



CLIMATE<sup>AND</sup>  
**HEALTH**  
ALLIANCE

# Yarra Climate Emergency Forum

Fiona Armstrong

Founder and Director

[www.caha.org.au](http://www.caha.org.au)

[www.ourclimate-ourhealth.org.au](http://www.ourclimate-ourhealth.org.au)

[Facebook: climateandhealthalliance](https://www.facebook.com/climateandhealthalliance)

Twitter @healthy\_climate



# What this will cover

About CAHA

Links between climate change and health

Impacts in Australia and around the world

What the solutions are

What you can do



# About Climate and Health Alliance (CAHA)

- Coalition of over 30 health groups [www.caha.org.au](http://www.caha.org.au)
- Partner and affiliate of Health Care Without Harm [www.noharm.org](http://www.noharm.org)
- Coordinate the Pacific region of Global Green and Healthy Hospitals network [www.greenhospitals.net](http://www.greenhospitals.net)
- Part of Climate Action Network Australia - bringing health perspectives and health voices to the climate movement
- Part of the broader global effort – founding member and on board of the Global Climate and Health Alliance [www.gcha.org](http://www.gcha.org)
- Leading Our Climate Our Health campaign [www.ourclimate-ourhealth.org.au](http://www.ourclimate-ourhealth.org.au)





Climate change poses serious threats to the health of people in Australia and globally.





# THE LANCET

Volume 373 · Number 9676 · Pages 1659-1734 · May 16-22, 2009

[www.thelancet.com](http://www.thelancet.com)

"Climate change is  
the biggest global  
health threat of the  
21st century."

See The Lancet Commissions page 1693

## Comment

Compensation for brain drain  
from developing countries  
See page 1666

## Correspondence

Amnesia from canned tuna?  
See page 1672

## Articles

RECORD4: Rivaroxaban for  
thromboprophylaxis after  
total knee arthroplasty  
See page 1673

## Articles

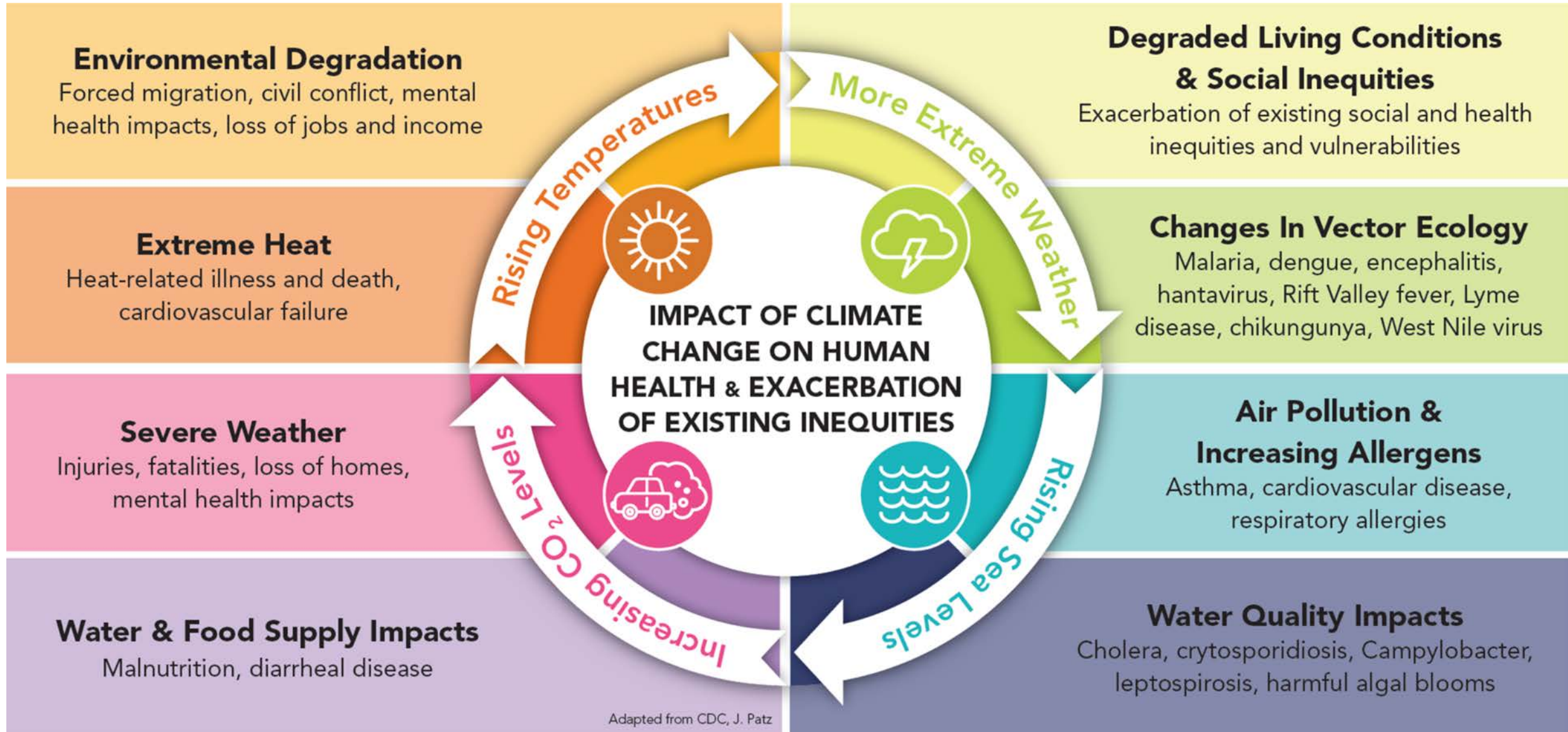
TACT: sequential docetaxel as  
adjuvant chemotherapy for  
early breast cancer  
See page 1681

## The Lancet Commissions

Management of health effects  
of climate change  
See page 1693



# How does climate change affect human health?





# Current impacts of climate change on health in Australia

Extreme weather events	Extreme weather events such as floods, storms, bushfires and heatwaves are causing illness, death and post-traumatic stress and placing increasing pressure on health services and infrastructure.
Air pollution and aeroallergens	Air pollutants from burning fossil fuels such as ozone and particulate matter cause respiratory and cardiac illnesses. Increases temperatures lengthen the pollen season, and worsen air pollution, aggravating respiratory conditions.
Infectious diseases	A warmer climate and changing rainfall patterns is increasing the range and prevalence of food, water borne diseases and illnesses from pathogens and vector-borne diseases such as dengue fever.
Occupational health impacts	Hotter temperatures are putting outdoor and manual labourers at increased risk of heat- related illnesses, work accidents and death.
Mental illness and stress	Environmental change and severe weather events, cause social and economic impacts and increase mental illness and stress.
Food and water insecurity	Changes in prevailing weather patterns threaten the security and quality of water sources and agricultural productivity, risking food and water security.
Vulnerable populations	People with pre-existing medical conditions, older people, young, disabled, socioeconomically disadvantaged and Indigenous Australians are particularly vulnerable to climate impacts.



Who will  
be  
affected  
by climate  
change?

