Climate change and health

Messaging for COP26

A Call for Action to the Health Community

In November 2021, the UK will host the 26th UN Climate Change Conference of the Parties (COP26)

The science is clear: we must urgently scale up action to respond to the threat of climate change to have a chance of limiting warming to 1.5 degrees, and to adapt effectively and increase our resilience

The UK is committed to fulfilling the potential of the Paris Agreement by facilitating a balanced negotiated outcome that accelerates climate action, enables greater ambition, and powers the process forward

The UK is also seeking to bring governments, business and civil society together to accelerate progress on **shared challenges of climate change:** adaptation & resilience, energy transitions, nature, clean transport, and finance. This briefing pack highlights the health benefits of action in those areas

The public health motives for action have a strong science basis and are well evidenced and compelling

We can rise to the challenge by working together, calling for stronger action in our countries, sectors, and professions to ensure the need to protect public health, by countering climate change, is fully recognised and acted upon

What can the health community do?

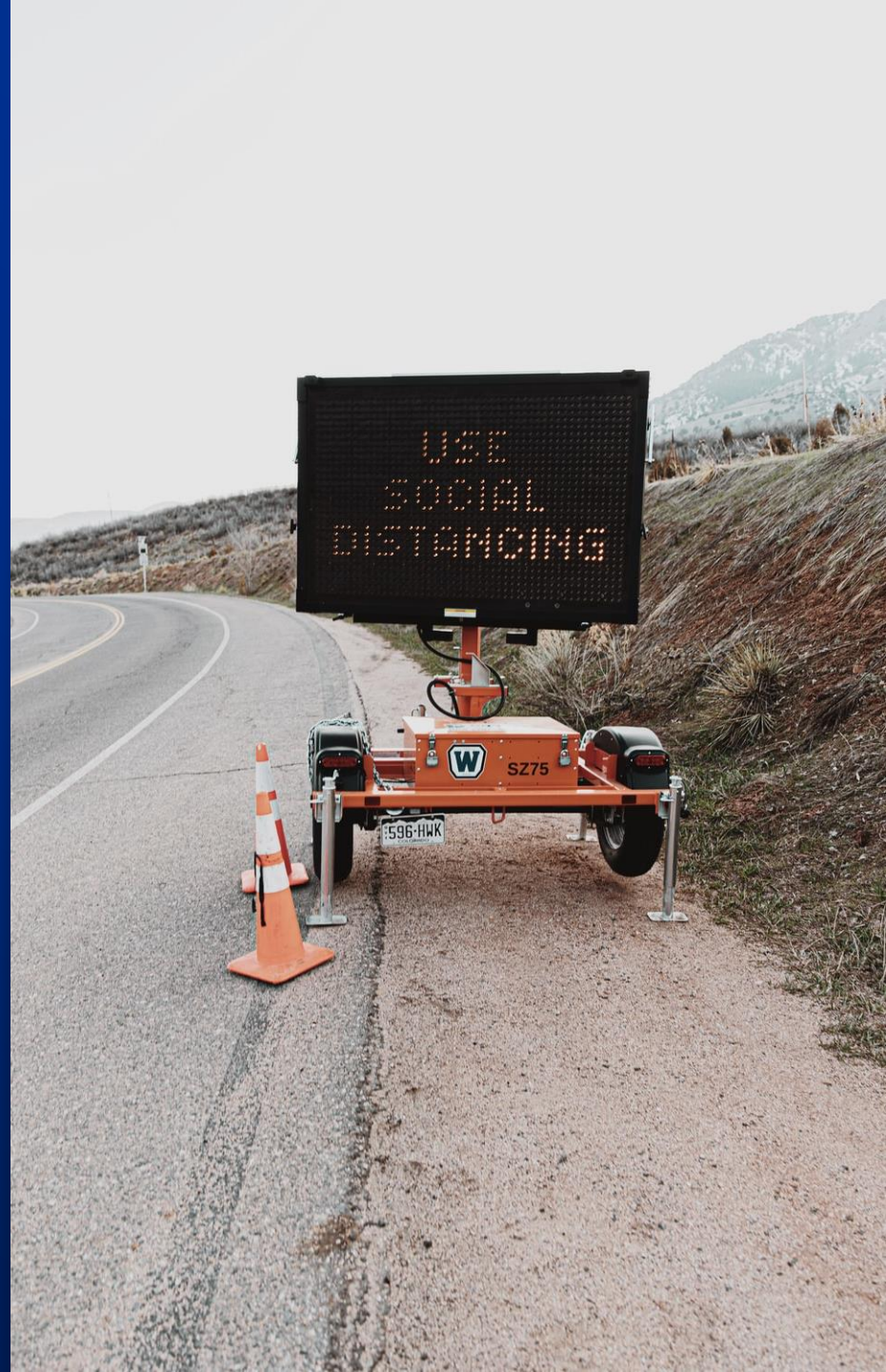
1. **Raise awareness of the significant health threats from climate change**
2. **Offer solutions informed by evidence to avoid the worst impacts**
3. **Highlight the health opportunities of climate actions**

A turning point for our planet and our health

COVID-19 has brought into sharp focus the fragile relationship between society, the economy and health. We owe it to future generations to build our recovery on **solid foundations**

The last year has also demonstrated the need for **resilient health and social care systems**, as well as renewed focus and public support for global health priorities

COP26 provides the opportunity to **unite** on an evidence based path to a zero carbon, resilient and inclusive global economy - building back greener and healthier from COVID-19



Climate change is one of the greatest threats to public health in the 21st century

[1]The effects of increased CO2 levels …

Rising temperature

Rising sea levels

Increasing extreme weather events

… directly influence health outcomes *(examples below)*

Extreme weather events
- Injuries
- Fatalities
- Mental health effects
- Mass migration events

Heat stress
- Heat-related illness and death

Air quality
- Exacerbations of asthma and other respiratory diseases
- Respiratory allergies
- Cardiovascular disease
- Lung cancer

Water quality and quantity
- Campylobacter infection
- Cholera
- Cryptosporidiosis

