

---

caha.org.au  
#climatehealth

# Healthy, Regenerative and Just

---

October 2021

Framework for a national strategy  
on climate, health and well-being  
for Australia



## 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.

## About Climate and Health Alliance

**Why we exist:** Climate change is the greatest threat to health we face.

**Our theory of change:** If the health sector leads on climate advocacy and solutions, decision-makers and the public will act, because the community cares about health and trusts health voices.

**Our mission:** To build a powerful health sector movement for climate action and sustainable healthcare.

**Our vision:** The health sector plays a leading role in restoring a safe climate, and an ecologically sustainable, just and healthy world.

Contact: [fiona.armstrong@caha.org.au](mailto:fiona.armstrong@caha.org.au)

Released October 2021



Suite 4.13, Level 4, 247-251 Flinders Lane,  
Melbourne VICTORIA 3000, Australia

© Climate and Health Alliance 2021

# Contents

Foreword	4	Why we must act	12
Executive Summary	6	The health sector and climate change	14
Key policy recommendations	8	Introduction to the framework	18
Our vision for the future	10	Principles	22
1. Health-promoting and emission reducing initiatives	26	5. Education, communication, and capacity building	42
2. Supporting healthy and resilient communities	31	6. A sustainable and climate-resilient health care sector	46
3. Thriving ecosystems	35	7. Research and data	51
4. Emergency and disaster-preparedness	38	8. Leadership, financing and governance	55
Implementation	63	Appendix B	80
Glossary	65	Appendix C	84
Acknowledgements	72	References	86
Appendix A	74		





# Foreword

**In a health crisis, we look to health and medical experts for guidance on how to respond. The climate crisis is a health crisis, and the path forward can seem complicated. We are fortunate then, that in Australia, and around the world, we have health and medical experts and health stakeholders speaking with one voice about how to respond.**

This Climate and Health Alliance-led roadmap to a Healthy, Regenerative and Just future offers policymakers at all levels of government, the health sector, and the community comprehensive guidance on the policies and programs needed to tackle this most wicked of problems. The first edition of the framework in 2017 delivered significant impact and has been drawn on by many in looking to chart the way forward.

The longer we delay, the bigger the price we will pay. We cannot afford to ‘kick the can’ down the road any longer. But when we take action, it is vital it is coordinated, and complements other efforts. We cannot solve a global problem like climate change by working alone.

This framework offers one of the most comprehensive roadmaps to action on climate change and health yet produced. It offers recommendations across eight critical areas of policy action, spanning multiple portfolios, and outlines actions for federal, state and local governments, business, community, and of course, the health sector.

Importantly, this framework also situates Aboriginal and Torres Strait Islander wisdom and knowledge (developed over millennia) as central to all climate-health action strategies. The recognition and inclusion of First Peoples in all decision-making is not just an act of reconciliation, it is self-preservation. We have much to learn, and bringing in the insights available from 60,000 years of custodianship to help tackle the climate challenge is well overdue.

The framework also offers the chance for stakeholders at many levels to coordinate action. We do need political leadership, but much can also be accomplished by stakeholders following a shared action plan.

I urge all policymakers, industry actors, all those in the health sector, and others to use this framework to guide action, and all those in the community (i.e. everyone) to call on all governments to commit to funding its adoption and implementation.

The window of opportunity for effective action on climate change is narrowing. We have just one decade to apply all the strategies available to us to give us a chance to hand on a habitable planet. I urge all readers to use this document to contribute towards that goal.



**Professor Peter Doherty**  
Nobel Laureate for Medicine





# Executive Summary

**In 2009, *The Lancet* named climate change as the biggest global health threat of the 21st century.<sup>1</sup> The impacts of climate change affect the foundations for human health and well-being, negatively impact the social, cultural and environmental determinants of health, endanger food security, threaten biodiversity, and increase the frequency and severity of extreme weather events such as heatwaves and bushfires.<sup>2</sup>**

In ratifying the Paris Agreement in November of 2016, the Australian Government formally agreed to consider citizens' right to health in the context of the nation's climate change response, and to recognise the co-benefits for health in developing mitigation strategies.<sup>2,4</sup> In 2021, a global analysis of international climate-health commitments gave Australia zero points out of 15 for failing to mention human health in its Nationally Determined Contribution (towards achieving the goals of the Paris Agreement).<sup>5</sup>

While there is some positive action underway at the state/territory and local level, Australia lacks the coordinated national effort required to protect the health and well-being of the population from the impacts of climate change. There are immense opportunities for human health through carefully targeted strategies that promote health and reduce emissions simultaneously.

This framework for a national strategy on climate, health and well-being for Australia builds on the version released in 2017, and provides a comprehensive roadmap to support the Commonwealth Government in taking a leadership role in protecting the health and well-being of Australian communities from climate change and in fulfilling its international obligations, including under the Paris Agreement.

The framework is informed by consultation with climate and health experts and health stakeholders over an extended period and across multiple forums. It represents the insights and expertise from academics, researchers, health service managers, policymakers, professional associations, unions, and health and medical professionals from many disciplines. It is supported by a wide cohort of stakeholders, united in their concern about the health impacts of climate change on people in Australia and around the world, and in their desire to see a comprehensive response to tackle this issue, to avert further harm and realize the gains available for health from integrated climate mitigation and adaptation measures.

Bringing in the recommendations from the 2020 Healthy, Regenerative and Just policy agenda, and insights from further consultation in 2021, this framework sets out with Key Areas of Policy Action, along with the policies and strategies that all levels of government, the health sector, business and the community can implement to reduce Australia's greenhouse gas emissions, limit pollution and environmental damage, improve health outcomes, and empower the Australian population to respond to the health impacts of climate change.

The recommendations in the framework emphasise the processes through which these policies should be implemented – through co-design and consultation – to ensure that all Australian communities are empowered to safeguard their health from the growing impacts of climate change. Critical to this process is the leadership and guidance of Aboriginal and Torres Strait Islander people, who have inhabited this land for tens of thousands of years, and hold a unique knowledge of how to care for their country.

The intention of the framework is to provide a roadmap that can be progressed into a formalised strategy and be implemented by the Federal Government, in cooperation with states and territories.

If implemented, the measures set out in the framework will help us tackle both the climate and biodiversity crisis and deliver significant public health, economic, and environmental benefits.

The clear message from the proponents of this work is that, in Australia, we are fortunate to have the wealth of knowledge and resources necessary to meet the challenge of climate change head-on. A healthy, regenerative and just future is not just possible, it is scientifically, economically, culturally, socially, and technologically feasible. By making the right choices now, we can create a future which benefits everyone.

**But we must act soon, as time is running out.**



## Key policy recommendations



### 1. Health-Promoting and Emissions-Reducing Policies

- Legislate a 75% reduction in greenhouse gas emissions below 2005 levels by 2030 and net-zero greenhouse gas emissions by 2035 as recommended by the best available science.
- Pursue these targets by rapidly phasing out fossil fuel-based energy and transport, and invest in renewable energy resources and infrastructure.
- Mandate a “health in all policies” approach in all public policy decisions.



### 2. Supporting Healthy and Resilient Communities

- Embed recognition of the relationship between climate change and the social, cultural and environmental determinants of health in all policy decisions.
- Recognise and respect the knowledge, capacity and strength of Aboriginal and Torres Strait Islander peoples to lead decisions that affect their country and communities.
- Empower communities and community service organisations to respond and build resilience to climate threats.



### 3. Thriving Ecosystems

- Expand programs to preserve natural environments, including wilderness areas and national parks, recognising their vital role in healthy human development and long-term health and well-being.
- Expand initiatives to support Aboriginal and Torres Strait Islander people to implement traditional approaches to environmental management and biodiversity conservation, and support local communities to care for country.



### 4. Emergency and Disaster-Preparedness

- Improve the preparedness of health and emergency services to respond to the impacts of climate change such as increased extreme weather events.
- Integrate climate risk assessments into all disaster-preparedness and health sector planning.



### 5. Education, Communication and Capacity Building

- Educate and train current and future health professionals to prepare for and respond to the health impacts of climate change.
- Boost understanding among the general public of the health impacts of climate change to strengthen their capacity to respond.



### 6. A Sustainable and Climate-Resilient Health Care Sector

- Establish national and subnational plans by 2023 to decarbonise healthcare by 2035.
- Support the health sector to lead on mitigation of health care-related greenhouse gas emissions.



### 7. Research and Data

- Fund climate and health research to evaluate priority needs and identify solutions to specific climate-health threats in Australia and the region
- Invest in systems to monitor and evaluate climate and health impacts in real time.



### 8. Leadership, Financing and Governance

- Implement the reforms set out by the Uluru Statement from the Heart, to right historical wrongs and give Aboriginal and Torres Strait Islander people a constitutionally enshrined voice.
- Establish a progressive taxation system to fund the measures needed for a climate-resilient, healthy society.
- Establish a multi-portfolio Ministerial Committee to oversee the development of the national strategy on climate, health and well-being.
- Require health sector boards and executives to respond to climate change as their fiduciary duty.



# Our vision for the future

A healthy, regenerative and just future is one that benefits everyone. It requires us, however, to acknowledge and face up to uncomfortable truths: that our current economic system, focussed on growth and consumption, irrespective of environmental, human or social harm, is deeply counterproductive. If our current trajectory continues unchecked, this poses existential threats to humanity i.e. it threatens the survival of billions of people around the globe.

"The outcome [our] children and grandchildren will live with depends on what decisions are made today. Happily, the solutions are win-win, or even win-win-win: they reduce emissions, improve the environment and make people healthier and wealthier overall." — Professor Mark Maslin<sup>6</sup>

To create a better future requires the transformation of our energy and transport systems, housing and infrastructure, urban planning, food systems, waste and governance. All of this will almost certainly require a significant shift of current power dynamics. The good news is that Australia is well-positioned to take action. A skilled workforce, modern industrial base, and an abundance of renewable energy sources can facilitate easier emissions reductions than many other countries.<sup>7</sup>

The rewards will far outweigh the costs. If measures to tackle global warming and the biodiversity crisis are developed carefully with human and planetary health as an overarching goal, all of them can deliver substantial benefits. These benefits apply not just to the health of individuals, but will improve the health and well-being of the whole population. The economic value of avoided ill-health and associated productivity gains will also deliver considerable savings for health care and social service budgets.

Political will, cross-parliamentary support, and community involvement will be essential in developing and maintaining the necessary governance, funding, policy, infrastructure and resources required to achieve the vision for a healthier and safer Australia encapsulated in the framework's recommendations. Australia's response to the COVID-19 pandemic has shown the potential for swift reactions to an emergency. Our response has illustrated a willingness across society to change our behaviour and engage in a massive cooperative effort to tackle a public health threat. It is clear that we are willing to make sacrifices if we understand the threat, and understand that our actions now will lead to a better future for everyone.

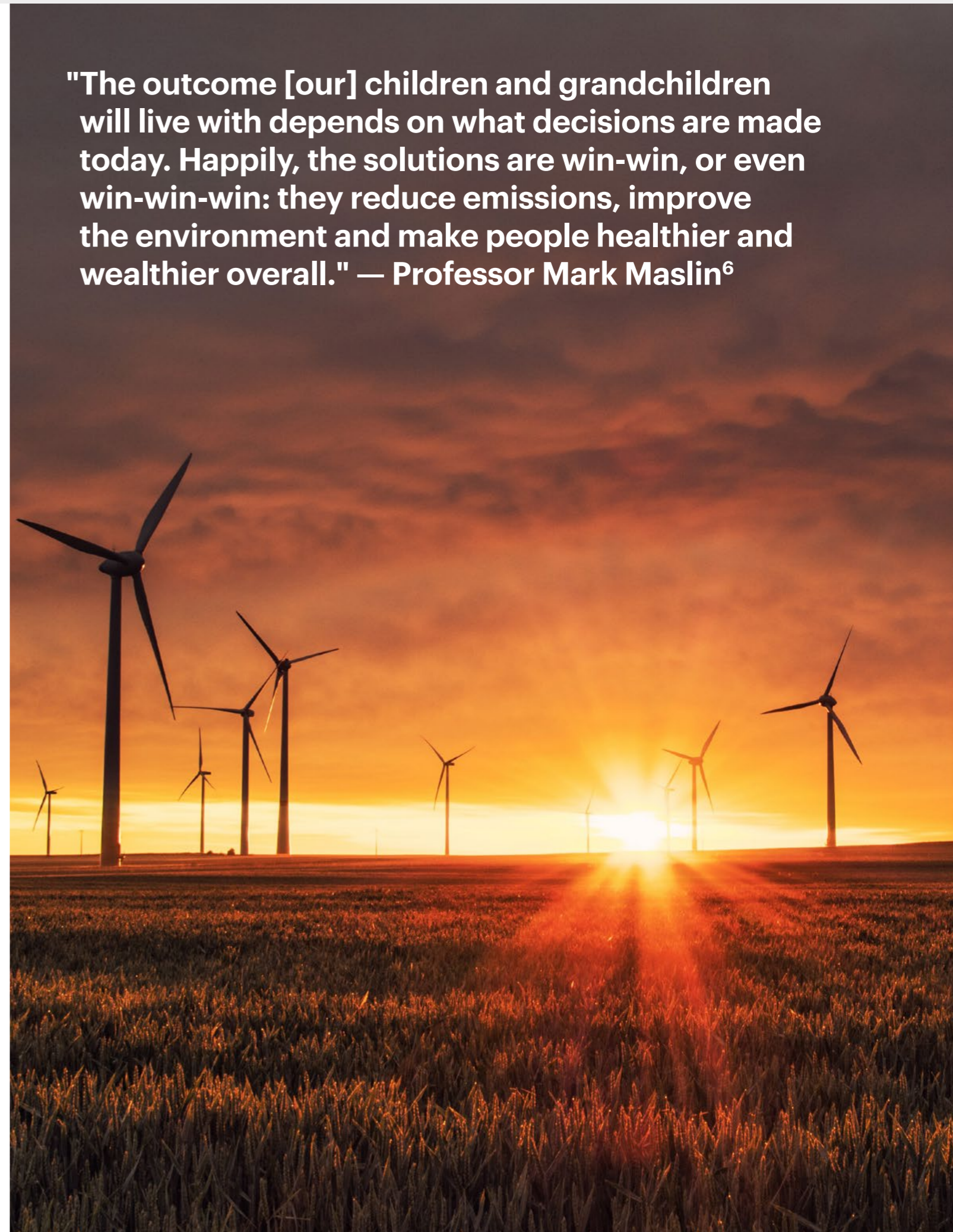
Achieving a better future involves a clear-eyed look at current structural political, social, economic, environmental and public health challenges, identifying and implementing integrated strategies. The approach must be holistic. We must move beyond silos in terms of public dialogue, policy portfolios, investment strategies, political and business priorities, and leadership.

We must recognise and value Indigenous peoples' knowledge. Indigenous peoples are feeling the impacts of climate change 'right now and first' and they rightfully expect action.<sup>8</sup> We must pay attention to the rights of children and young people, and generations yet unborn, who will bear the brunt of the climate challenge. The voices of children and young people deserve to be heard, and we must prioritise their right to a viable future.

All this requires a collective vision and commitment to making decisions in a meaningful timeframe. We cannot postpone responsibility. We cannot get to net zero emissions by 2050 by starting in 2040.

We must start now.

**"The outcome [our] children and grandchildren will live with depends on what decisions are made today. Happily, the solutions are win-win, or even win-win-win: they reduce emissions, improve the environment and make people healthier and wealthier overall." — Professor Mark Maslin<sup>6</sup>**





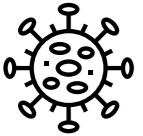
# Why we must act

## The current health impacts of climate change in Australia



### Extreme weather events

Heatwaves, drought, storms, floods and fires are increasing in Australia and will worsen in intensity, duration and frequency, leading to illness, loss of life and livelihoods, and increasing pressure on our health services.<sup>7,9,10</sup> These events combined with the social and economic impacts of climate change are increasing the risk and incidence of climate-related mental illness and stress.<sup>7,11,12</sup>



### Infectious diseases

Through biodiversity loss and a warmer climate, the range and prevalence of vector-borne and zoonotic diseases is increasing, threatening a larger proportion of the Australian population.<sup>7,13,14</sup>



### Food and water security

Changing weather patterns associated with climate change are impacting agriculture, fisheries, and water supply, jeopardising rural livelihoods and endangering Australia's food and water security.<sup>7,15,16,17</sup>



### Air pollution and aeroallergens

As well as driving climate change, burning coal, oil and gas creates harmful local air pollution, estimated to cost Australia \$5.3 billion pa.<sup>18</sup> Droughts and heatwaves contribute to dust storms and bushfires, both additional sources of harmful air pollution.<sup>19,116</sup> Rising temperatures increase ground level ozone and aeroallergens, aggravating allergic and respiratory conditions, and amplifying the toxic effect of other air pollutants.<sup>19,20</sup>



### Sea level rise

Coastal inundation from sea level rise threatens food production, health, homes, livelihoods, and culture.<sup>7</sup> Sea level rise also compounds other threats to the availability and quality of fresh water.<sup>21</sup>



## Populations at greater risk

Vulnerable populations suffer disproportionately from the adverse health impacts of climate change, with people with pre-existing medical conditions, older people, young, disabled, socioeconomically disadvantaged and Indigenous Australians particularly vulnerable.<sup>7,11,12,22,23</sup> Women in particular are disproportionately impacted by climate change, as long-standing social, cultural and economic gender inequalities are exacerbated by climate-related hazards.<sup>24,25,26,27</sup>

Hotter temperatures are also putting outdoor and manual labourers at increased risk of heat-related illnesses, work accidents and death,<sup>117</sup> while the extreme weather events are increasing occupational risks and demands on emergency services.<sup>11,28</sup>



# The health sector and climate change

Despite its healing mission, the health care sector is a key contributor to greenhouse gas emissions, and thus has a responsibility to transition to environmentally sustainable, and ultimately net zero emissions, operations. The Australian health care sector accounts for 7% of yearly national greenhouse gas emissions, equivalent to the entire state of South Australia.<sup>29</sup> Globally, health care generates 4.4% of greenhouse gas emissions.<sup>9</sup> Acknowledging this, the British National Health Service has committed to net zero emissions by 2040.<sup>30</sup> It has already made significant progress by 2020, reducing its Scope 1, 2 and 3 emissions by 26% on a 1990 baseline, delivering annual savings of £90 million, which is expected to rise to £120 million per annum by 2034.<sup>30, 31, 32, 33</sup> Action in Australia must follow their lead. The Grattan Institute recommends all Australian state and territory governments finalise plans for net-zero public health sectors by the end of 2023.<sup>11</sup> A Global Road Map for Health Care Decarbonization is available to guide this work.<sup>34</sup>

Health services in Australia are already experiencing the destructive effects of climate change, which is damaging vital health infrastructure, impacting the health workforce, and putting at risk the ability of some services to continue to provide care for the community.<sup>35</sup> Around 70% of the 875 health professionals who responded to a 2020 national survey said climate change was negatively impacting public health in Australia, and 55% reported their workplaces had been affected by an extreme weather event in the previous 12 months.<sup>36</sup>

These threats will only amplify in the future, putting more lives at risk.

The case for action is clear.

