Climate Change, Health, and the Role of the VCSE Sector

10 October, 10am – 12pm, Main Hall, Priory Street Centre

SLIDE NOTES

Slide 11

Climate change is the long-term shift in the Earth's average temperatures and weather conditions.

Over the last decade, the world was on average around 1.2C warmer than during the late 19th Century.

It has now been confirmed that global warming exceeded 1.5C across the 12 month period between February 2023 and January 2024. That followed 2023 being declared the warmest year on record.

The temperature increase was driven by human-caused climate change and boosted by the natural El Niño weather phenomenon.

The climate has changed throughout the Earth's history and natural factors, such as El Niño, can affect the weather for shorter periods of time, as happened in 2023.
But natural causes cannot explain the particularly rapid warming seen in the last century, according to the UN's climate body, the IPCC.

This long-term climate change has been caused by human activity, the IPCC says, mainly from the widespread use of fossil fuels - coal, oil and gas - in homes, factories and transport.

When fossil fuels burn, they release greenhouse gases - mostly carbon dioxide (CO2). This traps extra energy in the atmosphere near the Earth's surface, causing the planet to heat up.

Since the start of the Industrial Revolution - when humans started burning large amounts of fossil fuels - the amount of CO2 in the atmosphere has risen by about 50%, external.
The CO2 released from burning fossil fuels, external has a distinctive chemical fingerprint which matches the type increasingly found in the atmosphere.

A global average temperature increase of 1.2C might not sound much. However, it has had a huge effect on the environment, including:

- more frequent and intense extreme weather, such as heatwaves and heavy rainfall
- rapid melting of glaciers and ice sheets, contributing to sea-level rise
- huge declines in Arctic sea-ice
- ocean warming

People's lives are also changing.

For example, parts of East Africa suffered their worst drought in 40 years, putting more than 20 million people at risk of severe hunger.

In 2022, intense European heatwaves led to an abnormal increase in deaths.
The more average temperatures increase, the worse the impacts of climate change become.

Limiting long-term average temperature rises to 1.5Cis crucial, according to the IPCC.
The science is not completely certain, but the consequences of 2C global warming versus 1.5C, external could include:

- Extreme hot days would be on average 4C warmer at mid-latitudes (regions outside the poles and tropics), versus 3C at 1.5C
- Sea-level rise would be 0.1m higher than at 1.5C, exposing up to 10 million more people to events including more frequent flooding
- More than 99% of coral reefs would be lost, compared with 70-90% at 1.5C
- Twice the number of plants and vertebrates (animals with a backbone) would be exposed to unsuitable climate conditions across more than half the geographical area where they are found
- Several hundred million more people may be exposed to climate-related risks and susceptible to poverty by 2050 than at 1.5C.

The call to limit temperature rise to 1.5C was partly designed to avoid crossing so-called "tipping points".

After these thresholds are passed, changes could accelerate and become irreversible, such as the collapse of the Greenland Ice Sheet. However, it's not clear precisely where these thresholds sit.

About 3.3 to 3.6 billion people are highly vulnerable to climate change, according to the IPCC.

People living in poorer countries are expected to suffer most as they have fewer resources to adapt.

This has led to questions about fairness, because these places have typically only been responsible for a small percentage of greenhouse gas emissions, external.

However, knock-on impacts could be felt over wide areas. For example, crop failures linked to extreme weather could raise global food prices.

Slide 13

Scientists have known for decades that the Earth is warming. The rise in global temperatures since the late 19th century is unprecedented over thousands of years.
It is unequivocal that humans are causing the warming. Changes in the sun's activity and volcanic eruptions are not the cause of the warming trend.

The intent of this figure is to show that human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years.

This figure has two important messages:

1. Climate is warming at a rate that is very unusual – this can be seen in the left panel.
2. The climate is warming as a consequence of human activities – this can be seen in the right panel.

