An Australian glossary on Health and Climate Change

February 2021

Introduction

Cross-disciplinary research and collaboration on health and climate change must be enhanced and supported to aid decision making for optimal adaptation and mitigation. An improved, shared understanding of the terminology used in the field enhances the capacity for effective collaboration. The glossary aims to support collaborations on health and climate change by facilitating communication in building cross-sectoral partnerships with research end-users and translating research outcomes into policies and practices in the Australian context.

Target audiences

Researchers from various disciplines who need to collaborate to conduct multi-disciplinary research on health and climate change, and partners and end-users who need to understand and use that research to drive change (e.g. policy, business, and other decision makers).

Glossary Terms	Definitions
1. 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 (CO2) levels rise and the concentration of dissolved CO2 in sea water increases, forming carbonic acid. (Australia State of the Environment)
2. Adaptation / Maladaptation (to climate change)	**Adaptation (to climate change):** 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) **Maladaptation (to climate change):** Actions to adapt to climate change that may lead to increased risk of adverse outcomes. These could include increased vulnerability to climate change, further negative environmental impacts or diminished wellbeing, now or in the future. Maladaptation is usually an unintended consequence. (new proposed definition, adapted from the IPCC's definition)

Glossary Terms	Definitions
3. Air pollution/pollutant	**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) **Pollutant:** A substance that contaminates the air or water. Pollutants can cause problems in ecosystems as well as health problems in humans. (Minnesota Climate & Health Program, Minnesota Dep. Of Health)
4. Anthropocene	The 'Anthropocene' is a proposed new geological epoch resulting from significant human-driven changes to the structure and functioning of the Earth System, including the climate system. Originally proposed in the Earth System science community in 2000, the proposed new epoch is undergoing a formalization process within the geological community based on the stratigraphic evidence that human activities have changed the Earth System to the extent of forming geological deposits with a signature that is distinct from those of the Holocene, and which will remain in the geological record. Both the stratigraphic and Earth System approaches to defining the Anthropocene consider the mid-20th Century to be the most appropriate starting date, although others have been proposed and continue to be discussed. The Anthropocene concept has been taken up by a diversity of disciplines and the public to denote the substantive influence humans have had on the state, dynamics and future of the Earth System. (IPCC)
5. Attribution / Climate change attribution	**Attribution:** The process of evaluating the relative contributions of multiple causal factors to a change or event with an assignment of statistical confidence (IPCC) Climate change attribution: Determination of the change in likelihood and/or intensity of a hazardous weather or climate event, due to anthropogenic climate change and/or natural influences {such as the El Nino-Southern Oscillation phenomena}. An emergent capability in climate science with potential to become operational for real time events in the near future (northern hemisphere)". (new proposed definition).
6. 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)

Glossary Terms	Definitions
7. 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 hazardreduction 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).
8) Capacity building / Coping capacity / Adaptive capacity	**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) **Adaptive capacity:** The ability of systems, institutions, humans and other organisms to adjust to climate change (including climate variability and extremes) to moderate potential damage, to take advantage of opportunities, or to cope or respond to consequences. (IPCC)
9) Carbon accounting / footprinting / Carbon pricing/Carbon tax	**Carbon accounting/ footprinting:** Though carbon accounting/ footprinting covers a wide range of different practices and means different things to different groups of people, it can generally be split into two categories: physical carbon accounting, which looks at quantifying physical amounts greenhouse gas emissions to the atmosphere and financial carbon accounting which looks at giving carbon a financial market value. Physical carbon accounting for example, can be used to help companies and countries work out how much carbon they are emitting into the atmosphere, this is known as a greenhouse gas inventory. Once it has been established how much carbon is being emitted, reduction targets can be set. This method is also important for helping us assign responsibility to different parties for their associated carbon emissions. (University of Edinburgh) **Carbon pricing:** The price for avoided or released carbon dioxide (CO2) or CO2-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) **Carbon Tax:** surcharge on the carbon content of fossil fuels that aims to discourage their use and thereby reduce carbon dioxide emissions, or a direct tax on CO2 emissions. (Pew Research Centre)