Health is becoming more prominent in international climate change policy with 73% of countries now making explicit references to health and well-being in their Nationally Determined Commitments (NDCs). However, Australia's NDC was rated 0/15 in a scorecard based on analysis of its 2020 submission, due to its omission of any consideration of health impacts, adaptation for health, health co-benefits arising from emissions reductions, and economics or financing for health programs.

The 2020 Lancet Countdown policy brief for Australia recommends a cross-sectoral national strategy for climate change and health: "This should address both climate mitigation and adaptation, and encompass prevention, planning and preparedness; climate-health research; resilience and sustainability of the health care system and health equity."<sup>18</sup>

All Australian governments must work together to develop a comprehensive national strategy on climate, health and well-being for Australia. We offer this framework for a Healthy, Regenerative and Just Australia to facilitate its advance.

---

## The role of the health sector, and health professions, on climate change

The international medical journal The Lancet makes clear that doctors, nurses, and the broader health professions "have a central role in health system adaptation and mitigation, in understanding and maximising the health benefits of any intervention, and in communicating the need for an accelerated response."<sup>12</sup>

In the context of declining public trust in institutions and experts, health professionals remain highly trusted in society.<sup>37</sup> The importance of health and climate change is being recognised globally with a 96% increase in news coverage referencing climate change and health in 2018-2019 (outpacing a general increase in climate change coverage).

Australian health groups and medical groups have formed a strong consensus around the need for urgent action and an increasing number are declaring climate change a health emergency.<sup>38</sup> In April 2021, over 60 health groups, including the Australian Medical Association and superannuation company HESTA, wrote an Open Letter to the Prime Minister calling on the government to "scale up emissions reduction strategies to prevent premature deaths and declining health outcomes associated with climate change", calling for health to be included in Australia's Nationally Determined Contribution to the Paris Agreement, for the decarbonisation of health care, and for a National Strategy on Climate, Health and Well-being for Australia.<sup>39</sup>

The global health and medical community also are stepping up their calls for urgent action, with over 200 health and medical journals publishing simultaneous editorials in September 2021 calling on governments to take emergency action to tackle the "catastrophic harm to health" from climate change.<sup>40</sup>

This was followed by a 'Healthy Climate Prescription' signed by groups representing more than 50 million health and medical professionals around the world. This Prescription calls on leaders of every country and their representatives to act to "avert the impending health catastrophe by limiting global warming to 1.5°C, and to make human health and equity central to all climate change mitigation and adaptation actions."<sup>41</sup>

---





# Healthy, Regenerative and Just

Framework for a national strategy  
on climate, health and well-being  
for Australia







# An introduction to the framework

The Healthy, Regenerative and Just framework for a national strategy on climate, health and well-being for Australia outlines a set of policy recommendations for all levels of government, the health sector, business and community that will protect the health and well-being of all people in Australia from the impacts of climate change. This work is guided by the desire to create a national policy framework that recognises, manages and addresses the health risks of climate change and promotes health through climate change action.

It is intended to support Australia in meeting its obligations under the Paris Agreement, as well as other international covenants, including but not limited to the Sustainable Development Goals (SDGs), the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the United Nations Convention on the Rights of the Child, and the International Covenant on Economic Social and Cultural Rights (see Appendix C).

Building upon previous work led by the Climate and Health Alliance in 2017,<sup>42</sup> and following further consultation with health experts and stakeholders, this version of the framework integrates the Healthy, Regenerative and Just policy agenda released in 2020,<sup>43</sup> and reflects recent research and policy development.

The framework should be viewed through the lens of eight foundational principles, which provide a conceptual underpinning for the intent, rationale and objectives of the framework.

Recommendations in this document cover the mechanisms available to policymakers to reduce greenhouse gas emissions in Australia in ways that protect and promote health and well-being, and the tools with which the nation might adapt to a warming world.

While there is an expectation that the federal government will provide essential coordination and leadership, the scale of measures needed to tackle the complex implications of climate change requires collaboration. That is, collaboration both vertically (involving national, state/territory and local governments) and horizontally (across multiple portfolios and sectors and within the health sector itself), as well as international collaboration (engaging with and supporting other nations) to build on global experience and global learnings. The framework outlines a broad range of recommendations for all potential stakeholders.

We propose the development and implementation of the national strategy on climate, health and well-being for Australia be undertaken with the oversight of a National Committee (or similar construct) of Health and Climate Change (or related portfolios) Ministers.

In summary, this framework outlines a shared agenda to support the development of a national policy framework that recognises international obligations in relation to the Paris Agreement, manages and addresses the health risks of climate change, promotes the health benefits of climate action, and ensures our shared future is healthy, regenerative and just.







# Principles

The following principles provide the foundation for the intention, rationale and objectives of the Healthy, Regenerative and Just framework for a national strategy on climate, health and well-being for Australia. They serve to guide the application of the framework, and provide a conceptual underpinning to the policy directions and recommendations.

---

## 1. The right to health

To fulfil individuals' and communities' right to health, action must be taken to protect the environment and achieve sustainable development that meets the needs of present and future generations.

---

## 2. Community safety and resilience

The safety and protection of the community must be paramount in policy development, along with the goal of creating the conditions to ensure communities are prepared for and able to respond to the impacts of climate change.

---

## 3. Planetary boundaries and planetary health

Planetary boundaries are finite limits within which human civilisation must operate to keep both life and the planet safe: biosphere integrity, land-system change, freshwater use, biogeochemical flows, ocean acidification, atmospheric aerosol load, stratospheric ozone depletion, novel entities and climate change.<sup>44</sup> Planetary health is the health of human civilisation, and the state of the natural systems on which it depends.

---

## 4. Environmental protection as a foundation for health and well-being

The dependence of human population health on a healthy functioning natural environment is recognised in many international treaties and must be core to policy development on climate change and health.<sup>45</sup>

---

## 5. Health in all policies<sup>46</sup>

All dimensions of climate change are intrinsically linked, and action to reduce the health risks from climate change requires working across all policy areas and sectors to consider the health impacts of their policies and practices. Governments must incorporate the experience and insights of health care professionals in policymaking. This is best captured through a Health in All Policies approach.

---

## 6. Intragenerational and intergenerational equity

This refers to the obligation to ensure those most vulnerable to the impacts of climate change are protected, as well as to ensure the rights of all people and communities to access societal and environmental conditions for optimum health and well-being, now and for future generations. Australia also has a responsibility to its neighbours in the region who are disproportionately impacted by climate change and have limited capacity to respond.

---

## 7. Minimising and managing risk

Reducing and managing current risks and anticipating and preparing for future risks to health from climate change must be a key element of policy development, and should be incorporated into risk management strategies for all public and private institutions.

---

## 8. Indigenous rights, recognition, and reconciliation

The rights and wisdom and unique cultures of Australia's Indigenous people must be central to policy development on climate mitigation and adaptation policies. To that end, the Climate and Health Alliance fully endorses the call of the Uluru Statement from the Heart for constitutional reforms that will empower Aboriginal and Torres Strait Islander people to take their rightful place in their own country.<sup>47</sup>

---

## 9. Citizen engagement

Climate change will disproportionately impact vulnerable Australians, and like all members of society, their lived experience must inform policymaking. All policy development must occur in consultation with, and account for, the stated needs and priorities of affected communities and stakeholders.

# Key Areas of Policy Action

Building on the widely endorsed policy roadmap released by the Climate and Health Alliance in 2017, we outline necessary reforms across seven previously identified key areas of policy action to create a healthy, regenerative and just society. Given the interconnectedness of human and environmental health, highlighted by COVID-19, we are adding an additional eighth policy area, relating to thriving ecosystems.

This framework covers eight areas of policy action



## 1. Health-Promoting and Emissions-Reducing Policies

Policies that protect and promote health and well-being while simultaneously reducing greenhouse gas emissions.



## 2. Supporting Healthy and Resilient Communities

Enhancing the capacities of communities to anticipate their climate risks and reduce impacts on health and well-being in their communities.



## 3. Thriving Ecosystems

Restoring and safeguarding Australia's ecosystems, recognising that intact ecosystems are the fundamental basis of human health and livelihoods.



## 4. Emergency and Disaster-preparedness

Supporting the identification of vulnerable populations and gaps in policies and procedures, including in emergency services, in order to adequately prepare for the impacts of climate change.



## 5. Education, Communication and Capacity Building

Educating and raising awareness of the health impacts of climate change within the health workforce, and the wider Australian community.



## 6. A Sustainable and Climate-Resilient Health Care Sector

A net-zero greenhouse gas emissions, environmentally sustainable, climate-resilient health sector which can effectively respond to the health impacts of climate change.



## 7. Research and Data

Supporting Australia's health and climate research capacity to evaluate specific health threats, priority needs, to design responses and to monitor trends and opportunities for maximising multi-sector benefits.



## 8. Leadership, Financing and Governance

Providing leadership and establishing appropriate governance and financing arrangements in order to effectively respond to climate change and health risks at national, state/territory, and local levels, and contributing to the international effort to limit global warming.



# Policy Directions, Outcomes and Recommendations

This section outlines the rationale for each Area of Policy Action, key policy directions, the desired outcome, and the specific policy recommendations to achieve this outcome.

Key actors responsible are identified, and include federal, state/territory, and local government, as well as health institutions, private and public companies, universities, academic and training institutions, accrediting bodies, professional associations and unions, health and medical research bodies, and directors of board of governance of public and private sector institutions, including hospitals and health services.







# Health -promoting and emissions reducing initiatives

Climate change mitigation requires government policy and regulation as well as private sector action to shift finance and investment towards green and net-zero carbon initiatives. Policies that achieve better health and well-being outcomes while reducing greenhouse gas emissions and creating jobs are win-win-win options. In all policy efforts, a health lens should be applied i.e. a "Health in All Policies" approach that evaluates potential for health benefits and health harms.

## Policy Direction 1

A rapid transition towards renewable energy for electricity, heating and cooling as one of the highest priority actions for reducing greenhouse gas emissions.

Outcome: Reduced demand on health care, improved productivity, with accompanying economic savings associated with reduced incidence of cardiovascular, respiratory and other illnesses – and reduced greenhouse gas emissions in line with international obligations.

### THE FEDERAL GOVERNMENT MUST:

- 1.1 Set an ambitious national emissions reduction target for 2030, that includes provisions to end public funding of fossil fuels.
- 1.2 Establish a reduction in greenhouse gas emissions of 75% below 2005 levels by 2030 and net zero emissions by 2035 for all sectors, including emissions from exports.
- 1.3 Significantly increase investment in renewable energy for electricity generation, manufacturing, transport and storage in order to reach 100% renewable electricity in Australia by 2030.
- 1.4 Reform the national electricity grid to allow for an increasing proportion of renewable energy generation from sources such as wind and solar.
- 1.5 Accelerate the closure of coal-fired and gas-fired power generation to create incentive and demand for low and zero greenhouse gas emissions energy by 2030.

- 1.6 Provide support for affected workers and communities to identify and develop alternative economic and employment opportunities to ensure a just transition.
- 1.7 Strengthen mechanisms for carbon pricing to accelerate the phase out of fossil fuel based resources and technologies.

### ALL AUSTRALIAN GOVERNMENTS, BUT IN PARTICULAR FEDERAL AND STATE/ TERRITORY GOVERNMENTS ARE URGED TO:

- 1.8 Develop and implement detailed plans for all sectors (with near and long term targets) to transition to net zero greenhouse gas emissions.
- 1.9 Set a date for completion of the transition plans by different agencies and government trading entities which should be published and progress reported annually.
- 1.10 Prioritise large scale as well as community-owned renewable energy infrastructure projects (especially wind, solar and battery storage) in local and regional economies to decentralise energy networks and share the economic benefits of energy generation and storage with local communities.
- 1.11 Encourage domestic renewably powered manufacturing and industrial processes to:
  - 1.11.A Produce components for wind and solar and electric transport technologies.
  - 1.11.B Process minerals and metals for use in other industries.
  - 1.11.C Produce new products from recycled municipal, medical, industrial, and commercial waste.





- 1.12** Increase investment in research for renewable energy technology innovation and development.
- 1.13** End taxpayer subsidies for fossil fuel extraction, production and consumption.
- 1.14** Apply financial incentives to reduce energy consumption, improve energy efficiency and encourage purchasing of renewable energy.
- 1.15** Adopt world's best practice air quality standards to reduce avoidable morbidity and mortality from air pollution from fossil fuel sources.

- 1.16** Mandate best practice emissions controls on air pollution from coal mining, transportation and combustion and gas exploration and production.<sup>48, 49</sup>

#### **ALL ORGANISATIONS, INSTITUTIONS AND COMPANIES SHOULD:**

- 1.17** Divest from any investments in coal, oil or gas resources and infrastructure.
- 1.18** Examine their own internal energy usage, implement energy efficiency strategies, and transition to renewable energy.

#### **Policy Direction 2**

**Accelerate the transition away from fossil fuel based transport and electrification of the nation's road transport fleet, and scale up public and active forms of transport infrastructure.**

**Outcome: Improved air quality, reduced emissions, improved health and well-being and productivity gains.**

#### **FEDERAL, STATE/TERRITORY AND LOCAL GOVERNMENTS ARE URGED TO:**

- 1.19** Strengthen national emissions standards for motor vehicles, improve national fuel quality standards and introduce mandatory fuel efficiency standards.
- 1.20** Expand and electrify public transport infrastructure (bus, tram, train) and provide incentives to promote utilisation.
- 1.21** Develop infrastructure, programs and incentives to reduce car dependency and encourage safe, healthy and active commuting (such as access to alternative forms of micro-mobility, pedestrian zones, well connected bike lanes, safe and visible crossing points, traffic calming measures, and reduced traffic speed zones).<sup>50</sup>
- 1.22** Develop incentives to accelerate uptake of low or zero emissions vehicles including electric vehicles (individual and commercial use) and expand associated infrastructure, e.g. requiring all new or refurbished service stations to include electric vehicle charging stations at their facility.

#### **Policy Direction 3**

**A healthy natural and built environment in both urban and rural settings will support the foundations of health and well-being of the community, reduce greenhouse gas emissions, improve air quality and reduce the urban heat island effect.**

**Outcome: A natural and built environment that contributes to the health and well-being of the community, rather than being a potential cause of ill-health.**

#### **FEDERAL, STATE/TERRITORY GOVERNMENTS, AND LOCAL GOVERNMENTS WHERE RELEVANT SHOULD:**

- 1.23** Establish incentives to encourage low and zero carbon, climate resilient buildings and infrastructure (including in the health sector).

- 1.24** Amend the National Construction Code to incorporate health-protecting and climate resilient measures into construction (for example including ability to withstand temperature extremes and natural disasters).
- 1.25** Establish energy efficiency standards for all buildings (including hospitals, schools, and social housing) to be thermally efficient, renewably powered and climate resilient.
- 1.26** Include health impact assessment and cost-benefit analysis on all significant infrastructure planning, projects and policy decisions.
- 1.27** Invest in amenities, community hubs and telecommunication infrastructure outside of major metropolitan areas to support flexible working arrangements, including working from home.<sup>50</sup> These amenities should also provide shelter and safe spaces for work and refuge during heatwaves and other extreme weather events.

#### **Policy Direction 4**

**Accelerate the transition to a circular economy to help regenerate and preserve natural resources and ecosystems.**

**Outcome: Tackle climate change, air pollution, and biodiversity loss, and improve environmental and community resilience, population health and well-being.**

#### **FEDERAL, STATE/TERRITORY GOVERNMENTS SHOULD WORK TOGETHER TO:**

- 1.28** Develop a national framework for a circular economy to drive responsible consumption and production, including the incorporation of circular economy principles into trade policies.
- 1.29** Establish a national certification and labelling scheme for products to communicate embodied carbon and to guide consumer behaviour towards low carbon choices.



### 1.30 Develop policy incentives aimed at:

- 1.30.A Stimulating design for goods and packaging with an emphasis on durability, reusability, design for reparability and remanufacturing, recyclability and compostability.<sup>51</sup>
- 1.30.B Encouraging regenerative production through product and formulation design, sourcing practices, as well as agricultural and land-use policies.<sup>51</sup>
- 1.30.C Fostering repair, sharing, resale, and remanufacturing of products to maximise asset use and return on invested energy.<sup>51</sup>
- 1.30.D Creating product stewardship responsibilities for producers, importers and sellers to support circular opportunities, from reuse to recycling.<sup>51</sup>

- 1.30.E Establishing incentives for low and zero carbon purchasing decisions, including life cycle analysis and the evaluation of embodied carbon to guide decisions about procurement.
- 1.30.F Supporting interdisciplinary research to drive innovation in circular economy practices.
- 1.30.G Ensuring every local government area across Australia has its own recycling/remanufacturing/composting facilities.
- 1.30.H Decentralising and localising circular economy opportunities beyond metropolitan areas.

#### Policy Direction 5

Promote a food production system that responds to the risks of climate change and recognises environmental limits and planetary boundaries.

**Outcome: Healthy, low greenhouse gas emissions food production and distribution systems will optimise resources, and contribute to the positive health and well-being of the community, land and other species.**

#### FEDERAL AND STATE/TERRITORY GOVERNMENTS AND RELEVANT SECTORS ARE ENCOURAGED TO:

- 1.31 Establish a national climate-smart agriculture strategy to support farmers and graziers to reduce greenhouse gas emissions, access tools and resources and information, and adopt healthy, regenerative practices.

- 1.32 Provide incentives for production of low-emission, healthy foods and discourage production of highly processed foods which are damaging to both human and planetary health.
- 1.33 Develop incentives for farmers to invest in resources, technologies and production practices which lower greenhouse gas emissions, store carbon in the soil, and enhance the nutritional value of food produced.
- 1.34 Increase investment in research into sustainable low greenhouse gas emissions and healthy dietary patterns.
- 1.35 Increase investment in sustainable water strategies and water infrastructure to secure our food production systems in the face of a hotter and drier climate.
- 1.36 Address already-existing food insecurity in under-served communities to prevent further exacerbation of health inequities by the impacts of climate change.



# Supporting healthy and resilient communities

The COVID-19 pandemic has revealed deep inequalities in our society which the climate crisis will only exacerbate. We must prioritise tackling inequality to build social resilience to respond to and recover from future crises. This includes investing in measures that support communities to anticipate health, environment, and climate risks to limit entrenching further inequity and build a healthy, climate-resilient society. Local communities should be encouraged and empowered to participate in the care and wise use of natural resources. In particular, this process should enable and support traditional owners to care for their country. Greater awareness of the fundamental links between people and environment will promote engagement and reinforce environmental protection as a health promotion initiative.





### **Policy Direction 1**

**Recognise the relationship between climate change and the social, cultural and environmental determinants of health (e.g. factors such as cultural identity, gender, housing, food security, employment and the natural and urban environment).**

**Outcome: Improved health outcomes and enhanced social and climate resilience through the adoption of 'upstream' health promotion strategies.**

#### **FEDERAL, STATE/TERRITORY AND LOCAL GOVERNMENTS AND HEALTH AND SOCIAL SERVICES ARE ENCOURAGED TO:**

- 2.1** Incorporate the concept of planetary boundaries and planetary health into decision-making – to ensure we recognise we are rapidly approaching fundamental limits to finite resources that underpin our economy and way of life, and that our health depends on the state of natural systems, which are being profoundly undermined by our way of life.
- 2.2** Invest in long term risk assessment and strategic management of energy, water and food systems, which are crucial to positive health outcomes as well as social, economic and national security.
- 2.3** Promote energy security for all, and support community-owned energy infrastructure, particularly in remote and regional communities (including transitioning from diesel to clean, renewable energy such as solar and wind with battery storage).

