East Sussex

Addressing the Health Effects and Impacts of Climate Change

Addressing Environment, Climate and Health
A Systemwide Health Impact Assessment for East Sussex (ECH-HIA)

Taking a Whole Systems Approach for Integrating and Advancing Population and Planetary Health in All of Our Approaches

Main Technical Report

Part 2: The Evidence and Summary of the Methods



East Sussex
County Council

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1. The East Sussex Climate Hazards and Health Data Profile

"We need to be looking at criteria relating to long term trends in climate change because they're already starting and creeping up on us and are only going to increase and snowball." (East Sussex Stakeholder)

1.1. Introduction

The aim of this data profile is to collate and narrate key local data on climate change and health. It can be used to understand and help address the health effects of a changing climate by bringing together the key climate hazards scoped into the report. It displays any locally available data on the hazards and their relative health effects. Climate hazards have been defined as events, trends or emergencies caused or exacerbated by climate change that have the potential to cause harm, damage or loss; while climate risk is the likelihood of that harm occurring considering the hazard, a person's exposure and their vulnerability. Local vulnerable groups have been highlighted throughout the report where there is the highest risk of harm from a climate hazard.

The East Sussex Climate Hazards and Health Data Profile hopes to be used by all colleagues who can mitigate or support adaptation to the climate effects on health through strategic decision making, influence climate focussed policy and educate on the far-reaching health effects of climate change. The UKHSA's Health Effects of Climate Change (HECC) report, and Climate change and public health indictors: Scoping review have been cornerstone documents to guide this work.

For more information:

- Health Effects of Climate Change (HECC) report - GOV.UK
- Climate change and public health indicators: scoping review - GOV.UK

The data profile utilises a series of signposts to highlight key information, specialist databases or areas of interest. System partners have been signposted to climate hazards of highest importance to their work; and can see other sectors that may be a key partner in achieving positive change.

This report contains:

1. Focussed county baseline demography
2. Climate hazard: Temperature
3. Climate hazard: Sun and UV

4. Climate hazard: Drought
5. Climate hazard: Wildfires
6. Climate hazard: Air quality
7. Climate hazard: Flooding and coastal impacts
8. Climate hazard: Infectious diseases
9. The Food System
10. Transitioning and Adapting Infrastructure

1.2. Baseline Data

East Sussex features a diverse geography with distinct rural and coastal areas. The coastline includes urbanized seaside towns like Hastings and Eastbourne, where tourism, fishing, and service industries dominate, leading to denser populations and developed infrastructure. In contrast, the rural inland areas consist mainly of South Downs hills, farmland, and smaller villages, characterised by low population density, agricultural activity, and a focus on conservation. This rural-coastal split influences local economies, housing patterns, and transport, with coastal towns often facing challenges like seasonal population changes and infrastructure strain, and higher deprivation.

Highlighted by the 2021 Chief Medical Officer report, coastal areas suffer from more ill health than inland neighbours due to higher concentrations of older, retired citizens and people of higher deprivation. There is also a difficulty in attracting healthcare staff to more rural locations and public transport is often limited, impacting not only healthcare delivery but also job opportunities (Whitty, 2021).

Many of the known demographic variables that affect health status will continue to create health inequalities due to the changing climate (Centre for Climate and Health Security and UK Health Security Agency, 2023); this report will highlight some of the key groups or characteristics disproportionately affected by climate health hazards. The county has an aging population, with 26.5% of its population over 65 years compared to only 18.7% nationally (East Sussex County Council, 2024). Our population of frailer older adults over the age of 85 is also higher than nationally, 3.9% compared to 2.5% respectively (East Sussex County Council, 2024). East Sussex has 10% under 10s, of which we know from the recent My Health My School Survey that 18% of year 5 and 6 pupils worry about climate change (East Sussex County Council, 2025). As well as being a more vulnerable to health effects of climate change, the young and old may also put greater pressure on the healthcare system, affecting its ability to respond to all ages health needs.

For more information:

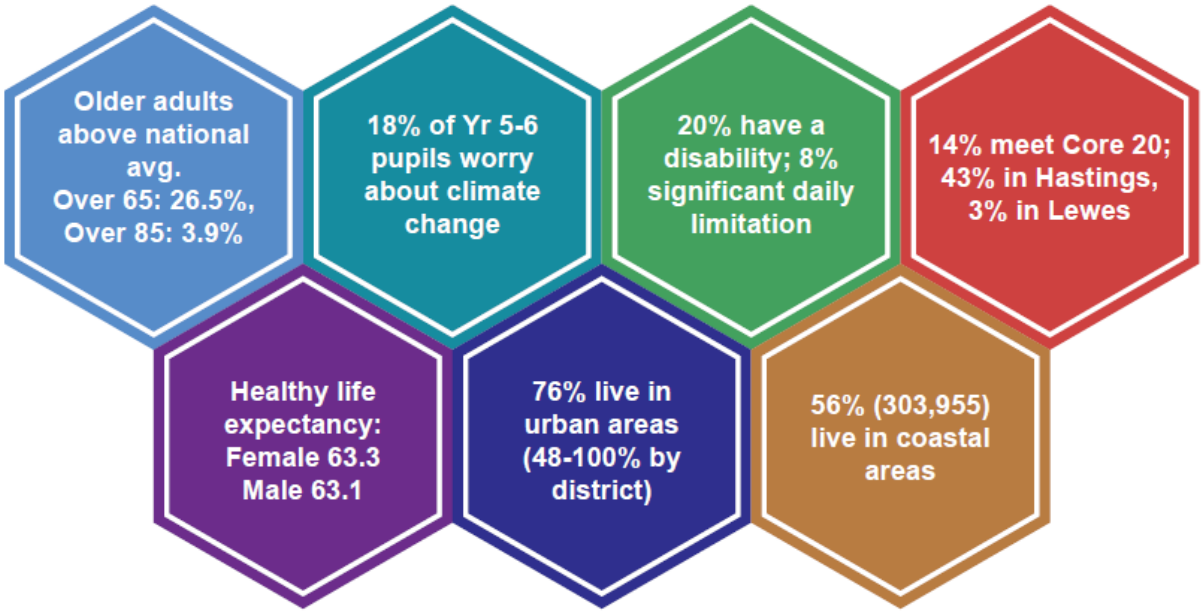
- My Health My School survey 2023-2024 |