- Over the last decade, global surface temperature has become 1.1°C warmer than the period 1850-1900. This compares today's global surface temperature with pre-industrial levels.
- Each of the last four decades has been successively warmer than any decade that came before it since 1850.
- Earth's climate can fluctuate due to natural factors, such as volcanic eruptions or the sun's activity.
- The global warming we observe since 1850 is not caused by such natural events.
- Today's warming is caused by human activities emitting greenhouse gases from burning fossil fuels and land use change.
- Greenhouse gases trap heat in the atmosphere cause an imbalance of the Earth's energy budget, heating the climate system.
- Human activities have warmed the climate over the last 170 years.

----------**Caption**----------

Figure SPM.1 | History of global temperature change and causes of recent warming
Panel (a) Changes in global surface temperature reconstructed from paleoclimate archives (solid grey line, years 1–2000) and from direct observations (solid black line, 1850–2020), both relative to 1850–1900 and decadally averaged. The vertical bar on the left shows the estimated temperature (very likely range) during the warmest multi-century period in at least the last 100,000 years, which occurred around 6500 years ago during the current interglacial period (Holocene). The Last Interglacial, around 125,000 years ago, is the next most recent candidate for a period of higher temperature. These past warm periods were caused by slow (multi-millennial) orbital variations. The grey shading with white diagonal lines shows the very likely ranges for the temperature reconstructions.

Panel (b) Changes in global surface temperature over the past 170 years (black line) relative to 1850–1900 and annually averaged, compared to Coupled Model Intercomparison Project Phase 6 (CMIP6) climate model simulations (see Box SPM.1) of the temperature response to both human and natural drivers (brown) and to only natural drivers (solar and volcanic activity, green). Solid coloured lines show the multi-model average, and coloured shades show the very likely range of simulations. (See Figure SPM.2 for the assessed contributions to warming). {2.3.1; Cross-Chapter Box 2.3; 3.3; TS.2.2; Cross-Section Box TS.1, Figure 1a}

Slide 14 – Overconsumption

Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas.

Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures.

The main greenhouse gases that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example. Clearing land and cutting down forests can also release carbon dioxide. Agriculture, oil and gas operations are major sources of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main sectors causing greenhouse gases.

Generating power
Generating electricity and heat by burning fossil fuels causes a large chunk of global emissions. Most electricity is still generated by burning coal, oil, or gas, which produces carbon dioxide and nitrous oxide – powerful greenhouse gases that blanket the Earth and trap the sun's heat. Globally, a bit more than a quarter of electricity comes from wind, solar and other renewable sources which, as opposed to fossil fuels, emit little to no greenhouse gases or pollutants into the air.

Manufacturing goods
Manufacturing and industry produce emissions, mostly from burning fossil fuels to produce energy for making things like cement, iron, steel, electronics, plastics, clothes, and other goods. Mining and other industrial processes also release gases, as does the construction industry. Machines used in the manufacturing process often run on coal, oil, or gas; and some materials, like plastics, are made from chemicals sourced from fossil fuels. The manufacturing industry is one of the largest contributors to greenhouse gas emissions worldwide.

Cutting down forests
Cutting down forests to create farms or pastures, or for other reasons, causes emissions, since trees, when they are cut, release the carbon they have been storing. Each year approximately 12 million hectares of forest are destroyed. Since forests absorb carbon dioxide, destroying them also limits nature's ability to keep emissions out of the atmosphere. Deforestation, together with agriculture and other land use changes, is responsible for roughly a quarter of global greenhouse gas emissions.

Using transportation
Most cars, trucks, ships, and planes run on fossil fuels. That makes transportation a major contributor of greenhouse gases, especially carbon-dioxide emissions. Road vehicles account for the largest part, due to the combustion of petroleum-based products, like gasoline, in internal combustion engines. But emissions from ships and planes continue to grow. Transport accounts for nearly one quarter of global energy-related carbon-dioxide emissions. And trends point to a significant increase in energy use for transport over the coming years.

