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Climate Change is a Health Crisis

Health Messages from the IPCC Sixth Assessment Report
on Climate Impacts, Adaptation and Vulnerability



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Recognition and Commitment

We recognise Aboriginal and Torres Strait Islander People as the traditional custodians of the land on which we live and work and acknowledge that sovereignty of the land we call Australia has never been ceded. We commit to listening to and learning from Aboriginal and Torres Strait Islander people about how we can better reflect Indigenous ways of being and knowing in our work.

Climate Change is a Health Crisis

Health Messages from the IPCC Sixth Assessment Report on Climate Impacts, Adaptation and Vulnerability

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Background

What is the IPCC report?

This briefing document prepared by CAHA provides a summary of the key findings related to health and wellbeing from the [February 2022 IPCC report](#).

The **Intergovernmental Panel on Climate Change**, or IPCC, is the world's highest authority on climate science. It is made up of leading climate scientists from around the world who provide regular assessments of the latest climate science.

The IPCC is publishing their sixth series of assessments, also known as the Sixth Assessment Report (AR6). AR6 consists of three major reports published in 2021-22:

- A report on the physical science basis of climate change, which was released in August 2021;
- A report on climate change impacts, adaptation and vulnerability, which was released in February 2022;
- A report on mitigation of climate change, which will be released in April 2022.

This briefing discusses the second report on climate change impacts, adaptation and vulnerability.

This IPCC Report is the most comprehensive scientific summary to date of the impact of climate change. The IPCC has reviewed thousands of scientific papers and provides summaries on a wide range of topics, including water systems, food systems, **Indigenous knowledge**, oceans, cities, **health**, poverty and inequality. It also contains chapters on specific regions, including **Australasia**, Small Island Developing States, Africa and Asia.

The IPCC AR6 report runs to over a thousand pages. This briefing aims to summarise the findings relevant to health and wellbeing, and provide a resource for health professionals and policy-makers working at the intersection of climate change and health. In no way does it aim to replace, dispute, or reinterpret the findings of the IPCC report. CAHA encourages readers to consult the original report for more information.

The IPCC report also comes with a [Summary for Policymakers](#) (SPM), which provides a high-level synopsis of the entire report, and serves as a guiding document for policymakers worldwide. The exact wording of the SPM is negotiated by governments from around the world, and forms an important basis for national and international climate policies.

To verify statements throughout this briefing, references are included for the original IPCC chapter and section (Chapter.Section) or section of the SPM (SPM: B.1.4).

Key Findings

1

Climate change is already harming people's health.

Climate change affects human health and wellbeing in many ways: illness, injury and death caused by extreme climate events such as floods, bushfires and heatwaves; increased spread of mosquito- and tick-borne diseases; a rise in cardiovascular disease caused by extreme heat; respiratory diseases from air pollution; food insecurity; increased risks for mental health and wellbeing; and effects on livelihoods, migration and conflict.

The health impacts of climate change are happening now, and are worsening. They overwhelmingly affect disadvantaged and marginalised communities and exacerbate existing health inequities.

Rapid cuts to greenhouse gas emissions and evidence-based adaptation strategies can greatly reduce future health risks.

2

More action is needed to protect our health.

We have many solutions at hand to reduce the health risks associated with climate change, but far more action is needed.

Building a climate-resilient health sector requires anticipating the health impacts of climate change, identifying vulnerable populations, and improving health protection measures.

Reducing socio-economic inequalities will also reduce people's vulnerability to climate-related health risks.

3

Climate solutions benefit our health and our economy, making them 'win-win-win' actions.

The benefits to health far exceed the costs of implementing climate actions. Climate action is good for health. Well-designed strategies that reduce greenhouse gas emissions and strengthen resilience have significant benefits for health and wellbeing, like cleaner air, soil and water; improved mental health; more active and resilient communities; healthier diets; and more.



The global health impacts of climate change

Climate change is already harming human health and wellbeing everywhere.