Another vulnerable group are those with a disability. Locally we know that 20% of residents have a disability with 8% reporting a significant day to day limitation (East Sussex County Council, 2025). This will likely affect their ability to adapt to rising temperatures or react to extreme events such as wildfires and flooding.

The Core20PLUS5 (for adults and now adapted to apply to children and young people) initiative is a national workstream formulated as part of the NHSE strategy to tackle health inequalities. It describes the most deprived 20% and five locally chosen priority clinical areas specific to adults and children (NHS Sussex Integrated Care Board, 2025). Locally we can see a very uneven distribution of the Core20 group, with 43% of Hastings population part of Core20 compared to only 3% of Lewes.

Healthy life expectancy is an estimate of the average number of years babies born today would live in good health. In East Sussex, on average, this is better than England (Females 62.2 vs 61.9; Males 61.8 vs 61.5), but there is a 20-year gap between the most and least deprived areas of the county, again highlighting the huge disparity in health across East Sussex which could manifest in worsening inequality if climate change actions are not considered (East Sussex County Council, 2024).

Rural and urban populations are affected differently in the face of climate hazards. The unique geography of the county see that some districts are entirely urban, while others are over 50% rural (East Sussex County Council, 2024), highlighting the need for local solutions for climate hazards. This is also true of coastal communities, over half the population (56%) live in coastal areas but rising sea levels will cause greater erosion to the East Sussex coastline putting this particular group at risk compared to others (East Sussex County Council, 2024).



For further information, data and insights:

- East Sussex in Figures – Data Observatory – Welcome to East Sussex in Figures
- East Sussex Joint Strategic Needs Assessment |
- Wider Determinants of Health - Data | Fingertips | Department of Health and Social Care
- NHS England » Core20PLUS5 – An approach to reducing health inequalities for children and young people
- Why we need to talk about health and climate: an essay collection » Green Alliance

1.3. Temperature

Central Climate hazard: Temperature

Associated climate hazards:

- Drought: Sustained dry, hot weather leading to increased risk of drought
- Flooding: Flash flooding from rainfall on dry baked land
- Wildfires: Dry hot weather making fires easier to catch
- Infectious diseases: More outdoor use increases exposure to infection vectors, and likelihood of antimicrobial resistance

Sectors of interest:

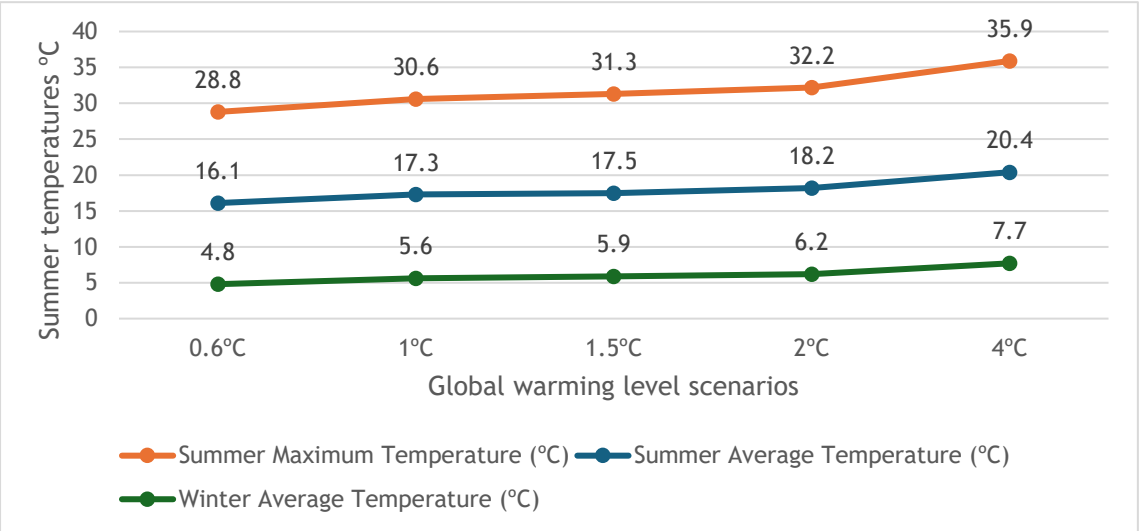
- Emergency services: Increased ambulance call outs in hot weather compared to cold, increased fire risk
- Health and social care: Older adults are vulnerable to hot weather
- Housing.