#ClimateChange

## WHETHER YOU LIVE IN A...



Rural village



Small island or  
coastal town



Big city

## CLIMATE CHANGE THREATENS YOUR HEALTH

Drought,  
floods and  
heat waves  
will increase.



Vector-borne  
diseases, like malaria  
and dengue virus will  
increase with more  
humidity and heat.

## Basic necessities will be disrupted...



### FOOD

Hunger and famine will  
increase as food production  
is destabilised by drought.



### AIR

Pollution and pollen seasons  
will increase leading to more  
allergies and asthma.



### WATER

Warmer waters and flooding  
will increase exposures to  
diseases in drinking and  
recreational waters.

Between 2030 and 2050 climate change is expected to cause

# 250 000 ADDITIONAL DEATHS PER YEAR

due to malaria, malnutrition, diarrhoea and heat stress.



World Health  
Organization



# 250,000 deaths a year from climate change is a 'conservative estimate,' research says



By **Jen Christensen**, CNN

🕒 Updated 2219 GMT (0619 HKT) January 16, 2019



Undeniable climate change facts 01:48

**(CNN)** — Climate change could "halt and reverse" progress made in human health over the last century.

## News & buzz

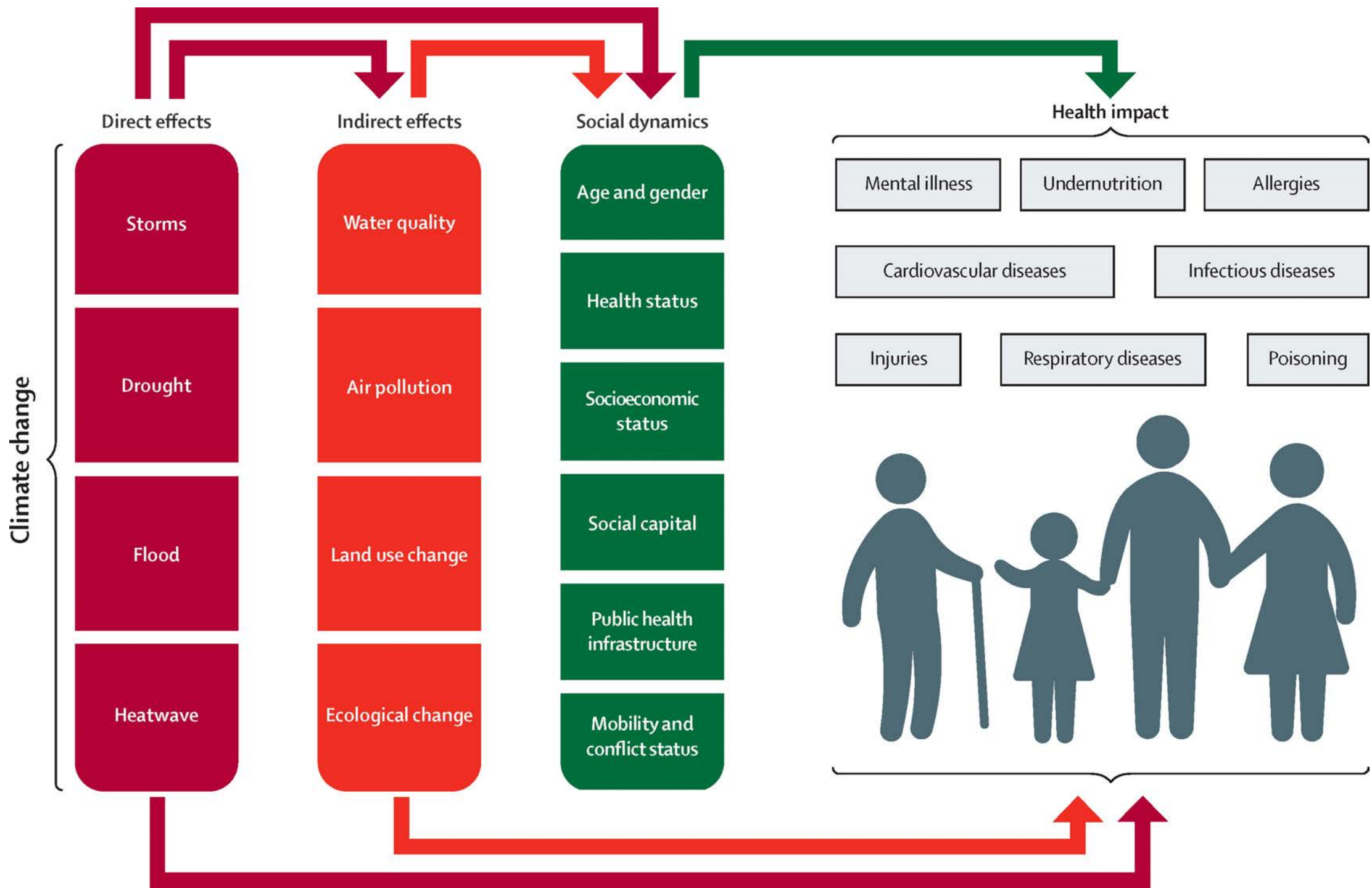


FAA: Boeing 737 MAX planes to stay grounded

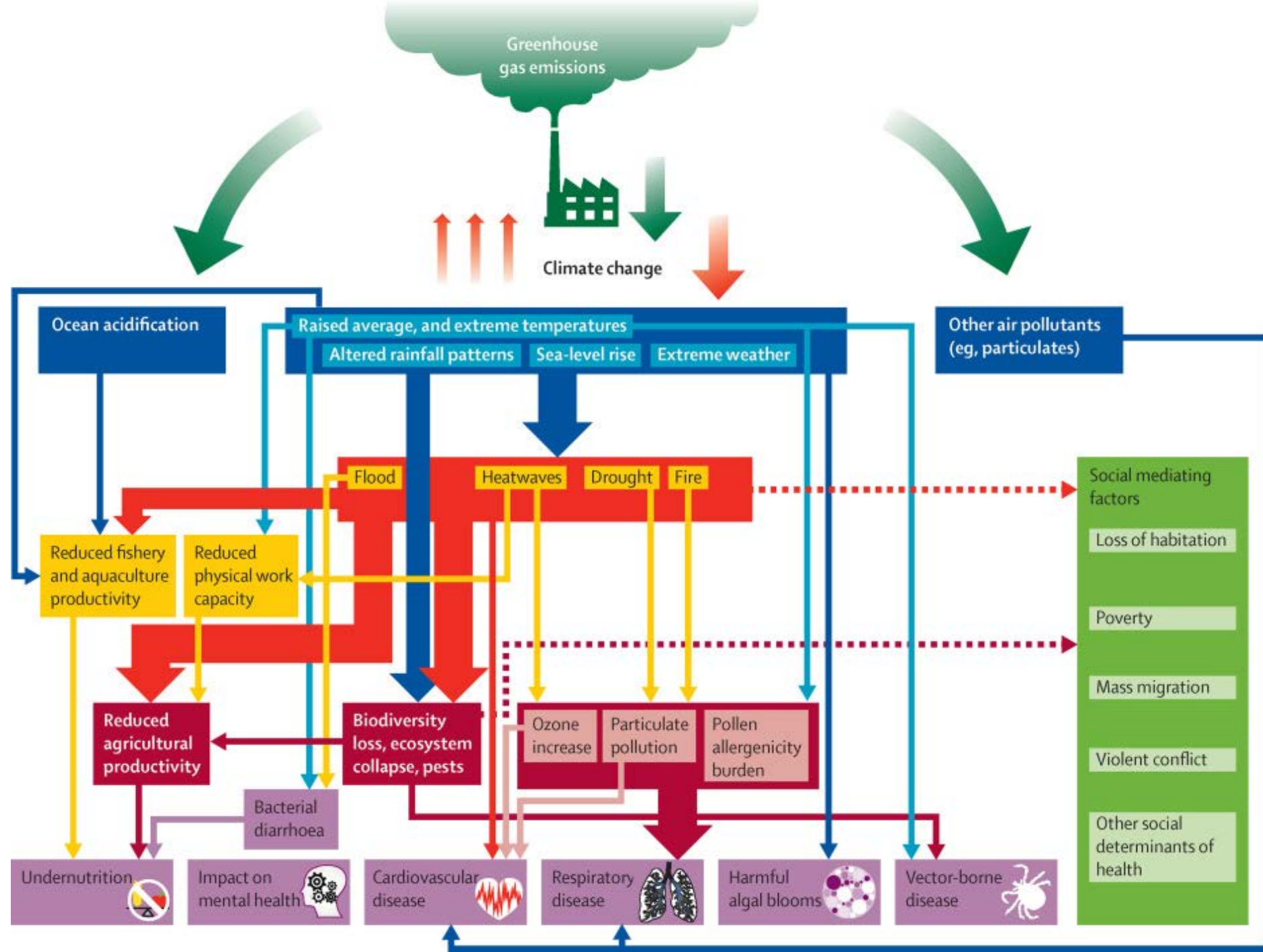


Canada is warming at twice the global rate, report says











We are all  
at risk from  
climate  
change –  
but those  
already  
vulnerable  
are most at  
risk

#ClimateChange

## WHO IS AT RISK OF CLIMATE CHANGE?

Those **living in poverty**, as well as **women, children and the elderly**.

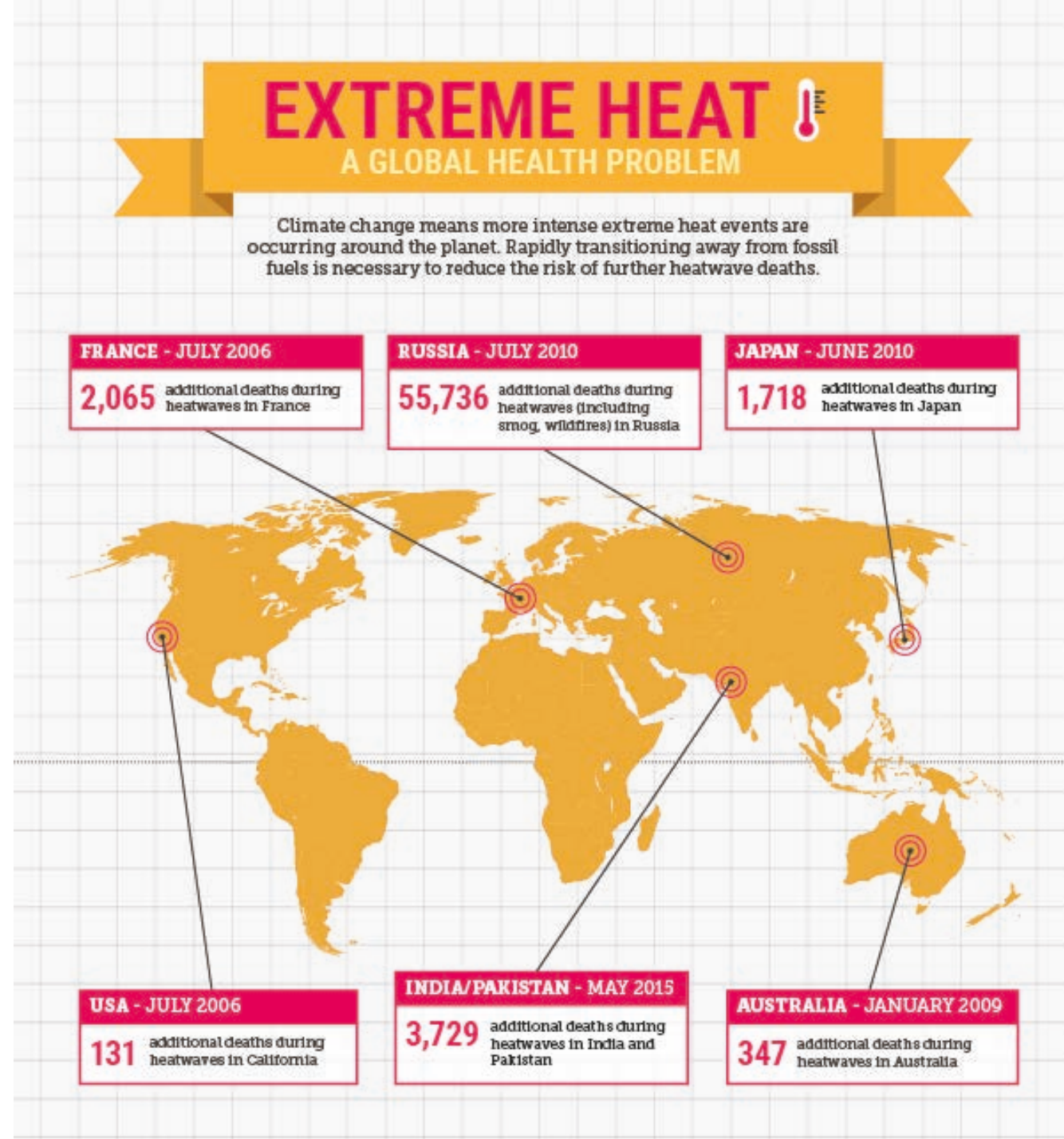
**Outdoor workers** and people **living with chronic medical conditions**.