Worldwide, climate change is causing illness and death in diverse ways. A non-exhaustive list of examples includes (SPM: B.1.4):

- Many vector-borne, food-borne and water-borne diseases have increased in incidence;
- New diseases, including diseases transmitted from animals to humans (zoonoses), are emerging;
- Mental health challenges related to climate change are increasing, caused by increasing temperatures, trauma from extreme weather events, loss of livelihoods and culture;
- Cardiovascular and respiratory conditions have increased from exposure to air pollution and bushfire smoke; and
- Health services access and service provision is disrupted during extreme weather events.

The IPCC report identifies 11 categories of diseases and health outcomes that are influenced by climate change, or are “climate-sensitive”.

These diseases and health outcomes are climate-sensitive either through direct pathways (e.g. heat, floods) or indirect pathways (e.g. disease vectors, allergens, air and water pollution, and food system disruption) (see Table 1 below).

In 2019, climate-sensitive diseases were estimated to comprise 69.9% of global deaths. Of these, cardiovascular diseases made up the largest proportion (32.8% of global deaths) (7.2).

Climate change is worsening health inequities.

Climate change and extreme weather events disproportionately impact groups and people who are economically and socially marginalised, thereby increasing existing inequities (SPM: B.1.5).

In many regions, the limits of human tolerance to extreme heat are being reached.

Limits to human physiological tolerances of heat have been reached in many regions. High temperatures currently increase mortality and morbidity, with impacts that vary by age, gender, location, and socioeconomic factors, and this impact is expected to increase in many regions. Hotter temperatures are associated with an estimated 5% reduction in labour productivity in the last 15 years (10% in low income countries) (7.2).

The severity of climate-related health risks is highly dependent on how well public health systems can protect people.

Climate change will undermine the capacity of public health systems to respond to diseases, particularly in resource-poor regions. The strain on health and economic systems will continue to grow as climate impacts become more frequent and intense. (7.4.1).

Table 1: The global burden of climate-sensitive health risks assessed in the IPCC report.

Climate-sensitive diseases were estimated to comprise 69.9% of global deaths in 2019. The large majority of climate-sensitive health outcomes are negative, with a few diseases potentially having a reduced burden in certain regions because of climate change (e.g. a reduced number of respiratory tract infections in Northern latitudes with higher average temperatures). Table adapted from IPCC Table Box 7.2.1.

Health outcome (disease/ condition)	Global annual deaths in 2019	Regions most affected (% of global deaths)	Climate change observed impacts
Malaria	643,381.00	Africa (92%)	****
Dengue	36,055	Asia (96%)	***
Diarrheal diseases	1,534,443	Asia (56%)	***
Salmonella	79,046	Africa (89%)	***
Respiratory tract infections	2,493,200	Asia (47%)	**
Noncommunicable respiratory illness	3,741,705	Asia (74%)	***
Cardiovascular disease	18,562,510	Asia (58%)	**
Death from malignant neoplasms	10,079,637	Asia (55%)	***
Diabetes	1,551,170	Asia (56%)	**
Environmental heat and cold exposure	47,461	Asia (46%)	***
Nutritional deficiencies	251,577	Africa (43%)	***
Mental health	N/A	N/A	****

Red = Negative health impacts , Grey = Negative and positive health impacts
 **** = Very high Confidence, *** = High Confidence, ** = Medium Confidence

Climate change and health in Australia

Bushfires, super-charged by climate change, are a growing health risk.

Bushfires have caused serious illness and loss of life in recent years in Australia, both directly and from the resulting deterioration of air quality (Box 11.1).

The 2019/2020 mega-bushfire season in Australia followed extreme drought and high temperatures, and was at least 30% more likely to occur compared to a century ago due to the influence of climate change. The 2019/2020 bushfires caused 33 deaths directly and exposed millions of people to heavy particulate pollution. Bushfire smoke additionally caused 417 deaths, 3,151 hospital admissions for cardiovascular or respiratory conditions, and about 1,300 emergency department presentations for asthma. Smoke-related health costs from the 2019-20 fires are estimated at A\$1.95 billion (11.3.6).

Extreme heat and droughts threaten the health of Australians.

Heatwaves can have severe health implications, ranging from ambulance callouts to hospital admissions for kidney disease, to episodes of food-borne illnesses, incidents of ischaemic heart disease, decreased mental wellbeing, and even death (11.3.6).