Glossary Terms	Definitions
10) 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)*
11) Climate- and eco- anxiety/ grief and Solastalgia	**Climate anxiety/grief:** The anxiety/grief felt in relation to experienced or anticipated losses due to acute or chronic environmental change, including the loss of species, ecosystems, and meaningful landscapes, the losses for future generations, and the loss of cultural connection to the land (particularly for Aboriginal and Torres Strait Islander peoples). (new proposed definition adapted from Cunsolo & Ellis, 2018 - cited in Climate & Mind) **Solastalgia:** A concept developed to give greater meaning and clarity to environmentally induced distress. As opposed to nostalgia (the melancholia or homesickness experienced by individuals when separated from a loved home), solastalgia is the distress that is produced by environmental change impacting on people while they are directly connected to their home environment (Albrecht et al. 2007). Experiences of solastalgia may also involve loss of connection to, and integrity of, one's own place, one's home or Country, as well as the resulting sense of isolation. (new proposed definition, adapted from Albrecht et al., 2007).
12) 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])
13) Climate justice/ equity	**Climate justice:** Justice that links development and rights in addressing climate change, safeguarding the rights of people and other sentient beings, and sharing the burdens and benefits of climate change and its impacts equitably and fairly. (new proposed definition, adapted from Climate Justice building on the definition used by the 2018 Mary Robinson Foundation) **Climate equity:** The principle of being fair and impartial, and a basis for understanding how the impacts and responses to climate change, including costs and benefits, are distributed in more or less equal ways. (new proposed definition, adapted from IPCC)

Glossary Terms	Definitions
14) Climate models	A numerical representation of the climate system based on the physical, chemical and biological properties of its components, their interactions and feedback processes, and accounting for some of its known properties. The climate system can be represented by models of varying complexity; that is, for any one component or combination of components a spectrum or hierarchy of models can be identified, differing in such aspects as the number of spatial dimensions, the extent to which physical, chemical or biological processes are explicitly represented, or the level at which empirical parametrizations are involved. There is an evolution towards more complex models with interactive chemistry and biology. Climate models are applied as a research tool to study and simulate the climate and for operational purposes, including monthly, seasonal and interannual climate predictions." (IPCC)
15) 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)
16) 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)
18) Climate/ Weather	**Climate:** Climate in a narrow sense is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization. The relevant quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system. (IPCC) **Weather:** Condition of the atmosphere at a particular place and time measured in terms of wind, temperature, humidity, atmospheric pressure, cloudiness, and precipitation. In most places, weather can change from hour to hour, from day to day, and from season to season. (Institute of Medicine)
19) Coastal inundation	Inundation is the amount of water that occurs above normally dry ground as a result of flooding. Along the coast, there are a few common sources of inundation including abnormally high tides, storm surge, persistent onshore winds and waves. In rivers and tidal estuaries, runoff from excessive rainfall can provide another source of inundation. The combination of all of these potential factors makes up the total water level. (National Oceanic and Atmospheric Administration)

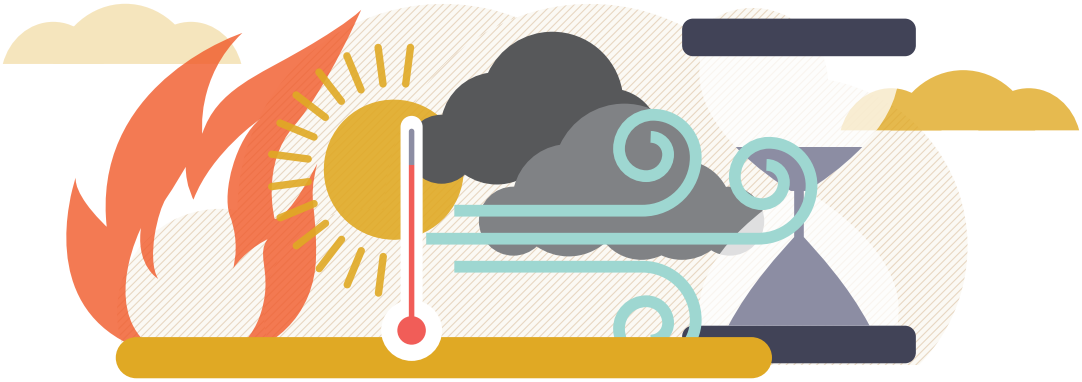
Glossary Terms	Definitions
20) Co-benefits	The positive effects that a policy or measure aimed at one objective might have on other objectives, thereby increasing the total benefits for society or the environment. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits are also referred to as ancillary benefits. (IPCC)
21) Determinants of health	The range of behavioural, biological, socio-economic and environmental factors that influence the health status of individuals or populations. (WHO)
22) 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)
23) 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)
24) Ecological economics (e.g., Doughnut economics)	Ecological economics integrates the study and management of the human economy embedded in society and the rest of nature. The field involves governing economic activity in a way that promotes wellbeing, sustainability and justice. (new proposed definition, adapted from Costanza et al (2020) Sustainable Wellbeing Futures: A Research and Action Agenda for Ecological Economics) **Doughnut economics:** Raworth (2017) conceptualised the Doughnut as a conceptual framework for human wellbeing comprising social and planetary boundaries. The Doughnut combines two concentric radar charts to depict social boundaries (12 dimensions and indicators) and ecological boundaries (nine dimensions and their indicators) within which we need to operate for human health and well-being. The inner boundary is a social foundation, below which lie shortfalls in wellbeing, such as hunger, ill health, illiteracy and energy poverty. The outer boundary is an ecological ceiling beyond which lies an overshoot of pressure on Earth's life-supporting systems, in areas such as chemical pollution, ocean acidification and ozone depletion. (new definition adapted from Lancet publication by Raworth (2017) and a pending publication in Medical Teacher)