Warmer weather is the most consistent predicted trend in weather predictions under a changing climate. With the 1.5 ºC warming scenario inevitable, warmer weather will occur in the UK by mid-century. The table below outlines the possible global warming scenarios predicted by the Met Office (Met Office, 2025). 1.2 ºC describes the current level of warming, for each further scenario (1.5 ºC, 2 ºC, 4 ºC). The Met Office predicts when this may occur, for example we may reach 2 ºC warming in 2030 if we are on a more aggressive global warming trajectory. Both the central and high global warning levels are consistent with current global emissions but show the possible variation in predicting future impacts.

Table 1: Global warming scenarios and predicted timelines

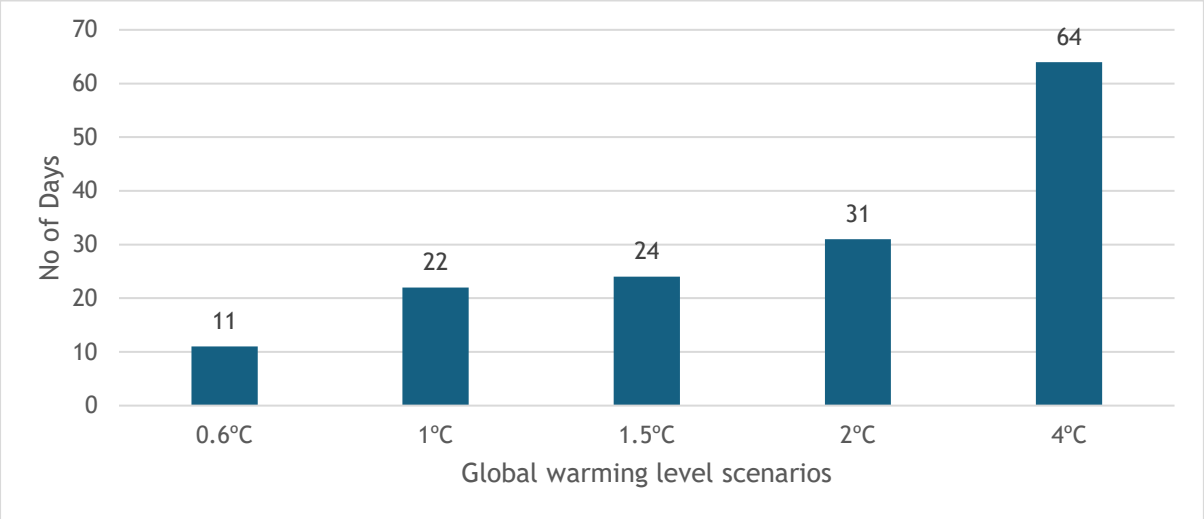
	+0.6 °C	+1.0 °C	+1.2 °C	+1.5 °C Paris agreement	+2 °C Prepare for	+4 °C Risk assess for
Central Global warming level	Baseline compared to preindustrial levels	2001-2020	Current	2030s	2080s	After 2080
High Global warming level				Before 2030	2030s	2080s

In all the climate scenarios, East Sussex can expect to see warmer weather all year round with winter averages going from 4.8°C up to a possible 7.7°C in the most extreme global warming predictions. The graph below shows the predicted temperature changes from the pre- industrial baseline, current climate and across the three Met office climate change prediction scenarios. We can see that by mid-century when global warming reaches 1.5 °C the summer high temperature will be up to 31.3 °C, compared to 28.8 °C in pre-industrial times, this is predicted to increase to 35.9 °C if global warming continues.



Graph 3: Predicted average temperatures at each Met Office Global Warming Scenario

Currently the Met Office threshold for a heatwave in East Sussex is 27 ºC (Met Office, 2025), which is already warmer than regions outside of the southeast where a heatwave is anything above 25 ºC, showing the increased risk East Sussex has to extreme temperatures.



Graph 4: Predicted number of days that will reach over 25 ºC at each Met Office Global Warming Scenario

The Met Office predicts to see an increase in summer days of 25 ºC or warmer. Graph 4 shows that at the current warming level of around 1 ºC, East Sussex experiences 22 days of weather over 25 ºC, this could increase up to 64 days at the most extreme predicted Global Warming Scenario of 4 ºC. This may have some positive health benefits including more outdoor activities and active travel which have been liked to positive physical and mental health.

- 72% of adults (19+ yrs) in East Sussex are **physically active** (150+ minutes/week) (Department of Health and Social Care, 2025).
- 15% of adults in East Sussex **walk** for travel at least 3 days per week. 1% of adults in East Sussex **cycle** for travel at least 3 days per week (Department for Transport, 2024).

Climate change scenarios predict we will have an increased number of warm days, around 25 ºC, which has the potential to have a positive health impact for active travel and outdoor physical activity.