In Australia, the annual number of days over 35°C is projected to increase 20-70% by 2030. Heat-related excess deaths in Australian cities are projected to increase by 200-400% during 2031-2080 relative to 1971-2020. Total costs of heat-related impacts for the city of Melbourne for 2012-2051 have been projected to be A\$1.9 billion, of which A\$1.6 billion is human health/mortality costs (11.3.5).

Extreme heat exacerbates problems in urban Australia where urban heat is superimposed upon regional warming. This particularly affects socio-economically disadvantaged groups (11.3.5).

Successful adaptation options for extreme heat include: urban cooling interventions, green infrastructure, education to reduce heat stress, heatwave/fire early-warning systems, battery/generator systems for blackouts, building standards that improve insulation/cooling, and accessible, well-resourced primary health care (11.14).

Severe droughts also contribute to poor health outcomes, including extreme stress and suicide, with lasting impacts on communities. In Australia, competition between water users has left some communities suffering from extreme water shortage and insecurity with associated health impacts (11.3.5).

Australians are increasingly suffering from the mental health impacts of climate change.

One study has shown how changing climatic patterns in Western Australia have undermined farmers' sense of identity and place, heightened their anxiety and increased their

self-perceived risks of depression and suicide. Another study, looking at the “Black Saturday” bushfires in Victoria in 2009, found 10–15% of the population in the most severely affected areas to suffer from persistent fire-related post-traumatic stress disorder, depression and psychological distress (11.3.6).

Farmers of certain crops are facing reduced yields because of drought and extreme heat.

Yields of some Australian crops are decreasing due to hotter average temperatures and spikes in extreme heat. Interactions of heat and drought could lead to even greater losses. If emissions are not reduced, wheat yields may decline by half or more and become extremely variable across seasons (11.3.4).

Australian cities have made some progress in health protection from climate extremes.

Australian cities and local governments are progressing with climate adaptation, including for urban heat and protecting people during heatwaves (11.3.5.3). Heatwave responses are the best-developed element of adaptation planning for health in Australia, but many metropolitan centres are still not covered (11.3.6).

Rural, regional and remote areas in Australia are ill-prepared for climate disasters.

Rural, regional and remote areas across Australia are extremely vulnerable to climate change, due to widening inequities between rural and urban areas, an ageing population, and reliance on an over-stretched volunteer base to respond to disasters. Disaster recovery is also disrupted by the lack of economic and social investment in the regions (11.3.5).

Extreme heat is a growing threat to liveability in some rural, regional and remote areas in Australia, as their populations are older and depend more on outside physical work. Future climate impacts are expected to worsen existing inequities between rural and urban areas, and in particular between Indigenous and non-Indigenous Australians (11.3.5).

The Australian health system is ill-prepared for climate change.

One of the most effective ways to protect Australians from the worsening impacts of climate change is by strengthening the country’s public health system (11.3.6). However, hospitals and other critical facilities face physical risks from weather-related hazards exacerbated by climate change that were not originally anticipated in building and infrastructure design (11.3.5).

The protection of health facilities and supply chains is a fundamental element of health preparedness and disaster response, but health service managers seldom have capacity to invest in long-term improvements in infrastructure. Australian health services are required to prepare disaster plans, and these could be expanded to explicitly cover health adaptation and local threats from climate change (11.3.6).

Climate change and Indigenous health

Globally, Indigenous Peoples have historically contributed the least to carbon emissions but are among those most affected by its consequences. Recognition of the role of Indigenous Peoples in identifying solutions to the problems caused by climate change are only now being recognised. They are still largely excluded from meaningful representation in climate change dialogues and decision-making (11.4).

Climate change will exacerbate inequities faced by Aboriginal and Torres Strait Islander peoples in Australia.

Changing climate conditions are expected to exacerbate many of the social, economic and health inequalities faced by Aboriginal and Torres Strait Islander peoples in Australia (see Table 2). Some areas in northern Australia, for example, especially those with higher proportions of Aboriginal and Torres Strait Islander Peoples, already face severe challenges in access to housing, health, education, employment and services, increasing vulnerability to climate change (11.3.5).