Glossary Terms	Definitions
25) 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)
26) Emissions trading scheme	A market-based instrument aiming at meeting a climate change mitigation objective in an efficient way. A cap on greenhouse gas emissions is divided in tradeable emission permits that are allocated by a combination of auctioning and handing out free allowances to entities within the jurisdiction of the trading scheme. Trading schemes may occur at the intra-company, domestic, or international level. (new proposed definition, adapted from IPCC, 2018)
27) 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-1, tonnes kWh-1 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-1 (energy intensity), kWh tonne-1. For buildings, it is often measured as kWh m-2, and for vehicles as km liter-1 or liter km-1. Very often in policy 'energy efficiency' is intended as the measures to reduce energy demand through technological options such as insulating buildings, such as more efficient appliances, efficient lighting and vehicles. (IPCC)
28) 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 CO2 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)

Glossary Terms	Definitions
29) 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)
30) 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)
31) Exposure to climate change	The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected by climate change. (IPCC)
32) 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). (slightly adapted definition from IPCC)
33) 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)

Glossary Terms	Definitions
34) 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)
35) 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 (H2O), carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4) andozone (O3) 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 CO2, N2O and CH4, the Kyoto Protocol deals with the GHGs sulphur hexafluoride (SF6), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). See also Carbon dioxide (CO2), Methane (CH4), Nitrous oxide (N2O) and Ozone (O3). (IPCC)
36) Greenhouse gas emissions/ Anthropogenic 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) **Anthropogenic emissions:** GHGs, precursors of GHGs and aerosols caused by human activities. These activities include the burning of fossil fuels, deforestation, land use and land-use changes (LULUC), livestock production, fertilisation, waste management and industrial processes. (IPCC)
37) Green infrastructure	The interconnected set of natural and constructed ecological systems, green spaces and other landscape features. It includes planted and indigenous trees, wetlands, parks, green open spaces and original grassland and woodlands, as well as possible building and street-level design interventions that incorporate vegetation. Green infrastructure provides services and functions in the same way as conventional infrastructure. (IPCC, building on the definition from Culwick & Bobbins, 2016)
38) Health and wellbeing	A 'state of complete physical, mental, and social wellbeing, 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)

Glossary Terms	Definitions
39) Health emergency (of climate change)	Health emergency: Emergency is a term describing a state. It is a managerial term, demanding decision and follow-up in terms of extraordinary measures. It is usually defined in time and space, it requires threshold values to be recognized, and it implies rules of engagement and an exit strategy. Conceptually, it relates best to Response. (WHO)
40) 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)
41) 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)
42) 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)
43) 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)



Glossary Terms	Definitions
44) 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.
45) 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)
46) Land use, landuse 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-CO2 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 CO2 removals not considered as 'anthropogenic' in some of the scientific literature assessed in this report (e.g., removals associated with CO2 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)
47) Mitigation of climate change	A human intervention to reduce emissions or enhance the sinks of greenhouse gases. (IPCC)
48) 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)

Glossary Terms	Definitions
49) One Health/ Ecohealth	The One Health approach - with its focus on increasing sustainable practices in agriculture and improving the overall health and well-being of humans, animals, and the environment - has the potential to be transformative. By highlighting the ways our current challenges are interconnected, One Health points to the need to tackle human, animal, and environmental health holistically in order to avert future health crises, restore a healthy planet, and sustainably end hunger. (2020 Global Hunger Index: One Decade to Zero Hunger - Linking Health and Sustainable Food Systems) Ecohealth: Ecohealth adopts systems approaches to promote the health of people, animals and ecosystems in the context of social and ecological interactions (Parkes, Waltner-Toews & Horwitz, 2014)
50) 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 Rockerfeller-Lancet Commission)
51) 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 service aim to provide conditions under which people can maintain to be healthy, improve their health and wellbeing, or prevent the deterioration of their health. Public health focuses on the entire spectrum of health and wellbeing, 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)
52) 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)
53) 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).

Glossary Terms	Definitions
54) Urban heat island	Increased temperature associated with a built environment, such as a city or town, with respect to near rural areas. 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)
55) 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 socio-economic 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)

* A searchable mega-database of terms and definitions related to health and climate change from existing glossaries is available, please contact ying.zhang@sydney.edu.au

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The glossary was developed by the Project Team with multiple rounds of researcher and enduser stakeholder engagement. More details of the methodology used and discussion points for some of the terms will be published in a peer-reviewed journal. Link to the publication will be added here when it is available.

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