Producing food
Producing food causes emissions of carbon dioxide, methane, and other greenhouse gases in various ways, including through deforestation and clearing of land for agriculture and grazing, digestion by cows and sheep, the production and use of fertilizers and manure for growing crops, and the use of energy to run farm equipment or fishing boats, usually with fossil fuels. All this makes food production a major contributor to climate change. And greenhouse gas emissions also come from packaging and distributing food.

Powering buildings
Globally, residential and commercial buildings consume over half of all electricity. As they continue to draw on coal, oil, and natural gas for heating and cooling, they emit significant

quantities of greenhouse gas emissions. Growing energy demand for heating and cooling, with rising air-conditioner ownership, as well as increased electricity consumption for lighting, appliances, and connected devices, has contributed to a rise in energy-related carbon-dioxide emissions from buildings in recent years.

Consuming too much
Your home and use of power, how you move around, what you eat and how much you throw away all contribute to greenhouse gas emissions. So does the consumption of goods such as clothing, electronics, and plastics. A large chunk of global greenhouse gas emissions are linked to private households. Our lifestyles have a profound impact on our planet. The wealthiest bear the greatest responsibility: the richest 1 per cent of the global population combined account for more greenhouse gas emissions than the poorest 50 per cent.

Slide 15 – More Warming, More Changes

With more global warming, many changes become larger. Land and Polar Regions warm faster than other parts. On land, we will experience more variations, from very wet to very dry events. Some areas will get drier, others will be wetter, and monsoons will intensify.
Our lives will be affected by climate change wherever we live. With every increment of global warming, changes get larger in regional mean temperature, precipitation and soil moisture

The intent of this figure is to show that with every increment of global warming, changes get larger in regional mean temperature, precipitation and soil moisture.

This figure includes two important messages:

1. Many changes in the climate system happen in direct relation to increasing global warming.
2. Increasing global warming leads to increasing regional changes in hot extremes, precipitation and soil moisture.

----------**Caption**----------
Figure SPM.5 | Changes in annual mean surface temperature, precipitation, and soil moisture
Panel (a) Comparison of observed and simulated annual mean surface temperature change. The left map shows the observed changes in annual mean surface temperature in the period 1850–2020 per °C of global warming (°C). The local (i.e., grid point) observed annual mean surface temperature changes are linearly regressed against the global surface temperature in the period 1850–2020. Observed temperature data are from Berkeley Earth, the dataset with the largest coverage and highest horizontal resolution. Linear regression is applied to all years for which data at the corresponding grid point is available. The regression method was used to take into account the complete observational time series and thereby reduce the role of internal variability at the grid point level. White indicates areas where time coverage was 100 years or less and thereby too short to calculate a reliable linear regression. The right map is based on model simulations and shows change in annual multi-model mean simulated temperatures at a global warming level of 1°C (20-year mean global surface temperature change relative to 1850–1900). The triangles at each end of the colour bar indicate out-of-bound values, that is, values above or below the given limits.

Panel (b) Simulated annual mean temperature change (°C), panel (c) precipitation change (%), and panel (d) total column soil moisture change (standard deviation of interannual variability) at global warming levels of 1.5°C, 2°C and 4°C (20-year mean global surface temperature change relative to 1850–1900). Simulated changes correspond to Coupled Model Intercomparison Project Phase 6 (CMIP6) multi-model mean change (median change for soil moisture) at the corresponding global warming level, that is, the same method as for the right map in panel (a). In panel (c), high positive percentage changes in dry regions may correspond to small absolute changes. In panel (d), the unit is the standard deviation of interannual variability in soil moisture during 1850–1900. Standard deviation is a widely used metric in characterizing drought severity. A projected reduction in mean soil moisture by one standard deviation corresponds to soil moisture conditions typical of droughts that occurred about once every six years during 1850–1900. In panel (d), large changes in dry regions with little interannual variability in the baseline conditions can correspond to small absolute change. The triangles at each end of the colour bars indicate out-of-bound values, that is, values above or below the given limits. Results from all models reaching the corresponding warming level in any of the five illustrative scenarios (SSP1-1.9, SSP1-2.6, SSP2-4.5, SSP3-7.0 and SSP5-8.5) are averaged. Maps of annual mean temperature and precipitation changes at a global warming level of 3°C are available in Figure 4.31 and Figure 4.32 in Section 4.6. Corresponding maps of panels (b), (c) and (d), including hatching to indicate the level of model agreement at grid-cell level, are found in Figures 4.31, 4.32 and 11.19, respectively; as highlighted in Cross-Chapter Box Atlas.1, grid-cell level hatching is not informative for larger spatial scales (e.g., over AR6 reference regions) where the aggregated signals are less affected by small-scale variability, leading to an increase in robustness.
{Figure 1.14, 4.6.1, Cross-Chapter Box 11.1, Cross-Chapter Box Atlas.1, TS.1.3.2, Figures TS.3 and TS.5}

