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**Friends of  
the Earth**

# Briefing

# Climate Change facts

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**From the Met Office 'Warming – climate change: the facts'**

[http://www.metoffice.gov.uk/climatechange/guide/downloads/quick\\_guide.pdf](http://www.metoffice.gov.uk/climatechange/guide/downloads/quick_guide.pdf)

- The rise in global surface temperature has averaged more than 0.15 °C per decade since the mid-1970s. Central England temperatures have increased by 1 °C since the 1970s.
- The 10 warmest years on record have occurred since 1997.
- Sea levels around the UK have risen 10 cm since 1900.
- If emissions continue to grow at present rates global temperature could rise as much as 7 °C above pre-industrial temperature by 2100.

**From the Environment Agency (2009), Adapting for tomorrow**

<http://publications.environment-agency.gov.uk/pdf/GEHO0709BQBW-e-e.pdf>

- By the 2080s, annual economic damage from flooding in the UK could increase from £1 billion to between £15 billion and £21 billion.
- We anticipate that climate change will increase the likelihood of flooding. We expect that winters will get significantly wetter. On the wettest days of the year, this could mean an increase in rainfall of 40 per cent or more by the 2080s.
- As a consequence of the floods in summer 2007, 350,000 people were without mains water for over a week, after a water treatment works flooded.

**From the Government's Foresight Programme, Foresight Future Flooding, Government Office of Science & Technology (2004)**

<http://www.foresight.gov.uk/OurWork/CompletedProjects/Flood/index.asp>

- The numbers of properties at high risk of localised flooding from sewer and drainage systems being overwhelmed by sudden localised downpours] could typically increase by 2080 four-fold to over 300,000 properties and around 800,000 people. High risk means a 10% chance of flooding in any year.

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- There will be mental-health consequences from repeat flooding. Besides the considerable stress of extensive damage, the threat of repeat flooding, coupled with the possible withdrawal of insurance cover can make properties unsaleable, and cause long-term depression in the victims.
- The socially disadvantaged will be hardest hit. The poor are less able to afford flooding insurance and less able to pay for expensive repairs. People who are ill or who have disabilities will be more vulnerable to the immediate hazard of a flood and to health risks due to polluted floodwaters.

### From IPCC summary for policy makers

<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-spm.pdf>

- Even if global temperatures rise by only 1.5 to 2.5 °C it could mean that 20–30% of species could face extinction.
- Globally, the potential for food production is projected to increase with increases in local average temperature over a range of 1-3°C, but above this it is projected to decrease.
- In Africa, by 2020, between 75 million and 250 million people are projected to be exposed to increased water stress due to climate change. In some countries in Africa, yields from rain-fed agriculture could be reduced by up to 50% by 2020.
- Freshwater availability in Central, South, East and South-East Asia, particularly in large river basins, is projected to decrease due to climate change which, along with population growth and increasing demand arising from higher standards of living, could adversely affect more than a billion people by the 2050s.
- In Southern Europe, climate change is projected to worsen conditions (high temperatures and drought) in a region already vulnerable to climate variability, and to reduce water availability, hydropower potential, summer tourism and, in general, crop productivity. It is also projected to increase health risks due to heatwaves, and the frequency of wildfires.
- In Northern Europe, climate change is initially projected to bring mixed effects, including some benefits such as reduced demand for heating, increased crop yields and increased forest growth. However, as climate change continues, its negative impacts (including more frequent winter floods, endangered ecosystems and increasing ground instability) are likely to outweigh its benefits.

**From The Treasury's Stern Report into the economics of climate change**

[http://www.hm-treasury.gov.uk/d/Executive\\_Summary.pdf](http://www.hm-treasury.gov.uk/d/Executive_Summary.pdf)

- At 4°C and above, global food production is likely to be seriously affected.
- Rising sea levels will result in tens to hundreds of millions more people flooded each year with warming of 3 or 4°C. There will be serious risks in South East Asia (Bangladesh and Vietnam), small islands in the Caribbean and the Pacific, and large coastal cities, such as Tokyo, New York, Cairo and London.
- Rising sea levels and other climate-driven changes could drive millions of people to migrate: more than a fifth of Bangladesh could be under water with a 1m rise in sea levels, which is a possibility by the end of the century.
- A 5 or 10% increase in hurricane wind speed, linked to rising sea temperatures, is predicted approximately to double annual damage costs, in the USA.
- In the UK, annual flood losses alone could increase from 0.1% of GDP today to 0.2 - 0.4% of GDP once the increase in global average temperatures reaches 3 or 4°C.
- Heat waves like that experienced in 2003 in Europe, when 35,000 people died and agricultural losses reached \$15 billion, will be commonplace by the middle of the century.
- At higher temperatures, developed economies face a growing risk of large-scale shocks - for example, the rising costs of extreme weather events could affect global financial markets through higher and more volatile costs of insurance.
- With 5-6°C warming - which is a real possibility for the next century - existing models that include the risk of abrupt and large-scale climate change estimate an average 5-10% loss in global GDP, with poor countries suffering costs in excess of 10% of GDP.