



Scotland

IPCC FIFTH ASSESSMENT BRIEFING

In 2013/2014, the Intergovernmental Panel on Climate Change (IPCC) published the three parts of its Fifth Assessment Report. While the first covered the climate science, the two most recent reports cover impacts and mitigation. WWF Scotland is pleased to provide MSPs with a briefing on some of the very top lines.

The Scottish context

As Christina Figueres, Executive Secretary of the UNFCCC stated in January 2013, 'domestic legislation on climate is the absolutely critical, essential linchpin between action at the national level and the international agreements'. Scotland is leading the way with the passing of the Climate Change Act in 2009 and is now grappling with the challenge of implementation.

Now more than ever, the world needs examples of where climate change legislation is making an impact, so we hope that Scotland remains committed to implementing its Climate Act with the right policies to achieve the necessary emissions cuts. We hope that this briefing will provide a brief, helpful insight into some of the IPCC's key findings and inject a sense of urgency into Scotland's climate debate, putting us on course to delivering our high climate change ambitions.

Key Findings - Working Group 1, The Science¹

Working Group 1 (The Physical Science Basis) found that scientists are now more certain than ever that human activity is responsible for the majority of global warming since 1951. It also shows that:

- sea level rise has accelerated
- the rate of arctic sea ice retreat has doubled
- the melting of the glaciers and ice sheets is faster than before
- oceans are acidifying

The report makes it clear that rapid reduction of greenhouse gas emissions will help the world avert the worst of climate change, but without aggressive mitigation strategies, global temperature rise will likely exceed 2 degrees by 2100.

¹ WG I Summary for policy makers - http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf

Key Findings - Working Group 2, Impacts²

Working Group 2 (Impacts, Adaptation and Vulnerability) looks at what impacts we are seeing already, what we could see in future. This report reinforces the sobering reality we face that climate change is real, happening now and affecting the livelihoods of people and the sensitive ecosystems that sustain us.

What is happening already?

1. Climate change is affecting the availability of the most critical resource for human life - water. Across the world, glaciers also continue to shrink.
2. We are already losing permafrost in high-latitudes and we know that there could be a tipping point in the future if large amounts of prehistoric methane are released.
3. Climate change will likely further increase drought frequency in already dry regions.
4. Anthropogenic climate change is causing species to have to shift the way they live on earth.
5. Disadvantaged people face the most severe impacts of climate change and higher warming will have even more unjustly distributed impacts.
6. Warm-water coral reef and Arctic ecosystems already experience irreversible shifts.

What could happen?

7. Climate change poses a fundamental risk to the livelihood and lives of people living on the coast due to storm surges, coastal flooding, and sea-level rise. Climate change also puts large cities at severe risk from flooding.
8. Climate change risks extreme weather events that may break down infrastructure networks or critical services such as electricity, water, health and emergency services. Climate change also risks extreme heat leading to excess mortality and morbidity.
9. Climate change risks the breakdown of food systems linked to warming, drought, flooding, and precipitation variability and extremes. Climate change of more than 2°C above pre-industrial levels will negatively impact production of major world crops including wheat, rice and maize.
10. Both on land and in fresh water, many ecosystems face increased extinction risk due to climate change within this century and beyond— the higher the temperature increase the higher the extinction risk. Through ocean acidification, climate change also poses substantial risks to marine ecosystems.

² WG II Summary for policy makers - http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf

Key Findings - Working Group 3, Mitigation³

Working Group 3 (Mitigation of Climate Change) issues a starker warning than ever that we need to take firm and urgent mitigation action. On publication of this report, Rajendra Pachauri, chairman of the IPCC warned “the high-speed mitigation train would need to leave the station soon and all of global society will have to get on board”. Climate change is a global problem. Addressing it requires international cooperation, alongside effective local and national policies.

1. Keeping temperature rise below 2°C by 2100 is definitely possible, but will require large scale changes in the global energy mix plus deep cuts in emissions soon.
2. Significant cuts in emissions will be required by both developed and emerging economies, e.g. 50% cuts by 2030 (from 2010 levels) in wealthy countries.
3. The stabilisation of GHG concentrations at low levels requires the “long-term phase-out of unabated fossil fuel conversion technologies”.
4. A low-carbon economy doesn't have to mean reduced economic growth. Policies such as carbon taxes have helped to decouple carbon emissions from GDP in some countries.
5. The transformation to a low-carbon economy will require new patterns of investment, and will result in the creation of a significant amount of new jobs. Reduction of subsidies to fossil fuels can achieve significant emission cuts at no or low social cost.
6. The energy supply sector is the largest contributor to global GHG emissions, primarily due to an increasing demand for energy services and a growing share of coal in the global fuel mix.
7. Since the last IPCC report, many renewable energy technologies have substantially advanced, which has increased their share in the global energy mix. However, for the continued expansion of renewable energy, more enabling policies will need to be enacted.
8. Without action, transport CO₂ emissions are projected to double by 2050, but with strong measures and good policies, energy demand in this sector could be reduced 40%. In a large number of countries, fuel taxes act as carbon taxes. In Europe, where fuel taxes are highest, they have contributed to reductions in emissions from the transport sector of roughly 50%.
9. The building sector was responsible for 34% final energy use in 2010, but with energy demand projected to roughly double, emissions could increase 50-150% by 2050. Low energy building codes in new buildings, combined with retrofits in existing ones can help achieve reductions of heating/cooling energy use by 50-90%.

³ WG III Summary for policy makers -http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf

FOR MORE INFORMATION

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