Slide 24 – Impact on flooding across Humber and North Yorkshire

This is potentially what we are looking at in a 4 degree world.

In the UK, under a high emissions scenario, and without large investments in adaptation, an annual average of 585,400 people are projected to be affected by flooding due to sea level rise between 2070 and 2100.

In addition to flooding due to sea level rise, the UK faces inland river flood risk due to climate change. Under a high emissions scenario, it is projected that by 2030, 36,300 additional people may be at risk of river floods annually due to climate change and 14,900 due to socio-economic change above the estimated annual affected population of 24,700 in 2010.

Flooding causes deaths from drowning and extensive indirect health effects, including impacts on food production, water provision, ecosystem disruption, and infectious disease outbreak and vector distribution. Longer term effects of flooding may include posttraumatic stress and population displacement.

Slide 25 – Temperature Change Map in York since 1850

The heatwaves seen in 2022 were unprecedented, but there is a phrase being used that last summer will be the coldest summer for the rest of our lives. This is based on the assumption that we are going to continue to see temperatures rise and extreme heat become more normal.

Heatwaves broke temperature records around the world, but could still be seen as one of the coolest summers of the next few decades. In July we saw temperatures above 40 degrees in the UK for the first time, with parts of the world seeing 14 days above 40 degrees. The hottest day recorded in the UK came in July 2022 with 40.3C measured in Lincolnshire. In North Yorkshire, the hottest temperature recorded was 39.6C. The UKs ten warmest years on record have all occurred since 2002, with heatwaves seen in 2022 now 30 times more likely to happen due to climate change, and by 2050 expected to happen every other year.

The Met Office predict that winters will also continue to be warmer and wetter on average. By 2070 they project that winters will be between 1 and 4.5C warmer and up to 30% wetter and summers between 1 and 6C warmer and up to 60% drier.
Heatwaves are becoming longer and more frequent. Of course not every summer will be hotter than the last but eventually the heat records we've just seen will fall down the records charts.

This imbalance in temperatures is shown clearly in the climate stripes. This image, the background to this slide, shows temperatures going back to the 19th century for England, relative to the average temperature. Although there is the odd pink, or orange scattered throughout, the pile up of red, and dark red, in the most recent decades is hard to ignore. This is where the phrase is coined. The 1990s were supplanted as the hottest decade by the 2000s, which were then replaced by the 2010s, and the 2020s will follow suit.

Slide 29 – Climate Change and Health

There is a worldwide acknowledgement that climate change will have impacts on health globally, with the world health organisation describing climate change as an emergency with multiple adverse consequences that will worsen health inequalities. In 2008/9 the first lancet commissioned multi-disciplinary report on climate change declared that climate change is the greatest global threat to health of the 21st century. When we've just experienced the COVID-19 pandemic this feels very hard to appreciate the scale at which we are talking here, but the threat from climate change remains truly the greatest threat we face, on a scale far greater than we have ever experienced before.

However, it's important that we realise the possibilities around the climate agenda and the opportunities to redefying the social and environmental determinants of health.

Slide 31 – Drivers, Changes and Impacts of Climate Change

A changing climate impacts crop growth and human health, while many people may need to leave their homes. It places certain species at an increased risk of extinction. The effects of climate change are real, and they are already happening.