Table 2: Climate-related impacts on Aboriginal and Torres Strait Islander peoples' health, country and culture. (adopted from IPCC Table 11.10)

Impacts	Implications
Loss of bio-cultural diversity (land, water and sky)	Healthy country is critical to the livelihoods, caring for country responsibilities, health and wellbeing of Aboriginal and Torres Strait Islander peoples. Damage to land can magnify the loss of spiritual connection to land from dispossession from traditional Country and leads to disruption of cultural structures.
Climate-driven loss of native title and other customary lands	Traditional coastal lands lost through erosion and rising sea level, with associated mental health implications from loss of cultural and traditional artefacts and landscapes, including the destruction and exhumation of ancestral graves and burial grounds.
Changing availability of traditional foods and forced diet change	Health impacts can be exacerbated by climate change through changing availability of traditional foods and medicines. Outages and high costs of electricity can limit storage of fresh food and medication.
Changing climatic conditions for subsistence food harvesting	Climate change-induced sea level rise and saltwater intrusion can limit the capacity for traditional Indigenous floodplain pastoralism, and also affect food security, access and affordability to healthy, nutritional food.
Extreme weather events triggering disasters in	Increasing frequency or intensity of extreme weather events can cause disasters in remote communities, including infrastructure

remote locations	damage of essential water and energy systems and health facilities.
Heatwave impacts on human health	Heatwaves can occur in many regions. Tropical regions can experience prolonged seasons of high temperatures and humidity levels, resulting in extreme heat stress risks.
Health impacts from changing conditions for vector-borne diseases	Climate change can change exposure and increase risk of infection from waterborne and insect-borne diseases, especially if medical services are limited or damaged by extreme weather events.
Unadaptable infrastructure for changing environmental conditions	Poorly-designed, inferior quality and unmaintained housing can create health challenges for tenants in extreme heat. Essential community-scale water and energy service infrastructure, unpaved roads, sea walls and storm water drains can fail in extreme weather events.
Drinking water security	Arid conditions in Australia are expected to reduce the recharge rate of finite groundwater supplies. For remote communities reliant on groundwater for drinking supplies, this water insecurity creates vulnerabilities from over-extraction and lack of access.

A changing climate has serious mental health consequences for Aboriginal and Torres Strait Islander peoples. Some have said, “If the land is sick, our people are sick.” Mental health is spiritually connected to cultural and land responsibilities. Impacts on Country and mental health, combined with a lack of security for food and water, non-resilient housing and extreme weather events, can contribute to migration off traditional lands and into towns and cities. This can have negative flow-on social impacts such as homelessness, dislocation from community and family, and disconnection from country and spirituality (11.4.1).

When designed well, climate change adaptation can be empowering for Aboriginal and Torres Strait Islander peoples.

Efforts to adapt to climate change can be empowering for Indigenous peoples when they control their land, with the right and the opportunity to adapt it (see Table 3). However, in most adaptation projects, this is not the case (11.4.1).

Table 3: ‘Caring for Country’: Examples of Aboriginal and Torres Strait Islander Peoples’ practices of adaptation to a changing climate (adopted from IPCC table 11.11)

Indigenous Protected Area (IPA) management plans enable culturally and ecologically compatible development that contributes to local Indigenous economies.
Fire management using cultural practices can achieve greenhouse gas emission reductions when undertaking burning for maintaining Indigenous cultural heritage.
Indigenous Ranger programs provide a means for Indigenous-guided land management, including for fire management and carbon abatement, fauna studies, medicinal plant products, and weed management.
Conservation planning , such as through faunal field surveys, can engage local, bounded and fine-scale deep knowledge by Indigenous knowledge holders.
Cultural flows in waterways are a demonstration of cultural knowledge, values and practice in action as they are informed by Indigenous knowledge, bound by water-dependent values, and define when and where water is to be delivered - particularly in a changing climate.

Climate change, infectious diseases and pandemics

Climate change is increasing the risk of new infectious diseases emerging.

One of the greatest challenges we face is an increase in emerging infectious diseases.