Food supply and safety
- Undernutrition
- Foodborne diseases
- Mycotoxin effects

Vector distribution and ecology
- Chikungunya
- Dengue
- Malaria
- Encephalitis (various forms)

Social factors
- Physical and mental health effects of violent conflict and forced migration (complex and context-specific risks)

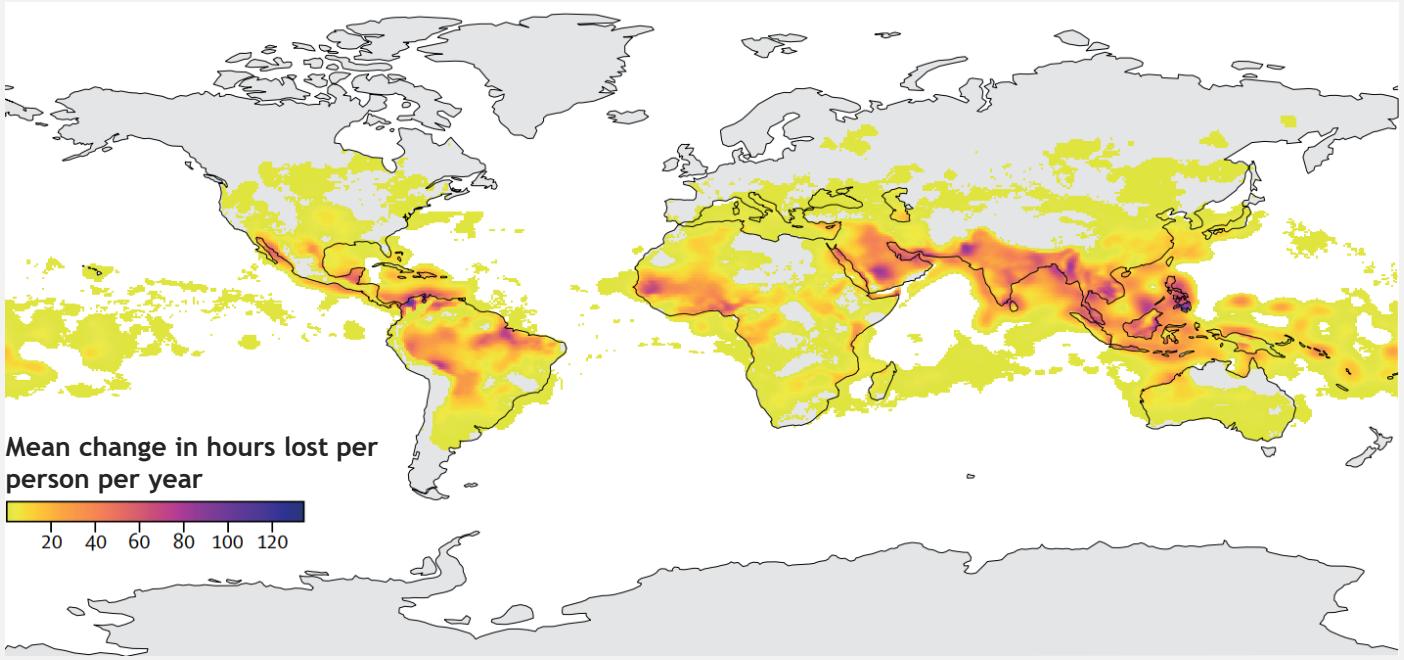
Wildfires
- Injuries
- Fatalities
- Mental health effects
- Displacement

Health outcomes of extreme climate events are compounded by the economic losses

The economic costs of extreme climate events can cause indirect effects on health and wellbeing in the subsequent months to years[2]

- In 2018, **831 extreme weather events** resulted in **US$166 billion in economic losses.** 2017 and 2018 recorded the highest losses since 2005[3]
- Unless emissions are cut, extreme heat exposure could **exceed the limits of physiological tolerance** in some part of the world later this century.[4]
- In 2018, **133.6 billion hours of labour were lost** because of heat alone, 45 billion more than those lost in 2000[3]
- The impacts of such events have the greatest impact on the poorest and least resilient, often in developing countries, and causes increased health inequalities

Labour loss at activity level 400 W, mean change 2000–17 relative to baseline[2]



Health has a role in *both* climate change mitigation and adaptation

Mitigation
"Avoiding and reducing emissions of heat-trapping greenhouse gases into the atmosphere to prevent the planet from warming to more extreme temperatures“

Adaptation
"Altering our behaviour, systems, and—in some cases—ways of life to protect our families, our economies, and the environment in which we live from the impacts of climate change"

- World Wildlife Fund

Mitigation and health

The cost of doing nothing is great…

- The Paris Agreement aims to limit the global temperature rise to well below 2°C, while perusing efforts to limit the increase to 1.5°C above pre-industrial levels
- Modelling indicates that countries' current Nationally Determined Contributions (NDCs), which set out their commitments to reduce emissions, **are not enough to achieve this limit**[5]
- The world is on track for between 3-5°C heating; **immediate action is needed** to limit this warming to 1.5°C[6]
- Health systems are significant contributors to global GHG emissions, and have a leadership role in addressing the impact on health.
- Rising temperature is associated with **higher incidence of noncommunicable diseases** (NCDs)
  - An 11-year study in Burkina Faso showed exposure to moderate or extreme heat significantly increases daily premature mortality from NCDs. Cardiovascular disease accounted for 50% of years of life lost in this study[7]

…but so are the gains from action

1. **Pushing an evidence based health agenda drives ambitious climate policy**
   - Health, wellbeing and other social co-benefits are strong motivators for countries to take more ambitious policy action on climate change
   - For example, a million lives a year can be saved by 2050 through air-quality improvements created by meeting the goals of the Paris Agreement (PA)[8]
2. **Avoided health costs outweigh cost of mitigation and air pollution reduction strategies**
   - The cost of welfare loss from air pollution alone is ~US$5.1 trillion[9]
   - Avoided health costs from meeting PA goals would outweigh cost of the mitigation measures by 2-to-1[10]
3. **Considered mitigation actions combat health inequality**
   - Mitigation efforts that account for the unequal impact on health & society will combat widening health inequalities