The level of climate change we will see depends on how quickly we cut emissions of dangerous greenhouse gases. Even if we were to stop all emissions today, we would not prevent some changes. However, the sooner we cut emissions, the smaller the changes will be.

Drivers of climate change
We know that greenhouse gases, aerosol emissions and land use affect our climate. Overall, human activity is warming our planet.

Changes to the climate system
Climate change can affect our climate system in lots of different ways:

- Changes in the hydrological cycle
- Warmer land and air
- Warming oceans
- Melting sea ice and glaciers
- Rising sea levels
- Ocean acidification
- Global greening
- Changes in ocean currents
- More extreme weather

Find out more about these and other indicators of climate change on our global climate dashboard and extremes dashboard.

Impacts of climate change
Our climate system is finely balanced, and small changes can have significant consequences. Some of the impacts from these changes to our climate system include:

- Risk to water supplies
- Conflict and climate migrants
- Localised flooding
- Flooding of coastal regions
- Damage to marine ecosystems
- Fisheries failing
- Loss of biodiversity
- Change in seasonality
- Heat stress
- Habitable region of pests expands
- Forest mortality and increased risk of fires
- Damage to infrastructure
- Food insecurity

Slide 32 – The Impact on Health

There have been three broad health impacts identified:

- Relatively direct impacts, usually caused by weather extremes
- Consequences of environmental change and ecological disruption in response to climatic change

- Consequences that occur when populations are demoralised and displaced by the following climate change induced factors:
    - economic dislocation,
    - environmental decline and conflict situations including traumatic, infectious diseases, nutritional, psychological and other health consequences.

Slide 33 – Air Quality

The activities that drive climate change are the same things that drive poor health outcomes. By taking steps to tackle climate change we will also improve health and wellbeing. The health benefits accrue quickly, especially in the communities taking action. The emissions and gases that are warming our planet are also polluting our air and are toxic to our bodies.

Each year in the UK around 40,000 deaths are attributable to exposure to outdoor air pollution, but air pollution also causes harm to people across all stages of life. There is no recognised safe level of emissions.

Transport is one of the main sources of the warming greenhouse gas emissions in the UK. As the main mode of transport for many, frequent car use is not only increasing the greenhouse emissions that drive climate change, but contributes to our increasingly sedentary lives. We have designed out opportunities for physical activity in our communities in favour of the car.

Physical inactivity is associated with 1 in 6 deaths in the UK, yet around 1 in 3 men and 1 in 2 women are not active enough for good health. Chief Medical Officer guidelines state that we should spend more time moving and less time sitting. One way of being more physically active is to spread activity throughout the day, using active forms of travel instead of cars, especially for short journeys.

Evidence shows that the lack of accessible public transport options disproportionately impacts people with disabilities, those with caring responsibilities, and those on low incomes; whilst the burden of poor air quality is highest in our most disadvantaged communities. As transport is the largest source of greenhouse gas emissions in the UK, we cannot achieve net zero without change.

Around half of journeys in towns and cities under 5 miles were made by car in 2021, with around a quarter of all car trips in England less than 2 miles. Many of these journeys could be walked or cycled. Active travel is good for the planet because it is a low carbon alterative to car journeys. It is estimated that active travel can deliver between 1MtC02 emissions and 6MtCO2 emissions savings from 2020 to 2050 in the transport decarbonisation plan.

In cycle share schemes, an average of 53kg of CO2 emissions are saved per cycle share user each year according to CoMoUK’s 2021 bike share report. Fewer emissions means better air quality, which in turn leads to improvements in physical and mental health.

Slide 35 – Air Quality and Aeroallergens

The most direct link between climate change and ill health is air pollution. Burning fossil fuels for power, transport and industry is the main source of the carbon emissions that are driving climate change and a major contributor to health-damaging air pollution, which every year kills over seven million people due to exposure inside and outside their homes. Over 90% of the urban population of the world breathes air containing levels of outdoor air pollutants that exceed WHO's guidelines. Air pollution inside and outside the home is the second leading cause of deaths from NCDs worldwide; it is responsible for 26% of deaths from ischaemic heart disease, 24% of those from strokes, 43% from chronic obstructive pulmonary disease and 29% from lung cancer.