- 2.4** Promote strategies to improve the energy performance of buildings and inclusion of green infrastructure in urban design to simultaneously achieve emissions reductions and promote public health and well-being.
- 2.5** Promote measures to ensure appropriate social housing that is resilient to extreme heat and other weather events, including for Aboriginal and Torres Strait Islander people, especially in remote communities.<sup>52</sup>
- 2.6** Encourage the adoption of low emissions diets and development of local urban food systems and food production, including the use of community gardens.
- 2.7** Promote adaptation and mitigation strategies to manage food and water security in regional and remote communities, including the rising cost of food and pharmaceutical supplies due to a loss of flora and fauna.
- 2.8** Develop public health promotion programs to encourage shifting to healthy and sustainable dietary patterns, with an emphasis on locally sourced food where possible.<sup>53, 54</sup> These programs should be targeted to specific communities based on their locations and sources of food (e.g. remote Aboriginal and Torres Strait Islander communities).
- 2.9** Invest in building social resilience across all communities to support local leadership and community connection and empowerment to enhance collective efficacy.
- 2.10** Support communities to increase their own resilience to the effects of climate change and reduce near- and long-term demand on all health and well-being services.

### **Policy Direction 2**

**Recognise and respect the knowledge, capacity and strength of Aboriginal and Torres Strait Islander peoples to lead decisions that affect their country and communities.<sup>8</sup>**

**Outcome: The wisdom, insights and knowledge of First Nations people is honoured and protected and serves as the basis for stewardship of land and holistic, place-based, culturally safe approaches to health and well-being.**

#### **FEDERAL, STATE/TERRITORY AND LOCAL GOVERNMENTS, ARE URGED TO:**

- 2.11** Increase Aboriginal and Torres Strait Islander participation in policymaking and decision-making regarding environmental management strategies, and implement sustainable funding models for Indigenous-led environmental management programs.

- 2.12** Recognise the knowledge, capacity and experience that exists among Australia's First Peoples when developing programs and policies, and work with Aboriginal and Torres Strait Islander people and groups to ensure new and existing initiatives enhance and support these strengths.
- 2.13** Invest in initiatives to expand Aboriginal and Torres Strait Islander health, culture, and conservation initiatives, including Indigenous-led health and community services, education and language programs and Indigenous Ranger programs.
- 2.14** Ensure Aboriginal and Torres Strait Islander leadership and co-design in climate adaptation and resilience initiatives, such as bushfire prevention, water management, carbon farming, development of robust community renewable energy systems, and restoration of ecosystems.
- 2.15** Provide sufficient resources to fully implement the National Aboriginal and Torres Strait Islander Health Plan to close the gap in Indigenous disadvantage.

### **Policy Direction 3**

**Empower health and community service organisations with data and information to equip them to build resilience and capacity to respond to specific climate related threats.**

**Outcome: Informed community service organisations are better positioned to anticipate, prepare for and respond to climate-related health impacts and support communities to engage in health protecting and health promoting behaviours and actions.**

#### **FEDERAL, STATE/TERRITORY AND LOCAL GOVERNMENTS AND RELEVANT INSTITUTIONS ARE ENCOURAGED TO:**

- 2.16** Invest in community engagement initiatives using co-design principles to guide policy development and decision-making.
- 2.17** Support and resource health and community services to respond and adapt to climate change to ensure ongoing service continuity and safety and quality of care.<sup>55</sup>





- 2.18** Ensure health and community services have access to data and information to:
- 2.18.A identify the risks from climate change and extreme weather events to their service (organisation and service recipients) and to prepare emergency management and service continuity plans to enhance organisational and community resilience;
  - 2.18.B develop their understanding of the likely impacts and associated costs of climate change on social determinants of health (e.g. gender, cultural and socio-economic status, rurality, housing, employment, food security, built environment);
  - 2.18.C identify actions to mitigate these impacts; and quantifying the health co-benefits of implementing these actions;
  - 2.18.D take an integrated, holistic, culturally appropriate and strength-based approach to support people most at risk from the health, social, cultural, economic and environmental impacts of climate change;
  - 2.18.E implement appropriate public health measures to reduce avoidable morbidity and mortality from: heatwaves; bushfires; poor air quality; vector borne and other infectious diseases; food and water borne illnesses; and mental health stressors;<sup>55</sup>
  - 2.18.F support marginalised and vulnerable communities so they have capacity to respond to climate-related risks and threats; and
  - 2.18.G utilise inclusive approaches to risk assessment and planning to strengthen and empower communities, services and individuals, and to help reduce feelings of helplessness.
- 2.19** Invest in early warning systems based on meteorological data to inform timely public health advice.
  - 2.20** Invest in improvements to housing, including energy security and insulation to reduce thermal stress.
  - 2.21** Establish urban planning guidance to ensure equitable access to public shade, greenspaces and cool spots.
  - 2.22** Implement Heat-Health Action Plans for all states to build heatwave preparedness and resilience and avoid excess mortality and service strain related to heat.
  - 2.23** Boost heatwave readiness: ensure adequate heat shelters or cooling centres are located or built for vulnerable individuals and groups, including rural and remote communities.
  - 2.24** Invest in community mental health programs (e.g. resilience workshops, counselling services) to support people suffering from the mass trauma of climate-related disasters and emergencies, as well as climate anxiety and distress due to climate change impacts on health, lives, and livelihoods.<sup>56</sup>
- 2.24.A Support mental health programs that are led by and specific to the needs of Aboriginal and Torres Strait Islander communities, and ensure all mainstream services are culturally safe for Indigenous people, people of colour, ethnic minorities and people at risk of discrimination.



# Thriving ecosystems

**We must restore and safeguard Australia's ecosystems, recognising the intrinsic value of biodiversity and ecosystems as the fundamental basis of human health and livelihoods. Healthy and resilient communities rely on a healthy natural environment and thriving ecosystems. To that end, policies must be informed by an understanding of planetary boundaries and the rights of nature.**

**Indigenous knowledge of sustainable land use and understanding of the relationship between people and country will be essential to all policies that seek to create a thriving ecosystem in Australia. Decisions should recognise the importance of connection to land for Aboriginal and Torres Strait Islander people's health and well-being and ensure that Aboriginal and Torres Strait Islander land rights and native title underpin all land use planning and decision making.**





### Policy Direction 1

Implement measures that will maintain and restore healthy natural environments as fundamental for the ongoing health and well-being of the population.

**Outcome:** The restoration of a healthy natural environment, both on land and underwater, to ensure the environmental and cultural determinants of good health and well-being.

#### FEDERAL, STATE/TERRITORY AND (WHERE APPROPRIATE) LOCAL GOVERNMENTS ARE ENCOURAGED TO:

- 3.1** Expand programs to preserve natural environments, including wilderness areas and national parks, recognising their vital role in healthy human development and long-term health and well-being, as well as the profound benefits for mental and physical health, from interaction with nature.
- 3.2** Provide incentives for greenhouse gas emissions reductions through land restoration, revegetation of forests, rivers and wetlands, and biodiversity conservation, prioritising bushfire and drought-affected regions, as well as metropolitan, suburban, peri-urban and rural areas.

- 3.3** Support the promotion of biodiversity and human health in urban environments, through the creation and expansion of green corridors, green roofs, and green spaces, and engaging the community (including through initiatives such as 'Healthy Parks, Healthy People') in the care and wise use of natural resources.
- 3.4** Incorporate Aboriginal and Torres Strait Islander people's knowledge of native plants and materials into consideration as sources of food and medicine.
- 3.5** Restore and improve soil quality and water conservation through carbon farming and regenerative agriculture practices.
- 3.6** Reduce greenhouse gas emissions in agricultural and land sectors through land restoration and carbon sequestration in soils. This will have significant co-benefits for better air quality, biodiversity, employment and health.<sup>7</sup>
- 3.7** Protect forests, freshwater and marine ecosystems, agricultural land and food production from mining and development.
- 3.8** Support coastal habitat restoration and monitoring, and expand programs that clean up marine debris such as plastics, in partnership with local communities and marine industries.

### Policy Direction 2

Facilitate the empowerment of communities to participate in the care and wise use of natural resources, including the land and sea, and in particular enable and support traditional owners to care for their country.

**Outcome:** Local communities and especially First Nations Peoples are enabled to take the lead in preserving and restoring the natural environments that they live and work in.

#### FEDERAL, STATE/TERRITORY AND LOCAL GOVERNMENTS, IN COLLABORATION WITH CIVIL SOCIETY, MUST:

- 3.9** Invest in education and awareness raising campaigns to promote greater understanding of the fundamental links between human health and healthy ecosystems. This will help promote connection with nature, positive stewardship of natural resources and reinforce environmental protection as a health promotion initiative.
- 3.10** Collaborate with Aboriginal peoples through commitment to pursuing greater application of Aboriginal land management, including cultural burning.

- 3.11** Support Indigenous engagement, empowerment, and employment in cultural and environmental land management such as through the expansion of Caring for Country and Indigenous Ranger Programs.
- 3.12** Ensure that access to traditional lands and respect for Aboriginal and Torres Strait Islander land rights and native title underpins decision-making with regard to land use and land use change.
- 3.13** Foster and support nature-based enterprises that deliver health, environmental and economic benefits (such as native food production, and nature – and cultural-based tourism).
- 3.14** Establish greater environmental and heritage protections for sites that are sacred or culturally significant, recognising the impacts on Country, social and emotional well-being and the cultural determinants of health.<sup>8</sup>
- 3.15** Draw on Indigenous cultural knowledge and practice of ecosystem management, for fire prevention, management and response, including creation of an Indigenous-led National Cultural Fire Strategy to complement and inform fuel management by agencies.<sup>57</sup>





# Emergency and disaster-preparedness

Protecting the health and well-being of communities from the impacts of extreme events and compounding crises, such as bushfires, storms, flooding, heatwaves and pandemics requires unprecedented cooperation across government, agencies, services and communities. This requires building the capacity of health and emergency services to prepare and respond as well as identifying vulnerable populations and landscapes.

"A resilient nation will plan thoroughly for disasters, and seek to manage and mitigate all of the attendant risks. It will build the capacity of communities to prepare for, adapt to, and recover from disasters." Report, Royal Commission into National Natural Disaster Arrangements, 2020<sup>58</sup>

## Policy Direction 1

Improve the overall preparedness and ability of the health and emergency services sectors at all levels to respond to climate threats to health, including from extreme weather events.

Outcome: Health and emergency services are climate-resilient, and adequately prepared for and able to respond to climate-related health threats, including those posed by extreme weather events, ensuring they are well positioned to protect communities and environments when required.

### FEDERAL, STATE AND TERRITORY GOVERNMENTS MUST:

- 4.1 Monitor, assess and evaluate the short, medium and long term effects of climate threats to health, and accompanying risks to health and emergency services.
- 4.2 Expand investment in early warning systems to identify climate-related threats to health, such as extreme weather events, to enable rapid response to mitigate the impacts on Australian communities.<sup>59</sup>
- 4.3 Increase support for emergency services and the health sector (acute, primary and community care) to prepare for and respond to climate related hazards and disasters.
- 4.4 Better resource fire and land management agencies to manage fuels, and rapidly detect and attack new fire outbreaks.<sup>57</sup>
- 4.5 Better utilise Australian Defence Force support capabilities in emergencies and disasters.<sup>57</sup>
- 4.6 Ensure Australia is self-sufficient in its medium and large aerial and on ground firefighting capability.<sup>57</sup>
- 4.7 Expand investment in vulnerability mapping programs to identify and map vulnerable populations and infrastructure in real time to inform climate adaptation strategies and emergency response plans, noting that vulnerabilities are specific to circumstances.
- 4.8 Invest in and support locally-led disaster recovery initiatives to build capacity and support the agency of affected people and communities to ensure communities can withstand and recover from extreme weather events.
- 4.9 Ensure disaster planning, preparation and education is culturally appropriate and informed by diverse community perspectives.<sup>18</sup>





## Policy Direction 2

Mandate climate risk assessment and reporting by all government and public agencies, including health and social services.

**Outcome:** Government agencies and services, and private companies providing health and social services, will be required to assess and prepare for climate change risks affecting their services, workforces and infrastructure.

### FEDERAL, STATE AND TERRITORY GOVERNMENTS ARE MUST:

- 4.10** Ensure all government agencies and services conduct climate and disaster vulnerability assessments following the guidelines developed by the National Resilience Taskforce.<sup>60</sup>
- 4.11** Ensure long term and sustainable funding for first-responder organisations (e.g. ambulance, fire and police services, lifesaver organisations, state emergency services, and marine rescue services).

**4.12** Support all health and social services to reduce climate risks and increase disaster preparedness by undertaking climate risk assessments and adaptation planning, using tools such as the Human Health and Well-being Climate Change Adaptation Plan in use in Queensland.<sup>55</sup> This should:

- 4.12.A Draw on available climate change projections and past exposures to identify local health service risks and vulnerabilities, and use systems thinking to consider current preparedness and to forecast what health service adaptations will be required.<sup>61</sup>
- 4.12.B Assess vulnerabilities and preparedness measures in the area of i) ambulance services, emergency, and acute health care, ii) routine health care, and iii) population and preventative health.<sup>61</sup>
- 4.12.C Provide training for relevant practitioners in responding to mass trauma and psychosocial impacts of disasters and emergencies.
- 4.13** Resource and support health and social services to support those most in need in responding to disasters and climate risk, including psychological first aid.
- 4.14** Embed capacity in service delivery contracts for community-based health and social service organisations for emergency handling and response.
- 4.15** Include community-based health and social service provider organisations in emergency planning processes (national bodies at the national level, state bodies at state level and relevant service providers at local government level) with a focus on health and well-being outcomes for communities.

## Policy Direction 3

All Australian governments, emergency and essential service providers, insurers, charities, and communities must work together to achieve an effective national approach to preventing, preparing for, and recovering from climate change related emergencies and disasters.

**Outcome:** More frequent and severe extreme weather events require unprecedented cooperation, where action can reduce risks to human populations, other species, and natural and human landscapes.

### THE AUSTRALIAN GOVERNMENT (AS RECOMMENDED BY THE ROYAL COMMISSION ON NATURAL DISASTER ARRANGEMENTS), SHOULD:

- 4.16** Work together through a national intergovernmental forum to coordinate all phases of disaster management: mitigation, preparedness, response, and recovery.<sup>58</sup>
- 4.17** Prioritise the development of nationally consistent data and data standards and common platforms for sharing national disaster risk information, including specific health risks and at risk and vulnerable communities.<sup>58</sup>

### FEDERAL, STATE/TERRITORY, LOCAL GOVERNMENTS AND EMERGENCY AND DISASTER PREPAREDNESS AGENCIES SHOULD:

- 4.18** Set up a national climate disaster fund to meet climate-fuelled disaster costs and build resilience - paid through a fossil fuel producer levy.<sup>57</sup>
- 4.19** Engage with and include health sector stakeholders including primary health care providers in disaster preparedness planning.
- 4.20** Establish an integrated and consistent review process to occur after significant emergencies that will set out the learning and changes needed to prevent similar events in the future.
- 4.21** Review all response and recovery programs to ensure the specific needs of Aboriginal and Torres Strait Islander communities are included, including national emergency responses.
- 4.22** Ensure all services, processes and programs related to emergency and disaster preparedness support culturally safe practice, including with regard to the make-up and training of emergency management personnel.
- 4.23** Increase the affordability and uptake of insurance for properties in disaster prone areas, a key factor in community resilience.<sup>57</sup>
- 4.24** Better coordinate and resource wildlife rescue and recovery efforts, including restoration of habitat.<sup>57</sup>



# Education, communication, and capacity building

Education, communication, and training initiatives are needed to inform and build capacity across the health and well-being workforce, policymakers and the wider community to respond to the health impacts of climate change. While most Australians recognise that climate change is occurring, programs that educate and raise awareness of the health impacts of climate change are needed to help to build resilience in the Australian community as well as within the health workforce.

Furthermore, investment in climate education should aim to develop a workforce that can support and lead innovation in environmentally regenerative and net zero emissions initiatives.

## Policy Direction 1

**All Australian governments, emergency and essential service providers, insurers, charities, and communities must work together to achieve an effective national approach to preventing, preparing for, and recovering from climate change related emergencies and disasters.**

**Outcome: More frequent and severe extreme weather events require unprecedented cooperation, where action can reduce risks to human populations, other species, and natural and human landscapes.**

## FEDERAL, STATE AND TERRITORY GOVERNMENTS, HEALTH PROFESSIONAL AND INDUSTRIAL ORGANISATIONS, UNIVERSITIES, AND TRAINING INSTITUTIONS SHOULD:

- 5.1 Develop a national education and training framework to support health professionals in recognising, preparing for and responding to health impacts of climate change.
- 5.2 Invest and grow the Aboriginal and Torres Strait Islander health workforce, with a focus on local solutions, to increase access to care, particularly during times of crisis.

## ACADEMIC INSTITUTIONS AND ACCREDITING BODIES SHOULD:

- 5.3 Develop curricula for all undergraduate and relevant postgraduate health, medical, aged care and childcare workforces about: health impacts of climate change; effective adaptation and mitigation strategies; at-risk communities; and how to talk about climate risks with patients, clients and the public.<sup>62, 63</sup>
- 5.4 Ensure accreditation standards for all accredited health professions include recognition of the environmental determinants of health and the health-climate change nexus.<sup>64</sup>

## HEALTH INSTITUTIONS AND PROFESSIONAL BODIES SHOULD:

- 5.5 Invest in continuing education and professional development initiatives to support the development of a workforce that is equipped to respond to climate change, and can lead and support the development and implementation of low and net zero carbon initiatives in health care.
- 5.6 Work in collaborative multi-organisational alliances and partnerships, including with peak bodies, to guide policy priorities regarding climate change and health.





## Policy Direction 2

**Enhance the climate change and health literacy of the general public.**

**Outcome: Community resilience and well-being will be enhanced through greater community awareness of, and capacity to address, climate change at home, in their organisations and communities.**

### FEDERAL, STATE/TERRITORY AND LOCAL GOVERNMENTS, HEALTH SECTOR STAKEHOLDERS, AND SOCIAL MARKETING AND BEHAVIOUR CHANGE EXPERTS, SHOULD:

- 5.7** Develop engaging community education campaigns to inform communities about the health risks of climate change, and the benefits of adapting to and mitigating those risks. This should include:
- 5.7.A Information to raise awareness of, and promote resilience to, risks arising from climate change (e.g. increased exposure to heat and other dangerous weather events, food and water insecurity, eco-anxiety, risk of infectious and vector borne diseases, gender-based violence).
- 5.7.B Creative, accessible and consistent messaging that resonates across the general population.
- 5.7.C Targeted communication and deliberative engagement to overcome issues of psychological distancing, motivation and differences in available information.

