wbcsd

Healthy planet, healthy people

Understanding the relationship between human health and natural systems

Deloitte.

Contents

1. Executive summary 2
2. Introduction 3
3. What are the links between the health of the planet and the health of people? 6
   - Non-communicable diseases 8
   - Infectious disease 9
   - Malnutrition 10
   - Mental health 11
   - Migration & displacement 11
   - Recommended reading 12
4. How should business be using this information? 13
5. Conclusion 19

Annex: some key definitions 20

1. Executive summary

Human activities are driving fundamental changes to the biosphere and disrupting many of our planet's natural systems. There is increasing scientific evidence that the unfolding climate crisis, global pollution, unprecedented levels of biodiversity loss, and pervasive changes in land use and cover threaten nearly every dimension of human health and wellbeing.

As the planetary emergency continues to unfold, a litany of health risks look set to place an ever-growing burden on health systems, societies and economies worldwide. These risks include significant rises in malnutrition, infectious and non-communicable diseases, migration, displacement and conflict, and negative mental health impacts.

Until now, the objective of mitigating greenhouse gas emissions and reducing environmental footprints – meaning better managing business impacts and dependencies on nature and climate – has driven business action on climate and nature. While this objective remains an imperative, there has been little effort to inform this objective with the health implications of human-caused damage to natural systems. Recent developments show that the intrinsic link between the health of people and the health of the planet is quickly moving to the forefront of dialogue on sustainability.

This white paper seeks to unpack the relationship between human health and natural systems, outline the health implications of climate change and nature loss, thereby clearly showing that the planetary crisis is also a health crisis. It provides guidance on how businesses from a wide range of sectors can use this information to drive accelerated climate, nature and equity action. Specifically, it aims to make the case that by integrating health into business decision-making, companies have the opportunity to bridge the environmental and social domains of sustainability and build long-term business resilience in the face of an ever-growing burden of disease that looks set to threaten societies and economies now and in the future.

2. Introduction

The planet is in crisis because human activities are driving fundamental changes to the biosphere and disrupting many natural systems. Factors such as the unfolding climate emergency, widespread pollution, unprecedented levels of biodiversity loss, and pervasive changes in land use and land cover are altering the foundational conditions needed to live healthy lives. As a result, the global burden of disease is rising and the health of people is severely compromised.

"An estimated 12.6 million people die each year from health issues associated with an unhealthy environment" – World Health Organization (WHO)[1]

Evidence is constantly emerging showing that the planetary crisis is also a health crisis. More people are suffering from heart disease, heat stress, asthma, malnutrition and infectious diseases like malaria and dengue fever than ever before in history. There are higher rates of eco-anxiety, leading to depression and stress, particularly among younger generations.[2] In addition, the impact of environmental degradation on human health disproportionately affects the most vulnerable in society, adding to the challenges of mounting inequality.

In the past there was a tendency to overlook the relationship between the health of people and the environment although it is visible everywhere.

The rapidly growing field of planetary health is providing the scientific evidence behind the relationship between the environment and human health, as well as the urgent actions needed to secure a livable and equitable future. It provides a new lens through which to identify ways to step up ambitious action on climate and nature and deliver co-benefits for human health.

The inextricable link between the health of people and the health of the planet is quickly moving to the forefront of dialogue on sustainability and has proven to be a useful climate action accelerator. Over the last few months, there has been an outcry for change from healthcare professionals and the wider health community worldwide who are experiencing the overwhelming impacts on the front line.

Figure 1 shows how the appreciation of the planetary crisis as a health crisis continues to gain considerable momentum.

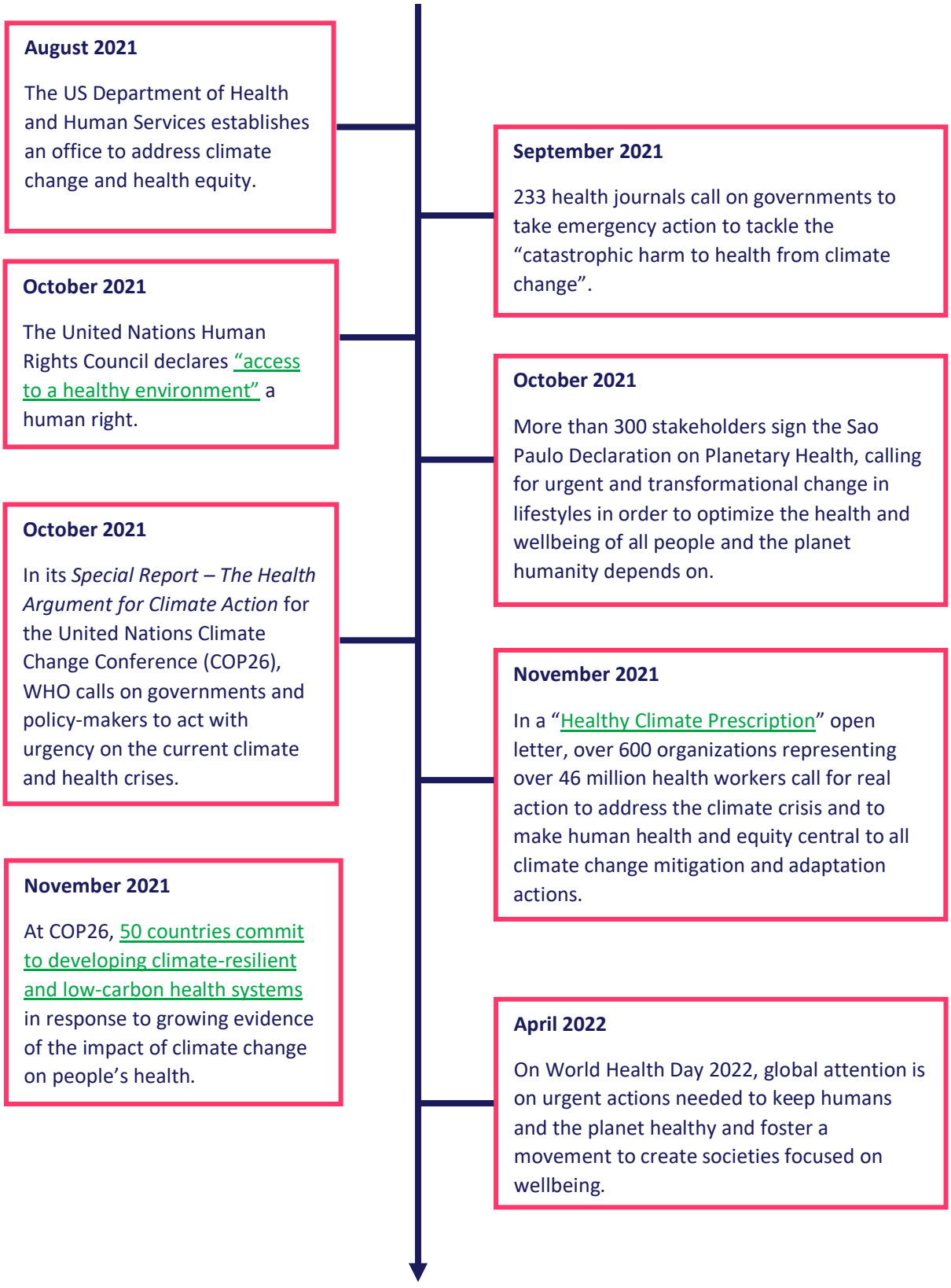
The COVID-19 pandemic has helped to shine a light on this public health emergency and has provided a sharp reminder of the critical importance of health and wellbeing as the bedrock for prosperous societies and economies around the world, as well as humanity's interconnectivity with the natural world. Even if the pandemic is seemingly coming to an end, pressures on planetary health continue to rise and so too does the potential for similar health emergencies to occur in the future. It is imperative not to fall back on the progress made and to keep the momentum for health to be part of the conversation.

