



CLIMATE AND
HEALTH
ALLIANCE

IPCC 1.5°C REPORT

BRIEFING PAPER FOR MEMBERS OF PARLIAMENT/PARLIAMENTARY CANDIDATES

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SUMMARY

- Any increase in global temperatures has primarily negative consequences for human health. More people will die from heat waves, flooding, infectious diseases, food and water insecurity.
- There are significant health gains from limiting global warming.
- Actions to limit warming to 1.5°C require emissions reductions of 45% from 2010 levels by 2030
- Requires rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems.
- Strengthening the capacity for climate action of national and sub-national authorities, civil society, the private sector, indigenous peoples and local communities can support implementation of ambitious actions required to limit global warming to 1.5°C.

INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) is the world's most authoritative climate science body. The IPCC Special Report: Global Warming of 1.5°C (IPCC 1.5°C) was commissioned by parties to the UNFCCC¹ at the global climate summit in Paris in 2015 (COP21) and was prepared by 91 authors from over 40 countries. This report informs global leaders and policy makers on how the world can limit global warming to 1.5°C, and provides advice about the impacts of 1.5°C relative to 2°C of global warming (above pre-industrial temperatures). The report is intended to help strengthen the global response to climate change and support sustainable development and efforts to eradicate poverty. This Brief draws upon the findings of the IPCC 1.5°C report, and associated documents, including the 1.5 Health Report from the World Health Organization.

Global Warming at 1.5°C and 2°C

Human activities have already caused 1°C of global warming above pre-industrial levels, and global temperatures are likely to reach 1.5°C between 2030 and 2052. This warming will persist for centuries to millennia and will continue to have irreversible impacts, such as the loss of ecosystems and biodiversity on which human health depends.

Limiting global warming to 1.5°C relative to 2°C (or higher) of global warming is predicted to reduce risks for natural and human systems: reducing increases in ocean temperature and acidity and reducing decreases in ocean oxygen levels. It will reduce risks to marine biodiversity, fisheries and ecosystems and retain more of their services to human. The level of global warming and future climate

¹ United Nations Framework Convention on Climate Change. The object and purpose of the [UNFCCC](#) is to stabilise 'greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous [human-induced] interference with the climate system'.

related risks are dependent on how soon net zero CO₂ emissions is reached, and the rate of decline in levels of radiative non-CO₂ emissions (i.e. greenhouse gases).

Projected Climate Change and Associated Risk

With increases in global temperatures come more frequent and more intense extreme weather events, global mean sea level rise, and losses to biodiversity and ecosystems on land and sea. The risks associated with each of these are greater at 2°C than they are at 1.5°C.

A warmer climate results in changes to the distribution of many infectious diseases, threatens food security, displaces populations and contributes to other climate related stresses. No level of global warming is considered safe, as even half a degree increase poses a significant risk to human health.

Rising global temperatures increase poverty and disadvantage, along with food and water insecurity, at 1.5°C and even more at 2°C. Limiting global warming to 1.5°C, compared with 2°C, could reduce the number of people exposed to climate-related risks and susceptible to poverty by up to several hundred million by 2050.

Global warming of +2°C could see major cities, such as Sydney or Melbourne, incur unprecedented temperatures of 50°C. Melbourne city temperatures of 46.4°C in 2009 were associated with catastrophic bushfires and deadly heatwaves.²

Human Health at 1.5°C vs 2°C

Heatwaves

Increasing the frequency, intensity and duration of heatwaves, climate change has contributed to increased heat-related mortality. Compared to the present, +1.5°C it is projected that 350 million people will be exposed to deadly heat stress by 2050.

Air quality

Limiting warming to 1.5°C will improve air quality (from reductions from many non-CO₂ emissions) and provide direct and immediate population health benefits, preventing illnesses and premature deaths.

Droughts and water security

Climate change threatens water security. Limiting global warming to 1.5°C could reduce the population exposed to a climate-related water stress by up to 50%.

Flooding and sea-level rise

Sea-level rises, coastal flooding and increased storm surges due to global warming is projected to exacerbate risk of death, injury, ill-health and disruption of livelihoods in low-lying coastal zones and our small island neighbours.

The risks of +1.5°C vs +2°C is most severe for the health, livelihoods, cultural identity and income of small island developing states.

Food security

Climate change exacerbates the risk of food insecurity and undernutrition, and these risks are higher at 2°C compared to 1.5°C of global warming. Warming of +1.5°C is projected to lead to under-nutrition for 530-550 million people, increasing to 540-590 million at 2°C. Food insecurity will worsen childhood undernutrition and stunting especially in poorer populations.

Occupational health

Climate change is predicted to increasingly compromise safe work activities and worker productivity, due to higher ambient temperatures and increased humidity. Global warming of +1.5°C is projected to reduce working hours worldwide by 6% due to heat stress.

Population displacement

At 2°C of warming there is a potential for significant population displacement, especially in Australia's neighbouring tropical regions. Tropical populations may have to move at distances greater than 1000 km if global mean temperature rises by 2 °C.

² Lewis, King, and Mitchell (2017), Australia's Unprecedented Future Temperature Extremes Under Paris Limits to Warming, AGU Geophysical Research Letters: <https://doi.org/10.1002/2017GL074612>

Limiting global warming to 1.5°C

Many strategies aimed at limiting global warming to 1.5°C could synergistically improve energy security, alleviate poverty and confer public health benefits. Achieving this will require rapid and far-reaching transitions in energy, land, urban infrastructure and industrial systems. It would require a reduction of net anthropogenic CO₂ emissions of 45% from 2010 levels by 2030, reaching net zero around 2050. Reduction of emissions provides health co-benefits including reducing air pollution and avoiding premature death.

All pathways that limit global warming by 1.5°C project that carbon dioxide removal strategies must be employed. These strategies currently include afforestation and reforestation, land restoration and carbon sequestration, bioenergy with carbon capture and storage and direct air carbon capture and storage. It is also estimated that annual investments in low-carbon energy technologies and energy efficiencies would need to be six times greater by 2050.

The choices and implementation of mitigation and adaptation options strongly influence the climate related risks for natural and human systems. If poorly designed or implemented, adaptation strategies to global warming can result in adverse impacts for sustainable development, including risks to health. Therefore, responses to climate change should be appropriate to national contexts, with increased investment in physical and social infrastructure to enhance resilience. Mitigation consistent with 1.5°C pathways in the context of sustainable development requires system transitions, policy instruments, acceleration of technological innovation and behavioural changes. Staying under 1.5°C will require partnerships with non-state public and private actors, civil society, scientific institutions, local communities and indigenous peoples to guide and support the implementation of ambitious climate action.

CONCLUSION

To limit global warming to 1.5°C more will need to be done, however it is evident that the risks associated with failing to meet this target are devastating. The negative impact of global warming on sea levels, biodiversity, ecosystems and human health is far greater at 2°C than at 1.5°C, although no level of global warming is safe. However, mitigation and adaptation strategies specific to a local context, provide an opportunity for co-benefits for sustainable development, and are most effective when communities, civil society, business, and local and regional governments are supported by national decision-makers.