- 5.7.D Well-designed and evidence-based social marketing to address the significant knowledge gap among health and well-being practitioners, health service executives, policymakers and the wider community regarding the links between climate change and health.
- 5.7.E Engage with a broad variety of stakeholders and utilise principles of co-design to reach all sections of the community. This includes for different genders and for those who may be difficult to reach with traditional education campaigns (e.g. low income and disadvantaged people, culturally and linguistically diverse communities, children and young people) to ensure the messaging is appropriate and accessible for members of all communities.
- 5.7.F Promotion of the health, social, economic and climate benefits of low and zero carbon lifestyles.
- 5.8** Evaluate community knowledge and awareness of climate health impacts through community surveys.<sup>65</sup>

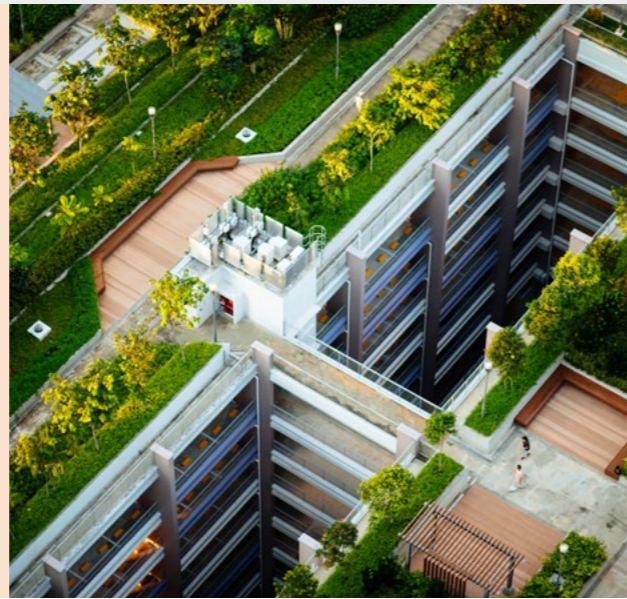
## Policy Direction 3

**Utilise the health community as a highly trusted source of credible information to advance community understanding of climate change and its health impacts by communicating that climate solutions are a health priority and will provide co-benefits to all.**

**Outcome: A well informed and empowered health workforce can play a very important role in advocating for action on climate change.**

### PROFESSIONAL HEALTH AND MEDICAL ORGANISATIONS SHOULD:

- 5.9** Advocate for climate change and health to be included in all undergraduate and postgraduate health and medical curricula.
- 5.10** Support members to engage in continuing professional development on climate change and health and health sector action to respond, including through sustainability in healthcare measures.
- 5.11** Seek to increase their profile and capacity to contribute to public dialogue to help build understanding and support for climate mitigation and adaptation among health professionals, policymakers and in the community.
- 5.12** Invest in developing and disseminating information about the health impacts of climate, and guidance for their members on how to respond as an individual, in a professional context, and as part of the wider health sector.



# A sustainable and climate-resilient health care sector

Currently, the health and aged care sector makes a significant contribution to Australia's greenhouse gas emissions. The sector can lead by example in decarbonising its operations. A zero greenhouse gas emissions, environmentally sustainable, climate-resilient health and aged care sector would deliver demonstrable economic, social and environmental benefits for Australia. It would ensure we can effectively respond to the health impacts of climate change and continue to deliver high-quality care in an environmentally responsible manner, while realising savings for health sector budgets.

## Policy Direction 1

Policies should establish nationally consistent standards for a zero greenhouse gas emissions, climate-resilient, environmentally sustainable health sector, and systems for their implementation, monitoring and achievement.

Outcome: Transitioning as quickly as possible towards net zero health care will ensure future health system resilience and sustainability.

### THE FEDERAL GOVERNMENT IS URGED TO:

- 6.1 Undertake, as a matter of urgency, a national assessment of climate risks to healthcare infrastructure, service provision, the health workforce, and supply chains.
- 6.2 Establish a national health care unit within the Commonwealth Department of Health to:
  - 6.2.A Establish a process for public reporting of the public and private health system's annual environmental footprint, including waste, energy and water usage, transport, use of medical devices and consumables, and emissions.
  - 6.2.B Support small and independent health and medical practices (GPs, physiotherapists, optometrists etc) to transition their operations to environmentally sustainable practices.
  - 6.2.C Establish nationally consistent procurement standards based on circular economy criteria with minimum percentages of recycled content in public procurement contracts.

6.3 Mandate climate risk management in health care sector governance and national health performance standards. This is to ensure clinical practice, and strategic and operational planning processes in the sector recognise and respond to climate change, including by (for example):

6.3.A developing a new mandatory National Safety and Quality Health Service (NSQHS) Standard for minimising the health risks of climate change to the health of patients and to the delivery of safe, quality care.<sup>66</sup>

6.4 Reform health funding models away from volume-driven mechanisms such as fee-for-service to prioritise value-based mechanisms such as bundled payment to disincentivise over servicing and unnecessary care.<sup>67, 68</sup>

6.5 Embed explicit requirements for assessment of environmental impact as well as impacts on health outcomes and costs for health technology assessment applications.

### FEDERAL, STATE AND TERRITORY GOVERNMENTS SHOULD:

6.6 In consultation with the health sector and aged care sector, develop national and subnational plans for net zero greenhouse gas emissions health care by 2023.

6.7 These plans should include:

6.7.A A goal of a net zero emissions health care sector by 2035;<sup>30, 69, 70</sup>

6.7.B Five-yearly carbon budgets to ensure measurable progress towards net zero;

6.7.C As an essential interim, include a commitment to 80% reduction in emissions from health care by 2030;





- 6.7.D Ensure the health sector's wider supply chain reaches net zero by 2035;
- 6.7.E A target of 100% renewable electricity supply and no new gas installations in Australian hospitals and health services by 2030;
- 6.7.F Require all health service providers to report annually on their efforts to reduce their carbon and environmental footprints; inclusive of Scope 1, 2 and 3 emissions - and provide funding and resources to support this;
- 6.7.G Draw on existing international tools to assess health and hospital system risk, as well as vulnerability and capacity assessments to develop locally relevant tools, instruments and processes.
- 6.8** Support and resource all health services to conduct organisation-wide risk assessments and planning for risks such as surges in service demand, destruction of infrastructure and equipment, and interruptions to workforce availability, access and supply chain.
- 6.9** Retrofit existing service infrastructure such as hospital, emergency, aged care and early childhood centres to improve climate resilience, enhance energy and water security, and improve capacity to continue providing essential and emergency services.<sup>55</sup>
- 6.10** Invest in installation and purchasing renewable energy for all hospitals and health and aged care services.
- 6.11** Prioritize environmental sustainability in health care facility design, construction and operation, incorporating this into capital works guidelines and minimum standards.
- 6.12** Establish an enduring funding mechanism to support the health sector's transition to net zero emissions.

- 6.13** Work with health professionals and their professional associations to identify and develop suppliers of sustainable and net zero emissions medical equipment and products to decarbonise the health care supply chain.
- 6.14** Develop healthcare procurement policies and practices to ensure the health sector supply-chain (e.g. medical equipment, pharmaceuticals, and protective equipment) is transitioning to environmentally sustainable practice and net zero emissions.<sup>11</sup>
- 6.15** Develop incentives to accelerate the transition to a sustainable and net zero emissions healthcare manufacturing industry and supply chain.

#### **STATE AND TERRITORY GOVERNMENTS, IN CONSULTATION WITH HEALTH STAKEHOLDERS, ARE URGED TO:**

- 6.16** Establish health care sustainability units in their jurisdictions tasked with:
- 6.16.A establishing sustainability metrics to calculate and target the carbon and environmental footprint of all health care services;
- 6.16.B supporting hospitals, health services and health sector organisations and institutions to reduce their carbon and environmental footprints; and
- 6.16.C supporting the development of health care-focused climate mitigation and adaptation plans.

#### **ALL HEALTH SUPERANNUATION FUNDS AND LARGER HEALTH SERVICES (PUBLIC AND PRIVATE) SHOULD:**

- 6.17** Review their investment policies to ensure they are not invested in any activities that contribute to the climate crisis.

#### **Policy Direction 2**

**Planning for and investing in climate-resilient infrastructure, technology and service delivery.**

**Outcome: This will avoid future costs and ensure service continuity and integrity during and following climate-related events.**

#### **FEDERAL, STATE AND TERRITORY GOVERNMENTS ARE URGED TO:**

- 6.18** Develop and adopt mandatory standards and obligations for health facility design, construction and ongoing management of both new and existing facilities which ensures resilience to direct and indirect climate risks and continuity of health service delivery.
- 6.19** Mandate standards for health facilities to include resilience to climate related disasters, such as extreme weather events.
- 6.20** Invest in secure knowledge management systems for health services to withstand power interruption in the event of emergencies or disasters, including extreme weather events.
- 6.21** Invest in communications technologies that can withstand climate shocks and stresses to ensure service coordination and continuity during disasters and reduce vulnerability of isolated or remote communities.

#### **FEDERAL, STATE / TERRITORY AND LOCAL GOVERNMENTS, AND PRIVATE HEALTH CARE PROVIDERS ARE URGED TO:**

- 6.22** Support collaboration across health sector networks, as well as with international partners and non-health sector institutions, to develop innovative, low carbon models of care. This may include:
- 6.22.A sharing innovations in information communication technologies;
- 6.22.B greater utilisation of primary and community care;
- 6.22.C establishing and supporting networks of multidisciplinary health professionals committed to developing and implementing low carbon models of care in their area of clinical practice and building social capital;
- 6.22.D investing in evaluation of health outcomes, as well as environmental and financial cost/benefit analysis of low carbon models of care.
- 6.23** Provide support to expand participation of hospitals, health services and health institutions across Australia in the Global Green and Healthy Hospitals initiative.

### Policy Direction 3

Invest in a health workforce that is well equipped to contribute to mitigation of greenhouse gas emissions and respond to the challenges of climate change and other pressures on the health system.

**Outcome:** A well resourced and empowered health workforce that can meet the challenges presented by climate change within the workplace and community, while delivering high quality care with a low greenhouse gas emissions footprint.

6.24 x

- 6.25 Implement low carbon models of care to reduce exposure and build community and sector resilience to climate change threats (e.g. shifting from a reliance on centralised facilities, adopting 'hospital in the home' approaches and localised service provision, and using information communications technologies to provide guidance).<sup>61</sup>
- 6.26 Invest in health promotion and primary prevention and a multidisciplinary integrated workforce to ensure access to health care where it is needed and reduce demand for expensive, high emissions acute tertiary health care.
- 6.27 Invest in initiatives designed to target over prescribing and identify and eliminate low-value care.<sup>73, 74, 75</sup>
- 6.28 Invest in an appropriately trained and skilled aged care workforce in aged care to build the capacity of services to implement sustainable healthcare measures.
- 6.29 Invest in and expand the Aboriginal and Torres Strait Islander health workforce to provide care in local settings.



# Research and data

**Climate change and health policy must be informed by a solid evidence base. We need robust and independent research institutions and funding to support research and development. We must support Australia's climate and health research capacity to evaluate specific health threats from climate change and develop responses, as well as better understand the health and economic benefits associated with climate action. We must also ensure equitable access to knowledge, especially for already disadvantaged groups, through investment in digital infrastructure.**





### 🔍 Policy Direction 1

Establish and fund a world class climate and health research capacity that enables evaluation of priority needs and identifies solutions to Australia's specific climate-health threats, as well as supporting climate-health research and responses in low and middle income countries.

**Outcome:** Decision-making is informed by robust, Australian generated research on climate change health threats and the mechanisms of health impact, identification of at-risk communities as well as co-benefits, and effective strategies to mitigate or adapt to health risk factors.

### FEDERAL, STATE AND LOCAL GOVERNMENTS AND HEALTH AGENCIES ARE ENCOURAGED TO:

- 7.1** Recognise opportunities for technological innovation to mitigate the effects of climate change on health through development and implementation of affordable and environmentally sustainable technologies that enable care to be shifted to prevention, personalisation and precision.<sup>76</sup>
- 7.2** Support Australia's health and climate research capacity through the establishment of an ongoing climate change and health funding stream through both the National Health and Medical Research Council (NHMRC) and Medical Research Future Fund (MRFF), and ongoing funding to a national climate-health research network to support the investigation of localised state and regionally-based climate health challenges and identification of solutions. Priority research projects include:

- 7.2.A Modelling the health and economic costs of near, medium and long-term climate-related health threats, including assessment and forecasting of climate change health risks and impacts across all of Australia's climatic zones and among vulnerable population groups.
- 7.2.B Assessment of the economic value of health co-benefits of climate change mitigation and adaptation (including those that result from building community resilience, improving air quality, adoption of active transport etc).<sup>55</sup>
- 7.2.C Undertaking ongoing evaluation of community attitudes and knowledge (including psychological well-being) in relation to climate change.
- 7.2.D Improving understanding of climate change-related risk perceptions and barriers to attitudinal, behavioural and socio-economic change.
- 7.2.E Assessing the health sector's vulnerability to climate change, as well as its contribution to greenhouse gas emissions and developing pathways to net zero health care emissions and improved resilience.
- 7.2.F Investigate the short/long-term and synergistic health effects of exposure to bushfires, pollution, drought and heatwaves and identify solutions to support evidence-based policy and practice.
- 7.2.G Encouraging interdisciplinary research to identify relationships between human health and urban design, energy, housing, food, and water security, transport and other sectors and strategies to respond;

- 7.2.H Assess and strengthen the resilience of rural and remote communities and health services to climate extremes, natural disasters, and related physical, mental and social health impacts.
- 7.2.I Conduct further research to determine the most effective interventions to mitigate the health impacts of climate-sensitive infectious diseases in Australia and the region.<sup>62</sup>

- 7.2.J Identification of those at-risk from the mental health impacts of climate change to inform the development of culturally appropriate strengths-based resilience building measures in all communities.<sup>62</sup>
- 7.3** Allocate funding to Aboriginal and Torres Strait Islander-led research programs to ensure that there is a focus on the needs and specific implications of the climate-health emergency for Aboriginal and Torres Strait Islander peoples. Respectfully integrate Aboriginal and Torres Strait Islander knowledge structures into the climate-health research agenda.

### 🔍 Policy Direction 2

Implement comprehensive monitoring and evaluation systems of climate and health impacts to provide regular and current data to inform policy responses.

**Outcome:** The health of the population will be protected most effectively when policies are based on evidence and data regarding risk, vulnerability and exposures.

### FEDERAL, STATE / TERRITORY AND LOCAL GOVERNMENTS, AND HEALTH AND MEDICAL RESEARCH INSTITUTIONS, ARE URGED TO WORK TOGETHER TO:

- 7.4** Guide policy and decision-making through well-planned research and climate health risk surveillance, to build greater understanding of risks, vulnerabilities and effective strategies by:
- 7.4.A Monitoring over long time periods with robust indicators to help governments and services understand climate change risk and vulnerability and region-specific adaptation challenges, and track how communities and organisations are responding.<sup>55</sup>
- 7.4.B Undertaking climate vulnerability and adaptation assessments for all regional areas with a focus on at-risk population groups (e.g. elderly, people with chronic illnesses).



7.4.C Monitoring and reporting of environmental and health changes within communities that are affected by climate related health risks/issues (smoke, pollution, floods) and developing risk reduction strategies.

7.4.D Increasing investment in monitoring and early warning systems for climate-sensitive infectious diseases to inform necessary preparation of public health systems. Incorporate risk analyses considering local climatic variations and risk communication strategies to ensure informed decision-making.<sup>62</sup>

7.4.E Expanding and harmonising monitoring and reporting systems for climate-related health presentations in emergency departments (e.g. heat-stress, air pollution induced respiratory conditions). Health services should work with inter-sectoral partners including ambulance and emergency services and the Bureau of Meteorology to optimise the value and utility of such a system for preparation and warning systems.<sup>55</sup> Monitoring systems should provide data in real-time, and integrate multiple sources, for example: hourly reporting of air quality, ambulance call out.<sup>11</sup>

7.4.F Utilising a comprehensive set of national, regional and local indicators to evaluate specific health risks from climate change and measure and monitor Australia's progress towards managing and ameliorating the health impacts of climate change, drawing on existing indicators as in Lancet Countdown: Tracking Progress on Health and Climate Change, which has indicators across five thematic groups covering:

- climate change impacts, exposures, and vulnerabilities
- adaptation planning and resilience for health
- mitigation action and health co-benefits
- economics and finance of health and climate change
- political and broader engagement with health and climate

7.5 Ensure all Australians have equal access to information and knowledge about climate change and health impacts and solutions via digital services and technology through a centralised data repository.



# Leadership, financing and governance

**As a nation, we must right historical wrongs with Australia's First Peoples and incorporate Indigenous perspectives, cultural knowledge and practice into decision-making. The development of integrated policy to tackle climate change and health requires national leadership and coordination across all levels of government: federal, state/territory and local. Governments must lead through the coordination of policy and provision of incentives and work together with civil society and business to develop and achieve climate change mitigation and adaptation goals. Systems of representative democracy and progressive taxation must be strengthened to ensure transparent and accountable government and an equitable society. The rights of future generations must be reflected in decisions in relation to climate justice.**





### **Policy Direction 1**

Recognise the importance of righting historical wrongs towards Aboriginal and Torres Strait Islander people, so that we as a nation, move forward together.

**Outcome:** The sovereignty, and long and continuing connection of Aboriginal and Torres Strait Islander peoples with the land is recognised and respected, and the structural impediments and poorer health outcomes faced by First Nations Peoples are overcome, and health inequities eliminated.

### **ALL AUSTRALIAN GOVERNMENTS, BUT WITH A PARTICULAR FOCUS ON LEADERSHIP FROM THE COMMONWEALTH, SHOULD WORK TOGETHER TO:**

- 8.1** Implement the reforms set out in the Uluru Statement from the Heart.<sup>47</sup>
  - 8.1.A A First Nations Voice enshrined in the Constitution.
  - 8.1.B A Makarrata<sup>77</sup> Commission to supervise a process of agreement-making with governments and truth-telling about First Nations history.
- 8.2** Embed Aboriginal and Torres Strait Islander cultural knowledge, land management and conservation practices into national climate change mitigation efforts.
- 8.3** Provide for Aboriginal and Torres Strait Islander self-determination through the committed outcomes of the National Agreement on Closing the Gap.<sup>78</sup>
  - 8.3.A Shared decision-making.
  - 8.3.B A community-controlled health and social services sector.
  - 8.3.C Improved mainstream institutions that are accountable and culturally safe.
  - 8.3.D Aboriginal and Torres Strait Islander-led locally-relevant health and well-being data.

### **Policy Direction 2**

Development of evidence-based policy, regulation and legislation to provide a predictable environment to support decision-making by public and private entities.

**Outcome:** Evidence informed policy, regulation and legislation will ensure responses are appropriate, effective, and timely.

### **FEDERAL, STATE AND TERRITORY GOVERNMENT MUST COORDINATE TO:**

- 8.4** Implement a price on carbon that drives reductions in greenhouse gas emissions across all sectors.
- 8.5** Provide policy certainty for services, sectors and industries to guide decisions and investment for climate change mitigation and adaptation.
- 8.6** Develop budgets to support national and state and territory climate change programs and initiatives which include assessment of all relevant health costs and benefits.
- 8.7** Include climate and health impact assessment and mitigation planning as mandatory, key criteria for approval of all government-funded projects, including those funded by the Clean Energy Finance Corporation.
- 8.8** Include climate and health impact assessments in government decisions to underwrite uninsurable projects, businesses and activities.