The message is clear, it is no longer possible to see the health of the planet and the health of the human population as disconnected. A global movement is essential and growing quickly. Businesses play a crucial role in leading impactful action, advocating for change and communicating with their stakeholders.

Together with a cross-sectoral coalition of 23 leading companies, under the umbrella of WBCSD's Healthy People, Healthy Business project, we explored the relationship between human health and natural systems. This white paper provides guidance how understanding this link can help businesses:

- Strengthen the S in ESG (environmental, social and governance) and overcome silos between the environmental and social components of sustainability,
- Drive added value and impact on sustainability agendas – accelerating action on climate, nature and equity – generating co-benefits for people and planet,
- Future-proof the business and secure their long-term license to operate.

Figure 1: Health is increasingly shaping the conversation on climate and nature, driving a global movement



3. What are the links between the health of the planet and the health of people?

Experts expect the global burden of disease, in particular non-communicable diseases (NCDs), infectious and nutritional diseases and mental health, to significantly increase over the coming years. A wealth of scientific evidence points to environmental impacts on health being a key driver of this trend:

- **Air pollution alone is responsible for nearly 9 million deaths each year worldwide as a result of stroke, heart disease, pulmonary disease, lung cancer and other respiratory infections.[3,4]**
- **Between 2030 and 2050, WHO expects climate change to cause 250,000 additional deaths annually from malnutrition, malaria, diarrhea, and heat stress.[5]**
- **Since 2010, weather-related emergencies have forced an average of 21.5 million people a year to move;[6] estimates suggest that climate change could displace as many as 1.2 billion people by 2050.[7]**

Figure 2 visualizes the chain of reactions leading to an ever-growing burden of disease. It shows how human activity drives significant environmental shifts, including climate change, nature loss and pollution, and how these environmental changes are compromising the foundational conditions for human health – including safe air and water quality, nutritious food, protection from infectious diseases, and extreme weather events.

Businesses rely and depend on thriving natural systems and healthy people. While good health drives economic growth, the lack thereof represents existential threats as forcefully evidenced throughout the COVID-19 pandemic.

Figure 2: Planetary Health Framework – Visual representation of the relationship between human activity, environmental degradation and the impacts on human health

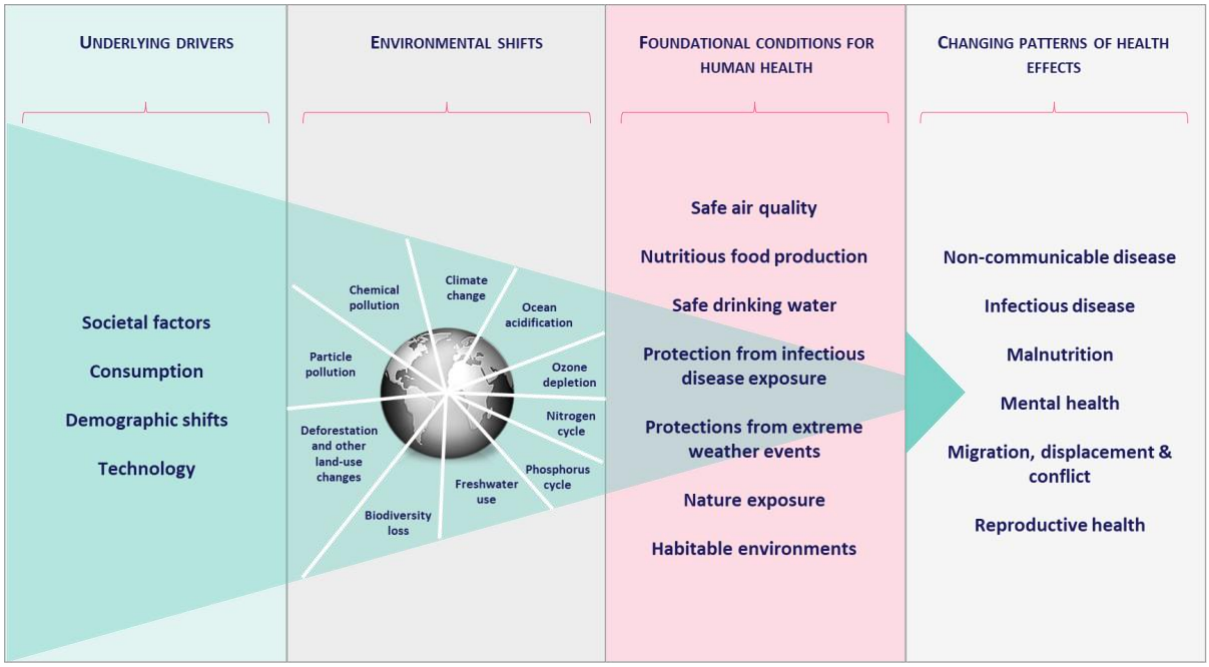


Figure 2 is an adapted representation of the Planetary Health Alliance Framework.[8]

It incorporates the Stockholm Resilience Centre's planetary boundaries concept to highlight environmental shifts caused by human activity. Transgressing one or more planetary boundaries risks causing irreversible changes or catastrophic consequences for life on Earth.

The planetary health framework focuses the many individual conversations and activities about climate, biodiversity, oceans, global food systems and pollution into a single discussion about the survival of humanity and all life on Earth, with an emphasis on social justice. It addresses the scale and urgency of both the current societal challenges and the solutions needed to achieve a livable future.

PLANETARY HEALTH ALLIANCE

Established in 2016, the Planetary Health Alliance is a consortium of over 300 universities, non-governmental organizations, research institutes, and government entities from around the world committed to understanding and addressing global environmental change and its health impacts. Planetary health is a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth.

While there has been a tendency to overlook this relationship between the human-caused damage on natural systems and the effects on the foundational conditions for human health, understanding the links presents a significant opportunity to accelerate action to tackle climate change, nature loss and mounting inequality.

There are both direct and indirect risks to human health from the destruction of the planet's natural systems. Direct impacts may be immediate, such as mortality through heatwaves, droughts and natural disasters, or they may emerge over time, such as cardiovascular and respiratory diseases exacerbated by climate change and pollution. Indirect impacts can also be devastating, for example reduced nutritional value of crops due to changes in temperatures leading to malnutrition or migration, or displacement leaving people in dangerous environments as they move away from homes impacted by environmental shifts.

We explore a few examples of health implications driven by the planetary crisis and outline consequences for business and society that are gaining increasing understanding.