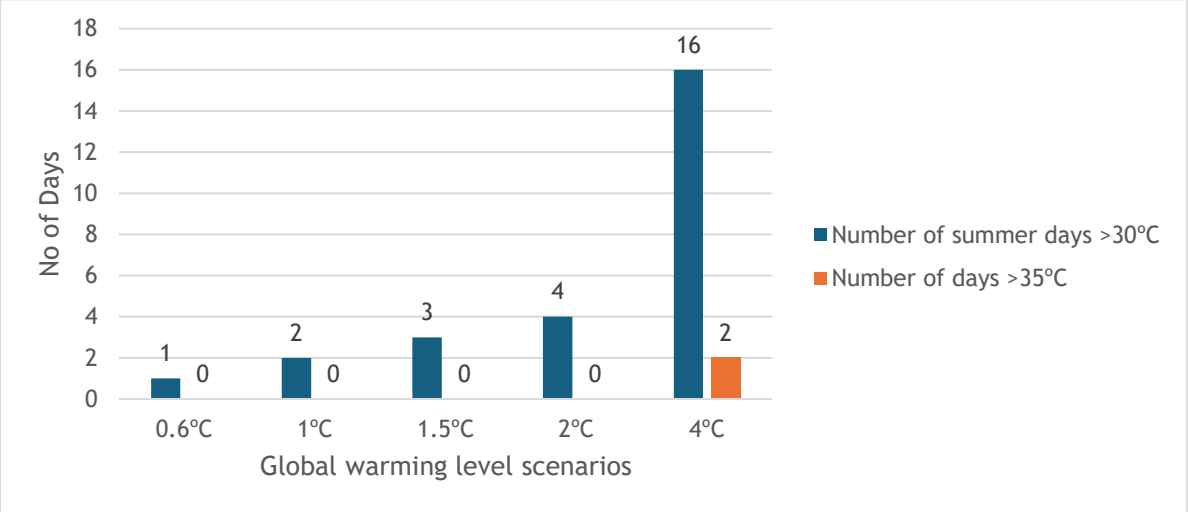
The county includes over **1,000 km of public rights of way**, coastal trails and green infrastructure including the **South Downs National Park, High Weald AONB**, and major parks in every district.

More info: Public Rights of Way - Public Rights of Way map

38% of primary, and 42% of secondary school children walk to school. This potential benefit is important for children as increasing physical activity has potential positive health effects throughout their lives (East Sussex County Council, 2025).

However, temperatures rising also means higher likelihood of extreme hot summer days. Climate projections suggest the number of days warmer than 30 ºC will increase dramatically from 2 days per year on average at the current warming level of around 1 ºC, up to 16 days a year for the most extreme Global Warming Scenario of 4 ºC, with the additional likelihood of days over 35 ºC (Met Office, 2025).

Graph 5: Predicted number of days that will reach over 30 ºC and 35 ºC at each Met Office Global Warming Scenario.



East Sussex suffered significant excess mortality during the 2022 heatwaves where temperatures ranged between 30-40 ºC (East Sussex Public Health, 2024). The table below highlights the difference in excess mortality between East Sussex and England during some recent heatwaves. The excess mortality in East Sussex in 2022 was 24% compared to only 6% for the rest of England.

Table 2: Excess mortality (%) during heatwaves 2016-2022 (2020,2021 are excluded due to COVID 19).

Year	East Sussex	England
2016	17%	9%
2017	18%	12%
2018	-2%	5%

Year	East Sussex	England
2019	15%	6%
2022	24%	6%

Data also showed that the use of 111 and emergency departments were more common in heatwaves compared to winter, suggesting local emergency services will be under pressure as temperatures rise.

The most vulnerable population are older adults, and national research suggests the years of life lost in the care home population due to heat waves could be up to 2.5 years as care home residents are most at risk of overheating (Ibbetson, 2021).

East Sussex has an ageing population, in particular East Sussex has a 1.1% prevalence of dementia, compared to 0.8% for England. Currently there are 282 care homes serving approximately 8,000 residents. The county has 3,869 nursing home beds, with these residents particularly at risk of heat related mortality as research has found that bedbound residents are at highest risk of overheating.

For further information, data and insights:

- Extreme temperatures and health
- Impact of hot weather on health

1.4. Sun & UV

Central Climate hazard: Sun and UV

Associated climate hazards:

- Temperature: Increased likelihood of sunny days leads to increased and sustained warmer weather.
- Drought: Sustained dry, hot weather leading to increased risk of drought

Sectors of interest:

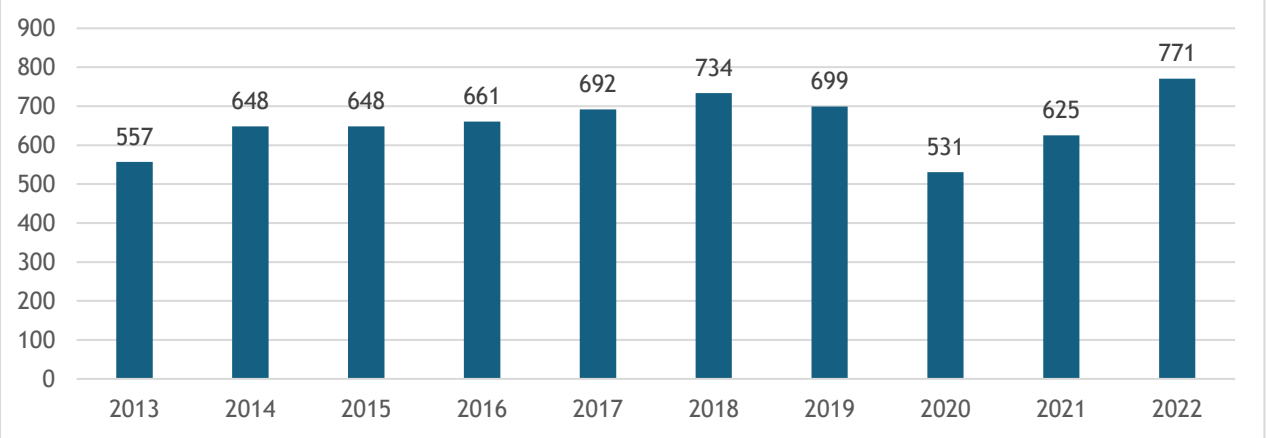
- Housing: Need to consider overheating in homes and protection against UV exposure
- Planning: Need for increased shade provision in new planning developments
- Education: Risks of sun exposure

The connection between UV exposure and climate change is not yet clear, but that social and demographic factors continue to affect health outcomes. The Met Office

data shows that the South East is already the region most exposed to UV rays, experiencing over 1,600 hours of sunlight annually (over 11 weeks), compared to parts of Northern Ireland, Wales and Scotland which will experience less than 1,000 hours (less than 6 weeks) (Met Office, 2025). Almost 95% of the local population identify as white (British, Irish or other), compared to 88% nationally (East Sussex County Council, 2025), which puts a large proportion of the population at higher risk of skin cancer due to their skin tone. Those with darker skin tones will likely benefit from the greater UV exposure through higher conversion of active vitamin D through the skin.

National trends show an increase in melanoma skin cancer diagnoses, which remains among the most common cancers in England. Within the NHS Sussex Integrated Care Board area, the East Sussex sub-region has seen a notable rise in new cases of malignant melanoma over the past decade. Annual diagnoses increased from 557 cases in 2013 to 771 cases in 2022, despite a temporary dip in 2020 likely linked to the COVID-19 pandemic and reduced screening activity.

Graph 6: Annual new diagnoses of malignant melanoma within NHS Sussex Integrated Care Board (East Sussex sub-region), 2013–2022.



Interestingly, at a national level, Melanoma skin cancer is one of the few skin cancers that's seen more in the least deprived communities (NHS England, 2024), it is not clear if this pattern is true locally or why those from less deprived areas are at higher risk.

An assessment of our local shade provision does show that East Sussex' rural regions have an abundance of shade even when the sun is high during summer months. In our urban areas, Hastings and Bexhill have good shade cover in their park lands but all urban areas have poor shade cover on the seafront promenades, popular summer outdoor spaces, potentially increasing the risk of UV exposure to residents, and the need for targeting education or intervention in these areas.

For further information, data and insights:

- Cancer registration statistics - NDRS
- ShadeMap - Simulate sun shadows for any time and place on Earth

1.5. Drought

Central Climate hazard: Drought

Associated climate hazards:

- Food supply: Drought could have direct effects to local food supply.
- Temperature: Precipitated by prolonged hot weather which causes its own health effects
- Wildfires: Dry hot weather making fires easier to catch

Sectors of interest:

- Agriculture: Mitigations against the effects of drought on local farming
- Water supply: Preparation for drought to minimise disruption to clean water supply.
- Health: Increasing chances of health effects of hot dry weather.

Alongside the warmer weather and increasing hot days described in the temperature section, the Met Office predicts wetter winters and drier summers as well as predicting that the South East region will likely be the worst affected region from drought (Met Office, 2025). The table below described the potential change in rainfall at the three key warming scenarios. By mid-century, when 1.5 ºC warming is predicted, we may see a 5% decrease in summer rainfall, with progressively drier summers as global warming continues (Met Office, 2025).

Table 3: Met Office predicted summer precipitation by Global Warming Scenarios.

	+0.6 ºC	**+1.0 ºC**	**+1.2 ºC**	**+1.5 ºC Paris agreement**	**+2 ºC Prepare for**	**+4 ºC Risk assess for**
	mm/day	mm/day	-	% change	% change	% change
Summer precipitation	1.71	1.65	-	-5%	-12%	-34%

Drought will affect East Sussex residents in a number of ways; through the health impacts of extreme heat, affect to the water supply, which may impact sanitation, and possible affect to local food supply through poor crop yields, and wildfires.

For further information, data and insights:

- UK Water Resources Portal

1.6. Wildfires

Central Climate hazard: Wildfires

Associated climate hazards:

- Drought: Sustained dry, hot weather leading to increased risk of wildfires
- Temperature: Sustained hot weather increases the risk of wildfires
- Air quality: Wildfires directly affect air quality through release of smoke

Sectors of interest:

- Emergency services: Increased risk of emergency call outs and resource use from wildfires
- Agriculture: Locally, wildfires typically affect agricultural land, reducing yield.
- Healthcare: Increased pressure from respiratory effects of smoke or injuries from fires
- Housing:

Wildfires are generally more common in hot, dry conditions. As noted in "temperature" and "drought" East Sussex will see increasing temperatures due to a changing climate.