- 8.9** Reform taxation to create a fairer, simpler and more progressive system that raises the revenue needed and discourages socially and environmentally damaging activities.
- 8.10** Reduce threats to evidence-based decision-making in the federal parliament through: the establishment of a federal Independent Commission Against Corruption; restrictions on and reporting of political donations; and restrictions on ministers and staff being employed as lobbyists.
- 8.11** Reform the public service to increase capacity and limit outsourcing of policy advice to consultants to build capacity and expertise in the public service.<sup>79</sup>
- 8.12** Employ financial regulation measures to facilitate transparent assessment of all investments according to social and environmental impact criteria.
- 8.13** Undertake superannuation-related legislative reform to drive divestment from fossil fuels and investment in renewable energy and climate resilience.<sup>80</sup>
- 8.14** Review and, where necessary, revise / renegotiate Australia's multilateral and bilateral trade agreements to ensure their provisions cannot be used to impede the actions required to protect health and well-being through the necessary transition to a resilient, circular, net-zero greenhouse gas emissions economy.

### **AUSTRALIAN GOVERNMENTS, BUSINESSES AND FINANCE BODIES SHOULD:**

- 8.15** Work together to align Australian and international financial accounting standards to adopt triple-bottom line practices in line with the recommendations of the Task Force on Climate-related Financial Disclosures.<sup>81</sup>



### **Policy Direction 3**

**Australia implements legislation and resolution to ensure we meet our international responsibilities in relation to climate change and with respect to economic, social, cultural and human rights, the rights of Indigenous people, and children.**

**Outcome: Australia addresses its international obligations and moral rights with respect to climate change to protect its population and natural assets in perpetuity.**

#### **THE FEDERAL GOVERNMENT MUST:**

- 8.16** Adopt a leadership role on climate change and health, consistent with its responsibilities under the Paris Agreement and other international conventions.
- 8.17** Ensure Australia's national climate change response is consistent with the goals of the Paris Agreement and delivers urgent action on climate change to preserve a habitable environment for current and future generations.
- 8.18** Ensure Australia's Nationally Determined Contributions (climate policy commitments under the Paris Agreement) include recognition of climate-health risks and opportunities for health co-benefits from climate action, and that these are reflected in mitigation and adaptation plans.<sup>83, 84</sup>

- 8.19** Create reporting mechanisms that ensure transparency in Australia's efforts to take action on climate change, as per the obligations of the Paris Agreement.<sup>82</sup>
- 8.20** Treat climate action as a human rights issue, including enabling sustainable development.
- 8.21** Develop a mechanism to facilitate the inclusion of the voices of children and young people in the context of Australia's national climate response.
- 8.22** Advocate for inclusion of health and climate change in statements of the UN General Assembly.
- 8.23** Ensure Australia's representation at international climate change forums includes Australian health ministries.
- 8.24** Encourage climate change adaptation and resilience building in low and middle income countries, including through aid budgets.
- 8.25** Immediately double Australia's current climate finance to \$3 billion over 2020-2025 and scale up Australia's contributions to global climate finance to provide a fair share by 2030.

### **Policy Direction 4**

**All directors of boards and executives in all public and private entities recognise and respond to their fiduciary duty in relation to climate change.**

**Outcome: Public services and corporations recognise and respond to operational, strategic and economic climate change risks.**

#### **BOARDS OF GOVERNANCE AND THEIR DIRECTORS IN THE PUBLIC AND PRIVATE SPHERE (INCLUDING THE HEALTH SECTOR) ARE URGED TO:**

- 8.26** Highlight board of directors' fiduciary responsibility under the Corporations Act (2001, Cth) and public sector regulation, including financial and legal consequences for board directors, investors and governments who fail to account for climate change risks in their business and organisational decisions.<sup>55</sup>

- 8.27** Familiarise themselves with their legal responsibilities to recognise and respond to climate risks in their institution's strategic and operational plans,<sup>85</sup> and for these plans to:

8.27.A acknowledge and reflect their short-, medium- and long-term risks from climate change.

#### **ALL HEALTH SECTOR BOARDS ARE URGED TO:**

- 8.28** Embed climate risk assessment and management in annual reporting, service accreditation standards, executive key performance indicators, service and grant funding requirements; and
- 8.29** Ensure all services conduct climate change risk assessments as a core risk management strategy.





## Policy Direction 5

Establish effective governance arrangements to achieve an integrated approach to tackling the health impacts of climate change in Australia.

**Outcome:** A national strategy on climate, health and well-being is implemented effectively with responsibility shared across governments and portfolios.

### THE FEDERAL GOVERNMENT SHOULD:

- 8.30** Develop a national strategy on climate, health and well-being for Australia in cooperation with the states and territories.
- 8.31** Establish a national Ministerial Committee on Health and Climate Change to facilitate cooperative leadership across portfolios and levels of government.
- 8.32** Establish a 'Climate Change and Health' standing committee of the Australian Health Protection Principal Committee (AHPPC).
- 8.33** Task a national agency to develop and implement the national strategy on climate, health and well-being for Australia.
- 8.34** Include consideration of climate change and health in other significant national health plans, such as the Long Term National Health Plan and the National Preventive Health Strategy, and align the national strategy on climate, health and well-being with these plans.
- 8.35** Include a 'health-in-all-policies' approach in policy decisions relating to climate.







# Implementation

## Governance Arrangements

We propose the development and implementation of the national strategy on climate, health and well-being for Australia be undertaken with the oversight of a National Committee (or similar construct) of Health and Climate Change (or related portfolios) Ministers. It should include Commonwealth Ministers with portfolio responsibility for Health, Environment / Climate Change and Energy, as well as State and Territory Ministers from each jurisdiction with responsibility for these (or other similarly titled) portfolios, e.g. Health, Environment, and Climate Change. There should also be regular engagement and consultation with Ministers with responsibility for related portfolios, such as Mental Health, Resources, Emergency Services, Planning, and Infrastructure with respect to policies, programs and initiatives in these portfolios that align with the Strategy.

The Ministerial Committee should have responsibility for overseeing the development of the Strategy, including setting the overall policy direction and providing final approval for the Strategy's policies, programs and initiatives. A 'Climate Change and Health' standing committee of the Australian Health Protection Principal Committee (AHPPC) should be established to provide advice to the Ministerial Committee. An appropriate national agency should be tasked with leading the coordination and implementation of policies, programs and initiatives to deliver the Strategy. The Strategy itself must be integrated with other significant national health strategies, including the Long Term National Health Plan, and the National Preventive Health Strategy.

The Ministerial Committee should be responsible for monitoring and reporting to the National Cabinet (or any subsequent body) on the progress and outcomes from the implementation of the Strategy, which should be outlined in detail in a publicly available annual report by the nominated national agency.

## Next Steps

We hope this edition of the *Healthy, Regenerative and Just framework for a national strategy on climate, health and well-being* will be used by the many stakeholders already engaged in implementing climate-health initiatives across Australia, including state and territory governments, local government, health system networks, and health care service providers (see Appendix B for more details of current initiatives).

We anticipate it will inform policy development at national, state/territory, local and institutional levels. It will also underpin the advocacy work of the Climate and Health Alliance and its members, partners and supporters in our shared campaign for a comprehensive, evidence-informed, and urgent public policy response to address the health impacts of climate change in Australia.





# Glossary

## Acidification

The process of becoming more acidic (i.e., lowering the pH). Soils tend to become acidic through natural leaching and weathering, and as a result of some agricultural practices such as loss of organic material and overuse of nitrogenous fertilisers. The ocean is becoming more acidic as atmospheric carbon dioxide (CO<sub>2</sub>) levels rise and the concentration of dissolved CO<sub>2</sub> in seawater increases, forming carbonic acid. (Australia State of the Environment)

## Adaptation

The process of adjustment to actual or expected climate and its effects. In human systems the process may moderate harm or exploit beneficial opportunities. Multiple outcomes may result from climate adaptation processes, including unintended consequences. (new proposed definition, adapted from the Intergovernmental Panel on Climate Change [IPCC]'s definition)

## Air pollution

Degradation of air quality with negative effects on human health or the natural or built environment due to the introduction, by natural processes or human activity, into the atmosphere of substances (gases, aerosols) which have a direct (primary pollutants) or indirect (secondary pollutants) harmful effect. (IPCC)

## Biodiversity

The variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (IPCC)

## Bushfires/ Bushfire disaster

Bushfires are fires in vegetated landscape whether accidentally or deliberately lit. It is a generic term that includes grass, forest, and scrub fires. Fires used to modify fuels to reduce the risk associated with future bushfires are also known as planned burns which are also called controlled burns, prescribed burns, fuel-reduction burns or hazard reduction burns. A bushfire disaster occurs when uncontrollable bushfires adversely affect human lives, property, or the environment. (new proposed definition by David Bowman, Professor of Pyrogeography and Fire Science, Director of the Fire Centre Research Hub, The University of Tasmania)

## Capacity building

Developing the technical skills and institutional capabilities in all aspects of adaptation to, mitigation of, and research on climate change. (Australian Government) Coping capacity: The ability of people, institutions, organizations, and systems, using available skills, values, beliefs, resources, and opportunities, to address, manage, and overcome adverse conditions in the short to medium term. (IPCC)

## Carbon pricing

The price for avoided or released carbon dioxide (CO<sub>2</sub>) or CO<sub>2</sub>- equivalent emissions. This may refer to the rate of a carbon tax or the price of emission permits. In many models that are used to assess the economic costs of mitigation, carbon prices are used as a proxy to represent the level of effort in mitigation policies. (IPCC)

## Circular economy

A circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems, and business models. (You Matter)

## Climate change

A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use. (IPCC) (Anthropogenic) climate change: A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. (United Nations Framework Convention on Climate Change [UNFCCC])

## Climate resilience

The capacity of social, economic, environmental and governance systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning, transformation and enhanced resilience for future events. (new proposed definition, adapted from IPCC)

## Climate-resilient health systems

Climate-resilient health systems have the ability to anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses, so as to bring sustained improvements in population health, despite an unstable climate." (World Health Organisation [WHO], 2015)

## Co-benefits

The positive effects that a policy or measure aimed at one objective might have on other objectives, thereby increasing the total benefits for society or the environment. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits are also referred to as ancillary benefits. (IPCC)



### Determinants of health

The range of behavioural, biological, socio-economic and environmental factors that influence the health status of individuals or populations. (WHO)

### Divestment of fossil fuels

Divestment is the opposite of investment – it is the removal of your investment capital from stocks, bonds or funds. The global movement for fossil fuel divestment (sometimes also called disinvestment) is asking institutions to move their money out of oil, coal and gas companies for both moral and financial reasons. These institutions include universities, religious institutions, pension funds, local authorities and charitable foundations. (Emma Howard, The Guardian 2015)

### Early Warning Systems

The set of technical, financial and institutional capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare to act promptly and appropriately to reduce the possibility of harm or loss. Dependent upon context, EWS may draw upon scientific and/or Indigenous knowledge. EWS are also considered for ecological applications e.g., conservation, where the organization itself is not threatened by hazard but the ecosystem under conservation is (an example is coral bleaching alerts), in agriculture (for example, warnings of ground frost, hailstorms) and in fisheries (storm and tsunami warnings). (IPCC)

### Ecosystems

An ecosystem is a functional unit consisting of living organisms, their non-living environment and the interactions within and between them. The components included in a given ecosystem and its spatial boundaries depend on the purpose for which the ecosystem is defined: in some cases, they are relatively sharp, while in others they are diffuse. Ecosystem boundaries can change over time. Ecosystems are nested within other ecosystems and their scale can range from very small to the entire biosphere. In the current era, most ecosystems either contain people as key organisms, or are influenced by the effects of human activities in their environment. (IPCC)

### Energy efficiency

The ratio of output or useful energy or energy services or other useful physical outputs obtained from a system, conversion process, transmission or storage activity to the input of energy (measured as kWh kWh<sup>-1</sup>, tonnes kWh<sup>-1</sup> or any other physical measure of useful output like tonne-km transported). Energy efficiency is often described by energy intensity. In economics, energy intensity describes the ratio of economic output to energy input. Most commonly energy efficiency is measured as input energy over a physical or economic unit, i.e., kWh USD<sup>-1</sup> (energy intensity), kWh tonne<sup>-1</sup>. For buildings, it is often measured as kWh m<sup>-2</sup>, and for vehicles as km liter<sup>-1</sup> or liter km<sup>-1</sup>. Very often in policy 'energy efficiency' is intended as the measures to reduce energy demand through technological options such as insulating buildings, more efficient appliances, efficient lighting and vehicles. (IPCC)

### Energy transition

A pathway toward transformation of the global energy sector from fossil-based to zero-carbon. At its heart is the need to reduce energy related CO<sub>2</sub> emissions to limit dangerous climate change impacts. The energy transition will be enabled by information technology, smart technology, policy frameworks and market instruments. (New proposed definition adapted from International Renewable Energy Agency)

### Environmental Ecological footprint/ Carbon footprint

Environmental/ecological footprint: The effect that a person, company, activity and so on, has on the environment/ecosystem, for example the amount of natural resources that they use and the amount of harmful gases that they produce. (Cambridge Dictionary Carbon footprint: The total amount of greenhouse gases released by a person, family, building, organization, or company each year. A person's carbon footprint includes the amount of greenhouse gases released from direct use, such as heating a home or driving a car) and from indirect use (such as the amount of fuel needed to produce a good or a service. (Minnesota Climate)

### Environmental health

Those aspects of human health determined by physical, chemical, biological and social factors in the environment. Environmental health practice covers the assessment, correction, control and prevention of environmental factors that can adversely affect health, as well as the enhancement of those aspects of the environment that can improve human health. (Western Australia Government)

### Extreme weather event

An extreme weather event is an event that is rare at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme climate event, especially if it yields an average or total that is itself extreme (e.g., drought, megablaze or heavy rainfall over a season). (Adapted from IPCC)

### Food and nutrition security

A situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. (IPCC)

### Fossil fuel subsidies

A fossil fuel subsidy is any government action that lowers the cost of fossil fuel energy production, raises the price received by energy producers, or lowers the price paid by energy consumers. Essentially, it's anything that rigs the game in favour of fossil fuels compared to other energy sources. The most obvious subsidies are direct funding and tax giveaways, but there are many activities that count as subsidies – loans and guarantees at favourable rates, price controls, governments providing resources like land and water to fossil fuel companies at below-market rates, research and development funding, and more. (Oil Change International)





### Greenhouse gases

Greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself and by clouds. This property causes the greenhouse effect. Water vapour (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>) and ozone (O<sub>3</sub>) are the primary GHGs in the Earth's atmosphere. Moreover, there are a number of entirely human-made GHGs in the atmosphere, such as the halocarbons and other chlorine and bromine-containing substances, dealt with under the Montreal Protocol. Beside CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub>, the Kyoto Protocol deals with the GHGs sulphur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). See also Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous oxide (N<sub>2</sub>O) and Ozone (O<sub>3</sub>). (IPCC)

### Greenhouse gas emissions

Greenhouse gas (GHG) emissions refers to greenhouse gases released into the air that are produced by numerous activities including burning fossil fuels, industrial agriculture, and thawing permafrost to name a few. (IPCC)

### Health and well-being

A 'state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity' (WHO 1948) 'The extent to which an individual or group is able to realize aspirations and satisfy needs, and to change or cope with the environment. Health is a resource for everyday life, not the objective of living; it is a positive concept, emphasizing social and personal resources, as well as physical capacities' (Ottawa Charter for Health Promotion, 1986)

### Health Impact Assessment/ Health Risk Assessment

**Health Impact Assessment:** A systematic process to assess the actual or potential, and direct or indirect, effects on the health of individuals, groups or communities arising from policies, objectives, programs, plans or activities. (Western Australia Government)  
**Health Risk Assessment:** The process of estimating the potential impact of a chemical, biological, physical or social agent on a specified human population system under a specific set of conditions and for a certain timeframe. (Australia Department of Health)

### Health system

A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities. (WHO)

### Heatwave

Three or more days in a row when both daytime and night-time temperatures are unusually high—in relation to the local long-term climate and the recent past. There is no single temperature threshold for a heatwave in Australia. For each part of the country, the Bureau compares the forecast maximum and minimum temperatures for each three-day period in the coming week (e.g., Monday–Wednesday, Tuesday–Thursday) to the 'normal' temperatures expected for that location at that time of year, and to observed temperatures over the last 30 days. (Bureau of Meteorology)

### Impacts of climate change

The consequences of realized risks on natural and human systems, where risks result from the interactions of climate-related hazards (including extreme weather and climate events), exposure, and vulnerability. Impacts generally refer to effects on lives; livelihoods; health and well-being; ecosystems and species; economic, social and cultural assets; services (including ecosystem services); and infrastructure. Impacts may be referred to as consequences or outcomes and can be adverse or beneficial. (IPCC)

### Indigenous Knowledges (Aboriginal and Torres Strait Islander knowledges)

Indigenous knowledges refer to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. For many Indigenous peoples, Indigenous knowledges informs decision-making about fundamental aspects of life, from day-to-day activities to longer term actions. This knowledge is integral to cultural complexes, which also encompass language, systems of classification, resource use practices, social interactions, values, ritual and spirituality. These distinctive ways of knowing are important facets of the world's cultural diversity. (IPCC builds on UNESCO) \* The definition that is specific to the Aboriginal and Torres Strait Islander people's knowledges relevant to climate change needs further development.

### Just Transition

A vision-led, unifying and place-based set of principles, processes, and practices that build economic and political power to shift towards a sustainable economic system that ensures social justice. (new proposed definition, adapted from Climate Justice Alliance)

### Land use, land use change, and forestry (LULUF)

In the context of national greenhouse gas (GHG) inventories under the UNFCCC, LULUCF is a GHG inventory sector that covers anthropogenic emissions and removals of GHG from carbon pools in managed lands, excluding non-CO<sub>2</sub> agricultural emissions. Following the 2006 IPCC Guidelines for National GHG Inventories, 'anthropogenic' land related GHG fluxes are defined as all those occurring on 'managed land', i.e., 'where human interventions and practices have been applied to perform production, ecological or social functions'. Since managed land may include CO<sub>2</sub> removals not considered as 'anthropogenic' in some of the scientific literature assessed in this report (e.g., removals associated with CO<sub>2</sub> fertilization and N deposition), the land-related net GHG emission estimates included in this report are not necessarily directly comparable with LULUCF estimates in National GHG Inventories. (IPCC)

### Micro-mobility

Refers to bicycles, ebikes, electric scooters, and other devices to move people over relatively short distances.