Non-communicable diseases

Non-communicable diseases (NCDs) are chronic illnesses that account for 72% of deaths globally. This proportion is growing as the effects of climate change and nature loss exacerbate NCDs.[9] The main NCDs are cardiovascular disease (e.g., heart diseases, heart attacks and strokes), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease (COPD) and asthma), as well as diabetes. There is growing evidence of the ways in which recent planetary changes are impacting these diseases. For example, warmer temperatures associated with climate change are increasing the formation of ground-level ozone, a main constituent of smog and contributor to many cardiorespiratory diseases. Air pollution also has a significant impact on health and is accelerating NCD mortality rates, contributing to an estimated 8.9 million deaths every year.[10]

Zoom in on heart disease

Heart disease is the leading cause of death globally, with one death in the US every 36 seconds.[11] Estimates suggest this cost the US economy USD $363 billion in 2017.[12] Studies show a link between environmental factors, such as air pollution and climate change, to an increase in the number of heart disease cases and a worsening of the symptoms of those already diagnosed. If the world remains on its current trajectory, a rise in temperatures of 1.5°C[13] will dramatically increase the incidence of heart disease-related illness, with 40% of Americans predicted to be living with heart disease[14] and an increasing percentage of working age people suffering from the disease by 2030. This in turn could cost the US economy over USD $1 trillion per year.[15] Other studies suggest that for every 1°C increase in temperature, there is an associated increase of around 4% in heart disease mortality.[16]

***Zoom in on* asthma**

Environmental shifts – and in particular air pollution – are increasing the number of people affected by asthma and the intensity of their symptoms.[17] Asthma results in *medical expenses, days missed from work or school, and deaths.* In 2019, 262 million people globally suffered from asthma and 461,000 people died.[18]

There is a direct link between shifts in natural systems and new asthma diagnoses and experts consider them to be a trigger for life-threatening asthma attacks. One study found that poor air quality worsens asthma for two-thirds of sufferers, putting them at risk of an asthma attack.[19]

Infectious disease

Back in 2007, WHO reported that infectious diseases were spreading more rapidly than ever before and that medical professionals were discovering new infectious diseases at a higher rate than at any time in history. WHO identified over 1,000 epidemics of infectious diseases between 2002 and 2007. Since then, the outbreaks of Ebola, the H1N1 virus (swine flu) and, most recently, COVID-19 have laid bare the consequences of this trend, raising questions of not if but when and what the next pandemic is likely to be.[20]

Pathogens such as bacteria, viruses, fungi and parasites cause infectious diseases. The increasing prevalence of infectious diseases and the growing acuteness of the planetary crisis are closely linked, as many are highly sensitive to changes in environmental conditions, such as land-use change and cover resulting from deforestation.

Increasing transmission and the spread of infectious diseases to new geographies are likely to significantly affect business and economic activity. COVID-19 has clearly demonstrated the ability for an infectious disease to shut down global economic activity and have a damaging impact on everyday business activities.

Studies also show that infectious diseases such as malaria have a deleterious impact national GDP, by as much as a 5% to 6%.[21] For example, the spread of infectious diseases to higher latitude areas will impact all local businesses through reductions in employee productivity and increases in absenteeism.[22]

***Zoom in on the* changing demographics of mosquito-transmitted diseases**

Climate change is driving an increasing prevalence of mosquito-transmitted diseases, such as malaria, zika and dengue fever, as warming temperatures and changes in rainfall patterns improve mosquito survival, reduce incubation periods, and cause female mosquitoes (which spread disease) to bite more often.[23] Changing temperatures allow mosquitos to move into regions they haven't been in before.[24] The increasing prevalence of dengue fever means that half of the world's population are now at risk, with an estimated 100-400 million infections each year.[25]

***Zoom in on* water-borne illnesses**

According to WHO, 1 in 3 people do not have access to safe drinking water.[26] Safe drinking water, sanitation and hygiene are basic human needs and essential to human health and wellbeing.[27] With intensifying environmental damage, water-borne illnesses are likely to become more common. Climate change and nature loss lead to changes in precipitation patterns and sea temperatures. These factors in turn increase the risk of flooding and storm surges, and cause runoff that spreads sewage, chemicals and disease agents. Increasing water temperatures also favor the growth, survival and spread of water-borne bacteria and viruses. As a result, exposure to water-borne illnesses is rising.[28] Another WHO analysis found that water-borne diseases accounted for 40% of climate-related health emergencies over the past two decades, causing premature deaths especially among children under five. These deaths are preventable through access to safe water and sanitation.[29]

Malnutrition

Malnutrition is a global health crisis. Nearly 2 billion adults are overweight or obese, and 462 million are underweight.[30] Estimates from 2020 show that 149 million children under the age of five were stunted (below the expected height for their age), contributing to around 45% of deaths for this age group.[31]

The planetary crisis threatens to exacerbate existing threats to food security and livelihoods through various impacts worldwide, including:

- Increasing frequency and intensity of extreme weather events
- Diminishing agricultural yields
- Reduced production in vulnerable regions
- Rising sanitation risks
- Increasing water scarcity
- Decreasing nutritional value of crops.

Projections suggest that the number of people at risk from hunger will increase by 10-20% by 2050 due to climate change, with 65% of this population in sub-Saharan Africa.[32] This, in turn, is likely to contribute to the increasing prevalence and effects of other diseases, such as malnutrition, which may increase the risk and severity of infectious diseases, diarrhea and mental health issues.

This poses long-term risks to businesses – and not just in developing countries. Estimates suggest the total economic cost of malnutrition ranges from 2% to 3% of GDP to as much as 16% in the most affected areas.[33]

Mental health

The importance of mental health in business and society has become increasingly clear in recent years, highlighted by the toll of the COVID-19 pandemic. Employers play a critical role in this, a concept explored in detail in our recent Healthy People, Healthy Business – Embedding a culture of health and wellbeing report. Less well understood, however, is the important relationship between a healthy environment and mental health.

The environment has the potential to both positively and negatively impact a person's mental health. Living in a healthy environment with access to nature and other green spaces is a proven way to support mental wellbeing and reduce rates of anxiety and mood disorders.[34]

Unsurprisingly, the planetary crisis is having a negative impact on many people's mental health. There is a link between air pollution, for example, and mental illnesses such as depression, dementia and anxiety. Indeed, studies show that exposure to air pollution at age 12 makes children three to four times more likely to have depression at 18.[35] In addition, there is a link between heat waves and increased rates of admissions for mental disorders in Australia, while studies show an association between extreme weather events and displacement, trauma and other stress-related psychiatric disorders.[36]

The impact of this on businesses is significant. The lost productivity resulting from trauma, depression and anxiety costs the global economy USD $1 trillion each year.[37] Furthermore, studies show that businesses that fail to act on their environmental footprint affect the mental health of their employees, especially younger generations.[38] Businesses, therefore, must take action on environmental issues if they want to attract talent, boost employee wellbeing and, ultimately, increase productivity.

***Zoom in on* eco anxiety**

Trauma from disasters, chronic stress about the state of the world (also known as eco-anxiety) and increased incidences of suicide are all reported at worrying rates. A recent survey shows that 78% of people of all ages suffer from some form of eco-anxiety, with 41% reporting being very much or extremely fearful of climate change.[39] In addition, one study by the Climate Institute found that if a month is 1°C warmer than average, the suicide rate will increase by 0.7% in the US and 2.1% in Mexico.[40]

Migration & displacement

Since 2010, the number of people displaced by climate change-related disasters has risen to 21.5 million on average per year.[41] Some estimates even predict that climate change could displace as many as 1.2 billion people by 2050.[42]

The health consequence of this is that migrants and refugees are vulnerable to health issues associated with travelling long distances and settling in potentially unsafe environments.