There may be an increase in frequency of episodes of high air pollution caused by weather patterns such as heatwaves. There is evidence that pollen releases may increase, affecting hay fever symptoms. UK climate projections indicate that conditions increasing wildfire risk will become more common. A review of the health effects of wildfires concluded that there is strong evidence that wildfire smoke exposure is associated with respiratory health effects. Growing evidence also suggests an association with increased mortality.

Over 90 per cent of people breathe unhealthy levels of air pollution, largely resulting from burning fossil fuels driving climate change. In 2018, air pollution from fossil fuels caused $2.9 trillion in health and economic costs, about $8 billion a day.

Slide 37 – Increased temperatures – increasing risks

As recent heatwaves have demonstrated, high temperatures are a threat to health and wellbeing. Extreme heat can also have an economic impact, reducing our ability to work, particularly for those working outside, undertaking manual work. Proactive adaptation will help to limit overheating and the subsequent health and wellbeing impacts.

As the weather gets hotter, our bodies have to work harder to keep our core temperature down. Severe heat compromises the body's ability to regulate temperature and can disrupt sleep, it impairs cognitive performance and can lead to heat exhaustion and heatstroke. It is associated with increased risk of suicide and hospital admission for mental illness as well as cardiovascular mortality. Some people are at higher risk of the health consequences associated with heat. This includes people with chronic conditions such as cardiovascular disease, respiratory diseases, diabetes, and hypertension.

Slide 40 – Emerging Infections

We need to prepare for changing vector patterns and infectious disease Vector-borne diseases are transmitted by organisms such as ticks and mosquitoes. The distribution of these species is changing across Europe and within the UK. Why this distribution is changing is complex but climate change plays a key role, especially in mosquito distribution. Biodiversity loss is likely to be another contributing factor.

Modelling predictions suggest that further climate changes coupled with other factors such as globalisation of trade could increase the UK's susceptibility to some vector borne diseases, although it should be noted that many variables influence vector distribution. Diseases transmitted by vectors include Lyme disease, Zika, tick borne encephalitis, and malaria, amongst many others.

The emergence of mosquito-borne viruses, such as West Nile Virus, is an increasing risk to UK public health due to a warming climate, and we have already seen evidence of this virus in the Netherlands and Germany, and outbreaks in Italy associated with hot spring weather. Where we see extreme weather and environmental changes that lead to more flooding (and the creation or expansion of wetlands) this affects both the density and distribution of native mosquitoes by providing new habitats for them. But a warming climate could also lead to non-native mosquitoes (such as the tropical species Aedes albopictus which has colonised Europe in recent decades) establishing and then increasing in numbers here in the UK. Ticks are also a public health issue, with Lyme disease already endemic in the UK.

Milder winters and springs will lengthen the periods ticks are active and biting (though it is also the case that warmer summers could limit their activity). Non-native ticks, imported on travelling pets and migratory birds, are now also being found in the UK, particularly associated with heatwave events, and their ability to survive and establish will be enhanced by climate change. Short term public health action to prepare and adapt to the risks posed by changing vector patterns includes developing and establishing surveillance strategies, including citizen science; raising public awareness.

Longer term policies will be needed to control any vector borne disease, including vaccine development. We do not have a clear picture yet of who is potentially most at risk from vector borne diseases in the UK and how to address vulnerability, prevent inequalities from emerging, and build resilience through community based adaptation.

The current burden of vector borne diseases is highest in tropical and subtropical areas; here they disproportionately affect the poorest populations, a pattern which we need to be aware of in the UK. An important element in reducing the incidence of vector-borne diseases is behavioural change. This includes helping people know how to protect themselves and their communities from mosquitoes, ticks, bugs, flies and other vectors. Community based approaches will be essential in ensuring all communities have the support and capacity to reduce their risk of exposure to vector borne diseases.