**Children are the most vulnerable** due to long exposure to environmental risks.





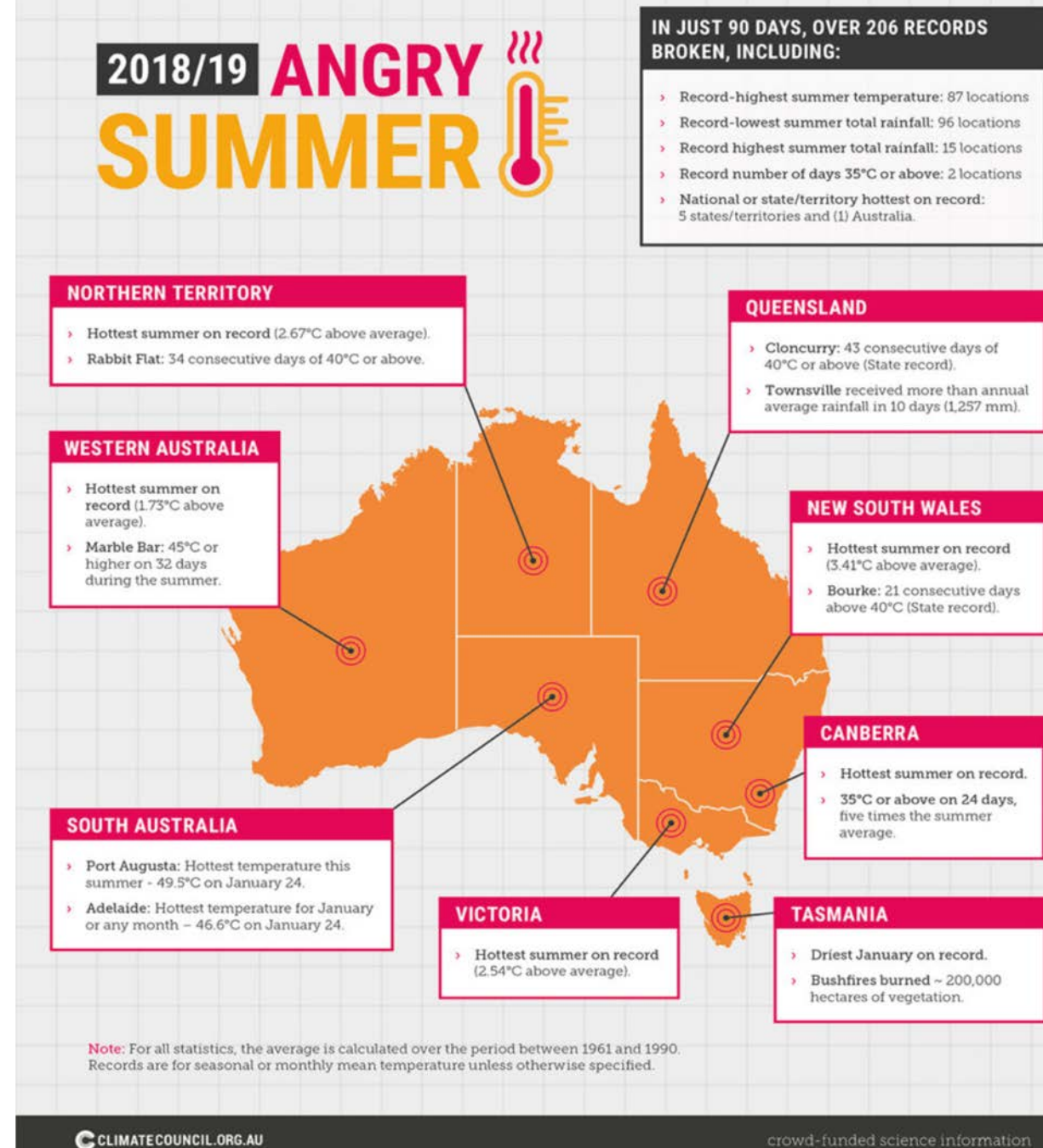
Heatwave deaths increased worldwide by 2300 percent from 1991-2000 and 2001-2010





Heatwaves in Australia kill more people than all other natural disasters combined.

Productivity losses from heat stress in Australia amount to \$7 billion p.a.





# Air pollution



The most direct link between the drivers of climate change, and of poor health, is air pollution.

Burning fossil fuels – for power, transportation and industry – is the main source of the carbon emissions driving climate change, and also a major contributor to air pollution, that kills 7 million people every year.



*Image of Morwell during coal mine fire*



## Air pollution in Australia

- Vehicle emissions in Australia cost \$3.3 billion each year.
- Coal fired power in Australia is estimated to cost \$2.6 billion per annum in health damages.





Climate change is contributing to worsening air pollution and increasing events such as the 2016 thunderstorm asthma event in Victoria, which caused a **3,000% increase in asthma-related admissions** to intensive care - and contributed to the death of nine people.



# Deadly mud bacteria claims a life as Townsville flood toll rises to three

**Up to 10 others in intensive care after exposure to melioidosis  
during clean-up**





# Queensland floods have likely killed hundreds of thousands of cattle, farmers facing 'catastrophic' losses

By [Krystal Gordon](#) and staff

Updated 8 Feb 2019, 7:52pm



**PHOTO:** The flooding in Queensland's north has had a devastating impact on the state's cattle industry. (Supplied)



# Planetary health

**“the health of human civilization and the state of the natural systems on which it depends”**



The Rockefeller Foundation–Lancet Commission on planetary health

Safeguarding human health in the Anthropocene epoch:  
report of The Rockefeller Foundation–Lancet Commission on planetary health





## Plummeting insect numbers 'threaten collapse of nature'



▲ The rate of insect extinction is eight times faster than that of mammals, birds and reptiles. Photograph: Courtesy of Entomologischer Verein Krefeld



# Earth's fish are disappearing because of climate change, study says

By Isabelle Gerretsen, CNN

🕒 Updated 1900 GMT (0300 HKT) February 28, 2019



Fishermen gather to harvest fish in Hangzhou in eastern China.

**(CNN)** — Climate change is endangering fish worldwide, shrinking populations by up to 35% in coastal regions near China and Japan, scientists say.

## News & buzz



These Japanese foods activate the body's longevity gene



Chicago Mayor-elect Lightfoot on challenges facing city

## Paid Content

by Outbrain | ▶



New Victorian Solar Rebate has Homeowners Rushing to Install solarforyou



# 'Whole thing is unravelling': climate change reshaping Australia's forests



▲ Researchers have found that big eucalypts grow slower as temperatures rise thanks to climate change.  
Photograph: N Cirani/De Agostini/Getty Images

Droughts, heatwaves, bushfires and rising temperatures are driving ecosystems towards collapse

Advertisement

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# 1992 World Scientists' Warning to Humanity

Scientist Statement

World Scientists' Warning to Humanity (1992)

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Some 1,700 of the world's leading scientists, including the majority of Nobel laureates in the sciences, issued this appeal in November 1992. The World Scientists' Warning to Humanity was written and spearheaded by the late Henry Kendall, former chair of UCS's board of directors.

## INTRODUCTION

Human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know. Fundamental changes are urgent if we are to avoid the collision our present course will bring about.



Without urgent action on climate change, the conditions that underpin the health and well-being of the human population will be greatly diminished in coming decades, and may only be available to a small number of people living in a few parts of the planet by the end of this century.





What can we  
do about  
climate  
change?

#ClimateChange

# WHAT CAN WE DO ABOUT CLIMATE CHANGE?

We can do a lot to protect ourselves, our families, and future generations.