Adaptation and health

The cost of doing nothing is great…

The longer it takes to reduce emissions and implement adaptation solutions, the more expensive and disruptive the solutions will need to be

Health systems are key to mitigating the health impacts of climate change, and they themselves are vulnerable to climate change

- In Pakistan in 2010, over 15 million people were affected by flooding, with 6 million requiring urgent medical care. The delivery of this care was hampered given the destruction of over 200 health facilities[7]

The most disadvantaged communities are impacted disproportionately, increasing health inequalities. Existing inequalities exacerbate the impacts of climate change for individuals and communities, limiting their resilience whilst constraining their options to act[11 12]

…but so are the gains from action

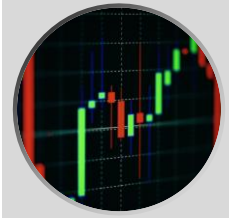
1. **Adapting to the health impacts of climate change supports global health equality and the commitment to Universal Health Coverage. Achieving Universal Health Coverage is also an essential step to improve prospects for adaptation**

2. **Improving the resilience of health and food systems helps shield vulnerable populations from health shocks,** e.g. COVID-19 and future **health emergencies posed by climate change**

3. **By strengthening resilience to climate-sensitive health threats and building adaptive capacity, we will be better prepared to manage the increasing risks of climate change**

COP26 Campaign aims

Bringing countries together to tackle shared climate challenges and accelerate progress towards a zero emission, resilient global economy



	Adaptation and resilience	Energy transition	Clean transport	Nature	Finance
COP campaign aim	Encourage greater political ambition, tools, finance, coordination and commitments to support practical adaptation and resilience action	Seize the opportunity of rapidly falling renewables and storage costs to accelerate zero-carbon transition	Accelerate the transition to zero carbon road transport by phasing out petrol and diesel engines	Protect and restore our natural habitats and ecosystems on which our climate, air, water and way of life depend	A green transformation of the financial system so that all countries have access to funds for climate investment
Health aim	Build climate resilient health systems, and support adaptation in food systems, water and sanitation, transport and energy systems	Guide a rapid transition to clean renewable energy, to save lives from air pollution, particularly from coal combustion. Ensure energy security for health facilities and decrease energy poverty.	Promote sustainable, healthy urban transport systems, including active and public transport, and the rapid phase out of petrol and diesel engines	Protect and restore nature and ecosystems, the foundations for healthy lives and sustainable livelihoods	Invest in climate-resilient health systems. Value health gains from carbon mitigation and adaptation policies, fossil fuel-subsidy reform and carbon pricing

Action on finance underpins all other COP campaigns

Adaptation & Resilience

Adaptation & resilience and health

Even if we stopped emissions rising today, the world would **still need to deal with the consequences of climate disruption**

Impacts are already being felt across the world, with the **climate vulnerable communities hit the hardest**

Existing inequalities exacerbate the **impacts of climate change for individuals and communities**, limiting their resilience whilst constraining their options to act.

Climate adaptation is crucial, and **includes strengthening the resilience of health and food systems, water and sanitation sectors amongst others- *urgently***

Through the COP 26 Presidency we will push for greater political ambition, tools, finance, coordination and commitment to support **practical adaptation and disaster preparedness/response**

Success will require coordination, collaboration and shared learning across scales, sectors and cultures

The Presidency will deliver on 3 A&R priorities

Better availability and access to finance for A&R

- Increased public finance for A&R consistent with the Paris Agreement and Addis Ababa Action Agenda, working with donor countries & multilateral development banks
- Shift of private finance towards climate-resilient infrastructure and support for threatened communities

Tangible progress on the UN Climate Action Summit (UNCAS) Call-for-Action commitments

- The UNCAS Call for Action[1] has been endorsed by 118 countries and 86 institutions and organisations, acknowledging that more must be done on A&R
- The Presidency will put the pledge into practice by driving action on the ground

Better preparedness for, and response to, climate disasters

- Renewed efforts and financing for Disaster Risk Reduction and preparedness. This includes early warning systems, and capacity to act on the risks identified

- Currently, just 0.5% of climate finance goes to health projects

- Technical and financial support for public health is essential for climate-resilient health systems

- Integrated resilient health and nutrition systems will be an important component of the Risk-Informed Early Action Partnership (REAP)

Note 1: UNCAS Call for Action aims to facilitate strengthened government, business and civil society support for vulnerable communities whilst building a resilient future for all people, environment and economies

Why climate A&R is critical for health

Water security for 80% of the global population is under threat[13]

25% of global health care facilities already lack basic water services and 20% have no sanitation service[14]

Thousands of health centres across low- and middle-income countries are not connected to the grid and lack electricity[15]

At +1.5°C warming, 350 million more people will be exposed to deadly heat stress by 2050[13]

Health equity | Exposure to, and poor outcomes from, climate emergencies are often greatest for the poorest and most threatened communities. Building resilience to climate events reduces health inequality. Existing inequalities can also be exacerbated, for example, women and children are 14 times more likely to die during climate-related disasters[16] and people with disabilities are more severely impacted by them[12].

Robust health systems | Health systems must be well-adapted to deliver a coordinated, all hazards, multisectoral response to extreme events whilst maintaining day-to-day services

Well-nourished populations | Climate change threatens food security. Well-nourished people are better able to escape poverty, adapt to climate change, and contribute to the economy

Secure borders & global cooperation | Resource scarcity may provoke mass migration and population displacement, straining global cooperation. Food security and access to safe drinking water helps mitigate this

Local Leadership | Close collaboration with impacted communities on adaptation and resilience will ensure locally effective solutions that address the right challenges, and that support and build upon local leadership and community strengths

What can we do to support health and A&R?