While the consequences for business are difficult to directly attribute, migration and displacement affect various dimensions of society, including public services and governance structures, and can destabilize society and the economy as a whole. Conflict and war can add to the burden of migration and displacement (as evidenced by the war in Ukraine), causing further uncertainty and exacerbating the health risks for affected people.

***Zoom in on* the health impacts of migration due to wildfires**[43,44]

The planetary crisis has had a huge effect on the intensity and number of wildfires, forcing migration even in the world's wealthiest countries. For example, eight of the ten largest fires ever recorded in California have occurred since 2017, with 354,000 people forced to leave their homes in 2018 alone.[45] In Australia, wildfires between July 2019 and February 2020 triggered around 65,000 new displacements.[46]

The displacement caused by these wildfires can have detrimental health implications. People who must leave their homes are 20% more likely to suffer from depression than their peers.[47] In addition, around 40% of displaced people suffer from direct physical health issues, such as infectious diseases and malnutrition caused by poor sanitation and a lack of access to food, clean water and medication.[48]

Recommended reading

The Lancet Planetary Health Report - The Rockefeller Foundation-Lancet Commission on Planetary Health published a report on *Safeguarding human health in the Anthropocene epoch*. This flagship report brings to light the far-reaching impacts of the destruction of Earth's natural systems, while shining light on the global threat to human health as a result.

The Compendium of WHO and other UN guidance on health and environment - A global repository of interventions and actions that provide guidance on improving health by creating healthier environments.

The WHO's *COP26 Special Report on Climate Change & Health: The Health Argument for Climate Action* - A call to action for government and business decision-makers to act with urgency on the planetary crisis, proposing ten priority recommendations.

The 2021 report of the Lancet *Countdown on health and climate change: code red for a healthy future* - These 44 indicators expose an unabated rise in the health impacts of climate change and the current health consequences of the delayed and inconsistent response of countries worldwide – providing a clear imperative for accelerated action that puts the health of people and planet above all else.

Forum for the Future: Driving Co-Benefits for Climate & Health - This piece highlights potential actions the private sector could take to address and combat the climate and health crises.

Planetary Heath Education Framework and Case Studies - The Planetary Health Alliance has educational resources, case studies and further reading available on their website.

4. How should business be using this information?

The devastating impact that the breakdown of natural systems is having on human health is clear. Individuals, societies, governments and – critically – businesses must act urgently. Businesses can leverage human health as an additional argument to accelerate and prioritize action that generates co-benefits for people, planet and the business itself. While the necessity is clear, there are two questions left to answer: What barriers have prevented the application of a health lens up to now? And where to start?

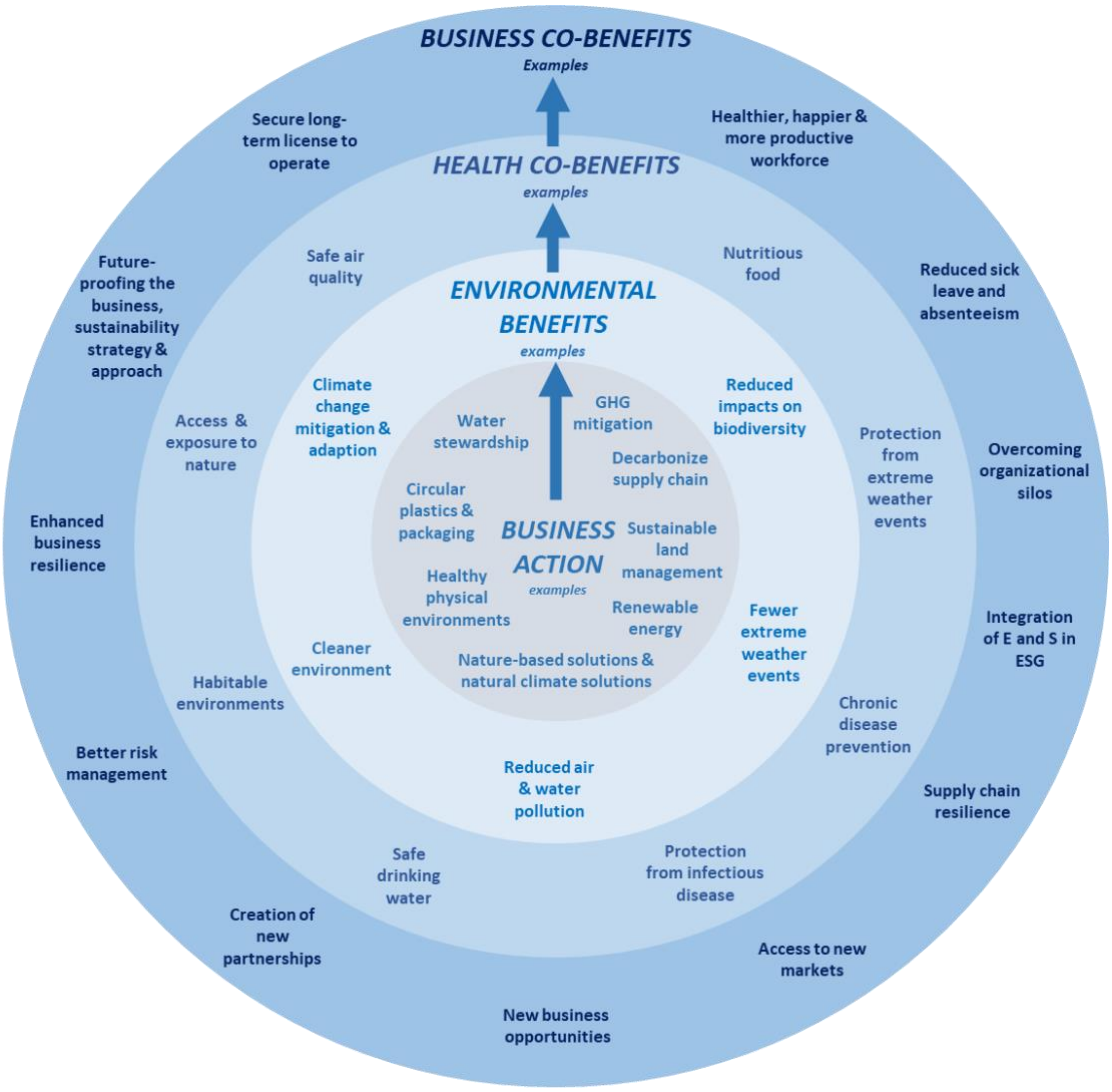
In terms of barriers, the often-apparent fragmentation of sustainability agendas, standards and environmental policies, as well as the resulting organizational silos, stand in the way of incorporating health impacts more holistically. While environmental, social and governance (ESG) reporting has become mainstream and the understanding of the key metrics to use to determine business performance on the "S" in ESG is evolving, more awareness and dialogue are necessary to outline how health could connect the environmental and social components of ESG.