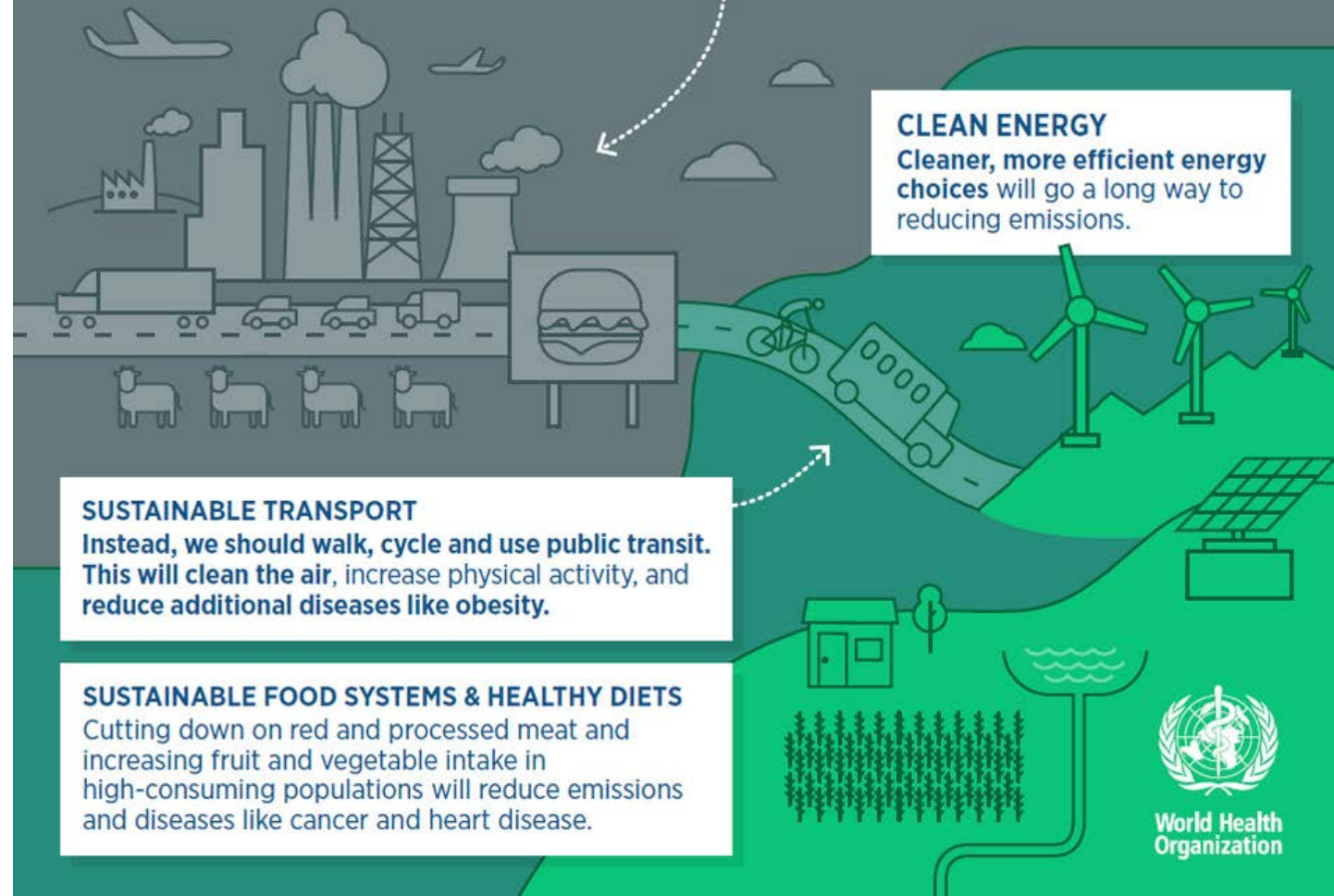
**Our transport systems are inefficient, polluting and drive CO2 into the atmosphere, which directly harms the environment and our health.**

**The same can be said of our energy and food systems.** The livestock sector is responsible for significant greenhouse gas emissions.

**CLEAN ENERGY**  
Cleaner, more efficient energy choices will go a long way to reducing emissions.

**SUSTAINABLE TRANSPORT**  
Instead, we should walk, cycle and use public transit. This will clean the air, increase physical activity, and reduce additional diseases like obesity.

**SUSTAINABLE FOOD SYSTEMS & HEALTHY DIETS**  
Cutting down on red and processed meat and increasing fruit and vegetable intake in high-consuming populations will reduce emissions and diseases like cancer and heart disease.





# THE LANCET

Health and Climate Change - November, 2009

[www.thelancet.com](http://www.thelancet.com)

"This Series makes clear that health co-benefits can accrue as a direct result of many mitigation activities for greenhouse-gas emissions. If societies change their energy systems, change their methods of transport, and modify intensive food production practices and consumer choices, then many positive health consequences will result."

