

Briefing

Climate Change – ten key findings from the climate scientists

In 2013/14 the Intergovernmental Panel on Climate Change produced three major reports on climate change and a report which synthesized all three. In this briefing we draw out ten key findings¹.

1. **Humans are warming the planet** - it is unequivocal that the planet has warmed and will continue to warm. Scientists are more certain than ever that humans have been the dominant cause since the mid-20th century. How much the planet warms in the 21st century depends on the decisions we take.
2. **It is still possible to avoid two degrees global warming** - this will require a peak in global emissions by 2020, all electricity production to be virtually carbon pollution-free by around mid-century (and earlier in developed countries), cutting global fossil fuel use by around two-thirds by 2050 and achieving a zero carbon pollution world by 2100. The pledges currently made by governments to cut carbon pollution are not sufficient to avoid warming of more than 2 degrees. More stringent action will be required to avoid 1.5 degrees of warming, the goal of most developing countries.
3. **The costs of avoiding dangerous climate change are small, less than the costs of inaction, and there are very significant co-benefits from reducing carbon pollution** - addressing climate change will have a tiny impact on likely future economic growth and much less than the costs resulting from damage from climate change. Addressing carbon pollution brings significant co-benefits, such as: reduced health impacts from air pollution, healthier lower meat diets, increased biodiversity from afforestation, and less water scarcity. Delaying action will lead to higher costs.
4. **Business as usual will lead to 4 degrees of warming and extremely severe impacts** - 4 degrees of warming would lead to large increases in water stress and drought in a number of regions (for example, southern Europe and southwest North America). It could lead to very large releases of methane from melting permafrost, triggering still greater

For more than 40 years we've seen that the wellbeing of people and planet go hand in hand – and it's been the inspiration for our campaigns. Together with thousands of people like you we've secured safer food and water, defended wildlife and natural habitats, championed the move to clean energy and acted to keep our climate stable. Be a Friend of the Earth – see things differently.

levels of warming, and the near-complete loss of the Greenland ice sheet which over a millennium or more would cause sea-level rise of up to 7 metres. It would lead to unacceptably high risks of catastrophic, irreversible tipping points. And it could lead to parts of the world becoming inhabitable.

5. **Warming is leading to more extreme weather** - warming has already increased the occurrence of some types of extreme weather events and further temperature increases will see the frequency of heavy rainfall events and very hot days increase, with the severity increasing in proportion to warming. Each degree of warming will increase rainfall intensity by 5-10%. There will be more droughts and floods.
6. **Sea levels are rising** - they will continue to do so over coming decades and centuries as sea water expands as it gets warmer, as well as additions from glacier melt water and losses from the Greenland and Antarctic ice sheets. For each degree of warming a sea level rise of 1-3 meters is expected if the warming persists for several millennia. Sea level rises are unlikely to exceed one meter in the 21st century.
7. **Food production will be hit** - climate change is expected to reduce crop productivity by as much as 2 per cent per decade. This is within a context of growing demand from an increasing population. The risks to food production are not spread evenly, with tropical countries at greatest risk. Impacts on production could be much worse in combination with other stresses such as ozone pollution and water stress.
8. **Severe threats to wildlife** - 20-30 per cent of the plant and animal species assessed are at increasing risk of extinction as global mean temperatures exceed a warming of 2-3 degrees above pre-industrial levels. Climate change will contribute to increased extinction risk for terrestrial and freshwater species over the coming century.
9. **The poorest in the world will suffer the most** - people who are socially, economically, culturally, politically, institutionally or otherwise marginalized are often highly vulnerable to climate change. Women, children and the elderly are particularly at risk. Africa is particularly vulnerable, even with high levels of adaptation.
10. **Investments in energy efficiency and low carbon energy need to grow substantially** - investment in low emissions generation technologies need to double to around \$300 billion per year, investments in energy efficiency need to grow by over \$300 billion per year, and \$21-35 billion per year needs to be invested to stop deforestation. Investment in fossil fuels should fall.

To take action on climate change visit: http://www.foe.co.uk/get_involved/climate_change

¹ More detail can be found in our fully referenced briefings on the report: Friends of the Earth (2013), Climate change, what the scientists say, <http://bit.ly/19iaW3J>; Friends of the Earth (2014), Climate change, poverty and environmental justice, <http://bit.ly/1fPRfOA>; Friends of the Earth (2014), Climate change mitigation, what the scientists say, <http://bit.ly/1g4QnG9>