### Mitigation of climate change

A human intervention to reduce emissions or enhance the sinks of greenhouse gases. (IPCC)



### Net zero emissions

Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple greenhouse gases are involved, the quantification of net zero emissions depends on the climate metric chosen to compare emissions of different gases. (IPCC)

### Planetary Boundaries

Refers to a set of nine planetary boundaries (nine processes that regulate the stability and resilience of the Earth system) within which humanity can continue to develop and thrive for generations to come. The boundaries are: climate change, biosphere integrity (functional and genetic), land-system change, freshwater use, biogeochemical flows (nitrogen and phosphorus), ocean acidification, atmospheric aerosol pollution, stratospheric ozone depletion, and release of novel chemicals (including heavy metals, radioactive materials, plastics, and more). Crossing these boundaries increases the risk of generating large-scale abrupt or irreversible environmental changes. (Stockholm Resilience Centre)

### Planetary Health

Planetary health is the health of human civilisation and the state of the natural systems on which it depends. The achievement of the highest attainable standard of health, well-being, and equity worldwide through judicious attention to the human systems — political, economic, and social — that shape the future of humanity and the Earth's natural systems that define the safe environmental limits within which humanity and other species can flourish. (new proposed definition, adapted from Rockefeller-Lancet Commission)

### Public Health

Public Health is defined as the art and science of preventing disease, prolonging life and promoting health through the organized efforts of society. Activities to strengthen public health capacities and services aim to provide conditions under which people can maintain to be healthy, improve their health and well-being, or prevent the deterioration of their health. Public health focuses on the entire spectrum of health and well-being, not only the eradication of particular diseases. Many activities are targeted at populations such as health campaigns. Public health services also include the provision of personal services to individual persons, such as vaccinations, behavioural counselling, or health advice. (WHO)

### Renewable energy

This form of energy can be used to provide electricity, heating or fuel for transportation similar to the way we use fossil fuels for these purposes. Unlike oil, gas and coal, renewable energy sources are not finite. Key sources include wood, waste decomposition, geothermal activity, wind and solar energy. The use of renewable sources for generating energy usually involves lower emissions of greenhouse gases than the use of fossil fuels does. (UNU-IAS & North Australian Indigenous Land and Sea Management Alliance, 2009)

### Rights of nature

This is the recognition that Nature has rights, and that our ecosystems – including trees, oceans, animals, mountains – have rights just as human beings have rights. This is being reflected in legal decisions such as the 2017 decision by New Zealand's parliament declaring the Whanganui River system a legal person with "all the rights, powers, duties and responsibilities of a legal person".

### Significant projects

Requiring an environmental impact statement (under specific State legislation, eg Qld, or under policy, eg State Environmental Planning Policy in NSW. In other states, may be called 'major projects')

### Sustainability / Sustainable development

**Sustainability:** Using natural resources within their capacity to sustain natural processes while maintaining the life-support systems of nature and ensuring that the benefit of the use to the present generation does not diminish the potential to meet the needs and aspirations of future generations. (Australia State of the Environment 2016, citing definition from the Environment Protection and Biodiversity Conservation Act 1999, p. 815.) **Sustainable development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987. Report of the World Commission on Environment and Development: Our Common Future)

### Urban heat island

Increased temperature associated with a built environment, such as a city or town. The magnitude of the urban heat island (UHI) is typically higher at night, under clear and calm skies (Oke 1982). The UHI may pose a health risk for urban dwellers because of elevated ambient air temperatures (McGregor et al. 2007). Precipitation patterns have been shown to be affected by some larger urban heat islands. Within urban areas complex temperature patterns arise from the variability in surface cover, building height, and anthropogenic heat sources, for instance. Urban areas have reduced sky view factors (SVFs) due to many tall buildings, which can contribute to the UHI effect. (Global Heat Health Information Network)

### Vulnerable

The people who are most vulnerable to climate change are those who already experience disadvantage, marginalisation and discrimination. This includes but is not limited to First Nations people, people of colour, women, LGBTIQ people, people living in poverty, people experiencing homelessness, people on a low incomes, people in insecure work and at risk industries, people with disabilities, of non-English speaking backgrounds, newly arrived migrants and refugees, children, young people and older persons, people with health problems, people living in rural and remote areas, farmers, people living in climate risk areas, and emergency responders. The Climate and Health Alliance acknowledges the resilience, strengths and capacities of people in all of their diversities to contribute to confronting the climate crisis.<sup>87</sup>

### Water security

The capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socioeconomic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability. (United Nations Water, 2013)

Many of these terms are drawn from *The Australian Glossary on Health and Climate Change*, Zhang, Y., Barratt, A., Rychetnik, L., and Breth-Petersen, M. (2021). An Australian Glossary on Health and Climate Change. Prepared for: The Human Health and Social Impacts (HHSI) Node, The NSW Adaptation Hub.



# Acknowledgements

**We would like to acknowledge the contributions of the following individuals, whose invaluable contributions in terms of time and expertise helped inform and strengthen this work:**

Dr Liz Bashford

Dr Ann Borda

Dr Kathryn Bowen

Nicole Bowman

Dr Anumitra Chand

Dr Kate Charlesworth

Christine Cocks

Dr Sebastian Cordoba

Dr Gemma Crawford

Dr Marjorie Cross

Sarah Davies

Phoebe Dent

Dr Angela Frimberger

Dr Angela Genoni

Professor Lisa Gibbs

Dr Nina Hall

Dr Claire Henderson-Wilson

Dr Martin Henscher

Emma Hoban

Sue Hogan

Ilan Ivory

Julie Lee

Professor Diana Lynne Madden

Dr Rosemary McFarlane

Dr Debra Parkinson

Kristin Renzenbrink

Dr Janet Roden

Professor Lucie Rychetnik

Dr Peter Sainsbury

Lauren Salathiel

Dr Magdalena Simonis

Carolyn Stapleton

Dr Greg Stewart

Dr Roscoe Taylor

Aileen Thoms

Professor Tarun Weeramanthri

Professor John Wiseman

Dr Annabelle Workman

Elizabeth World

Jaime Yallup Farrant

Dr Ying Zhang

James Beckford Saunders

Dr Anthony Brown

Denise Cauchi

Professor Caroline de Costa

Rachel de Sain

Dr Brett Montgomery

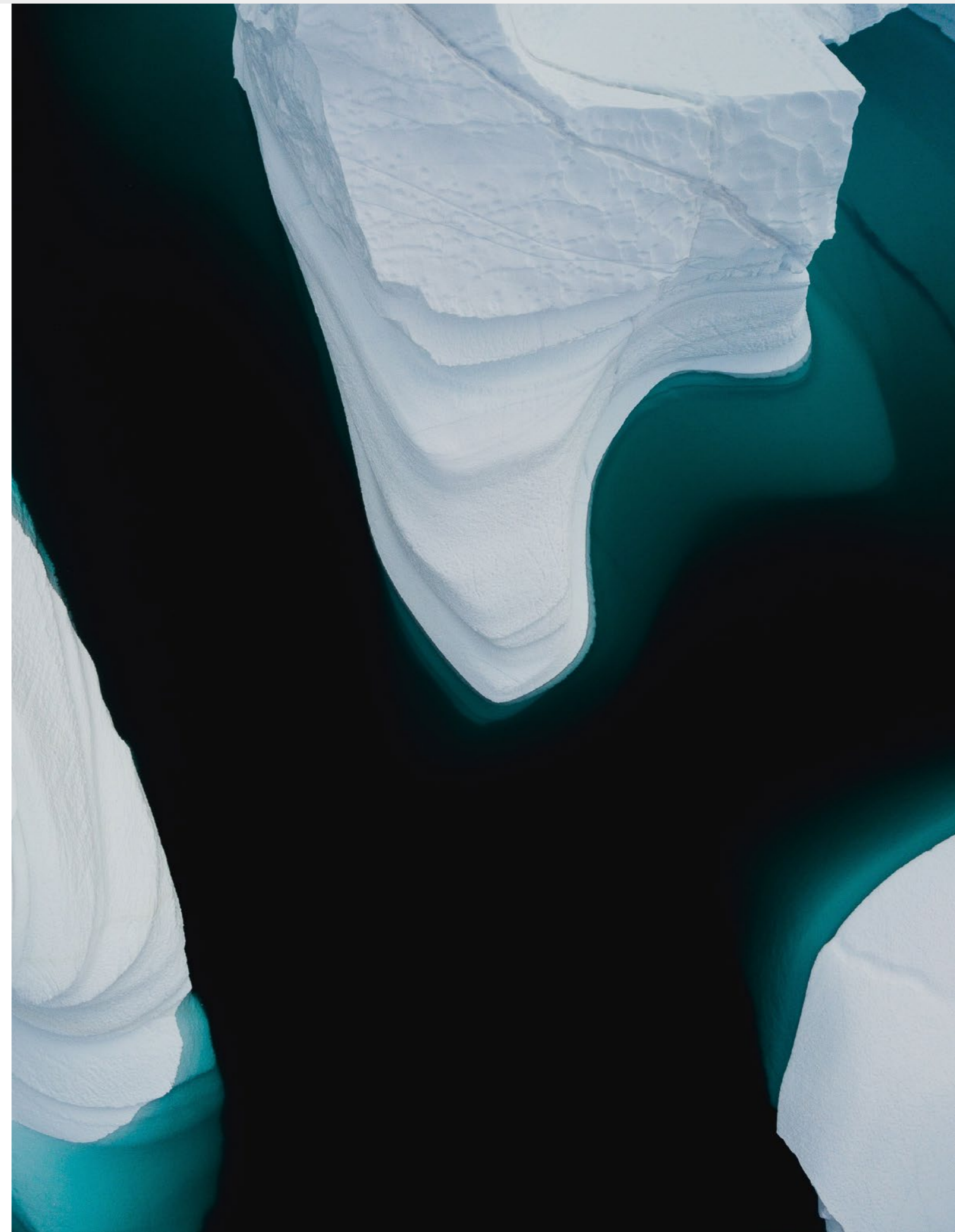
Dr Christine Walker

Dr Joanne Walker

Professor Kylie Ward

Dr Sue Wareham

Dr Ingo Weber





# Appendix A

## Examples of relevant policies and programs related to climate change and health internationally and across Australia

Jurisdiction	Initiative	Purpose	Date of establishment
Global	World Health Organization Manifesto for a Healthy Recovery	Outlines six key actions to limit harm to health from climate change and ecological degradation and promote a healthier, fairer, and greener world	2020
USA	Office of Climate Change and Health Equity <sup>88</sup>	To address the impacts of climate change on the health of the public	2021
USA	Building Resilience Against Climate Effects (BRACE) Framework	To guide public health planning and decision-making	2014
UK	Greener NHS	Aims to deliver the world's first net zero health service and respond to climate change, improving health now and for future generations.	2020 (although builds on work that began in 2012)
Cambodia	National Strategic Plan for Climate Change Adaptation and Disaster Risk Reduction in the Health Sector 2019–2023	Support the health sector to cope with climate impacts	2019

Jurisdiction	Initiative	Purpose	Date of establishment
Morocco		Morocco's climate commitments are among the few in the world considered compatible with the 1.5°C goal of the Paris Agreement. A National Strategy for Adapting the Health Sector to Climate Change is in development.	Since 2016
California	Climate Change and Health Strategic Action Plan (CCHSAP)	Aims to: improve capacity of communities to prepare, respond, and recover from climate-related health risks; increase understanding of climate impacts on public health; and promote information sharing and education.	2015
Fiji	Building Resilience Against Climate Effects (BRACE) Framework	Climate adaptation being mainstreamed into health policies, plans, and pilot projects	Commenced in 2010





## Examples of relevant policies and programs related to climate change and health internationally and across Australia

Jurisdiction (responsible agency)	Initiative	Purpose	Date of establishment
Federal (Department of Agriculture, Water and the Environment)	National Climate Resilience and Adaptation Strategy (NCRAS)	Mentions health and well-being, while acknowledging that there are no national programmes on climate and health.	Published in 2015, updated in 2021.
Federal	Draft Preventive Health Strategy	Includes a commitment to a National Environmental Health Strategy by 2030.	2021
Victorian Government	<i>Climate Change Act</i>	Legislated a net zero emissions target by 2050, and emissions reduction targets updated every five years. Obliges the development of Adaptation Action Plans (from 2021) for key systems vulnerable to the impacts of climate change or essential to the state's preparedness, one of which is health and human services.	2017
Victoria (Department of Health and Human Services)	Public Health and Wellbeing Plan 2019 – 2023	Aims to ensure: <ul style="list-style-type: none"> <li>• resilient and safe communities adapting to the public health impacts of climate change</li> <li>• decreased health impacts associated with climate change</li> <li>• increased action to reduce greenhouse gas emissions and realise associated health co-benefits</li> </ul>	2019

Jurisdiction (responsible agency)	Initiative	Purpose	Date of establishment
Victoria (Department of Health and Human Services)	Pilot Climate Change Adaptation Action	Intended to help the sector to further embed climate change considerations into policies, planning and operations, and to respond to the significant risks climate change poses to health and well-being and the health and human services system.	2019
Victoria (Department of Health and Human Services)	Guidance for local government: Tackling climate change and its impacts on health through municipal public health and well-being planning	To assist councils in meeting their obligations under the Climate Change Act (2017). It highlights opportunities for councils to protect and improve the health and well-being of their communities through climate change action.	2020
Victorian Health and Human Services Building Authority	Environmental Sustainability Strategy 2018-19 to 2022-23	Sets out the department's commitment to improve both the environmental performance of the health system and create resilience in the face of climate change. Includes commitment for department to join Global Green and Healthy Hospitals network.	2018
Queensland	Human Health and Wellbeing Climate Adaptation Plan	To support human health and well-being services to be innovative and resilient in managing climate risks. It provides a climate change adaptation framework and guidance for stakeholders across health care, aged care, and childcare services.	2018



## Examples of relevant policies and programs related to climate change and health internationally and across Australia

Jurisdiction (responsible agency)	Initiative	Purpose	Date of establishment
ACT (Environment Planning and Sustainable Development Directorate)	ACT Climate Change Strategy 2019-2025.	Actions are focussed on: <ul style="list-style-type: none"> <li>• meeting the 2025 target;</li> <li>• building resilience to climate change impacts;</li> <li>• avoiding future emissions; and</li> <li>• laying foundations for net zero emissions.</li> </ul> Includes a commitment for ACT Health Directorate to join Global Green and Healthy Hospitals network to improve sustainability performance and reduce emissions from ACT Health facilities.	2019
NSW (Office of Environment and Heritage (OEH) and NSW Health)	Human Health and Social Impacts Node	To understand how climate change will impact human health and social well-being.	2017
NSW (Western Sydney Health Alliance)	Guidance for Local Government on Incorporating Climate and Health Considerations into policies and programs	To support local government stakeholders to address the health impacts of climate change in their communities.	2021 (in development)

Jurisdiction (responsible agency)	Initiative	Purpose	Date of establishment
SA Government	Climate Change and Greenhouse Emissions Reduction Act 2007	First Australian state to legislate targets to reduce greenhouse emissions. Sets out emissions reduction targets to 2050. Requires two yearly reports by the responsible Minister. In 2019, SA had achieved a 33% reduction in emissions on 2005 levels.	2019
WA Government	Climate Health Inquiry	World's first statutory Inquiry into climate change and health. Recommendations endorsed by Parliament, but yet to be implemented (at time of printing).	2020
NT (Department of Health)	Climate and Health Advisory Group		2021
Tasmanian Government	Tasmania's Climate Change Action Plan 2017-2021	Requires identification of policies and programs to respond to the potential health impacts of climate change.	2017
Tasmania (Department of Health)	Climate and Health Roundtable	Identified 42 actions relevant to climate change and health.	2019





# Appendix B

## Our current trajectory, and its consequences

The Australian Academy of Science warns that planetary heating due to greenhouse gas emissions is trending towards three degrees Celsius compared to pre-industrial levels by the end of the century, and characterises national and international efforts to reverse this trend as inadequate.<sup>7</sup> Already, the world has seen 1.1 degrees warming compared to pre-industrial levels.<sup>89</sup> Disturbingly, the rate of heating is increasing and by some estimates we are on track to reach 1.5 degrees warming as early as 2030, a full decade before previous Intergovernmental Panel on Climate Change predictions.<sup>89,90</sup> The Australian continent is particularly vulnerable to climate change. Warming is occurring faster in Australia, where the average temperature has increased by 1.4 degrees since records began in 1910.<sup>7,91</sup>

Globally, pledges in current Nationally Determined Contributions (NDCs) would reduce emissions by only 0.5% by 2030 compared to 2010; a reduction of 45% is needed in that time to limit global temperature rise to 1.5 degrees.<sup>92</sup>

Experts warn that the Paris Agreement target of 1.5 degrees warming by 2050 is not a safe target, and at that temperature increase we will see the destruction of valuable habitats like the Great Barrier Reef, loss of forest ecosystems, and the potential for triggering tipping points that will endanger any further attempts to limit heating.<sup>90</sup>

Many models assume a linear trajectory of anthropogenic climate change. However, within the Earth's climate system there exists potential 'tipping points', whereby human-caused heating could trigger a cascade of mutually-reinforcing catastrophic greenhouse gas releases from the natural environment, such as the Greenland ice

sheet and Siberian permafrost.<sup>7</sup> This cascade could irreversibly transform the climate of the planet, creating a "hothouse" Earth.<sup>90</sup>

Unfortunately, Australia is not on track to achieve net zero greenhouse gas emissions by 2050, nor its stated commitment to a reduction of at least 26% below 2005 emissions by 2030 under the Paris Agreement.<sup>3</sup> Despite a commitment to net zero in 2021, Australia still has no national policies in place that meet our obligations under the Paris Agreement, with most emissions reductions being met by state and territory energy and climate policies.<sup>118</sup> This commitment also includes an obligation for Australia to consider its citizens 'right to health' in the context of its national climate change response. But the response from successive governments to date has been woefully inadequate, and Australian peoples' health and lives are at risk.<sup>93</sup>

### Climate change and health

The Lancet has described climate change as the biggest threat to health of the 21st century.<sup>1</sup> Globally, failure to meet Paris Agreement targets could see health costs alone that outweigh the potential costs of climate change mitigation measures by two to one.<sup>94</sup>

If global emissions trends continue, risks to the population and natural ecosystems like drought, heatwaves, floods, fires, coastal erosion and poor air and water quality - all already serious issues in Australia - will worsen, leading to loss of life and livelihoods, and undermining the foundations for our health and well-being.<sup>7,9,115</sup>

Disappointingly, at present, Australia's Nationally Determined Contribution makes no reference to health and well-being, nor includes any plans to tackle the health impacts of climate change on its citizens.

