

Climate change questions and answers October 2008

Tearfund works on climate change because it is already damaging the lives and livelihoods of poor communities.

What is climate change?

Climate change is the term used to refer to climatic changes caused by rises in the earth's global temperature. Global surface temperatures have increased by 0.76°C since the 19th century and eleven of the last 12 years have ranked among the 12 hottest years since records began in 1850. The Inter-governmental Panel on Climate Change or IPCC (a UN body consisting of 2,500 of the world's top climate scientists) predicts temperature rises of between 1.8°C and 4°C and perhaps even as high as 6.4°C by the end of this century. Scientists tell us that if global temperature rise exceeds 2 degrees, compared to pre-industrial levels, the consequences could be disastrous. We've already seen rises of 0.7 degrees in the past 100 years so drastic action is needed.

What is causing climate change?

The 'greenhouse effect' is a natural process that keeps the earth's temperature high enough for us to live on it. Some of the heat from the sun is absorbed by the earth and then re-emitted. This re-emitted heat is then trapped in the earth's atmosphere by 'greenhouse gases' such as carbon dioxide, water vapour and methane. These act like a blanket around the earth and enable life to exist on our planet.

However, there has been a dramatic increase in the levels of carbon dioxide and other greenhouse gases in the atmosphere since the industrial age began. This has enhanced the greenhouse effect, trapping more heat and increasing the earth's temperature. According to the Intergovernmental Panel on Climate Change (IPCC), carbon dioxide is 34 per cent higher now than in pre-industrial years.

It is widely accepted by the scientific community that the burning of fossil fuels (coal, gas, oil) - to heat and light our homes, for industry and for transport - which produces carbon dioxide, is the main cause of this 'enhanced greenhouse effect'.

The latest IPCC report stated that

"Global greenhouse gas emissions due to human activities have grown since pre-industrial times, with an increase of 70% between 1970 and 2004".

Visit the IPCC's website - www.ipcc.ch - to read the summary of the latest IPCC report covering the latest science on climate change reported by climate scientists.

What are the effects of climate change?

Sea level rise – as the oceans warm, water expands leading to rises in the sea level. There is also the threat of polar ice caps melting leading to an even more dramatic sea level rise.

Unpredictable rainfall – Many regions are experiencing huge variations in rainfall leading to droughts, floods and crop failures. This is resulting in problems of food insecurity and water scarcity.

Extreme weather events – as weather patterns change extreme weather events are becoming more commonplace. Heat waves and floods are likely to increase in intensity and frequency, leading to an increased number of disasters.

Other impacts: The changes outlined above are likely to lead to increased migration to urban areas; conflicts over food and water; as well as increases in diseases like malaria. Climate change will also have a huge impact on plant and animal biodiversity.

Tearfund, together with Oxfam, Christian Aid and Practical Action, has produced a report called Two Degrees, One Chance outlining the impacts of climate change which may occur at different levels of temperature rise: download Two Degrees, One Chance – www.tearfund.org/2degrees.

What impact is climate change having on poor communities?

Many development agencies are working on climate change because they already see its impact on the poor communities with whom they work. Tearfund's partner organisations in the developing world are already reporting changes to their climate.

"The climate has changed and the rainy season has become unpredictable. The water levels fall year by year and some kinds of animals and vegetation have disappeared. The future is bleak for farmers and cattle-breeders alike." Mali

"The rain does not come at the right time. People start cultivating and there is no rain. Then it comes after a month, so the seeds die and again we have to plant" India

"We expect the impacts of a changing climate to increase, with a greater area of our country becoming desert, more woods and jungle being lost, torrential rains, hurricanes and greater seasonal instability." Mexico

To find out more check out Tearfund's report **Dried Up, Drowned out** (follow link or visit www.tearfund.org/climate which reveals that poor communities around the world are extremely vulnerable to climate changes that are happening at the local level.

Is climate change really happening as a result of human activity, or is it just natural variations in temperature?

The latest UN scientific report concluded with 90 per cent certainty that climate change is occurring as a result of human activity, and that its impacts are already being felt, especially by developing countries. The science and impacts are now almost unanimously accepted by scientists and politicians alike. The rise in global average temperature that has occurred over the 20th century is well outside the range of known natural variability.

The Intergovernmental Panel on Climate Change says:

'Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic (human induced) greenhouse gas concentrations'.