The risk posed by emerging infectious diseases has increased because of:

1. Movement of wild animals and their parasites into new areas due to climate change, global trade, and travel;
2. Human intrusion and conversion of natural areas for agriculture, livestock, industrial/raw materials extraction, and housing;
3. Increased wildlife trade and consumption;
4. Increased human mobility resulting from global trade, war/conflicts, and migration made faster and farther by fossil fuel-powered travel; and
5. Widespread antimicrobial use, which can promote antibiotic-resistant infections (FAQ2.2).

The COVID-19 pandemic has shown how vulnerable our health systems are to shocks and stresses.

COVID-19, and interventions implemented to reduce its impact, primarily affected those people who are socio-economically most vulnerable in society. The pandemic has worsened climate risks, demonstrated the global and local vulnerability to cascading shocks, and highlighted the need for more long-term solutions (7: Cross-Chapter Box COVID-19).

The delayed and incomplete international response to COVID-19 resembles our response to climate change.

Many organisations, corporations and governments reacted too slowly or denied the pandemic's severity before responding at the scale and urgency required; a pattern that resembles international action, or lack of it, on climate change (7: Cross-Chapter Box COVID-19).

We have solutions at hand that would reduce the risk of pandemics, tackle climate change, and improve social justice and biodiversity conservation.

Countries can address the current pandemic and increase resilience against climate change at the same time. For example, the pandemic has shown the value of coordinated planning, safety nets, and other ways to address vulnerabilities and social inequities in societies to cope with a range of shocks and stresses (7: Cross-Chapter Box COVID-19).

Climate change and mental health

Climate change impacts mental health and wellbeing in complex and varied ways.

Mental health issues arising from climate change can include anxiety, depression, post-traumatic stress disorder, suicide, substance abuse, and sleep problems. These occur on a spectrum of severity ranging from mild symptoms to hospitalisation.

Mental health can be impacted directly through exposure to extreme weather events or prolonged high temperatures. Mental health can also be impacted indirectly as a result of climate impacts on economic, social and food systems, as well as loss of livelihoods and culture. The economic impacts of droughts have been associated with increases in suicide, particularly among farmers. Individuals in low and middle-income countries may be more severely impacted due to limited access to mental health services and fewer financial resources to cope with impacts, compared with high-income countries (7.2.5).

There can also be mental health consequences from learning about climate change or observing its impact on others. Distress is also caused by climate-related ecological grief and environmental change (solastalgia), and vicariously experiencing or anticipating climate events, and climate-related food insecurity (7.2.5).

High temperatures are associated with negative impacts on mental health.

Higher temperatures are related to mental health outcomes such as suicide, psychiatric hospital admissions, emergency department visits for mental health disorders, and experiences of anxiety, depression and acute stress. Higher temperatures are also connected to decreased happiness and wellbeing, as well as increased aggression and violent crime (11.3.6).

Bushfires have negative impacts on mental and physical health.

Mental health impacts can be due to the trauma of the immediate experience and/or subsequent displacement and evacuation. Increases in anxiety, sleeplessness, or substance abuse have been reported in response to extreme weather events, with impacts being pronounced among those who experience greater losses or are directly exposed to the event, including first responders (7.2.5).

In Australia, extreme weather events such as floods, heatwaves, droughts, storms and fires have long-lasting impacts on mental health.

Extreme weather events have caused deaths and injuries in Australia, and have long-lasting impacts on mental health, homelessness, and reduced access to health services (11.3.6)

Some groups are more vulnerable to the mental health effects of climate change.

Vulnerability to mental health effects of climate change varies across different groups. Indigenous Peoples, agricultural communities, first responders, women, and members of minority groups experience greater negative impacts (7.2.5).

Climate change, displacement and migration

Climate change can drive migration and displacement.

Climate disasters are drivers of migration, both directly (e.g. destruction of homes by tropical cyclones) and indirectly (e.g. rural incomes reduced by prolonged droughts). Since 2008, an average of 12.8 million people a year have been displaced by natural disasters, of which most were weather-related (7: Cross-Chapter Box Climate-related Migration).