Health and Climate Change

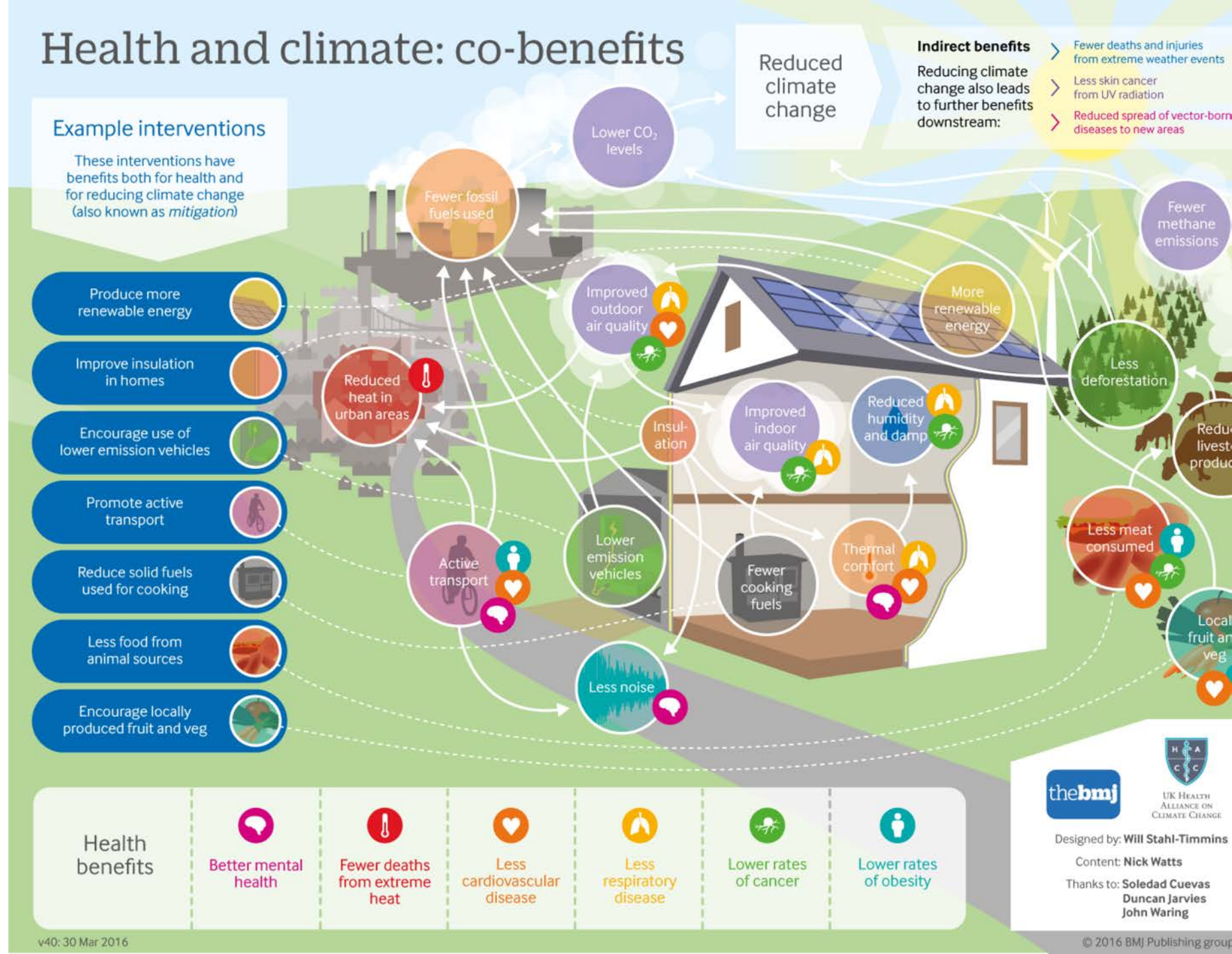


Climate change is the greatest threat to health, but tackling it offers the greatest opportunity for health





Reducing emissions offers many pathways to benefit our health





Health is the most effective frame when communicating about climate change

- In a US study (Myer, et al, 2012) of public responses to messages about climate change, a focus on public health was most consistent with support for climate change mitigation and adaptation
- Maibach et al (2010) found information about the potential health benefits of climate policy actions was particularly compelling

## Climatic Change

An Interdisciplinary, International Journal Devoted to the Description, Causes and Implications of Climatic Change

Editors: MICHAEL OPPENHEIMER  
GARY STONE

Volume 117 • Nos. 3–4 • August 2012

Including CLIMATIC CHANGE LETTERS  
Editor: Michael Oppenheimer



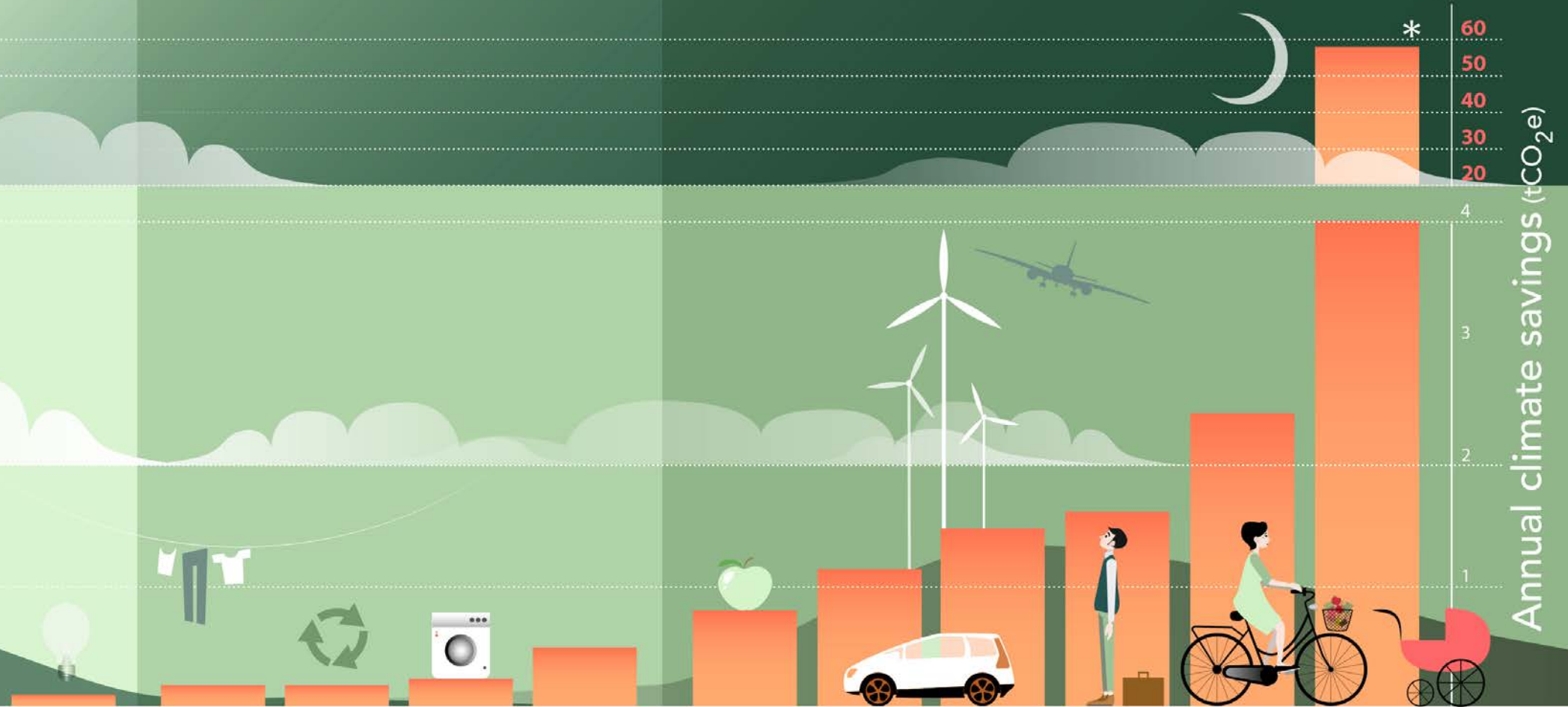
 Springer



# Personal choices to reduce your contribution to climate change

\* Cumulative emissions from descendants; decreases substantially if national emissions decrease.

Average values for developed countries, based on current emissions.



Low Impact

< 0.2 tCO<sub>2</sub>e

Moderate Impact

0.8-0.2 tCO<sub>2</sub>e

High Impact

> 0.8 tCO<sub>2</sub>e



# Become an active citizen

- Klar and Kasser found activism is positive for individual psychological wellbeing as well as social wellbeing
- Townsend et al – environmental volunteering positive for mental health, social capital, physical health, skill development





# The health benefits of climate action are *Our Uncashed Dividend*

## Our Uncashed Dividend

The health  
benefits  
of climate  
action

A briefing paper  
prepared by the  
Climate and Health  
Alliance and  
The Climate Institute



CLIMATE and  
HEALTH  
ALLIANCE



The  
Climate  
Institute

August 2012



# Energy sources matter to health

Fossil fuels play a dominant role in Australia's energy supply, which is currently one of the most emissions-intensive and inefficient in the world.<sup>18</sup> In particular, a heavy reliance on coal, which supplies almost 80 per cent of Australia's electricity, has direct and immediate consequences for human health.<sup>19</sup>

The mining and combustion of coal carries serious and well understood risks for human health, including diseases such as asthma, lung cancer, heart disease, and stroke.<sup>20,21</sup>