Slide 41 – Vector borne diseases

Higher temperatures will increase the suitability of the UK's climate for invasive species and increase the risk of them spreading diseases. Native disease vectors such as ticks and mosquitos may also increase in numbers or geographical range as temperature and moisture levels change.

For example, hot, dry weather can lead to increased areas of stagnant water, which would be likely to increase the spread of mosquito-borne diseases, should they be introduced. Land-use change such as creating wetlands may also contribute to mosquito abundance. Ixodes ricinus continues to be reported in new locations and increased abundance in Europe.

Slide 42 – Antimicrobial Resistance

One of the lesser-known consequences is the increased prevalence and spread of bacterial, viral, parasitic and fungal diseases in humans, animals and plants – as well as the likelihood that pathogens that cause diseases will evolve and become resistant to medicines.

This leads to the rise and spread of drug-resistant infections that are difficult or potentially impossible to treat with antimicrobial medicines, including antibiotics, antivirals, antifungals and antiparasitics, and puts modern medicine at risk.

For example, common bacterial infections, infections after childbirth or surgery, fungal infections, HIV and malaria, could become harder to treat and increasingly fatal. Millions more lives could be lost each year.

The climate crisis worsens the threat of antimicrobial resistance in several ways. Temperature is intimately linked with bacterial processes and infections.

Higher temperatures may also cause drought, which results in water shortages and a lack of food. This can cause malnutrition, with children most vulnerable, lowering immunity and the ability to fight off infections. Infections can spread quickly in these conditions and could become drug-resistant, with mortality rates likely to increase.

Flooding and drought can lead to displacement, overcrowding and a lack of clean water. Poor sanitation and reduced access to treatment and medicines in disasters like these can cause rises in infections that can become drug-resistant.

These extreme conditions, fuelled by climate change, will also put increasing pressure on farmers and livestock producers. Antibiotics are often used in food production and could further increase to protect diminishing crop and animal yields. The overuse and misuse of antibiotics in farming is increasing the development and spread of drug-resistant infections in humans and animals.

The 2023 Lancet Countdown on Health and Climate Change, supported by Wellcome, reports how our climate has become more suitable for disease transmission.
It finds that climate change, along with urbanisation and human movement, has driven an increase in dengue – a life-threatening viral infection that is transmitted from mosquitos to people. Cases have doubled every decade since 1990 and almost half of the world's population is now at risk. What's more, is that, in every future climate scenario of global heating, it's expected that dengue transmission will continue to increase.

Slide 43 - Mental Health

There is growing evidence of the various mechanisms by which climate change is affecting mental health.

The mental health impacts of climate change are unequally distributed with certain groups disproportionately affected depending on factors such as socioeconomic status, gender and age. However, it is clear that climate change affects many of the social determinants that are

already leading to massive mental health burdens globally. A 2021 WHO survey of 95 countries found that only 9 have thus far included mental health and psychosocial support in their national health and climate change plans.

Younger people are prone to climate related negative mental health because of their increased awareness of the climate emergency and a lack of support to help manage their concerns. The climate crisis is already playing into the life decisions of young people, some of whom are opting out of higher education or choosing not to have children.

In an international survey of 10 000 16-25 year olds across 10 nations, 75% agreed with the statement that the future is frightening, 56% agreed that humanity is doomed, and 68% reported sadness, feeling afraid, anxious, and powerless. In England, 57% of a sample of child and adolescent psychiatrists reported seeing children and young people who are distressed about the climate crisis and the state of the environment, and 47% of participants aged 18-34 in an American Psychological Society survey of 2017 adults in 2020 reported that the stress they feel about climate change affects their daily lives.

Slide 53 – Summary

Climate change is not just an environmental issue, it affects all of us as there are social and economic impacts. For example it will hit the poorest and most vulnerable in our society hardest and fastest. Climate change will exacerbate these and many other existing inequalities that many in the third sector work so hard to tackle: it's a matter of social justice.