East Sussex Fire and Rescue service data shows that the number of wildfires in East Sussex (1) is historically higher during summer months, particularly in July and August (East Sussex Fire and Rescue Service, 2025). Additionally, over the last 8 years one fifth of wildfires occurred in August 2022 (11/57) which was noted by

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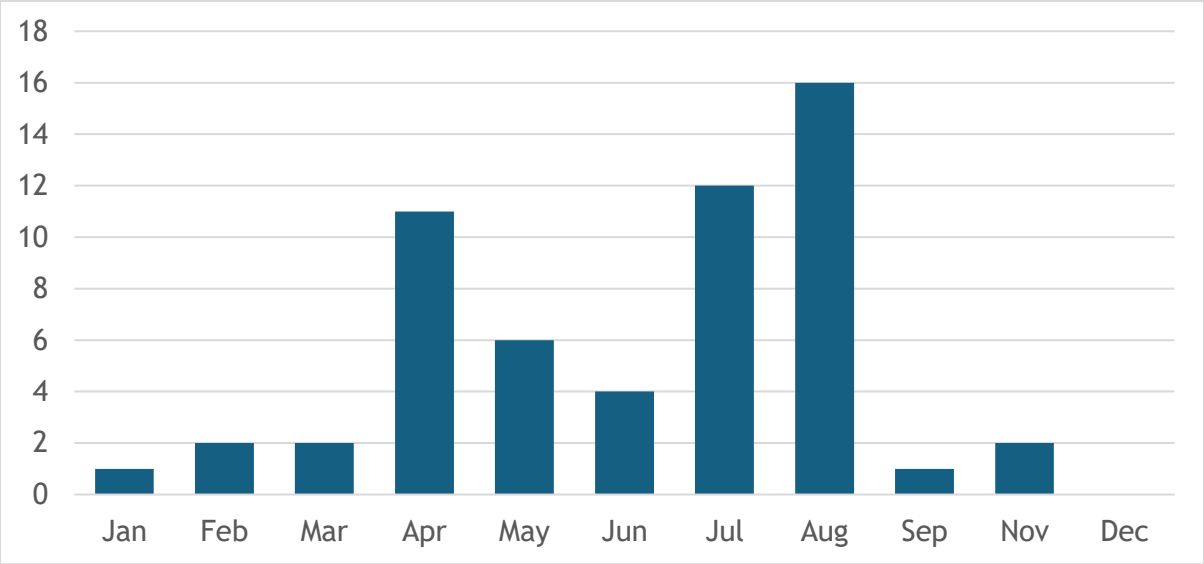
(1) This definition of a wildfire is based on the FRS Wildfire Operational Guidance document definition. These are fires in the open affecting vegetation, e.g. woodland, grassland, crops, shrub land etc. that meet at least one or more of the following criteria: ■ Involves a geographical area of >1 hectare. ■ Requires a committed resource of ≥ 4 FRS appliances. ■ Requires resources to be committed for ≥ 6 hours

UKHSA to be the hottest summer on record (UK Health Security Agency, 2025). On the 8th of July 2026 Ashdown Forest experienced 70m x 70m of grass and trees affected by wildfire hotspots.



Graph 7: Cumulative number of wildfires by month in East Sussex, 2017-2024

Wealden is the most affected district, based on its **rural** landscape. Around two-thirds of wildfires have occurred in Wealden, suggesting East Sussex's rural residents are more at risk of the health effects of wildfires. Two of the most common land types affected are heathland and woodland, which are areas that offer green space which is directly linked to positive health and wellbeing effects. Wildfires do not only affect the natural landscape but may also affect local food supply as the second most common land type affected is grassland for pasture or grazing.

Overall, the risk of wildfires is likely to increase during the summer months due to increasing hot summer days, heatwaves and drier weather. This will affect the landscape, areas for outdoor activities and possibly local food supply.

The health effects of wildfires include smoke inhalation, respiratory illness, cardiovascular complications, burn injuries and increased demand on emergency services.

For further information, data and insights:

- Home | East Sussex Fire & Rescue Service

1.7. Air Quality

Central Climate hazard: Air quality

Associated climate hazards:

- Wildfires: wildfire will directly reduce are quality through smoke
- Temperature: Evidence suggests that increasing temperatures worsens air quality
- Food supply: Local agriculture practices worsen air quality

Sectors of interest:

- Agriculture: Current pesticide spraying practice worsen air quality, new methods need to be developed to maintain yields in poorer climates.
- Planning: Consideration of planning in the context of increasing air quality risks, while maximising the known co benefits of net zero initiatives on air quality.
- Transport: Understand the co benefits of net zero planning, improving air quality and public health.
- Housing: Improve housing quality, ventilation and energy efficiency to reduce exposure to indoor and outdoor air pollution while maximising the health and air quality co-benefits of net zero measures.
- Environmental Services: Strengthen air quality monitoring, pollution prevention and environmental regulation to reduce exposure to harmful pollutants and protect public health, particularly for vulnerable communities.