The IPCC divides climate-related migration into four broad categories, which will each be affected by climate change (7.2.6):

1. Adaptive migration (i.e. where migration is an outcome of individual or household choice)
2. Involuntary displacement (i.e. where people have few or no options except to move)
3. Organised relocation of populations from sites highly exposed to climatic hazards
4. Immobility (i.e. an inability to move from areas of high exposure for cultural, economic or social reasons)

The socio-economic context plays an important role in climate-related migration.

Climate-related migration is strongly dependent on the local context and socio-economic conditions, such as household wealth, gender, social context, and power dynamics. Often the most vulnerable population groups are unable or unwilling to move out of locations with a high climatic risk. Other populations may choose to stay for emotional, cultural or spiritual reasons (7.2.6).

The majority of climate-related migration and displacement currently takes place within countries.

Currently, international climate-related migration is still relatively small, compared to internal migration. When international climate-related migration does occur, it most often takes place between neighbouring states, or states that have labour-migration agreements and/or longstanding cultural ties (7.2.6).

The best health outcomes are achieved when migrants have agency.

Specific climate events and conditions may cause migration to increase, decrease, or flow in new directions. The more agency migrants have, the greater the potential benefits for both the areas which migrants are leaving and the areas to which they are going (7.2).

Researchers are especially concerned about those groups and people who are unable or unwilling to move away from high risk areas.

Immobile populations are those groups and individuals that are unable or unwilling to move away from areas that are highly exposed to climatic hazards. Often the most disadvantaged members of society are least able to migrate (7: Cross-Chapter Box Climate-related Migration).

Climate justice

Unequal societies are more vulnerable to climate change.

How vulnerable people and communities are to climate change impacts is in part determined by their socio-economic circumstances. For example, women make up nearly 80% of farmers in Sub-Saharan Africa. They are often the poorest, most vulnerable members of their communities, and therefore less resilient to the impacts of climate change (8.3).

People's vulnerability to climate change is shaped by past social developments, such as colonisation and its ongoing legacy.

Climate change is impacting ways of life, especially for Indigenous Peoples, small-scale producers and low-income households. Vulnerability to climate change is dynamic and shaped by historical and contemporary political, economic, and cultural processes (8.3).

In Australia, many homeless people lack access to temperature-controlled or structurally safe housing, and often are excluded from disaster preparation and responses. These existing inequalities are reversible, and would significantly reduce vulnerability to climate change (11.3).

COVID-19 has worsened inequality, making disadvantaged groups more vulnerable to climate impacts.

The direct and indirect consequences of the COVID-19 pandemic have worsened inequalities within societies. This has in turn increased existing vulnerabilities to climate change and further limited the ability of disadvantaged communities to adapt (8.3).

The systemic disadvantages experienced by Indigenous Peoples leave them more vulnerable to climate change.

On average, Aboriginal and Torres Strait Islander people have lower income, poorer nutrition, poorer school outcomes, fewer employment opportunities, and higher rates of incarceration and removal of children than non-Indigenous Australians. These systemic disadvantages can reduce their capacity to adapt to climatic changes, and exacerbate climate change vulnerabilities (11.4).

Climate solutions are closely linked with climate justice.

How societies and communities mitigate and adapt to climate change has an influence on inequalities and livelihoods, and thereby aspects of climate justice. When designed well, climate solutions can have benefits for the most disadvantaged while ensuring resilient development (8.5).

Health Adaptation

Well-planned adaptation efforts can help protect lives and promote health.

A proactive, systems-based approach is needed – one that moves beyond incremental adaptation for health, and instead considers the multiple, interacting sectors that affect population health and the effective functioning of health systems.

Health adaptation efforts should (7.4):

- Reduce exposure to climate-related hazards;
- Reduce people's vulnerability to such hazards; and
- Strengthen health system responses to future risks.

Current global investments in health adaptation are insufficient.

Health adaptation has been relatively limited so far. This is mainly because of a lack of financial and human resources, and limited research funding on health adaptation (7.4.3).

Investing in the health sector is a good climate adaptation strategy.

Continued investment in general health systems, and in other systems that provide health protection, is an effective strategy to reduce health risks in the short- to medium-term.