Despite efforts to reduce the impact humans have on the environment, some climate change is now considered inevitable and new weather patterns are already emerging across the globe and within Wales. Impacts of weather changes due to climate change include health problems as a consequence of the heat waves; infrastructure impacts through disruption to travel via extreme weather events; economic and personal losses through flooding. We therefore need to help these communities and groups of vulnerable people to develop their 'adaptive capacity' to be able to cope with these changes.

In addition, policies to help mitigate climate change will have an effect on the people you support; this is an impact that we are likely to see very soon. These will include polices to mitigate carbon emissions in energy costs, travel, housing and lifestyles. We need to understand how our actions impact on the environment to help ensure we reduce or contribution to climate change.

The third sector has a key communication role to play in engaging communities and individuals, especially harder to reach and vulnerable groups, to support them in considering how climate change impacts on them and how they can build resilience to it by adapting their homes and communities. When extreme events happen, such as flooding, the third sector and communities will play an important role in the response and in providing help in the aftermath of such events. The third sector also has an important advocacy role: we must ensure that climate change mitigation policies are fair and do not disproportionately impact on already disadvantaged people. We must also campaign and advocate for a more sustainable future.

Engaging with climate change issues has lots of benefits Tackling climate change offers the opportunity to help achieve existing goals and future-proof efforts to build more resilient communities, stronger local economies and a more equitable society. Taking action on climate change also opportunities in terms of saving money through reducing your carbon footprint and income generation, particularly around community renewable energy.

Slide 60 – Social Prescribing at York CVS

Abbie Myers - Senior Social Prescriber
(Social prescriber on the ground as well as managing other social prescribers, get a mix of both what patients' struggles are / referral reasons as well as struggles staff are having / gaps in services)

What is Social Prescribing?
Social Prescribing links people to non-medical sources of support, to improve their health and wellbeing.

People often seek help from health services for things that are primarily social issues, (e.g. loneliness, isolation, financial worries). Social prescribing widens, diversifies and makes more accessible the range of support available to people, enabling them to take greater control of their own health and wellbeing.

Social Prescribers work with individuals to find out what matters to them. They support individuals to access local VCSE sector activities and statutory services with the aim of supporting them to self-manage their health and wellbeing.

Social Prescribers are not Support Workers, Counsellors, Social Care or Mental Health Workers – we support patients to connect with these services.

Primary Care Link Workers (Social Prescribers) offer social prescribing across York to those who are 18+ and registered to a GP surgery. In the year 2023-24, there were over 4,000 referrals to the service across York. This was over 500 more than the previous year, which shows demand for the service is increasing.

Examples of how social prescribing links in with climate change:

Preventing food waste
With cost of living being a massive struggle, we see and support many people who struggle to make ends meet. We support those who are unable to pay for food, by linking them in with local Trussle Trust foodbanks, as well as the community foodbanks (e.g. Red Tower, Planet food, local community centres).

A large majority of community foodbanks are supported by food donations from supermarkets to prevent food waste. These foodbanks also act a social space for those who are struggling to meet with others and also act as a warm spaces (which means they aren't having to heat their own homes whilst they are there).

Saving / using energy more effectively
As the cost of living increases and the winters become harder, we support those who are unable to pay for their gas and electricity and are in fuel poverty. We link these people in with services that can support those, for example York Energy Advice, which can give information on how they can save energy - https://yorkenergyadvice.org.uk/

We can support individuals to access grants if applicable e.g. for carpets or curtains etc., which may help to insulate a home. We also look aa an individual's routine, it may be that we work on making sure they have access to local warm spaces (like libraries etc.) to go too in the day time to keep warm, as well as this we link them with Citizens Advice to check they are claiming all they are entitled too.

Air quality - respiratory proactive social prescribing project
This is a project that actively reaches out to people with long-term respiratory conditions who may be isolated due to their condition. In 2023-24, 82 people across York were highlighted in this cohort and offered support, with 52 actively engaging with the project.

Find out more about Social Prescribing at York CVS here.