Businesses with ambitious sustainability strategies and well-established ESG reporting will find that they are not starting from scratch and that their existing environmental and social initiatives are already driving positive health outcomes. Mitigation and adaptation programs geared toward enhancing a company's environmental performance often generate unrecognized health co-benefits. For example, a program that develops degraded land into urban green spaces may not specifically aim to improve physical and mental health. Yet, by sequestering carbon and improving air quality, new green spaces will benefit lung health and support good mental health.

Health co-benefits can also deliver business co-benefits (see Figure 3). Businesses that recognize the importance of protecting the health of their employees and their wider business networks may observe a boost in employee wellbeing and satisfaction, from direct impacts like better working conditions and from the psychological impact of knowing they work for a company that is committed to contributing to achieving a sustainable future. One study has shown that this has the potential to increase worker productivity by up to 13% and reduce a company's staff turnover rate by as much as 50%.[49]

Recognizing that the future of disease will be very different from what it is today, identifying and designing health co-benefits into sustainability action plans and proactively embedding strategies to prioritize them are crucial to mitigating risk and adapting to the irreversible impacts of climate change and nature loss. Making health an integral part of business decision-making is therefore key to future-proofing the business.

Figure 3: Understanding the health co-benefits of climate and nature action to enrich and accelerate the corporate sustainability journey



We have identified four actions that businesses can take to enrich and accelerate their sustainability journey, thereby increasing ESG maturity and impact. At each stage, we explore important questions businesses can ask themselves and identify potential benefits for business.

Figure 4: Four actions for business to start embedding health into business decision-making and drive accelerated action on climate, nature and equity

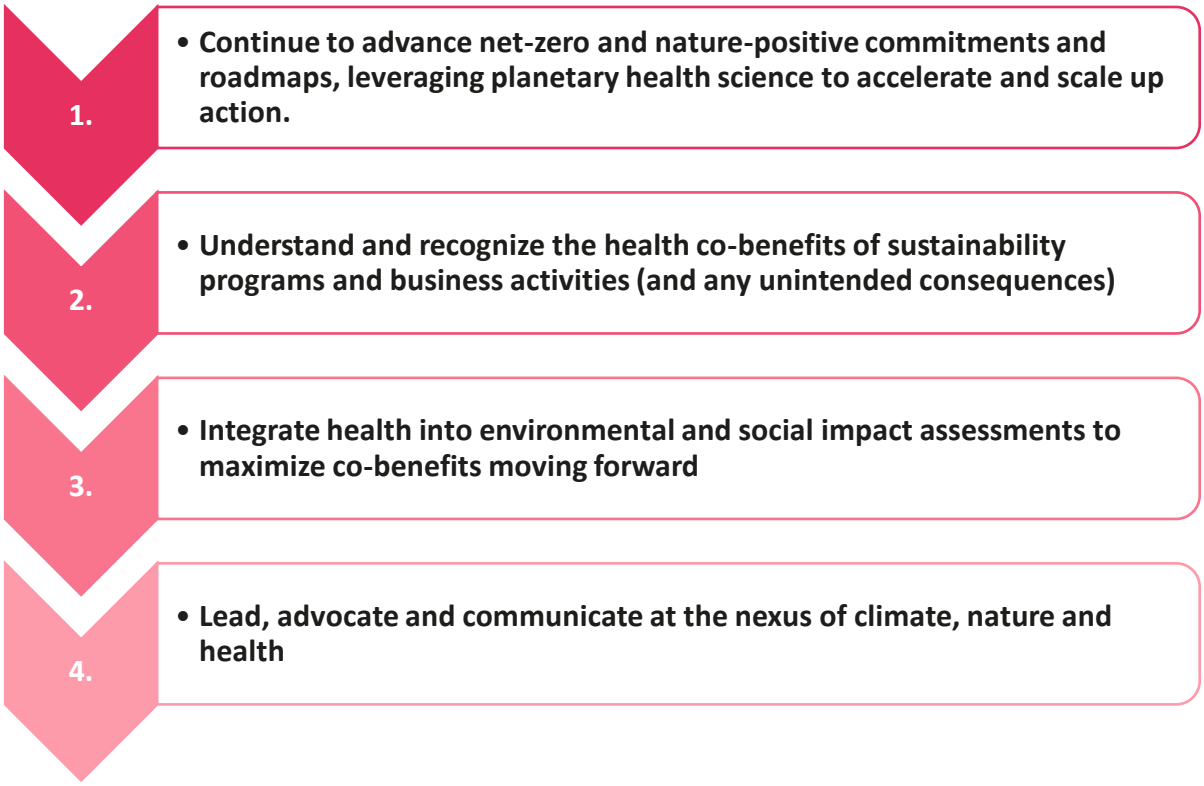


Table 1. Action and key questions to guide implementation

Action	Key questions	Potential value to business
Continue to advance net-zero and nature-positive commitments and roadmaps, leveraging planetary health science to accelerate and scale up action. Consider co-benefits for human health as a differentiator to enrich, accelerate and scale up net-zero and nature-positive action plans, thereby also addressing health inequity.	• *How can we use planetary health science to mobilize and accelerate action on climate and nature?* • *How does health fit into our environmental and social sustainability programs?*	• Optimization and acceleration of programs • Elevation of issues and messaging • Convergence of priority agendas • Accelerated action and investment in net-zero and nature positive plans
Understand and recognize the health co-benefits of sustainability programs and business activities (and any unintended consequences). Review and assess your existing sustainability strategy and ESG programs through the lens of health to understand the extent to which your organization is already driving positive (or unintended negative) health outcomes within direct operations and the wider value chain.	• *What health co-benefits are our current initiatives driving? What are the trade-offs or potential unintended consequences?* • *Which initiatives and actions should we prioritize based on their relative health co-benefits?* • *Is this a natural next step to keep our sustainability efforts current and urgent?*	• Identifying unrecognized value from your sustainability programs • Comparison of health co-benefits of your sustainability programs to prioritize investment and action
Integrate health into environmental and social impact assessments to maximize co-benefits moving forward Based on an enhanced understanding of co-benefits, design health into your sustainability initiatives and strategies from the outset. Work with stakeholders both across and outside the organization to come up with creative, impactful programs that drive these objectives.	• *How can health help us connect the environmental and social components of sustainability and ESG reporting?* • *What are we uniquely positioned to influence to improve the health of people and planet?*	• Holistic strategy to help differentiate by delivering value to employees, partners and customers • Avoiding unintended consequences • Connecting and integrating the E and S in ESG

Consult with experts and the people and communities impacted to ensure to drive the intended value.	• *What partnerships (networks) do we need engage in to help us build capacity, drive value and achieve our objectives?* • *How do we incorporate planetary health into our wider business strategy, product and process innovation?*	
Lead, advocate and communicate at the nexus of climate, nature and health. Educate and raise awareness about planetary health internally and throughout the wider value chain by building capacity, enabling knowledge transfer and offering training. Look for opportunities for dialogue and collaboration with key stakeholders to ensure consistency of messaging and approach. Play a proactive role advocating for ambitious policies and governmental action that ensure health is a key component of climate and nature policy.	• *How can we improve the awareness and fluency that our employees, suppliers, customers and industry peers have of the concept of planetary health?* • *How can we collaborate across organizational silos to have greater impact?* • *How does health enrich the story we tell about our commitment to sustainability?* • *How can we collaborate with organizations within – and beyond – our industry to catalyze change?* • *What do we need to do to drive the convergence of climate and nature policy with the health agenda?* • *What do we want other key stakeholders to be doing, thinking, saying?*	• Future-proofing your business • Busting of organizational silos • Enhanced advocacy and partnership approach • Improved reputation and stakeholder relations • Enhanced attractiveness as an employer of choice and retain talent • Expansion into new markets • Creation of new business opportunities • Enhanced access to capital • Enhanced value proposition and competitive advantage • Comprehensive environmental policies