### Extreme weather events

#### Extreme heat

As the world warms, extreme heat could exceed the limits of physiological tolerance in parts of the world by the end of the century, especially in the poorest and least resilient nations of the Global South.<sup>9</sup> At more than 1.5 degrees warming, 350 million more people will be exposed to deadly heat stress by 2050.<sup>9</sup>

If global mean surface temperature exceeds 1.5 degrees above the pre-industrial period, the Australasian region will experience more frequent and more intense heat waves.<sup>7</sup> Heat waves can cause heat stress, heat exhaustion and heat stroke, posing a serious threat to life.<sup>95</sup> To date, heat waves have killed more Australians than all other extreme weather events combined.<sup>96</sup>

#### Bushfires

A hotter and drier Australia will see frequent and more intense bushfires. Australia in particular is acutely vulnerable to these effects, and has experienced the greatest increase in bushfire risk of any country in the world, with a 22% increase since 2001 in the average number of days a year the population is at risk.<sup>1</sup> The year 2019 was the hottest and driest year on record in Australia, and the catastrophic megafires that occurred in the summer of 2019-2020 have been linked to

the long term meteorological trends caused by climate change.<sup>18</sup>

In those Black Summer fires, 41 people were killed directly by fire, and smoke caused hazardous air quality for a prolonged period in major cities, resulting in 417 excess deaths, 1,305 emergency department presentations for asthma and 3,151 hospitalisations for cardiovascular and respiratory conditions.<sup>18</sup> Primary care services were disrupted, and the specific needs of local communities were not considered ignored in response and recovery programs.<sup>8</sup>

The long term effects of smoke exposure and the mental health impacts of the fire season are yet to be quantified.<sup>18</sup> In the fires, almost 3 billion animals were killed or displaced, sacred sites as well as natural and human habitats were destroyed, and biodiversity damaged, possibly irreparably.<sup>8,58</sup>

#### Floods

Climate change will intensify wet periods as well as dry periods.<sup>89</sup> In fact, the likelihood of extreme rainfall has doubled due to climate change.<sup>97</sup> As a result, the frequency and intensity of extreme precipitation events that cause flooding are predicted to increase in most parts of the world due to climate change, including in Australia.<sup>89</sup> <sup>98</sup> Some of Australia's most urbanised areas, such as the Hawkesbury-Nepean region in Western Sydney are extremely vulnerable to flooding.<sup>99</sup> As well as loss of human life, damage to property, destruction of crops and loss of livestock, floods have severe lasting impacts on mental health, and increase the spread of infectious disease.<sup>100</sup>



### Impacts on services and insurance costs

Extreme weather events can be catastrophic for essential social service providers; a survey conducted by the Australian Council of Social Service in 2013 found that 50% of social service providers suffering damage to their premises in an extreme weather event would still be out of operation a week after the event, and as much as 25% may never recover.<sup>101</sup>

Due to increased risks to property from extreme weather events, one in every 19 property owners in Australia will potentially face insurance premiums that are unaffordable by 2030.<sup>7</sup> The costs of extreme weather events around the world in 2019 were estimated at around \$190 billion, much of which was uninsured.<sup>1</sup>

### Food and water security

Through impacts on agriculture, river systems and fisheries, climate change is endangering food and water security and quality in Australia.<sup>7</sup> <sup>15</sup> Australian agriculture and aquaculture will be threatened by unpredictable weather patterns, increasingly frequent and prolonged droughts and heatwaves, and harsher climates in agricultural regions.<sup>15</sup> Australia's water security has already been significantly influenced by climate change, with drier conditions and increased temperatures leading to less run-off water into catchment areas.<sup>15</sup> Water scarcity is also considered a 'threat multiplier' globally and in our region, with water being a potential flashpoint for future conflicts.<sup>15</sup>

### Air pollution

Disappointingly, one of the main sources of greenhouse gas emissions, global coal use for power generation, has increased by 1.7% from 2018 to 2019, a reversal of the downward trend in previous years. As well as being a key driver of climate change due to greenhouse gas emissions, burning coal, oil and gas also creates harmful local air pollution.

The health costs of air pollution due to the burning fossil fuels in Australia are estimated at \$5.3 billion a year.<sup>18</sup> Reducing air pollution has tremendous co-benefits for human health. The World Health Organization estimates that globally, over a million lives would be saved every year by 2050 if air quality measures were implemented in accordance with the Paris Agreement.

### Sea level rise

Global heating is causing rising sea levels as polar ice melts, while coastal inundation from sea level rise threatens health, homes, and livelihoods in Australia's most populous areas.<sup>7</sup> Sea level rise also threatens the availability and quality of fresh water.<sup>21</sup> At present, State and Territory government plans for adapting to rising sea levels are mismatched and will have questionable long term effectiveness and federal leadership is required.<sup>102</sup>

### Infectious and vector borne disease

The devastation of the COVID-19 pandemic demonstrates the social and economic risks that disease poses to our society. Climate change will intensify these risks. A warming world means vector borne diseases normally only seen in tropical climates, such as Ross River Virus, are spreading to more temperate areas across Australia, including major population centres in New South Wales and Victoria.<sup>7</sup>

Aside from warming, the same environmental changes that are key drivers of climate change (land-use change, agricultural expansion and intensification, and wildlife trade and consumption) also drive biodiversity loss.<sup>13</sup> These factors increase the risk of transmission of zoonotic disease from animals to humans,<sup>13</sup> and is the suspected origin of the COVID-19 virus.

### Inequalities and inequities

The COVID-19 pandemic has exposed deep inequalities in the health and well-being of Australian people. Rates of death from COVID-19 are higher among those with pre-existing conditions and higher still among poor and marginalised groups; poor mental health was much worse among unemployed, people with a disability, Aboriginal and Torres Strait Islander peoples and among bushfire-affected communities.<sup>103</sup>

One in eight Australians, and one in six children, live in poverty and cannot afford necessities such as healthy food.<sup>104</sup> There exist inequalities in mortality between age groups and between those living in cities and rural areas.<sup>103</sup> Even before the COVID-19 pandemic, over 116,000 Australians were classified as being homeless, about 8,000 were sleeping rough, more than a million people were experiencing rental stress, and waiting lists for social housing were into the hundreds of thousands.<sup>103</sup>

*Australia is very far away from addressing the societal level drivers of health inequity. There is little progressive policy that touches on the conditions of daily life that matter for health, and action to redress inequities in power, money and resources is almost non-existent.<sup>103</sup>*

While climate change affects us all, it is important to recognise that not everyone is equally affected. Climate change disadvantages women disproportionately more than men due to historical and current gender inequalities, their traditional family roles as carers, relatively lower incomes, and reduced access to credit and resources.<sup>25, 26, 27</sup>

Health policy researchers have already seen how COVID-19 has resulted in women's gendered roles becoming more entrenched, adversely affecting the health of women through the reallocation of resources, increasing unpaid care work, and exponentially increasing the risk of gender based violence, with women locked down with abusers and unable to access crisis services.<sup>26, 105</sup> Further, limited access to adequate reproductive health services can also result in more unplanned pregnancies.<sup>106</sup>

During such times, the effects of systemic gender inequity that exists are highlighted, as social disparities in health, health access and health equality broaden. The Intergovernmental Panel on Climate Change (IPCC) describes how gendered inequities are exaggerated by climate-related hazards, as they result in higher workloads for women, occupational hazards indoors and outdoors, psychological and emotional stress, and lead to higher mortality compared to men.<sup>27</sup>

These climate change effects are amplified in Indigenous women, culturally and linguistically diverse women, women with disabilities, older women, and women with children, thereby also becoming a human rights and justice issue. The Gender Action Plan agreed at the 25th United Nations Climate Change (2021) states it is essential to take the gendered dimension of climate change into account when developing policy.<sup>107</sup>





Any effort to address the impacts of climate change and aims to promote healthy and resilient communities must address these inequalities and inequities. Tackling climate change will create economic opportunities which we must ensure are used to also tackle systemic gendered inequities.

### Australia's built environment

Australia's built environment is overly car-dependent; to get from A to B in most major cities often requires a car. Four in five commuters use private vehicles, in Melbourne, 65% of journeys between 1km and 1.9km and two-thirds of school trips are made by private transport.<sup>50</sup> At present across Australia, access to public transport and active commuting opportunities and greenspaces are inequitably distributed, limiting a healthy lifestyle for many communities.<sup>108</sup>

This over-reliance on cars contributes to chronic diseases, worsens health inequalities, and greenhouse gas emissions.<sup>50</sup> The Australian transport sector (cars, road and rail freight, air transport and shipping) produces 18% of national greenhouse gas emissions.<sup>109</sup>

The rapid transition to working from home undertaken by many Australians during the COVID-19 pandemic however, may illustrate the potential for long mooted, but yet to be realised, low-emissions, decentralised and multi-centred cities and city networks.<sup>50</sup>

# Appendix C

## International Obligations

The development and implementation of a national strategy on climate, health and well-being will assist Australia in meeting its obligations under the following international conventions, agreements, and obligations:

- **United Nations Framework Convention on Climate Change (UNFCCC)** this international treaty obliges parties to stabilise "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system."<sup>110</sup> As a party to the Convention, the Federal Government is obliged to make national commitments consistent with its objective and purpose, and to develop national plans to mitigate climate change, and reduce and prevent greenhouse gas emissions.
- The **Paris Agreement** of the United Nations Framework Convention on Climate Change (UNFCCC) obliges Australia as a party to that agreement to consider its citizens' 'right to health' in its national climate change response, and to recognise the health co-benefits in choices made in relation to mitigation action.
- **International Covenant on Economic Social and Cultural Rights (ICESCR)** this international treaty obliges Australia as a party to recognise the right of everyone in Australia to the highest attainable standard of physical and mental health, and to take steps to realise this by all appropriate means to the maximum of its available resources.<sup>111</sup>
- **The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)** was adopted by the General Assembly on Thursday, 13 September 2007, by a majority of 144 states in favour, 4 votes against (Australia, Canada, New Zealand and the United States) and 11 abstentions (Azerbaijan, Bangladesh, Bhutan, Burundi, Colombia, Georgia, Kenya, Nigeria, Russian Federation, Samoa and Ukraine). Years later the four countries that voted against have reversed their position and now support the UN Declaration. Today the Declaration is the most comprehensive international instrument on the rights of indigenous peoples. It establishes a universal framework of minimum standards for the survival, dignity and well-being of the Indigenous peoples of the world and it elaborates on existing human rights standards and fundamental freedoms as they apply to the specific situation of indigenous peoples.<sup>112</sup>
- **Sustainable Development Goals (SDGs)** of particular relevance to this strategy are SDG Goals 3 (Good Health and well-being) and 13 (Climate Action). Australia has adopted the SDGs, and as such, the Federal Government is expected to take ownership and establish national frameworks for the achievement of the 17 Goals, and for follow-up and review of the progress made in implementing the Goals.
- **The Convention on the Rights of the Child** states that children have the right to participate in and influence decision-making processes that may be relevant in their lives; they have the right to the enjoyment of the highest attainable standard of health; and that Parties to the Convention shall ensure to the maximum extent possible the survival and development of children.<sup>113</sup> Decisions made in the near and medium term on climate change will affect the lives of children far into the future, so children must be invited to contribute to decision-making on climate change.<sup>114</sup>



# References

- Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Belesova, K., Berry, H., et al. (2018). 'The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come', *The Lancet Review*, vol. 392, issue 10163, pp2479-2514, [https://doi.org/10.1016/S0140-6736\(18\)32594-7](https://doi.org/10.1016/S0140-6736(18)32594-7).
- World Health Organisation (2018). Climate change and health, accessed 29/09/2021, available at: <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>.
- United Nations Framework Convention on Climate Change (2015). The Paris Agreement, [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf).
- The World Health Organisation has characterised the Paris Agreement as a health agreement: United Nations Framework Convention on Climate Change (2018). The Paris Agreement is a Health Agreement - WHO, accessed 29/09/2021, available at: <https://unfccc.int/news/the-paris-agreement-is-a-health-agreement-who>
- The goals of the Paris Agreement are to limit global warming to 2 degrees Celsius above the pre industrial average and if possible to 1.5 degrees).
- Maslin, M. (2021). 'Climate change: how bad could the future be if we do nothing?', *The Conversation*, <https://theconversation.com/climate-change-how-bad-could-the-future-be-if-we-do-nothing-159665>.
- Australian Academy of Science (2021). The risks to Australia of a 3°C warmer world, <https://www.science.org.au/supporting-science/science-policy-and-analysis/reports-and-publications/risks-australia-three-degrees-c-warmer-world>.
- Lowitja Institute (2021). Leadership and Legacy Through Crisis: Keeping our Mob Safe: Close the gap campaign report 2021. <https://www.lowitja.org.au/page/services/resources/Cultural-and-social-determinants/culture-for-health-and-wellbeing/close-the-gap-report-2021>.
- World Health Organisation (2020). COP26 Key Messages on Climate Change and Health, accessed 29/09/2021, available at: <https://www.who.int/publications/i/item/cop26-key-messages-on-climate-change-and-health>.
- Australian Academy of Science (2015). Climate change challenges to health: Risks and opportunities. Recommendations from the 2014 Theo Murphy High Flyers Think Tank. Canberra: Australian Academy of Science.
- Duckett, S., Mackey, W., and Stobart, A. (2020). Climate change and health: Preparing for the next disaster. Grattan Institute.
- Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson S., Beagley, J., Belesova, K., et al., (2020). 'The 2020 report of the Lancet Countdown on health and climate change: responding to converging crises', *The Lancet*, vol. 397, iss. 10269, PP129-170, [https://doi.org/10.1016/S0140-6736\(20\)32290-X](https://doi.org/10.1016/S0140-6736(20)32290-X).
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem-Services (2020). IPBES Workshop on Biodiversity and Pandemics, [https://ipbes.net/sites/default/files/2020-12/IPBES%20Workshop%20on%20Biodiversity%20and%20Pandemics%20Report\\_O.pdf](https://ipbes.net/sites/default/files/2020-12/IPBES%20Workshop%20on%20Biodiversity%20and%20Pandemics%20Report_O.pdf)
- Harley, D., Bi, P., Swaminathan, A., Tong, S., & Williams, C. (2011). 'Climate change and infectious diseases' in Australia: Future prospects, adaptation options, and research priorities. *Asia-Pacific Journal of Public Health*, Supplement to 23 (2), 54S-66S.
- Hughes, L., Steffen, W., Rice, M., & Pearce, A. (2015) Feeding a hungry nation: Climate change, food and farming in Australia, Climate Council of Australia, <https://www.climatecouncil.org.au/uploads/7579c324216d1e76e8a50095aac45d66.pdf>
- Wilks, C.R., Turner, A.J., & Aзуolas, J. (2006). Effect of flooding on the occurrence of infectious disease, *Advances in Ecological Research*, 39, 107-124.
- Steffen, W., Vertessy, R., Dean, A., Hughes, L., Bambrick, H., Gergis, J. and Rice, M. (2018). Deluge and Drought: Australia's water security in a changing climate, Climate Council of Australia, <https://www.climatecouncil.org.au/wp-content/uploads/2018/11/Climate-Council-Water-Security-Report.pdf>.
- Ying, Z., et al. (2020). 'The 2020 special report of the MJA-Lancet Countdown on health and climate change: lessons learnt from Australia's "Black Summer"', *Medical Journal of Australia*; 213 (11): 492.e2-492.e10.
- Deng, S. et al. (2020). 'Climate change, air pollution, and allergic respiratory diseases: a call to action for health professionals', *Chinese Medical Journal*, 133(13): 1552-1560.. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7386356/>
- Beggs, P. (2021). 'Climate change, aeroallergens, and the aeroexposome', *Environmental Research Letters*, 6 035006, <https://iopscience.iop.org/article/10.1088/1748-9326/abda6f#erlabda6fs5>.
- Health Care Without Harm, (n.d). Key considerations for the incorporation of a health perspective in NDCs, <https://noharm-uscanada.org/documents/key-considerations-incorporation-health-perspective-ndcs-0>.
- Hughes, L., Hanna, E., and Fenwick, J. (2016). The Silent Killer: Climate change and the health impacts of extreme heat Climate Council of Australia. Climate Council of Australia.
- Bourque, F., and Willox, A.C. (2014). 'Climate change: The next challenge for public mental health?', *International Review of Psychiatry*, 26 (4), 415-422.
- United Nations Framework Convention on Climate Change (2020). Report of the Conference of the Parties on its twenty-fifth session, held in Madrid from 2 to 15 December 2019, [https://unfccc.int/sites/default/files/resource/cp2019\\_13a01E.pdf](https://unfccc.int/sites/default/files/resource/cp2019_13a01E.pdf).
- Joky, F. (2020). 'Tackling climate with gender equality', *The Ecologist*, accessed 29/09/2021, available at: <https://theecologist.org/2020/jul/01/tackling-climate-breakdown-gender-equality>
- United Nations (2020). Policy Brief:The Impact of COVID-19 on Women, <https://www.un.org/sexualviolenceinconflict/wp-content/uploads/2020/06/report/policy-brief-the-impact-of-covid-19-on-women/policy-brief-the-impact-of-covid-19-on-women-en-1.pdf>
- Simonis, M., Humphrey, K. 'Climate change impacts women more than men', *InSight*, accessed 29/09/21, available at: <https://insightplus.mja.com.au/2021/33/climate-change-impacts-women-more-than-men/>.
- Kjellstrom, T., Briggs, D., Freyberg, C., Lemke, B., Otto, M, & Hyatt, O. (2016). 'Heat, human performance, and occupational health: A key issue for the assessment of global climate change impacts', *Annual Review of Public Health*, 37, 97-112.
- Malik, A., Lenzen, M., McAlister, S., McGain, F., (2018). 'The carbon footprint of Australian health care', *The Lancet Planetary Health*.
- National Health Service (2020). Delivering a 'Net Zero' National Health Service, <https://www.england.nhs.uk/greenernhs/publication/delivering-a-net-zero-national-health-service/>.
- Tennison, I. et al. (2021). 'Health care's response to climate change: a carbon footprint assessment of the NHS in England', *Lancet Planetary Health*, 5:2, E84-E92, [https://doi.org/10.1016/S2542-5196\(20\)30271-0](https://doi.org/10.1016/S2542-5196(20)30271-0).
- Sustainable Development Unit (2018). Reducing the use of natural resources in health and social care, Cambridge (UK): Public Health England and NHS England.
- Pencheon, D. (2018). 'Developing a sustainable health care system: the United Kingdom experience', *Medical Journal of Australia*, 208 (7). [https://www.mja.com.au/system/files/issues/208\\_07/10.5694mja17.01134.pdf](https://www.mja.com.au/system/files/issues/208_07/10.5694mja17.01134.pdf).
- Health Care Without Harm (2021).Global Road Map for Health Care Decarbonization, <https://healthcareclimateaction.org/roadmap>
- Loosemore, M, and Chand, A. (2016). Barriers to Building resilience to Extreme Weather Events in Australian Hospitals, <http://www.arcom.ac.uk/-docs/proceedings/6f43d85eb7a4398cc685ba4988a57e28.pdf>.
- Climate and Health Alliance (2021). Real, Urgent and Now: Insights from health professionals on climate and health in Australia, <https://d3n8a8pro7vnmx.cloudfront.net/caha/pages/1957/attachments/original/1620887738/caha-run-communication-guide-FA.pdf?1620887738>
- Maibach, E., Miller, J., Armstrong, F., Omrani, O., Zhang, Y., Philpott, N., Atkinson, S., et al. (2021). 'Health professionals, the Paris agreement, and the fierce urgency of now', *The Journal of Climate Change and Health*, Volume 1, <https://doi.org/10.1016/j.joclim.2020.100002>.
- Climate Change is a Health Emergency, see: <https://www.climatehealthemergency.org/declaring>.
- Open Letter to the Prime Minister, 2021, see: [https://www.caha.org.au/full\\_list](https://www.caha.org.au/full_list)
- Atwoli L, Baqui AH, Benfield T, et al. (2021). 'Call for emergency action to limit global temperature increases, restore biodiversity, and protect health', *British Medical Journal*, 374:n1734, <https://doi.org/10.1136/bmj.n1734>
- HealthyClimate Prescription, (2021) An urgent call for climate action from the health community ahead of COP26. <https://healthyclimateletter.net>.
- Horsburgh, N., Armstrong, F. and Mulvenna, V. (2017). Framework for a National Strategy on Climate, Health and Well-being for Australia, Climate and Health Alliance, <https://www.caha.org.au/national-strategy-climate-health-wellbeing>.
- Climate and Health Alliance (2020).Healthy, Regenerative and Just, <https://www.caha.org.au/hrj-agenda>.
- Stockholm Resilience Center, (n.d), The nine planetary boundaries, accessed 29/09/2021, available at: <https://www.stockholmresilience.org/research/planetary-boundaries/the-nine-planetary-boundaries.html>.
- Article 1 of the Legal Principles for Environmental Protection and Sustainable Development, adopted by the Expert Group of the Brundtland Commission. See: [http://www.who.int/hhr/information/Human\\_Rights\\_Health\\_and\\_Environmental\\_Protection.pdf](http://www.who.int/hhr/information/Human_Rights_Health_and_Environmental_Protection.pdf).