As climate change worsens and health risks increase, there will be pressure for more transformational changes in health systems to reduce vulnerabilities and limit further dangerous climate change (7.4).

Action to protect people's health from climate risks requires action within and beyond the health sector.

Climate solutions to protect and promote health and wellbeing often have their origins in sectors beyond the health sector, including water, sanitation, agriculture, food systems, social protection systems, energy, and key components of urban systems such as housing and employment. Multisectoral collaborations aimed at strengthening the health sector can generate multiple co-benefits in other sectors (7.4.3).

In Australia, coal and gas extraction can make local communities more vulnerable.

Coal and coal seam gas developments can severely impact local communities, including by worsening conditions of water stress and drought, and exacerbate people's vulnerability to climate change (11.3).

Good governance, collaboration, and coordination are key for health adaptation.

Without integration and collaboration across sectors, adaptation to climate-related health risks can become siloed, leading to less effective adaptation or even maladaptation (7.4.3).

Health co-benefits of climate solutions

Many climate solutions also have benefits for health and wellbeing.

Achieving the Paris Agreement targets can result in low-carbon, healthy, resilient, and equitable societies with high-wellbeing for all.

Emission reductions that reduce air pollution have positive co-benefits for health. Air quality improvements alone can substantially offset, or most likely exceed, mitigation costs at the societal level (7: Cross-Chapter Box Co-benefits of Climate Actions).

Benefits for health and wellbeing can be gained from access to affordable renewable energy, active transport (e.g. walking and cycling), green buildings, and nature-based solutions. Healthy, plant-rich diets contribute to lower greenhouse gas emissions while also generating health co-benefits, such as reducing ill health related to overconsumption of animal-based products (7.4.2).

A shift to largely plant-based diets brings environmental and health benefits.

Shifting to sustainable food systems that provide affordable, diverse, plant-rich diets can bring health co-benefits and substantially reduce greenhouse gas emissions. This is especially so in high income countries and in places where ill health related to overconsumption of animal-based products is prevalent (7: Cross-Chapter Box Co-benefits of Climate Actions).

Urban green and blue spaces tackle climate change and improve physical and mental health.

Urban green infrastructure, including urban gardens, can bring benefits to social cohesion, mental health and wellbeing and reduce the health impacts of heatwaves by decreasing temperatures. This reduces inequities in exposure to heat stress for low income and disadvantaged groups (7: Cross-Chapter Box Co-benefits of Climate Actions).

Investing in basic services can protect the health of the most vulnerable from climate risks.

Investing in universal basic infrastructure, including sanitation, clean drinking water, drainage, electricity, and land-rights, can transform development opportunities, reduce inequalities, increase adaptive capacity, and reduce vulnerability to climate-related risks (7: Cross-Chapter Box Co-benefits of Climate Actions).

Resources and Further Reading

Mental Health Support

It can be overwhelming to be confronted with the scale and urgency of the climate crisis. CAHA has compiled a list of useful resources to help build understanding of the mental health impacts of climate change, and promote ways in which people can build emotional and psychological resilience in the context of climate change.

[CAHA mental health resources.](#)

[Coping with Climate Change Distress.](#)

Communicating about Climate Change and Health

CAHA's project [Real, Urgent and Now](#) provides various resources for health professionals and health advocates on how to best communicate the health impacts of climate change.

The health co-benefits of climate solutions

Taking climate action has many great benefits for our health. This [CAHA resource](#) provides a quick overview of actions that benefit both our health and the health of the planet.

Previous IPCC Reports

The IPCC report published in August 2021 on the physical science basis of climate change was published alongside an interactive atlas on regional climate impacts, which can be accessed here: <https://interactive-atlas.ipcc.ch/>

In 2018, the IPCC Special Report on 1.5°C was published, explaining the expected impacts of 1.5°C and 2°C of global warming.

CAHA produced a [briefing paper for MPs](#) on the IPCC Special Report on 1.5°C, along with a document [answering frequently asked questions](#).

The World Health Organization also produced a [synthesis report](#), summarising the health findings in the IPCC Special Report on 1.5°C.

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