CASE STUDY: Preventing urban diabetes – Novo Nordisk

Through its Cities Changing Diabetes program,[50] Novo Nordisk has teamed up with C40 Cities to address the increase in type 2 diabetes vulnerability among certain people living in urban environments. Increasing urbanization means that more than half the world's population – and two out of three type 2 diabetes sufferers – live in metropolitan areas. As such, one of the partnership's aims is to develop infrastructure that features spacious and well-located cycle lanes and sidewalks to encourage active mobility among urban citizens. This contributes to cities delivering the reductions needed to curb $C0_2$ emissions and reduces the risk of heart disease and type 2 diabetes among urban populations. The company has implemented similar schemes in Mexico City, New York, Johannesburg, Santiago and Melbourne.

CASE STUDY: Collaborating with cross-industry experts to set higher standards for healthier homes – Trane Technologies

Trane Technologies established the Center for Healthy and Efficient Spaces with the goal of bringing together internal and external experts to advance indoor environmental quality policy, strategies and solutions through cross-industry collaboration. For example, the Center works closely with Allergy Standards Ltd on education and thought leadership initiatives which focus on raising awareness among homeowners, designers and builders about the importance of improving indoor environmental quality to combat major respiratory diseases – and in turn drive better health and wellness outcomes for people and the planet – as well as the economy – through reducing the burden on the healthcare system and reduced absenteeism. In 2021, Trane Technologies collaborated with Allergy Standards Ltd, Construction Instruction and the Energy & Environmental Building Alliance to launch the Healthier Homes Awareness for Building Professionals program. The suite of courses helps construction professionals become better informed about the benefits of optimizing indoor air quality and the selection of certified asthma & allergy friendly® products that can be incorporated into home environments.

5. Conclusion

Addressing the planetary crisis requires urgent and ambitious action. Climate change and nature loss are compounding the significant health risks disproportionately affecting the most vulnerable in societies.

Until now, the objective of mitigating greenhouse gas emissions and reducing environmental footprints – meaning better managing business impacts and dependencies on nature and climate – has driven business action on climate and nature. While this objective remains an imperative, there has been little effort to inform this objective with the health implications of human-caused damage to natural systems.

With the planetary crisis reaching an inflection point and the global burden of disease and inequality increasing rapidly as a result, it is time for businesses to view the planetary crisis and health crisis as one and the same. It is vital to safeguard and regenerate the foundational conditions of health for people and planet to thrive.

For business, understanding and recognizing the health implications of the planetary crisis can help accelerate action, bust organizational silos, enrich business strategy, enhance performance, strengthen reputation and provide access to capital, while building a mindset that encourages resilience and unlocks innovation and transformation. Fortunately, businesses are likely to find that they have already made the first steps along this journey and that their existing sustainability initiatives are driving unrecognized health co-benefits.

The scientific evidence emerging from the field of planetary health can inform businesses' sustainability strategies and wider business activities. By advocating for the inclusion of health as a key component of effective climate and environmental policies, businesses can connect the social and environmental domains of ESG and thereby accelerate their net-zero and nature-positive programs. In turn, this will enable businesses to generate health co-benefits, reduce health inequalities, and develop business strategies that are future-proof.

Guided by planetary health science, our Healthy People, Healthy Business coalition will continue to explore opportunities and identify strategies for businesses to integrate health into business decision-making. We welcome the opportunity for continued stakeholder engagement on this critical topic and call on businesses to:

- Consider how your company currently incorporates health into business activities and sustainability initiatives. If this is not currently the case, highlight that this is an important next step if your organization is to keep pace with the most important global issues.
- Engage with and convene key stakeholders to discuss the impact that the planetary crisis is having on your organization. Identify the key risks that your organization should consider for employees, suppliers, customers, communities and other important stakeholders.
- Explore opportunities to integrate health into your business's decision-making and activities. Consider the possibilities to catalyze change, generate investment and mobilize resources to drive concerted action.

Annex: some key definitions

- **Anthropocene** describes the most recent period in Earth's history, starting when human activity began to have a significant impact on the planet's climate and ecosystems.[51]

- **Biodiversity** refers to the variety of life found on Earth (plants, animals, fungi and micro-organisms) as well as to the communities that they form and the habitats in which they live.[52]

- **Health** is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

- **Planetary health** is a solution-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth.[53]

- **Displacement** is a new form of migration whereby individuals are forced to move against their will or due to poor circumstances in a particular region.

- **Infectious diseases** are disorders caused by organisms — such as bacteria, viruses, fungi or parasites. Some infectious diseases pass from person to person; insects or other animals transmit others.

- **Malnutrition** in all its forms includes undernutrition (wasting, stunting, underweight), inadequate vitamins or minerals, overweight, obesity and the resulting diet-related non-communicable diseases.

- **Mental health** is a state of wellbeing in which an individual realizes their own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to their community.

- **Non-communicable diseases (NCDs)**, also known as chronic diseases, are diseases that cannot spread from person to person and tend to be of long duration and slow progression.

- **Zoonosis (zoonotic disease)** is an infectious disease transmitted between species, from animals to humans.[54]

Acknowledgements

We would like to thank the following organizations and people for their valuable contributions to the development of this report.

Contributors

Member companies of WBCSD's Healthy People, Healthy Business working group developed this white paper collaboratively to serve the ongoing dialogue on the role of business in advancing health and wellbeing. We would like to extend our thanks to the following organizations for their guidance and support: 3M, Abbott, Arcadis, Baker McKenzie, Biogen, Clariant, Deloitte, ENEL, Eni, ERM, GSK, Guidehouse, Inter IKEA Group, Mitsubishi Corporation, Nestlé, Novartis, OCP Group, Philip Morris International Reckitt, Solvay, Sompo Holdings, Trane Technologies, Unilever

Contributing partner

Planetary Health Alliance

Coordination

WBCSD: Uta Jungermann, James Gomme

Deloitte MCS Ltd: Elizabeth Hampson, Sophia Davison, Elizabeth Baca, Hannah Lovell, Lisa Dittmar, Millie Lingham, Robbie Hardy

Disclaimer

This publication has been developed in the name of WBCSD and has been written in general terms. We recommend that you obtain professional or legal advice before acting or refraining from action on any of the contents of this publication. Like other WBCSD publications, it is the result of a collaborative effort by members of the secretariat and senior executives from member companies. A wide range of members reviewed drafts, thereby ensuring that the document broadly represents the perspective of the WBCSD membership. Input and feedback from stakeholders listed above was incorporated in a balanced way. This does not mean, however, that every member company or stakeholder agrees with every word.