46. Health in all Policies is an established approach to working on the social determinants of health across relevant areas of government. It is used to address complex issues such as health inequities, social determinants of health, and climate change for example. It has been used in South Australia for many years. A summary of the South Australia approach to the social determinants of health can be available at: South Australian Government (2013). South Australian Health in All Policies Initiative: Case Study, <https://www.sahealth.sa.gov.au/wps/wcm/connect/f31235004fe12f72b7def7f2d1e85ff8/SA+HiAP+Initiative+Case+Study-PH%26CS-HiAP-20130604.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-f31235004fe12f72b7def7f2d1e85ff8-nwJYEQf>
47. The Uluru Statement (2017). The Uluru Statement From the Heart, accessed 29/09/2021, available at: <https://ulurustatement.org/the-statement>.
48. Environmental Justice Australia (2021). The People's Clean Air Action Plan for Victoria Clean Air Action Plan, available at: <https://www.envirojustice.org.au/community-coalition-releases-its-own-clean-air-plan-after-government-inaction-on-pollution-from-coal-fired-power-stations/>.
49. Bambrick, H., Charlesworth, K., Bradshaw, S. and Baxter, T. (2021). Kicking the Gas Habit: How Gas is Harming Our Health, Climate Council of Australia, <https://www.climatecouncil.org.au/resources/gas-habit-how-gas-harming-health/>.
50. Giles-Corti B., Capon A., Wright A., et al. (2020) 'Physical determinants of health: healthy, liveable and sustainable communities', *Medical Journal of Australia*; 214 (8 Supplement): S17 – S21, pS17.
51. Ellen Macarthur Foundation (n.d). Universal Circular Economy Policy Goals, accessed 29/09/21, available at: <https://policy.ellenmacarthurfoundation.org/universal-policy-goals>.
52. Closing the Gap Target 9 aims to increase the proportion of Aboriginal and Torres Strait Islander people living in appropriately sized housing to 88% by 2031. See: <https://www.pc.gov.au/closing-the-gap-data/dashboard/socioeconomic/outcome-area9>.
53. Patrick R., Armstrong F., Capon A., et al. (2020). 'Health promotion in the Anthropocene: the ecological determinants of health', *Medical Journal of Australia*, 214 (8 Supplement): S22 – S26, pS23.
54. Patz, J. A. et al. (2004). 'Unhealthy landscapes: Policy recommendations on land use change and infectious disease emergence', *Environmental Health Perspectives*, <https://doi.org/10.1289/ehp.6877>.
55. Queensland Government (2018). Human Health and Wellbeing Climate Adaptation Plan, [https://www.qld.gov.au/\\_data/assets/pdf\\_file/0022/64237/h-cap-qld.pdf](https://www.qld.gov.au/_data/assets/pdf_file/0022/64237/h-cap-qld.pdf).
56. Climate and Health Alliance (2020). Northern Territory Climate Briefing: Heat, climate change, health and the need for urgent action, [https://d3n8a8pro7vhm.cloudfront.net/caha/pages/1854/attachments/original/1594953241/NT\\_Election\\_Briefing\\_-\\_Heat\\_Climate\\_Change\\_Health\\_and\\_the\\_Need\\_for\\_Urgent\\_Action.pdf?1594953241](https://d3n8a8pro7vhm.cloudfront.net/caha/pages/1854/attachments/original/1594953241/NT_Election_Briefing_-_Heat_Climate_Change_Health_and_the_Need_for_Urgent_Action.pdf?1594953241).
57. MacGuire, F. and Sergeeva, M. (2021). The Limits of Livability: The emerging threat of smoke impacts on health from forest fires and climate change, Global Climate & Health Alliance. [https://climateandhealthalliance.org/wp-content/uploads/2021/06/016062021\\_GCHA\\_bushfire\\_report\\_limits\\_livability\\_health.pdf](https://climateandhealthalliance.org/wp-content/uploads/2021/06/016062021_GCHA_bushfire_report_limits_livability_health.pdf).
58. Royal Commission into National Natural Disaster Arrangements – Report (2020), Available at: <https://naturaldisaster.royalcommission.gov.au/system/files/2020-11/Royal%20Commission%20into%20National%20Natural%20Disaster%20Arrangements%20-%20Report%20-%205Baccessible%5D.pdf>
59. The US Federal Emergency Management Agency found that every \$1US in hazard mitigation saves \$6US in recovery. See: Federal Emergency Management Agency, (2018). Natural Hazard Mitigation Saves Interim Report, [https://www.fema.gov/sites/default/files/2020-07/fema\\_mitsaves-factsheet\\_2018.pdf](https://www.fema.gov/sites/default/files/2020-07/fema_mitsaves-factsheet_2018.pdf).
60. Department of Home Affairs (2019). Guidance for Strategic Decisions on Climate and Disaster Risk, Chapter 03 Guidance on Vulnerability, Government of Australia, <https://knowledge.aidr.org.au/media/7710/03-vulnerability-guidance-strategic-decisions-climate-disaster-risk-2020.pdf>.
61. Rychetnik L., Sainsbury P., and Stewart G. (2018) 'How Local Health Districts can prepare for the effects of climate change: an adaptation model applied to metropolitan Sydney', *Australian Health Review* 43, S: 601-610.
62. Behrens, G., Zhang, Y. and Beggs, P., (2018). 'Lancet Countdown 2018 report: briefing for Australian policymakers', *Lancet Countdown*.
63. Shaw, E., Walpole, S., McLean, M., Alvarez-Nieto, C., Barna, S., Bazin, K., Behrens, G., Chase, H., et al. (2021). 'AMEE Consensus Statement: Planetary health and education for sustainable health care', *Medical Teacher*, 43:3, 272-286, <https://doi.org/10.1080/0142159X.2020.1860207>.
64. Omnia El Omrani, Alaa Dafallah, Blanca Paniello Castillo, Bianca Quintella Ribeiro Corrêa Amaro, Sanjana Taneja, Marouane Amzil, Md. Refat Uz-Zaman Sajib & Tarek Ezzine (2020). 'Envisioning planetary health in every medical curriculum: An international medical student organization's perspective', *Medical Teacher*, 42:10, 1107-1111, <https://doi.org/10.1080/0142159x.2020.1796949>.
65. Climate and Health Alliance (2020). Queensland Election Briefing: Climate Change, Health and Wellbeing: opportunities to boost resilience, [https://d3n8a8pro7vhm.cloudfront.net/caha/pages/1854/attachments/original/1603753458/QLD\\_Election\\_Briefing\\_Climate\\_Change\\_Health\\_and\\_Well-being\\_opportunities\\_to\\_boost\\_resilience.pdf?1603753458](https://d3n8a8pro7vhm.cloudfront.net/caha/pages/1854/attachments/original/1603753458/QLD_Election_Briefing_Climate_Change_Health_and_Well-being_opportunities_to_boost_resilience.pdf?1603753458).
66. Australian Commission on Safety and Quality in Health Care, Climate Risk Module. See: <https://www.safetyandquality.gov.au/standards/nsqhs-standards/climate-risk-module>.
67. Independent Hospital Pricing Authority (2019). Value-based health care, <https://www.ihoa.gov.au/publications/value-based-health-care>.
68. Australian Healthcare and Hospitals Association (2021). Healthy people, healthy systems: A blueprint for outcomes-focused, value-based health care, [https://ahha.asn.au/sites/default/files/docs/policy-issue/healthy\\_people\\_healthy\\_systems\\_-\\_a\\_blueprint\\_for\\_outcomes\\_focused\\_value-based\\_health\\_care\\_1\\_1.pdf](https://ahha.asn.au/sites/default/files/docs/policy-issue/healthy_people_healthy_systems_-_a_blueprint_for_outcomes_focused_value-based_health_care_1_1.pdf).
69. Australian Medical Association and Doctors for the Environment Australia joint call for emissions reduction in health care. <https://www.ama.com.au/media/joint-statement-medical-professionals-call-emissions-reduction-health-care>.
70. Doctors for the Environment Australia (2020). Net zero carbon emissions: responsibilities, pathways and opportunities for Australia's health care sector, [https://www.dea.org.au/wp-content/uploads/2020/12/DEA-Net-Zero-report\\_v11.pdf](https://www.dea.org.au/wp-content/uploads/2020/12/DEA-Net-Zero-report_v11.pdf).
71. Hoban, E., Haddock, R., and Woolcock K. (2021). Transforming the health system for sustainability: environmental leadership through a value-Based health care strategy, Deeble Institute.
72. Pendrey, C.G., Quilty, S., Gruen, R.L., Weeramanthri, T. and Lucas, R.M. (2021). 'Is climate change exacerbating health-care workforce shortages for underserved populations?', *The Lancet Planetary Health*. [https://doi.org/10.1016/S2542-5196\(21\)00028-0](https://doi.org/10.1016/S2542-5196(21)00028-0).
73. "It has been claimed that low-value care consumes at least 20% of health care resources in the United States — the comparable figure in Australia is unknown but there is emerging evidence of overuse of diagnostic tests and therapeutic procedures." See: Scott, I. and Duckett, S. (2015). 'In search of professional consensus in defining and reducing low-value care', *Medical Journal of Australia*; 203 (4): 179-181. | doi: 10.5694/mja14.01664.
74. de Vries, E.F., Struijs, J.N., Heijink, R. et al. (2016). 'Are low-value care measures up to the task? A systematic review of the literature', *BMC Health Serv Res* 16, 405. | <https://doi.org/10.1186/s12913-016-1656-3>.
75. Chalmers, K., Badgery-Parker, T., Pearson, SA. et al. (2018). 'Developing indicators for measuring low-value care: mapping Choosing Wisely recommendations to hospital data', *BMC Res Notes* 11, 163, <https://doi.org/10.1186/s13104-018-3270-4>.
76. Technologies can place patients as the focus, and through data generation and the advanced analytics required to interpret it, care is shifted to prevention, personalisation and precision. See: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5682364/>
77. From the Uluru Statement From the Heart: "Makarrata is the culmination of our agenda: the coming together after a struggle. It captures our aspirations for a fair and truthful relationship with the people of Australia and a better future for our children based on justice and self-determination." See: <https://ulurustatement.org/the-statement>.
78. Australian Government (n.d.) Closing the Gap in Partnership: 3. Objectives and Outcomes, accessed 29/09/21, available at: <https://www.closingthegap.gov.au/national-agreement/national-agreement-closing-the-gap/3-objective-and-outcomes>.
79. Baum F., Friel S., Baker P., et al. (2021). 'Governance for health and equity: a vision for our future', *Medical Journal of Australia*; 214 ( 8 Supplement ): S36 – S40.
80. Market Forces (n.d.). Super Funds Comparison Table, accessed 29/09/21, available at: <https://www.marketforces.org.au/superfunds/>.
81. See: <https://www.fsb-tcfd.org/>.
82. Article 12 of the United Nations Framework Convention on Climate Change sets out national responsibilities for communication and transparency. See: <https://cop23.unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change>.
83. Global Climate and Health Alliance (2021). Healthy NDCs. See: <https://climateandhealthalliance.org/initiatives/healthy-ndcs/>.
84. World Health Organization, (2019) Health in the Nationally Determined Contributions. See: <https://www.who.int/publications/i/item/who-review-health-in-the-ndcs>.
85. Centre for Policy Development (2021). "Climate Change and Directors' Duties", Further Supplementary Memorandum of Opinion, <https://cpd.org.au/wp-content/uploads/2021/04/Further-Supplementary-Opinion-2021-3.pdf>.
86. 215: Zhang, Y., Barratt, A., Rychetnik, L., and Breth-Petersen, M. (2021). An Australian Glossary on Health and Climate Change. Prepared for: The Human Health and Social Impacts (HHSI) Node, The NSW Adaptation Hub.
87. This statement is based on work by the Climate Justice Union to be available at: <https://climatejusticeunion.org/acknowledgements>.
88. Federal Register (United States) (2021). Establishment of the Office of Climate Change and Health Equity, <https://www.federalregister.gov/documents/2021/08/31/2021-18794/establishment-of-the-office-of-climate-change-and-health-equity>.
89. Intergovernmental Panel on Climate Change, (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press.
90. Breakthrough – National Centre for Climate Restoration (2020). Climate Reality Check 2020, <https://www.climatecheck.net/>.
91. Intergovernmental Panel on Climate Change, (2021) Regional fact sheet - Australasia, [https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC\\_AR6\\_WGI\\_Regional\\_Fact\\_Sheet\\_Australasia.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Australasia.pdf).
92. Wyns, A., van Daalen, K.R. (2021). 'From pandemic to Paris: the inclusion of COVID-19 response in national climate commitments', *The Lancet*, <https://www.thelancet.com/action/showPdf?pii=S2542-5196%2821%2900111-X>.



93. The MJA-Lancet countdown on health and climate change characterises Australia's policy inaction as putting lives at risk. See: Zhang, Y., Beggs, P.J., Bambrick, H., Berry, H.L., Linnenluecke, M.K., Trueck, S., Alders, R., et al. (2018). 'The MJA-Lancet Countdown on health and climate change: Australian policy inaction threatens lives', *Medical Journal of Australia*, <https://www.mja.com.au/journal/2018/209/11/mja-lancet-countdown-health-and-climate-change-australian-policy-inaction>.
94. World Health Organisation (2018). Health benefits far outweigh the costs of meeting climate change goals, accessed 29/09/2021, available at: <https://www.who.int/news/item/05-12-2018-health-benefits-far-outweigh-the-costs-of-meeting-climate-change-goals>.
95. Doctors for the Environment Australia (2021). Heatwaves and Health in Australia, [https://www.dea.org.au/wp-content/uploads/2021/01/DEA-Fact-Sheet\\_HeatwavesWEB.pdf](https://www.dea.org.au/wp-content/uploads/2021/01/DEA-Fact-Sheet_HeatwavesWEB.pdf).
96. Lucinda Coates, Haynes K, O'Brien J, McAnaney J, Oliveira FD De. (2014). 'Exploring 167 years of vulnerability: An examination of extreme heat events in Australia' 1844-2010. *Environ Sci Policy*. ;42(33-44).
97. Schiermeier, Q. (2011). 'Increased flood risk linked to global warming' *Nature* 470, 316. <https://doi.org/10.1038/470316a>.
98. Eccles, R., Zhang, H. and Hamilton, D. (2019). 'A review of the effects of climate change on riverine flooding in subtropical and tropical regions', *Journal of Water and Climate Change*, Vol. 10, Issue 4. <https://iwaponline.com/jwcc/article/10/4/687/69543/A-review-of-the-effects-of-climate-change-on>.
99. Climate Council of Australia (2021). Yes, Australia Is A Land Of Flooding Rains. But Climate Change Could Be Making It Worse, accessed 29/09/21, available at: <https://www.climatecouncil.org.au/flooding-rains-climate-change-conversation/>.
100. National Recovery and Resilience Agency (n.d). Flood, accessed 29/09/21, available at: <https://knowledge.aidr.org.au/resources/flood/>.
101. Mallon, K., Hamilton, E., Black, M., Beem, B. and Abs, J. (2013). Adapting the community sector for climate extremes, ACOSS.
102. Dedekorkut-Howes, A., Torabi, E. & Howes, M. (2021). 'Planning for a different kind of sea change: lessons from Australia for sea level rise and coastal flooding', *Climate Policy*, 21:2, 152-170, <https://doi.org/10.1080/14693062.2020.1819766>.
103. Friel S., Baum F., Goldfield S., et al. (2021). 'How Australia improved health equity through action on the social determinants of health', *Medical Journal of Australia*; 214 ( 8 Supplement ): S7 – S11.
104. Davidson P., Bradbury B., Wong M. (2020), Poverty in Australia 2020: Part 2: Who is affected? ACOSS/UNSW Poverty and Inequality Partnership Report, No. 4, Sydney: ACOSS, p22. [http://povertyandinequality.acoss.org.au/wp-content/uploads/2020/05/Poverty-in-Australia-2020-Part-2-%E2%80%93-Who-is-affected\\_Final.pdf](http://povertyandinequality.acoss.org.au/wp-content/uploads/2020/05/Poverty-in-Australia-2020-Part-2-%E2%80%93-Who-is-affected_Final.pdf).
105. Wood, D., Griffiths, K., and Crowley, T. (2021) Women's work: The impact of the COVID crisis On Australian women, Grattan Institute.
106. Castenada Carney, I., Sabater, L., Owren, C., Boyer, A.E. and Wen, J. (2020). Gender-based violence and environment linkages IUCN Global Programme on Governance and Rights ( GPGR) 2020. <https://doi.org/10.2305/IUCN.CH.2020.03.en>.
107. United Nations Framework Convention on Climate Change (n.d.). The Gender Action Plan, <https://unfccc.int/topics/gender/workstreams/the-gender-action-plan>.
108. Shill J., Büsst C., Horton K., et al. (2021). 'Our path to health for all: Australia in 2030', *Medical Journal of Australia*; 214 (8 Supplement): S5-S6.
109. Climate Analytics (2019). Australia Climate Factsheets - Vehicle Emissions, accessed 29/09/21, available at: <https://climateanalytics.org/publications/2019/australia-climate-factsheets-vehicle-emissions/>.
110. See Article 2 of: United Nations (1992). United Nations Framework Convention On Climate Change, <https://unfccc.int/resource/docs/convkp/conveng.pdf>.
111. See Articles 2.1 and 12.1 of: United Nations (1996). International Covenant on Economic, Social and Cultural Rights, <http://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx>
112. United Nations (2007), United Nations Declaration on the Rights of Indigenous Peoples, accessed 21/09/21, available at: <https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html>
113. United Nations (1990). Convention on the Rights of the Child, <https://www.ohchr.org/EN/professionalinterest/pages/crc.aspx>.
114. Sanson A.V., Burke S.E.L. (2020). 'Climate Change and Children: An Issue of Intergenerational Justice', In: Balvin N., Christie D. (eds) Children and Peace. Peace Psychology Book Series. Springer, Cham. [https://doi.org/10.1007/978-3-030-22176-8\\_21](https://doi.org/10.1007/978-3-030-22176-8_21).
115. Hanna EG, Mclver LJ. Climate change: a brief overview of the science and health impacts for Australia. *Medical Journal of Australia*. 2018; 208 (7): 311-5. 10.5694/mja1700640.
116. Johnston FH, Borchers-Arriagada N, Morgan GG, Jalaludin B, Palmer AJ, Williamson GJ, et al. Unprecedented health costs of smoke-related PM2.5 from the 2019-20 Australian megafires. *Nature Sustainability*. 2020; On Line 21 September <https://doi.org.virtual.anu.edu.au/10.1038/s41893-020-00610-5>. 10.1038/s41893-020-00610-5.
117. Vicedo-Cabrera AM, Scovronick N, Sera F, Royé D, Schneider R, Tobias A, et al. The burden of heat-related mortality attributable to recent human-induced climate change. *Nature Climate Change*. 2021; 11 (6): 492-500. 10.1038/s41558-021-01058-x.
118. ClimateWorks Australia, State and territory climate action: Leading policies and programs in Australia, 2021. Available at: <https://www.climateworksaustralia.org/resource/state-and-territory-climate-action-leading-policies-and-programs-in-australia/>.



---

[caha.org.au](http://caha.org.au)  
[#climatehealth](https://twitter.com/climatehealth)