Invest in climate-resilient health systems

Develop a **national health & climate change plan** based on a sound understanding of the climate vulnerabilities of health systems

Integrate health into all hazards multisectoral policy and planning for disaster preparedness and response

Invest in climate-resilient food systems for healthy diets

Enable and incentivise shifts towards **sustainable food supply chains and more nutritious crop and food choices** which deliver on both climate & environment and health & nutrition outcomes

Secure greater share of climate funding

Currently, only 0.5% of multilateral climate finance is allocated to health projects[7]

Significant investment is needed to develop early-warning systems, build adaptive capacity in health and food systems, provide WASH[2], progress climate-health research, and support mental health

Develop multi-sectoral all-hazard plans

Integrate **risk reduction and early-warning / response systems** for health emergencies, ensuring integration into national action plans

Develop **heat-action plans** that provide early alerts, combined with emergency public health measures to reduce heat-related morbidity and mortality

Encourage support for the REAP[1]

The REAP initiative was launched at UNCAS[3] last year

REAP includes a target (by 2025) to **cover 1 billion more people with improved early warning systems**, including for health and nutrition systems, connected to longer-term risk management and public awareness campaigns

Note 1: REAP = Risk-Informed Early Action Partnership 2: WASH = water, decent sanitation and good hygiene 3: UNCAS = United Nations Climate Action Summit

Energy Transition

Energy transition and health

Global emissions from coal are ~45% of total CO2 emissions and it is the most polluting source of energy. Transition to renewable power is underway and the market is moving fast, but the **transition must accelerate** to keep warming well below 2°C

Burning fewer fossil fuels reduces pollution, and offers immediate and local benefits for society and the economy

Health professionals can support the campaign by;

- **raising awareness** to governments and the public of the health implications of coal power and other fossil fuels;
- **advocating** for the phase out of coal and the adoption of renewable sources of energy which also help to reduce human exposure to air pollution, and **joining the Powering Past Coal Alliance**

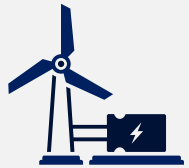
The energy transition campaign has 4 elements

Phase out coal power

Engaging key countries to join the Powering Past Coal Alliance and commit to coal phase out, with developed countries taking the lead

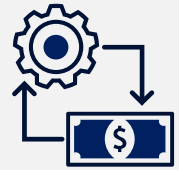
Reduce int'l coal financing

Pushing back on international coal finance



Present attractive clean-energy offer

Multilateral Development Banks (MDB) and donors supporting developing countries to increase use of renewables, reduce new coal pipeline projects and initiate a moratorium on coal



Support a Just Transition

Establishing financial and technical assistance to support a just transition away from existing coal

Health impacts of poor air quality

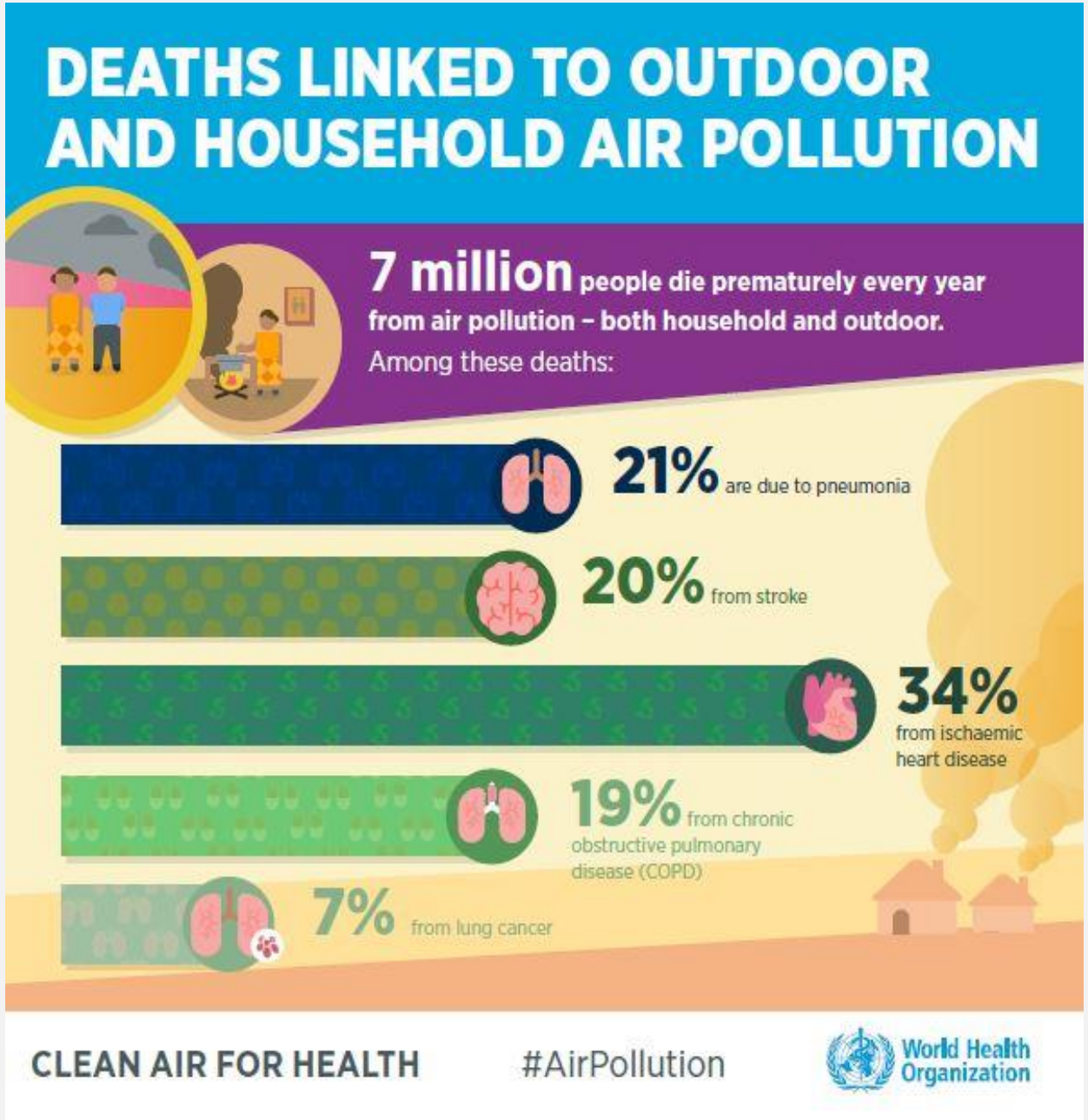
Air pollution is a major environmental risk to health. Burning fossil fuels is a major contributor to deaths from air pollution[3]

3.6 M

A recent study estimates that burning fossil fuels leads to about **3.6 million premature deaths** annually from ambient air pollution. These could potentially be prevented by decarbonisation[17]

$5.1 T

of welfare losses globally attributable to exposure to air pollution[9]



What can the health sector do to combat emissions & poor air quality?