About Deloitte

Deloitte provides industry leading audit and assurance, tax and legal, consulting, financial advisory, and risk advisory services to nearly 90% of the Fortune Global 500® and thousands of private companies. Our professionals deliver measurable and lasting results that help reinforce public trust in capital markets, enable clients to transform and thrive, and lead the way toward a stronger economy, a more equitable society and a sustainable world. Building on its 175-plus year history, Deloitte spans more than 150 countries and territories. Learn how Deloitte's more than 345,000 people worldwide make an impact that matters at www.deloitte.com. Deloitte MCS Limited and each of the member firms of Deloitte Touche Tohmatsu Limited accept no liability for any loss occasioned to any person acting or refraining from action as a result of any material in this publication.

About WBCSD

WBCSD is the premier global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net-zero, nature-positive, and more equitable future.

We do this by engaging executives and sustainability leaders from business and elsewhere to share practical insights on the obstacles and opportunities we currently face in tackling the integrated climate, nature and inequality sustainability challenge; by co-developing "how to" CEO-guides from these insights; by providing science-based target guidance, including standards and protocols; and by developing tools and platforms to help leading businesses in sustainability drive integrated actions to tackle climate, nature and inequality challenges across sectors and geographical regions.

Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD $8.5 trillion and 19 million employees. Our global network of almost 70 national business councils gives our members unparalleled reach across the globe. Since 1995, WBCSD has been uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues.

Together, we are the leading voice of business for sustainability, united by our vision of creating a world in which 9+ billion people are living well, within planetary boundaries, by mid-century.

www.wbcsd.org

Follow us on Twitter and LinkedIn

Copyright © WBCSD May 2022

Endnotes

[1] World Health Organization (2016). An estimated 12.6 million deaths each year are attributable to unhealthy environments. Retrieved from: https://apps.who.int/mediacentre/news/releases/2016/deaths-attributable-to-unhealthy-environments/en/index.html#:~:text=An%20estimated%2012.6%20million%20deaths%20each%20year%20are,global%20deaths%2C%20according%20to%20new%20estimates%20from%20WHO.

[2] Panu, Pikhala, Helsinki Institute of Sustainability Science (2020*). Anxiety and the Ecological Crisis: An Analysis of Eco-Anxiety and Climate Anxiety. Sustainability* 2020, 12(19), 7836; https://doi.org/10.3390/su12197836 Retrieved from: https://www.mdpi.com/2071-1050/12/19/7836/htm.

[3] World Health Organization (2021). Air Pollution in the Western Pacific. Retrieved from: https://www.who.int/westernpacific/health-topics/air-pollution.

[4] The World Counts (n.d.). Air Pollution Deaths Per Year. Retrieved from: https://www.theworldcounts.com/challenges/planet-earth/air/air-pollution-deaths-per-year/story.

[5] World Health Organization (2021). Climate change and health. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health.

[6] United Nations (2021). Climate change link to displacement of most vulnerable is clear: UNHCR. *UN News*. Retrieved from: https://news.un.org/en/story/2021/04/1090432.

[7] Henley, J. (2020). Climate crisis could displace 1.2bn people by 2050, report warns. *The Guardian*. Retrieved from: https://www.theguardian.com/environment/2020/sep/09/climate-crisis-could-displace-12bn-people-by-2050-report-warns.

[8] Modified from Myers, S.S. (2017). Planetary health: protecting human health on a rapidly changing planet. *The Lancet*, 390(10114), pp.2860-2868.

[9] Fuller, R. et al. (2018). Pollution and non-communicable disease: time to end the neglect. *The Lancet.* Volume 2, ISSUE 3, e96-e98, March 01, 2018. Retrieved from: https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(18)30020-2/fulltext.

[10] The World Counts, Air Pollution Deaths Per Year. Retrieved from: https://www.theworldcounts.com/challenges/planet-earth/air/air-pollution-deaths-per-year/story.

[11] Centers for Disease Control & Prevention (2021). Heart Disease Facts". Retrieved from: https://www.cdc.gov/heartdisease/facts.htm.

[12] American Heart Association (2021). *2021 Heart Disease & Stroke Statistics Update Fact Sheet At-a-Glance*. Retrieved from: https://www.heart.org/-/media/phd-files-2/science-news/2/2021-heart-and-stroke-stat-update/2021_heart_disease_and_stroke_statistics_update_fact_sheet_at_a_glance.pdf?la=en.

[13] Basu, J., Mudur, G.S. (2021). IPCC report suggests average global temp may rise by 1.5℃ by 2030. *The Telegraph Online*. Retrieved from: https://www.telegraphindia.com/world/ipcc-report-suggests-average-global-temperatures-may-rise-by-1-5%e2%84%83-by-2030s/cid/1825961.

[14] Kopman, J. (2013). How We're All Going to Die in 2050**.** The Weather Channel. Retrieved from: https://weather.com/health/news/how-were-all-going-die-2050-20131004.

[15] Kopman, J. (2013). How We're All Going to Die in 2050**.** The Weather Channel. Retrieved from: https://weather.com/health/news/how-were-all-going-die-2050-20131004.

[16] Baaghideh, M., & Mayvaneh, F. (2017). Climate Change and Simulation of Cardiovascular Disease Mortality: A Case Study of Mashhad, Iran. *Iranian journal of public health*, 46(3), 396–407. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5395536/.

[17] Marsh, S. & Taylor, M. (2018). Asthma deaths rise by 25% amid growing air pollution crisis. *The Guardian*. Retrieved from: https://www.theguardian.com/environment/2018/jul/18/asthma-deaths-rise-25-amid-growing-air-pollution-crisis.

[18] World Health Organization (2020). Chronic respiratory diseases: asthma. Retrieved from: https://www.who.int/news-room/questions-and-answers/item/chronic-respiratory-diseases-asthma.

[19] Asthma UK (2020). Pollution as an asthma trigger. Retrieved from: https://www.asthma.org.uk/advice/triggers/pollution/#:~:text=Around%20two%20thirds%20of%20people%20with%20asthma%20tell,small%20enough%20to%20get%20right%20into%20your%20lungs.

[20] World Health Organization (2007). *The World Health Report 2007: A Safer Future*. Retrieved from: https://www.who.int/whr/2007/whr07_en.pdf#:~:text=The%20World%20Health%20Report%202007%20is%20dedicated%20to,launched%20WHO%E2%80%99s%20discussion%20on%20global%20public%20health%20security.

[21] Malaria No More (n.d.). *Malaria: Bad for Business*. Retrieved from: https://malarianomore.org.uk/file/2286/download?token=DuJHxTdR.

[22] Malaria No More (n.d.). *Malaria: Bad for Business*. Retrieved from: https://malarianomore.org.uk/file/2286/download?token=DuJHxTdR.

[23] Steinberg, H. (2015). Climate Change and Dengue: How Global Warming Can Affect Your Health. Cohan Laboratory in Microbial Ecology. Retrieved from: http://cohanlab.research.wesleyan.edu/2015/10/09/one-reason-that-climate-change-might-make-you-sick/.

[24] Wu, X., Lu, Y., Zhou, S., Chen, L. & Xu, B. (2015). Impact of climate change on human infectious diseases: Empirical evidence and human adaptation. Environment International, Volume 86, January 2016, Pages 14-23 Retrieved from: https://www.sciencedirect.com/science/article/pii/S0160412015300489.

[25] World Health Organization (2022). Dengue and severe dengue. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/dengue-and-severe-dengue.