Indoor and outdoor air pollution is not only a major cause of the climate crisis but is and will be a consequence of climate change environmental effects. Temperature increases mean more people will be spending time outdoors, however the most deprived populations live in our most polluted areas, potentially increasing their health risks. Increasing temperatures and droughts also raise the risk of wildfires, as well as release chemicals into the air which reduce local air quality through smoke. Increasing need for reliance on local food supply may increase the air pollution effects of agriculture (Whitty, 2022). Finally, national research shows that temperature and sunshine increases are altering pollen seasons, with some seasons being longer and others more severe, likely leading to worsening health of respiratory allergen sufferers (Adams-Groom, et al., 2022).

In reviewing the effect of poor air quality on health outcomes the Health Foundation found that neighbourhoods with the lowest air pollution have better life expectancy by 2.5 years for women and 3.5 years for men compared to area with the highest air pollution (The Health Foundation, 2024). Local data on

avoidable deaths show that respiratory illness is the third most common avoidable death local, causing up to 14% of deaths in Hastings (East Sussex Public Health, 2019).

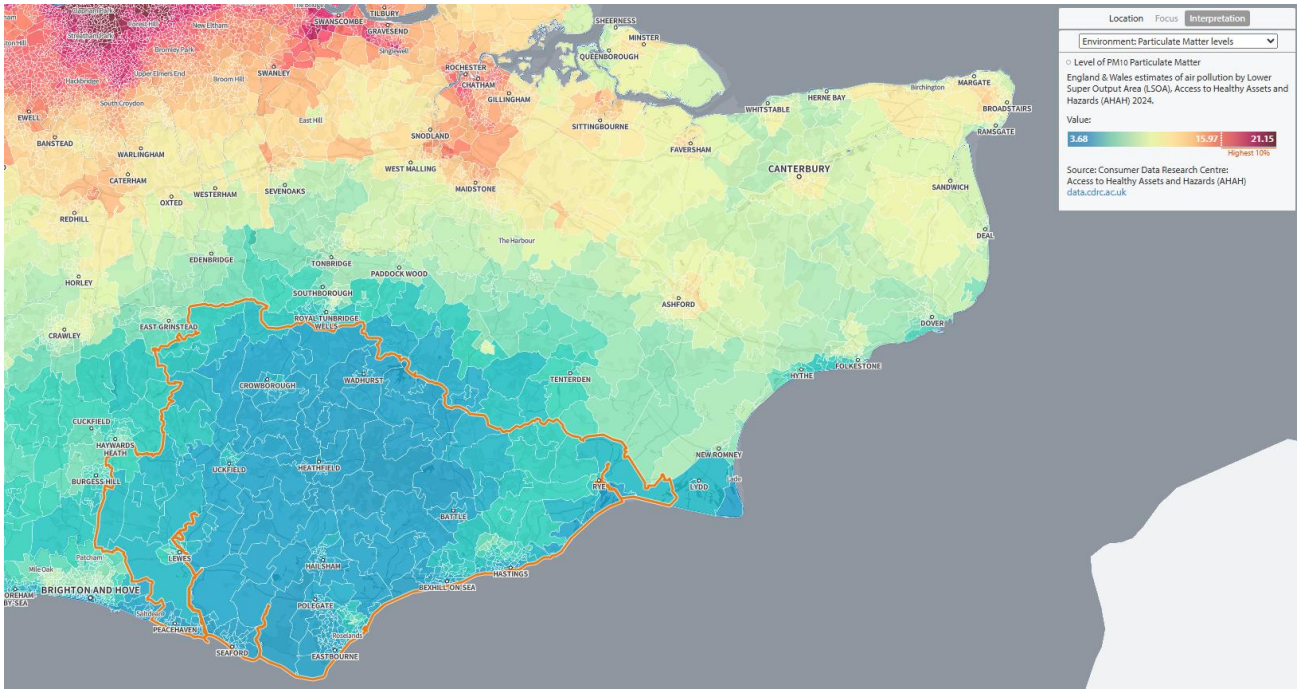
Local analysis has also found that in the areas most vulnerable to PM2.5 air pollution there is an increased rate of emergency admissions due to respiratory illness. This shows a direct local effect of air pollution on our most deprived communities, highlighting the inequity of climate change across populations.

For more information:

East Sussex JSNA Respiratory Disease Briefing [Respiratory Disease Briefing |]

Currently in East Sussex there are two small Air Quality Management Areas, in Lewes and Newhaven; these are areas identified by local authorities to be unlikely to meet national air quality objectives by the relevant deadlines. Whilst all East Sussex districts and boroughs currently meet the most recent UK air quality standards and future Government targets, apart from one or two exceptions, none of the air quality indicator levels at Air Quality monitoring points meet the revised WHO guideline standards which evidence suggests would benefit public health (East Sussex Public Health, 2024).

Map 2: PM 2.5 air pollution across the South East (Geographic Data Service, 2025)



Additionally reducing the exposure to the whole population would achieve the greatest public health benefit, as individuals who are more at risk may not be reflected in national targets, or may move between zones due to work, or education. The East Sussex JSNA Air Quality Briefing (East Sussex Public Health,

2024) has mapped those areas of greatest vulnerability to outdoor air pollution according to the experimental UKHSA Index for annual PM2.5 and NO2 exposure levels. It shows that the greatest vulnerability lies with the most deprived populations.

For more information:

East Sussex JSNA Air Quality Briefing Air Quality in East Sussex |

Air quality is not only a contributor to climate change but is worsened by global warming, and has significant health effects, on our most deprived residents.