Although at times the media portrays a debate between those who accept and those who reject the existence of human induced climate change, it is important to realise that this is not an equal debate. There is an overwhelming consensus in the scientific community that man-made global warming is a reality, and an enormous bank of scientific evidence that supports this consensus. There are a number of theories supported by the small minority who do not accept the overwhelming scientific consensus on man-made global warming.

You can find a guide to these theories and the science on these issues by visiting the www.royalsociety.org.

Why is climate change a development issue?

The impact of climate change is one of the greatest injustices of our time. The developing world produces a tiny fraction of the greenhouse gases that developed rich countries produce - Latin America contributes only 4% of global emissions and Africa 3.5%. As a contrast, the US emits over 25% of greenhouse gases but only has 4% of the world's population.

The world's poorest people have contributed least to our changing climate yet they are hardest hit by the devastating effects.

Poor people are the least able to adapt to changes in their climate. They

- are the most vulnerable to natural disasters
- are the most reliant on harvests coming at the right time
- tend to live on marginal and unsafe land
- lack insurance and savings
- find it difficult to move from affected regions.

According to the World Health Organisation, an extra 5 million serious illnesses and 150,000 deaths globally are already being caused by climate change¹. There could be 50 million environmental refugees by 2010 and 150 million by 2050 as a result of climate change².

The effects of climate change are threatening to compromise years of development work and action is urgently needed to prevent catastrophe.

¹ World Health Organisation (2006) WHO/UNEP Health and Environment Linkages Initiative (website), WHO, Geneva www.who.int/heli/risks/climate/climatechange

² New Economics Foundation. Environmental Refugees: The Case for Recognition, p36. Download:

www.neweconomics.org/gen/uploads/lpce0g55xjx5eq55mfjxbb5523102003180040.pdf

Why should Christians care about climate change and how should we respond?

Caring for creation: We believe God created the world and everything in it (Psalm 24:1). Throughout scripture we are reminded that God created the world for his purposes and we have responsibility to take care of it.

Loving out neighbours: 'Love does no harm to its neighbour' (Romans 13: 10). We need to recognise our connection with the poor who are suffering most from climate change. We should demonstrate our love and concern by taking action personally and politically to tackle climate change.

Acting justly: 'To act justly and to love mercy and to walk humbly with your God' (Micah 6: 8). It's an injustice that the poorest communities suffer the most from climate change when they've contributed the least to the problem. We must campaign for justice in a changing climate.

Looking at our lifestyle: 'I have learned the secret of being content in any and every situation, whether well fed or hungry, whether living in plenty or in want. I can do everything through him who gives me strength' (Philippians 4: 12-13). In response to the changing climate we need to examine our lives and role in this before God. Can we change the way we live to have less impact on the earth and our neighbours? Can we be content without some of the stuff and lifestyle we take for granted?

How can we tackle climate change?

We must take every step we can to avoid climate change increasing further in the future by reducing greenhouse gas emissions. We can't stop some inevitable climate change caused by past emissions, and emissions levels may increase before they start to come down.

But, if we dramatically reduce our current emissions we can prevent changes reaching critical levels. Scientists tell us that in order to avoid the worst effects of climate change, the global average temperature increase must remain as far below 2°C as possible, which for industrialised countries means emissions cuts of 80-95% by 2050.

What can we do as individuals? A quarter of the UK's emissions come from households. This means we all need to make lifestyle changes if we're serious about

addressing climate change. The cumulative effect of lots of people cutting their carbon emissions really will make a difference. Plus the more people that play their part, the more a compelling argument is made to Government to play theirs. For example, changing to energy saving bulbs is a simple action everyone can take. Over the life of an energy saving bulb, up to 60kg of carbon dioxide will be saved per year, and up to £60 (Energy Saving Trust). Of course this alone is not enough but it is through a combination of small changes in lifestyle that big differences really can be made. Check out www.tearfund.org/lifestyle for more information on simple lifestyle changes you can make. You can also order a copy of *For Tomorrow Too*, our simple lifestyle guide.

What can we do nationally? The UK Government has introduced a Climate Change Bill to set a framework to ensure the UK plays its part in reducing global emissions to keep global temperature rise below critical levels. The Bill is not strong enough yet to do this properly so Tearfund is campaigning as part of the Stop Climate Chaos coalition for the Bill to be toughened to include at least 80% emissions reductions by 2050 and for aviation and shipping emissions to be included.