[26] World Health Organization (2019). 1 in 3 people globally do not have access to safe drinking water – UNICEF, WHO. Retrieved from: https://www.who.int/news/item/18-06-2019-1-in-3-people-globally-do-not-have-access-to-safe-drinking-water-unicef-who.

[27] World Health Organization (n.d.). Water, sanitation and hygiene (WASH). Retrieved from: https://www.who.int/health-topics/water-sanitation-and-hygiene-wash.

[28] Physicians for Social Responsibility (n.d.). Climate Postcards: Water-borne Illness. Retrieved from: https://www.psr.org/issues/environment-health/climate/climate-postcards-water-borne-illness/#:~:text=As%20climate%20change%20continues%2C%20water,sewage%2C%20chemicals%20and%20disease%20agents.

[29] Reliefweb (2022). Africa faces rising climate-linked health emergencies Retrieved from: https://reliefweb.int/report/world/africa-faces-rising-climate-linked-health-emergencies#:~:text=The%20WHO%20analysis%20found%20that,death%20in%20under%205%20children.

[30] World Health Organization (2019). Malnutrition is a world health crisis. Retrieved from: https://www.who.int/news/item/26-09-2019-malnutrition-is-a-world-health-crisis.

[31] World Health Organization (2019). Malnutrition is a world health crisis. Retrieved from: https://www.who.int/news/item/26-09-2019-malnutrition-is-a-world-health-crisis.

[32] Met Office Hadley Centre & World Food Programme (2012). *Climate impacts on food security and nutrition: a review of existing knowledge*. Retrieved from: https://mahb.stanford.edu/wp-content/uploads/2014/07/Climate-Impacts-on-Food-Security-and-Nutrition-2012.pdf.

[33] The World Bank (2006). *Repositioning Nutrition as Central to Development: A Strategy for Large-Scale Action*. Retrieved from: https://www.unhcr.org/45f6c4432.pdf.

[34] Jennings, N., Fecht, D. & De Matteis, S. (2019). *Co-benefits of climate change mitigation in the UK: What issues are the UK public concerned about and how can action on climate change help to address them?* Imperial College London. Retrieved from: https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/Co-benefits-of-climate-change-mitigation-in-the-UK.pdf.

[35] Roberts, S. et al. (2019). Exploration of NO2 and PM2.5 air pollution and mental health problems using high-resolution data in London-based children from a UK longitudinal cohort study. *Psychiatry Research*. Volume 272, February 2019, Pages 8-17. Retrieved from: https://www.sciencedirect.com/science/article/pii/S016517811830800X.

[36] Kumar Padhy, S., Sarkar, S., Panigrahi, M. & Paul, S. (2015). Mental health effects of climate change. *Indian Journal of Occupational & Environmental Medicine.* 2015 Jan-Apr; 19(1): 3–7. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4446935/#.

[37] World Health Organization (2019). Mental health in the workplace. Retrieved from: https://www.who.int/news-room/commentaries/detail/mental-health-in-the-workplace.

[38] Bupa (2022). Gen Z seek ethical workplaces as environ-mental health burden bites. Retrieved from: https://www.bupa.com/news/press-releases/2022/gen-z-seek-ethical-workplaces-as-environ-mental-health-burden-bites.

[39] University of York and Global Future thinktank (2021). A Crisis in Common. Retrieved from: https://ourglobalfuture.com/reports/a-crisis-in-common-2/.

[40] Climate Institute (2019). Eco-Anxiety: Mental Health Impacts of Environmental Disasters and Climate Change. Retrieved from: http://climate.org/eco-anxiety-mental-health-impacts-of-environmental-disasters-and-climate-change/.

[41] United Nations (2021). Climate change link to displacement of most vulnerable is clear: UNHCR. *UN News*. Retrieved from: https://news.un.org/en/story/2021/04/1090432.

[42] Henley, J. (2020). Climate crisis could displace 1.2bn people by 2050, report warns. *The Guardian*. Retrieved from: https://www.theguardian.com/environment/2020/sep/09/climate-crisis-could-displace-12bn-people-by-2050-report-warns.

[43] Feldscher, K. (2021). Link between wildfires and COVID cases established. *The Harvard Gazette*. Retrieved from: https://news.harvard.edu/gazette/story/2021/08/wildfire-smoke-linked-to-increase-in-covid-19-cases-and-deaths.

[44] Internal Displacement Monitoring Centre (2019). *Spotlight on United States from IDMC's 2019 Global Report on Internal Displacement (GRID)*. Retrieved from: https://www.internal-displacement.org/sites/default/files/publications/documents/2019-IDMC-GRID-spotlight-united-states.pdf.

[45] Ponserre, S. & Fung, V. (2020). Rebuilding Paradise: A Story About Disaster Displacement, Resilience and Recovery. Internal Displacement Monitoring Centre. Retrieved from: https://www.internal-displacement.org/expert-opinion/rebuilding-paradise-a-story-about-disaster-displacement-resilience-and-recovery.

[46] Internal Displacement Monitoring Centre (2020). *The 2019-2020 Australian Bushfires: From Temporary Evacuation to Longer-term Displacement*. Retrieved from: https://www.internal-displacement.org/sites/default/files/publications/documents/Australian%20bushfires_Final.pdf.

[47] Urban Displacement Project (2021). What Are Gentrification & Displacement. Retrieved from: https://www.urbandisplacement.org/about/what-are-gentrification-and-displacement/.

[48] Internal Displacement Monitoring Centre (2021). *Impacts of Displacement: Displaced by violence, Jos, Nigeria*. Retrieved from: https://www.internal-displacement.org/sites/default/files/publications/documents/%202021.10.21_IDMC_Impacts%20of%20Displacement_Nigeria.pdf.

[49] IOSustainability and Babson College (2015). New Study, Commissioned by Verizon, Addresses a Persistent Knowledge Gap by Analyzing the Financial Impacts of Corporate Responsibility Programs. Retrieved from: https://www.babson.edu/about/news-events/babson-announcements/babson-io-sustainability-release-project-roi/#.

[50] Novo Nordisk (n.d.). The next 100 years. Retrieved from: https://www.novonordisk.ca/insulin-100/the-next-100.html#:~:text=To%20address%20this%2C%20in%202014,people%20living%20in%20urban%20environments.

[51] National Geographic (2019). Resource library – Encyclopedic entry: Anthropocene. Retrieved from: https://www.nationalgeographic.org/encyclopedia/anthropocene/.

[52] PBL Netherlands Environmental Assessment Agency (n.d.). Introduction to biodiversity. Retrieved from: https://www.pbl.nl/en/en/topics/biodiversity/introduction-biodiversity.

[53] Planetary Health Alliance (n.d.). Planetary Health. Retrieved from: https://www.planetaryhealthalliance.org/planetary-health.

[54] Minnesota Department of Health (n.d.). Zoonotic Diseases: Disease Transmitted from Animals to Humans. Retrieved from: https://www.health.state.mn.us/diseases/animal/zoo/index.html#:~:text=A%20zoonosis%20(zoonotic%20disease%20or,or%20from%20humans%20to%20animals).

World Business Council
for Sustainable Development

Geneva, Amsterdam, Beijing, Delhi, London, New York, Singapore

www.wbcsd.org