We can support and advocate for the phase out of fossil fuels to improve air quality

- **Raise awareness among policy makers** and improve understanding of the impact of poor air quality on health
- Advocate for countries to consider the WHO guidelines for fine particulate matter and **commit to setting ambitious targets**
- **Lead by example in reducing their** emissions. Health systems themselves are major global contributors to emissions (4.4% of global emissions), and therefore to poor air quality

- NHS England has set an ambitious target for the health service to reach net zero emissions by 2040[18]
- The NHS aims to reach an 80% reduction by 2028 to 2032 for emissions they control directly
- For emissions they can influence, they have set an ambition for net zero by 2045 and an 80% reduction by 2036 to 2039

Net zero by 2040

What are the benefits of fossil fuel phase-out?

Reduced cost

In China, renewables 33% cheaper than coal by 2030

In the US, renewables 25% cheaper than gas by 2030

Reduced air pollution

A worldwide fossil fuel phase-out, with adoption of healthy alternative fuel sources would prevent >3 million premature deaths from air pollution per year

The health gains of meeting the Paris climate agreement would be approximately twice the cost of the policies – with the largest gains expected in China and India

Energy resilience

Renewables can improve energy access e.g. through off grid solar and resilience of power systems via decentralisation

Climate-resilient and environmentally sustainable healthcare facilities reduce vulnerability to climate impacts and ensure health coverage

Energy security

Renewables can help reduce countries' reliance on imported fossil fuels & reduce energy poverty

Sources: 17, 7

Clean Transport

Clean transport and health

Cleaning up road transport is a priority campaign for COP26. Emissions from cars and vans make up ~7% of the global total, and this is increasing

To meet the goals of the Paris agreement, there needs to be a **rapid global shift to zero emission vehicles (ZEVs)**. Benefits include cleaner air and better energy security

We will use our COP26 Presidency to bring together countries, states, industry and businesses to **make all new cars zero emission by 2040**

Health professionals can **advocate for the health benefits of active travel, such as walking and cycling, use of public transport and** urban and regional planning that support safe walkable, bikeable and well connected cities

Health professionals can support by **educating on the health benefits of ZEVs** in situations where cars and vans are needed: in short, improved air quality leads to improved respiratory and cardiovascular health

Zero Emission Vehicles (ZEVs) will accelerate the transition to a net-zero society

The commitments this campaign is targeting …

Governments: 100% of new car sales ZEV by 2040 or earlier

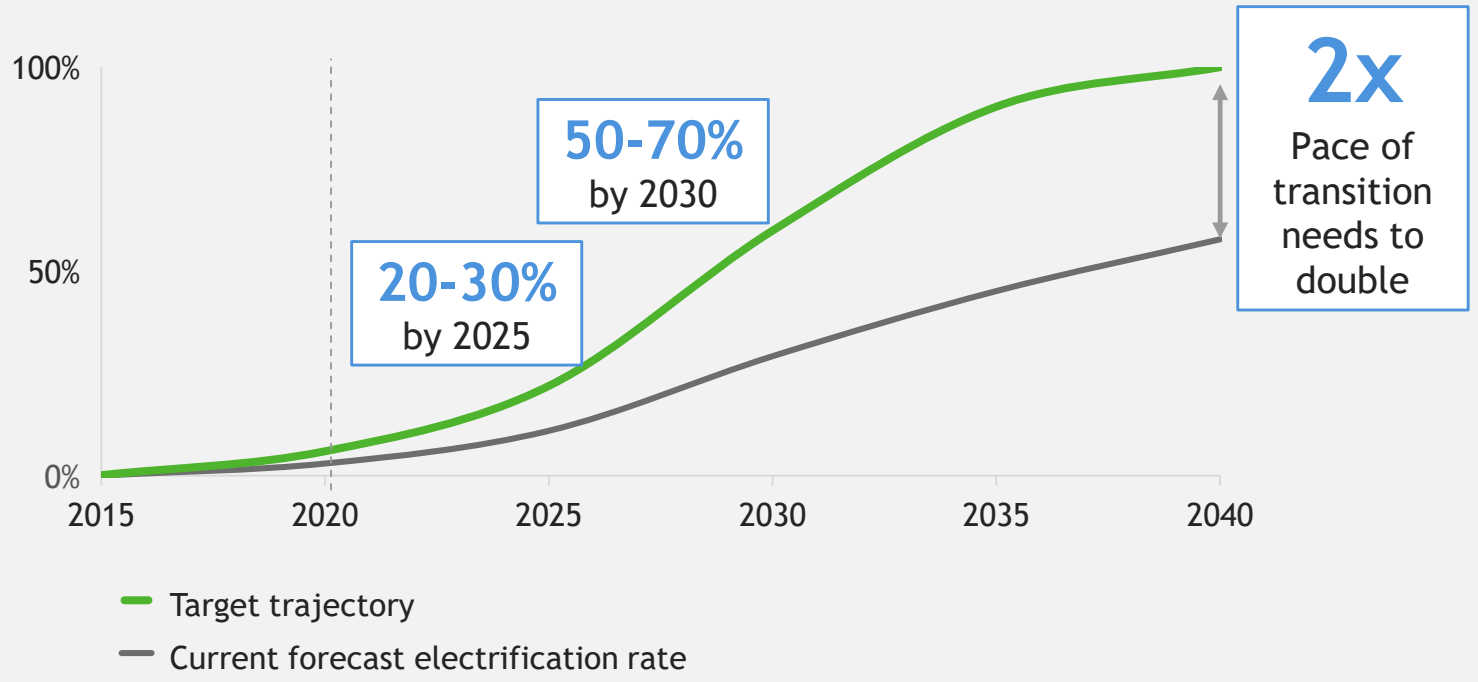
Cities: incentivise and procure ZEVs and deliver supporting policies and city planning