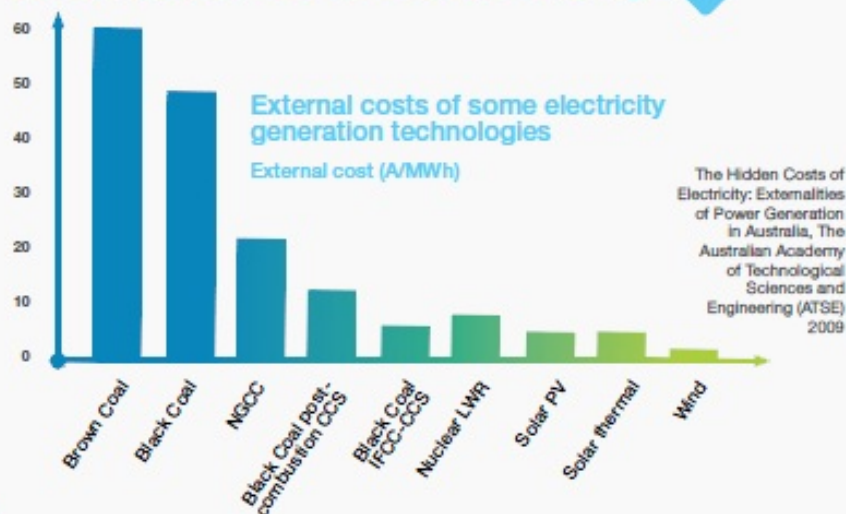
Pollution from coal power also affects lung development, increases the risk of heart attacks, and can impair intellectual development.<sup>22</sup> Coal mining is associated

with cardiovascular, lung and kidney diseases,<sup>23</sup> including pneumoconiosis ('black lung') which causes permanent scarring of lungs in coal miners.<sup>24</sup>

Researchers estimate that coal-fired power generation in Australia carries a human health cost—from associated respiratory, cardiovascular, and nervous system diseases—of A\$2.6 billion annually.<sup>25,26</sup>

Coal mining comes with some significant occupational hazards: coal miners die in greater numbers and suffer more lost time from injuries than all other miners.<sup>27</sup> In comparison, renewable energy systems have fewer and lower occupational health risks than coal and nuclear.<sup>28</sup>

## The hidden costs of electricity



# \$2.6 billion

Researchers estimate that coal-fired power generation in Australia carries a human health cost—from associated respiratory, cardiovascular, and nervous system diseases—of A\$2.6 billion annually.





# Changing the way we move



In Australia, annual health costs from pollution from fossil-fuelled transport are estimated to be around \$3.3 billion.<sup>62</sup> Emissions from transport are the country's third largest source of emissions and second fastest growing source, with emissions expected to rise 64 per cent between 1990 and 2020.<sup>63</sup>

Globally, 3.2 million deaths each year can be attributed to physical inactivity.<sup>64</sup> It is estimated that the UK National Health Service (NHS) spends \$US5,000 per minute treating diseases that could be prevented by regular physical activity.<sup>65</sup> Longitudinal studies reveal cycling for transport is associated with 30-40% lower mortality

Direct and immediate health gains are possible from changes to our approach to land transport. Reducing our reliance on private vehicles through investment in improved public transport and increasing the proportion of trips taken by active transport such as walking and cycling offer substantial opportunities to improve health.

These include:

- reduced incidence of chronic diseases, in particular respiratory and cardiovascular diseases;
- obesity, from increased physical activity
- reduced illnesses and deaths as a result of declining air pollution; and
- reduced road injuries and deaths.<sup>60,61</sup>

Switching to active transport to achieve emissions reductions can provide considerable health benefits, with reductions in risk of ischaemic heart disease; cerebrovascular disease/stroke; breast cancer; dementia; and depression.

## THE COSTS OF OBESITY

Obesity has now overtaken smoking as the leading cause of premature death and illness in Australia.<sup>70</sup> More than 60 per cent of Australian adults are overweight or obese.<sup>71</sup> Obesity leads to higher rates of diabetes and heart disease, and can lead to reproductive disorders, some cancers and osteoarthritis.<sup>72</sup> The health problems created by excess weight cause a burden for individuals, families and communities. The direct health costs of obesity to the Australian community are estimated to be more than \$8 billion a year.<sup>73</sup> The overall cost to Australian society and governments of lost wellbeing associated of obesity is estimated at more than \$58 billion a year.<sup>74</sup>

rates,<sup>66</sup> and cycling and walking projects provide high value for money, with the health gains returning a benefit:cost ratio of 5:1.<sup>67</sup>

The likelihood of becoming obese increases by 6 per cent for each hour spent in a car each day.<sup>68</sup> Conversely, it is possible to reduce these odds by 5 per cent simply by walking an additional kilometre each day.<sup>69</sup> Relatively simple, cheap initiatives like this can yield profound improvements in health, cutting emissions at the same time.

Investing in active forms of transport such as walking and cycling as well as public transport also offers economic benefits by reducing the need to invest in costly road infrastructure and protecting against future shocks from price rises and interruptions to fuel supplies.<sup>75</sup> Communities that are designed to facilitate active and public transport can reduce household costs,<sup>76</sup> reduce social isolation and improve social capital by improving community connectedness as well as improve health and wellbeing.<sup>77</sup>

10-19%

Reduction of ischaemic heart disease



10-18%

Reduction of cerebrovascular disease/stroke

12-13%

Reduction of breast cancer



4-6%

Reduction of depression

7-8%

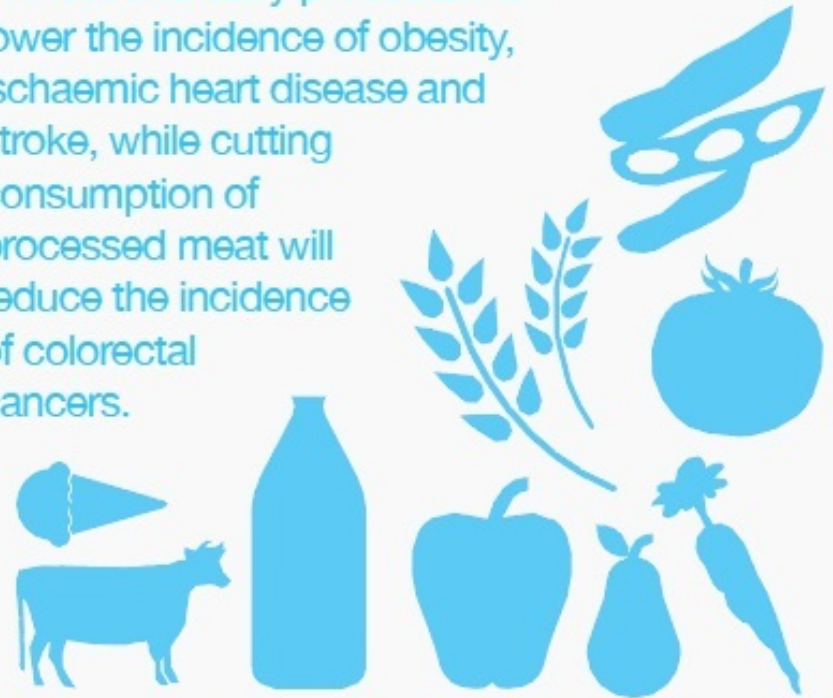
Reduction of dementia





Progressively changing the diets of people in affluent societies like Australia is an important climate change mitigation strategy, and one that could also result in significant public health benefits.