Find out more about the Climate Change Bill at www.tearfund.org/climatechangebill and how you can take action to ask for it to be made stronger. Scotland is currently developing its own Climate Change Bill. Find out more here www.scotland.gov.uk/Topics/Environment/Climate-Change/16327/Climate-Change-Bill

What can we do internationally? As climate change is a global problem, targets for reducing emissions are set at an international level. The framework for these agreements is the Kyoto Protocol until 2012. The United Nations body that sets the policies for tackling climate change – the UN Framework Convention on Climate Change (UNFCCC) – has started work on a the next phase of a global deal for tackling climate change post-2012. Tearfund is campaigning to ensure that this deal will be robust enough to ensure the international community takes adequate steps to address the causes of climate change and help countries adapt to their changing environment. Find out more and get involved: www.tearfund.org/cop

What can we do to help developing countries? No matter what we do to address the cause of climate change, significant change is already inevitable. It is therefore important that we ensure that the poor, who will be most affected, will be able to adapt to the changed environment.

Adaptation involves diverse areas like water resources, agriculture and health. It includes different measures such as planting drought resistant crops, water harvesting, soil conservation and reforestation. It also means helping communities to prepare for floods, droughts and cyclones.

We need to ensure that donors and governments fund adaptation to climate change for poor countries and that they consider it in all aspects of their development work. The next phase of a global deal on climate change must include adequate, reliable funding for adaptation in the region of \$50 billion a year, which must reach the poorest and most vulnerable people.

What does Tearfund think about the Governments decision to allow a new generation of nuclear power stations?

Tearfund is disappointed that the Government has chosen to focus on nuclear power, rather than increased investment in renewable power, and energy efficiency measures. Even a doubling of nuclear generating capacity will only lead to an eight percent cut in UK carbon dioxide emissions by 2035 – which is too little too late to address climate change. Given that any 'climate benefits' from nuclear power will not be felt until the 2030s we need to reduce emissions far sooner to avoid dangerous climate change.

What does Tearfund think about proposals to develop new coal fired power stations in the UK?

Tearfund is dismayed that energy companies are returning to coal as a source of power for the UK. Recent planning applications are for power stations with only 45 per cent efficiency which would lock the UK into high carbon electricity generation for decades. (In comparison, in Denmark, coal fired power stations have been built with 95 per cent efficiency using combined heat and power.) The new plant at Kingsnorth in Kent alone would emit as much C^o2 as the world's 24 lowest emitting countries combined - and would potentially keep doing so for 50 years. Tearfund thinks that coal fired power stations are a distraction from investment in energy efficiency measures and renewable energy.

Tearfund welcomes the governments new proposals around renewable energy and believes that this, rather than coal should be the focus for the future. All economies should be shifting towards a low carbon development path - in the UK this could save over 20 million tonnes of C^o2 by 2020, and provide up to 160,000 new jobs in green industries.

What is Tearfund doing about its own emissions?

Tearfund is committed to reducing its own carbon footprint. One measure already taken is to choose green electricity provider Good Energy to supply electricity to the head office. Good Energy is the only UK company obtaining all its electricity from renewable sources. Tearfund is also working to reduce air travel; encourage sustainable travel to work; recycling and using paper and other resources sustainably.

There is, however, a certain amount of travel that is unavoidable for Tearfund employees due to the nature of our work as a development charity. Therefore from 1 April 2007, we have offset all international air travel for staff with the Christian offsetting company Climate Stewards. Climate Stewards was set up by Christian conservation charity A Rocha, and their strategy is to invest in tree-planting and conservation projects in developing countries. In the future they also plan to develop renewable energy projects in the developing world.

But no matter what we do to address the cause of climate change, significant change is already inevitable. Tearfund is working with the local church to help poor communities adapt to climate change and also lobbying governments to do the same. Projects include planting drought resistant crops, rainwater harvesting, building small dams to delay the flow of rainwater and help it soak into the ground, soil conservation and reforestation. It also means helping communities to prepare for floods, droughts and cyclones.

In June 2008 we launched a new scheme called *My Global Impact* which helps supporters to calculate how much carbon dioxide they emit, find ways to reduce it, then make a payment to Tearfund projects that help poor people adapt to climate change, and invest in clean energy. Visit www.tearfund/mgi to find out more.

About Tearfund: We are Christians passionate about the local church bringing justice and transforming lives – overcoming global poverty. Our ten-year vision is to see 50 million people released from material and spiritual poverty through a worldwide network of 100,000 local churches.