Manufacturers: 100% of cars produced being ZEV by 2040 or earlier

Businesses: 100% ZEV fleets by 2030 or earlier and cleaner transport options

… will help to double the pace of the global transition to ZEVs

Zero Emission Vehicle Share of global light duty vehicle sales[19]



Health impacts of road transport

Pollution and poor air quality

Vehicle exhausts emit nitrogen oxides (NOx), particulate matter (PM10 and PM2.5), sulphur oxides (SOx) and carbon monoxide (CO).

These pollutants can cause a **wide variety of health problems**, e.g. lung cancer, COPD[1], cardiovascular disease, and exacerbation of asthma

Fuels used for transport produce >50% of the NOx emitted globally and a substantial proportion of PM, both are significant threats to health[3]

Physical inactivity and obesity

Physical inactivity contributes to approximately **5 million deaths/year**[20]

Physical activity not only improves health in the long-term via reduced emissions but it also reduces incidence of disease associated with physical inactivity

Cycling can lower risk of premature death by 28%[21]

In the Netherlands, **cycling prevents ~6,500 deaths each year**, and increases life expectancy by 6 months, equivalent to >3% of the Dutch GDP[22]

Other public health concerns

- Road traffic injuries and deaths
- Cardiovascular and respiratory health from air pollution and inactivity
- Noise pollution contributing to stress and lack/disruption of sleep
- Mental health and health inequalities, such as increased social isolation from private transport reliant connectivity

Supporting the switch to cleaner transport has clear benefits

Healthier populations

Active transport, e.g., walking and cycling, is zero emission, and has major health benefits, such as reducing the risk of many chronic health conditions and improving mental health and wellbeing

Equitable mobility

Accessible, affordable and zero-emission public transportation can make mobility more inclusive

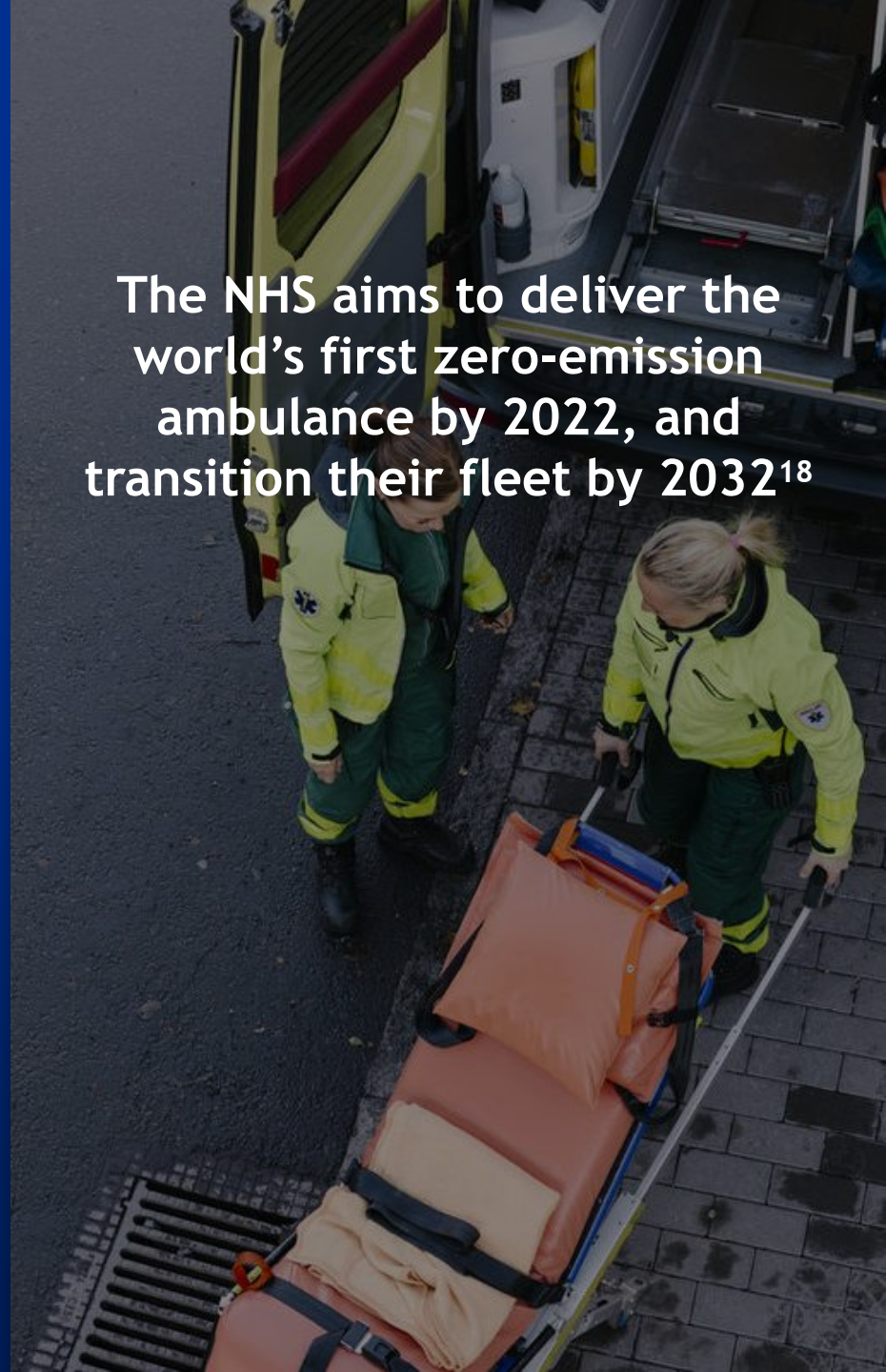
Electric bicycles make cycling a feasible option for those with poorer physical health, and for longer journeys

