadly outbreaks of malaria, dengue fever and cholera could increase.</li></ul>

<p><b>In Small Island States</b></p>	<ul style="list-style-type: none"> <li>• Even small rises in sea level rise will displace many indigenous people.</li> <li>• There will be increased risk of storm damage by tropical cyclones.</li> <li>• Vital freshwater resources are more likely to be contaminated by seawater.</li> </ul>
<p><b>In Polar Regions</b></p>	<ul style="list-style-type: none"> <li>• Polar ice caps will continue to melt and there will be massive coastal erosion.</li> <li>• Once triggered these changes may continue to effect global weather patterns long after greenhouse gas levels have stabilised – leading to, for example, irreversible changes in ocean currents and ice-sheets.</li> </ul>
<p><b>In Europe and North America</b></p>	<p>Although Europe and North America can adapt more easily, they will still face significant impacts:</p> <ul style="list-style-type: none"> <li>• In Europe half of alpine glaciers may be lost by the end of the century.</li> <li>• Important habitats home to many species of rare plants and animals will be lost for ever.</li> <li>• Coastal and river flooding will increase with impacts on people living in at risk areas.</li> </ul>

**Who will be affected the most?**

The developed countries contain only a quarter of the world’s population but are responsible for 60 % of the greenhouse gas emissions. However the catastrophic results of climate change are expected to fall disproportionately upon developing countries and their inhabitants.

Worse still, developed countries with greater resources to deal with the effects of climate change have attempted to reduce their obligation to cut emissions of greenhouse gases at home. Instead they have negotiated to pay for emissions reductions in developing countries.

**Surely I’ll be okay though?**

The climate of the UK is changing:

- The average temperature increased by 0.5 ° C during the 20<sup>th</sup> century.
- Winters have become wetter and summers drier.
- There has been an increase in violent winter storms matched by less rain in the summer.
- Sea levels are also rising, with a maximum relative rise of 2 mm a year on the East coast of England.

## **Impacts of climate change**

In Scotland we can expect to see increased river flooding affecting many homes and businesses. The winter sports industry – including skiing and snowboarding - will be particularly vulnerable. Unique ecosystems in areas such as the Cairngorm mountains could be destroyed.

Wales will be at greater risk of coastal flooding and more frequent river flooding. Many precious species, such as the Snowdon Lily, could be lost forever.

In England low level areas will be at risk from higher sea levels especially in the South East. Many homes and business in river valleys will be vulnerable to increasingly common flash floods, but drinking water shortages will become severe. Whilst there is some potential for new crops this will not compensate for the major changes to our native ecology as areas of salt-marsh, mud flats and lowland heath will be lost.

### **But are we responsible?**

The UN experts are confident that all these disastrous climatic changes are at least partly caused by human activity. The report is certain that our dependence on burning fossil fuels is the dominant force behind the continuing rise in atmospheric carbon dioxide levels.

### **But aren't governments tackling the issue?**

- Governments have recognised the problem and have agreed the United Nations Framework Convention of Climate Change. As a result of negotiations under this framework the Kyoto Protocol was drawn up. This committed developed country governments to an agreed level of greenhouse gas reductions.
- Hopefully this year sufficient countries will have ratified the Protocol that it will enter into force. A total of 55 countries plus countries responsible for 55 % of developed country emissions are needed in order for it to become law.
- However the US which releases more greenhouse gases than any other country has refused to commit to the Kyoto Protocol, and Australia has followed suit.
- In addition the Protocol has been weakened by loopholes created during international negotiations which allow countries to avoid true reductions in national emissions. These include plans to allow developed nations to count CO<sub>2</sub> absorbed by their forests against their emissions targets.
- The protocol will only at best result in small reductions in the greenhouse gas emissions of these countries ratifying the protocol. To give an impression of what is needed - the UK Royal Commission on Environmental Pollution has stated that a 60 % reduction in CO<sub>2</sub> emissions would be needed by 2050 just to keep CO<sub>2</sub> levels at double pre-industrial levels.

### **So, what needs to be done?**

Firstly we must recognise that climate change is a problem that we can tackle.

Friends of the Earth believes urgent action is required on an international scale to reduce emissions drastically in the next few decades. Governments must first commit to the Kyoto Protocol and then agree reductions of CO<sub>2</sub> emissions by 60 – 80 % globally by 2050. Rich countries must face the biggest cuts.

We need to switch our dependence on fossil fuels to renewable energy sources. The large international development banks must stop financing fossil fuel projects and start backing renewable energy.

### **What can I do?**

- Check our web-site ([http://www.foe.co.uk/campaigns/climate/press\\_for\\_change/](http://www.foe.co.uk/campaigns/climate/press_for_change/)) to add your voice on-line to calls for action from your MP, the Government and major corporations.
- Join Friends of the Earth's climate-online email action list and get calls to action e-mailed to your inbox
- Join the Stop Esso campaign and boycott Esso petrol – see [www.stopesso.com](http://www.stopesso.com).
- Reduce your own emissions by using public transport and being energy efficient in the home.
- Get your electricity supplied through a green tariff using our Green Electricity League Table – see:  
[http://www.foe.co.uk/campaigns/climate/press\\_for\\_change/choose\\_green\\_energy/index.html](http://www.foe.co.uk/campaigns/climate/press_for_change/choose_green_energy/index.html)