Moderating our consumption of meat and dairy products will lower the incidence of obesity, ischaemic heart disease and stroke, while cutting consumption of processed meat will reduce the incidence of colorectal cancers.



Changes to Australia's food systems have the potential to make a sizeable contribution to climate change mitigation through the sequestration of carbon and moving to lower emissions production.

But production changes alone are unlikely to be sufficient in the long run; changes to food supply chains and consumption will also be important. In turn, these will improve public health and reduce demand on the healthcare system.<sup>144</sup>

Improvements in farming practices have the potential to reduce carbon dioxide, methane and nitrous oxide emissions as well as improve environmental conservation, which itself has public health benefits (see above).

One major pathway to improving population health and reducing emissions is through changes in the Australian diet.<sup>145</sup> Moderating our consumption of meat and dairy products will lower the incidence of obesity, ischaemic heart disease and stroke, while cutting consumption of processed meat will reduce the incidence of colorectal cancers.<sup>146,147</sup>



# What's needed? According to Lancet Health and Climate Commission 2015:

“A sophisticated approach is needed, which draws on the universal desire to tackle threats to health and wellbeing..., in order to motivate rapid action, and a policy framing that is more human than purely environment, technology, or economy focused.”



# We are working to guide policy on climate change and health





FRAMEWORK FOR A  
**NATIONAL STRATEGY  
ON CLIMATE, HEALTH AND  
WELL-BEING FOR AUSTRALIA**

June 2017



## **A high level framework to guide government policy and decision-making**

- Intended to support the development of policy responses to help Australia mitigate and adapt to minimise the threats to health from climate change
- Supports Australia to meet its commitments under the Paris Agreement



# Supporting Organisations







## MEDIA RELEASES

### CLIMATE CHANGE AND HEALTH STRATEGY

April 02, 2019

A Shorten Labor Government will develop Australia's first National Strategy on Climate Change and Health, to address the health impacts of climate change.

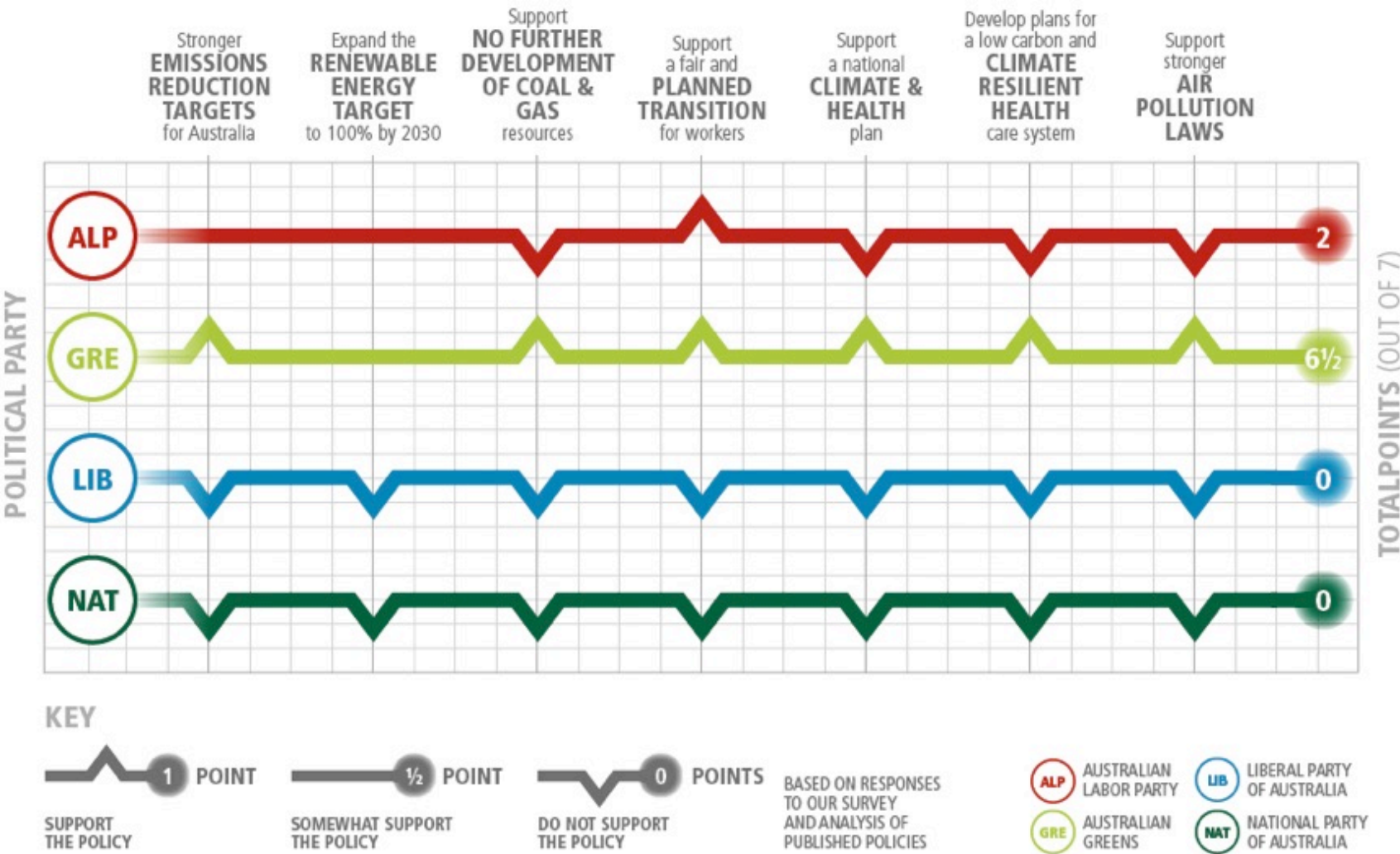
Labor knows that the federal government needs to lead on protecting the health and well-being of Australian communities from the impacts of climate change, and in fulfilling its international obligations under the Paris Agreement.

That's why a Labor Government will develop and implement this Strategy – as we first announced almost two years ago, and confirmed in our National Platform.



# FEDERAL ELECTION 2016

The health of all Australians is threatened by climate change. This election, how can you use your vote to protect communities from climate change and promote a healthier future? We analysed the policies of the main political parties in Australia – and here are the results.





“We all have a choice. We can create transformational action that will safeguard the living conditions for future generations.

“Or we can continue with our business as usual and fail.

“That is up to you and me.”



Swedish climate activist  
Greta Thunberg



# Key messages

- Health impacts of climate change are happening right now – lives are at risk
- We need to take action immediately
- There are many solutions available
- Climate action is good for health
- Vote for #climateaction