Resilient cities

By 2050, ~75% of the world population will be living in urban areas

Cities with a strong focus on public transport and high walkability will be more accessible and provide a healthier living environment

The hyper-connected '15-minute city' may become the new normal[23]



The NHS aims to deliver the world's first zero-emission ambulance by 2022, and transition their fleet by 2032[18]

Nature

Nature and health

Current land use, e.g. agriculture & forestry, contributes 23% of global emissions. However, land and coastal ecosystems could provide up to **one third of target emissions reduction**

Nature-based solutions (NBS) to climate change support adaptation, mitigation, biodiversity, and health. We will:

- Collaborate with producers and consumers of forest-risk commodities to **protect forests while supporting development and trade**
- Reorient public policy to incentivise **sustainable agriculture which delivers healthy diets with lower emissions**
- **Scale-up finance** for all forms of NBS

Health professionals can support the Nature campaign:

- Raise awareness that **biodiversity safeguards healthy ecosystems** which, in turn, offers essential services for our health, livelihoods and wellbeing
- Educate on **cross-sectoral integrated approaches** to minimise the risks of disease and disasters
- Promote healthy and **sustainable dietary choices**
- Advocate NBS for **health co-benefits of access to nature** in both urban and rural areas

The COP26 Nature campaign will focus on five priorities

Collaborate with agricultural producer and consumer countries on **sustainable land use**. Agree actions that both curb agriculture's effect on carbon-rich ecosystems and promote sustainable production

Deliver increased, and more sustainable, **finance for NBS**

Secure **political commitment to concrete actions on nature** at COP26. This should build on and complement what was agreed at the Biodiversity 15th Conference of Parties in 2020

Build on the work of the Just Rural Transition initiative to encourage **sustainable resilient agriculture**

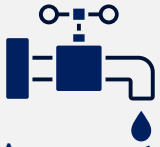
Increase **ambition and awareness of the ocean's role in climate change** and potential of marine ecosystems for adaptation and mitigation

Nature and health are intimately connected

All aspects of human health, wellbeing and our livelihoods depend on the goods and services provided by the ecosystem

Food systems and nutritional security

- Biodiversity plays a crucial role in human nutrition through its influence on the food system. Access to sufficient, nutritious and varied foods is a fundamental health determinant
- Food systems unable to support accessible and affordable healthy diets lead to over- and under-nutrition, diminishing climate change resilience
- Dietary risk factors such as excess sodium and low intake of whole grains, fruit and vegetables account for 11 million global deaths per year[24]
- Food systems are responsible for 19-29% of emissions, 40% of land-use and 70% of fresh water use



Access to clean water

- Water is essential for the protection of biodiversity and human health and wellbeing
- Pressures on water supply from industry, agriculture, aquaculture, forestry etc. impact both the ecosystem and human health
- Unsustainable agriculture hinders local food production and sanitation
- 2 billion people live in areas facing high water scarcity and this is expected to double by 2050
- ~768 million people (mainly from low/middle income countries) rely on contaminated water supplies leading to water-borne and water-related diseases[25]

Incidence of infectious diseases

- Changes to the natural environment, including (but not limited to) land-use, vegetation, oceans and biodiversity, are important factors in changing infectious disease risk
- ~60% of emerging infectious diseases (EIDs) are zoonoses[1] with the majority of these originating in wild animals[26]
- Climate change may also lead to changes in the spread of vector-borne diseases, e.g. deforestation and associated environmental changes have been hypothesised as the key drivers of the zoonotic malaria species *Plasmodium knowlesi* in Malaysian Borneo[27]

Note 1: Zoonoses are infectious diseases that are naturally transmissible from vertebrate animals to humans

An integrated approach to health and nature

- An integrated approach recognises that the health of people, animals, and the environment are closely connected. This is sometimes known as ‘One Health’ or ‘Planetary Health’
- Protecting biodiversity can stabilise ecosystems, prevent outbreaks of infectious disease, and support development progress, nutritional security, protection from natural disasters and help tackle the challenges of antimicrobial resistance and non-communicable diseases
- The health sector must work with governments, indigenous communities and a range of other sectors e.g. food and nutrition, urban planning, environment, transport and animal health

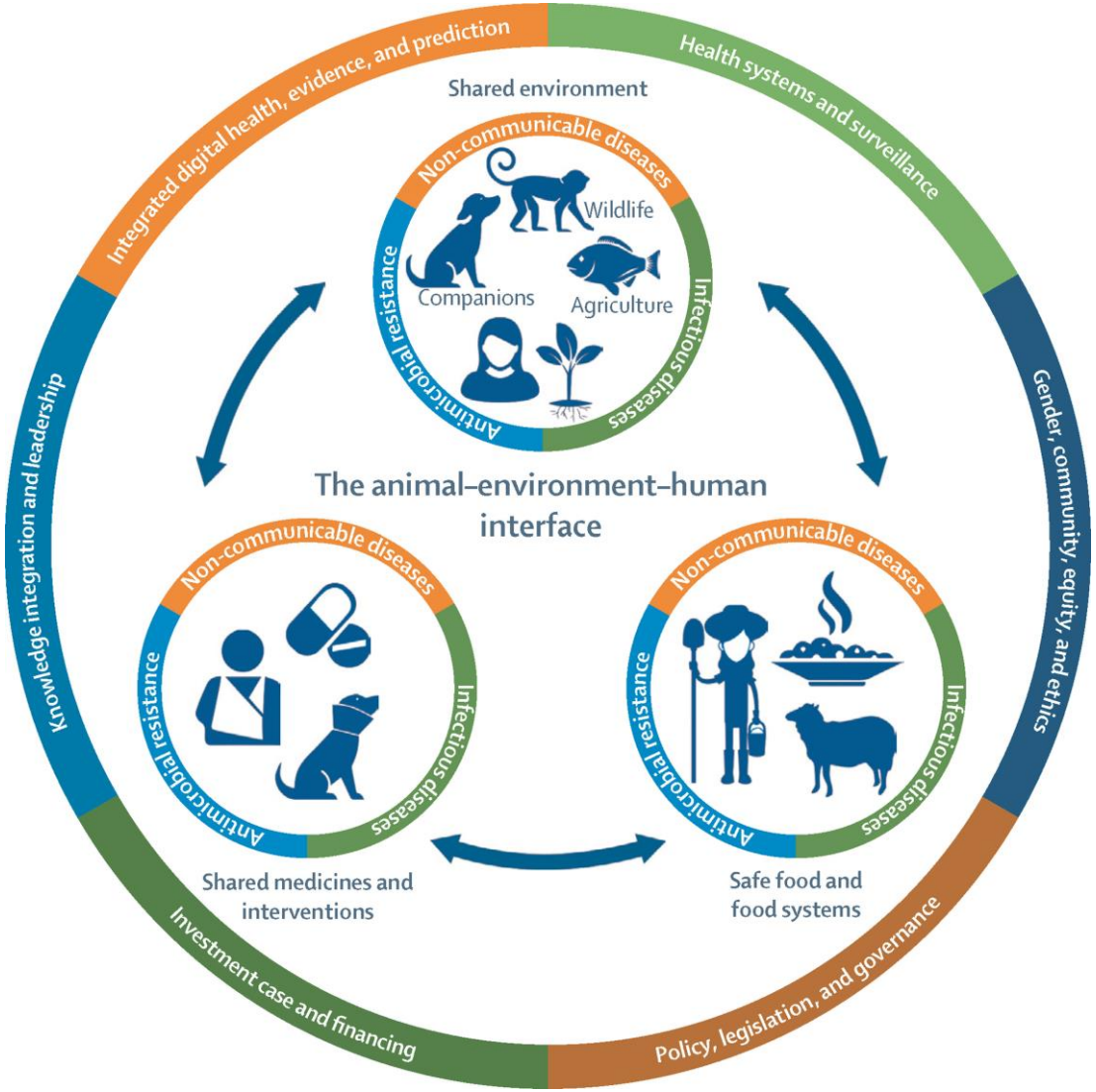


Figure from 'Reconnecting for our future: The Lancet One Health Commission. Amuasi et al. The Lancet, Volume 395 Issue 10235 Pages 1469-1471 (May 2020)

Nature-based solutions can support health and wellbeing

The promotion of nature based solutions and biodiversity deliver health benefits and provide a rationale for the conservation and sustainable use of biodiversity, as well as the fair and equitable sharing of benefits

Mental, physical and cultural wellbeing

Exposure to greener environments, including bodies of water, promotes good mental and physical health, and aids recovery from illness

Biodiversity and nature are often central to cultural-wellbeing[25]. Indigenous peoples are also stewards of 80% of the world's remaining biodiversity[28].

Healthier urban environments

Urbanised areas experience higher temperatures than outlying areas – the 'heat island'[1] effect. Vegetation in urban areas can reduce heat-related mortality[29]

Appropriate urban planning, prioritising access to nature, and enabling physical activity is essential for healthy populations

Suppression of new infectious diseases

Risk of infectious diseases, including zoonotic, vector-borne and newly untreatable infectious diseases, can be reduced through improved:

- surveillance of infectious diseases in wildlife and humans;
- management of human-animal contact;
- prevention of spread of invasive species; and
- avoiding ecosystem degradation.

Robust food and water systems

Resilient, sustainable food systems protect nature and prevent the health effects of both over- and under-nutrition, as well as reducing impact on emissions

Protecting terrestrial and freshwater ecosystems supports the regulation of nutrients and erosion of soils. They also play a role in managing pollution

Note 1: Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun's heat more than natural landscapes such as forests and water bodies (www.epa.gov)

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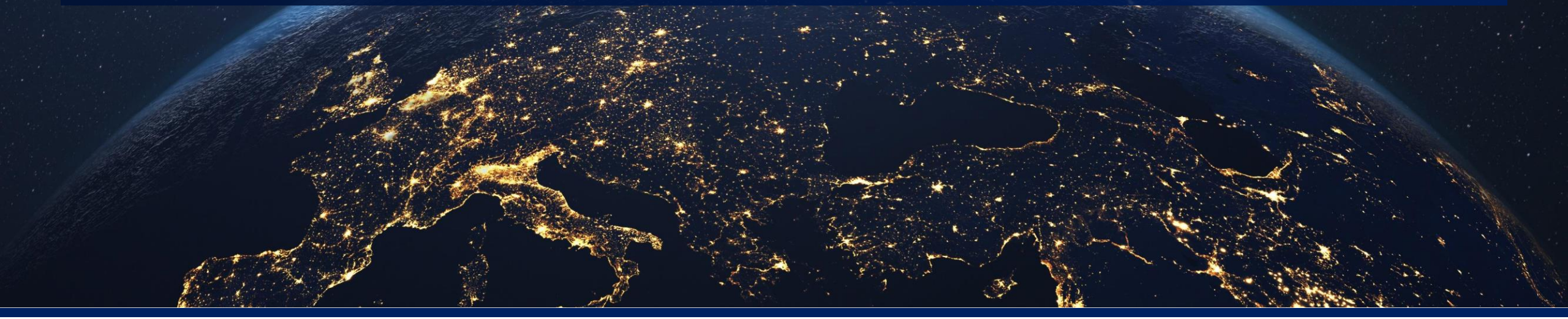
THE GLOBAL CLIMATE & HEALTH ALLIANCE

Coordinated action across the five COP26 campaigns can unite the world on a path to a zero carbon, resilient and inclusive global economy. The public health motives and subsequent health benefits of action are evidenced and compelling and we owe it to future generations to build a health inclusive recovery on solid foundations.



UN CLIMATE CHANGE CONFERENCE UK 2021