Locally more attention could be paid to air quality management to minimise morbidity and mortality.

For further information, data and insights:

- Shape Atlas tool SHAPE Atlas
- Sussex-air: Promoting better Air Quality in Sussex: sussex-air.net: Improving Air Quality

1.8. Flooding and Coastal Impacts

Central Climate hazard: Flooding

Associated climate hazards:

- Drought: Potential increased risk of flash flooding due to baked ground being unable to absorb water quickly.
- Infectious diseases: Increased risk of water borne infections through contamination, or exposure to sewage
- Chemicals: Increased exposure to chemicals from water run-off from farms

Sectors of interest:

- Planning and Transport: Need to consider climate resilient places, and transport links
- Emergency services: Pressure due to injuries and accidents during flood events, as well as disrupted travel routes, and need for evacuation
- Healthcare: Pressure to mental health services after flood events
- Utilities: Disruption to infrastructure, risk of power and water supply failure and contamination of water supply.

Flooding can be caused by multiple sources, however the main three are: rivers, the sea and surface water (rain that flows over the ground).

- Flooding from the sea is caused predominantly by sea level and wave height, with the type of coastline also playing a part.
- The factors impacting surface water and river flood risk are more complex. Whilst rainfall volumes have an impact on the risk of surface water or river flooding there are several significant factors which can impact how an area responds to increased water including geology, topography and the nature of ground cover (urban, rural, wooded etc).

The Met office predicts an increase in winter rainfall up to 20% in their Global Warming scenario predictions, and with 1.5 ºC warming inevitable we will see at least 5% more rainfall each winter by mid-century (Met Office, 2025).

Table 4: Met Office predicted winter precipitation by Global Warming Scenarios.

	+0.6 ºC	**+1.0 ºC**	**+1.2 ºC**	**+1.5 ºC Paris agreement**	**+2 ºC Prepare for**	**+4 ºC Risk assesses for**
Winter precipitation	2.56 mm/day	2.66 mm/day	-	+5% % change	+9% % change	+20% % change

The Environment Agency is responsible for modelling flood risk across England and determining the anticipated changes to flood risk overtime due to climate change. Due to the influencing factors differing across England the Environment Agency have analysed and set climate change allowances for both river and surface water flood risk based on the characteristics of individual river catchments in England.

The Cuckmere River is one of three river catchments in East Sussex; but the only one entirely within county boundaries. The Environment agency predicts that the flood risk could increase significantly due to climate change.

- For rivers the current risk is between 18-35%, but this could increase to between 32-76% by 2125 depending on the level of global warming that occurs (Department for Environment Food & Rural Affairs, 2025).
- For surface water flooding the risk will rise to 20-40% by 2125 depending on the global warming level reached (Department for Environment Food & Rural Affairs, 2025).

The Cuckmere River is a flood plain, it's not only a local recreational asset providing a water sports, and walking area, it also a location that can flood to try to protect local infrastructure being affected.

For more information:

- Climate change allowances for peak rainfall
- Climate change allowances for peak river flow

A review of the local major incident flood reports shows that in five recent flood events in Eastbourne, Hailsham, Seaford and Hastings heavy rainfall was the root cause of the disruption (East Sussex County Council, 2025).

It was also noted that during these events there can be a disruption to water supply and sanitation, water damage in homes can lead to mould growth, as well as increase the risk of chemical spills or contamination from industry, highlighting that increased rainfall can also increase the risk of waterborne infectious diseases, and spread chemicals onto the landscape.

In Hastings, the flooding event led to sewage being released from the sewage system, significantly increasing the infection risk, such as from coliform bacteria. Overfilled water systems can also lead to discharge of sewage into seas, which is an important issue in East Sussex as a coastal county.

Across the UK there has been evidence of significant accidents and death due to fast flowing water, or water concealing hazards such as displaced manhole covers.

For more information:

- Sewage in water: a growing public health problem - GOV.UK

The Environment agency flood models show where flooding is likely to occur in flood events with differing chances of happening in a single year. A **high-risk flood event**, sometimes referred to as a 1:30 event has a 3.3% chance of happening in a year (although it can happen more than once a year), a **low-risk flood event**, sometimes referred to as a 1:1,000-event has a 0.1% chance of happening in a year.

The total number of people at risk 1 from surface water flooding in the county is 74,885, with the majority of these in the more deprived areas of Hastings (29.7%) and Eastbourne (12.8%). In Hastings, 16.8% of people are in the high-risk flood event category (RoFSW and Public Health, January 2025, internal).

This is alongside rising sea levels, which impacts the risk of flooding from the sea; over the last 30 years sea levels have risen between 3mm and 5 mm annually. Climate scenarios suggest that by 2080 sea levels could have risen between 47cm-90cm, potentially having a significant impact on coastal communities (Met Office, 2025).

At present the number of people at risk 2 from flooding by rivers or seas in the county are 72,445. The majority of people have a less than 1 in 100 chance of being flooded by rivers or seas and are located in Eastbourne (36%). However, in Hastings and Rother 2.5% of residents are at high risk of experiencing flooding from rivers and seas, meaning there is a 1 in 30 chance of being flooded annually (RoFSW and Public Health, January 2025, internal).

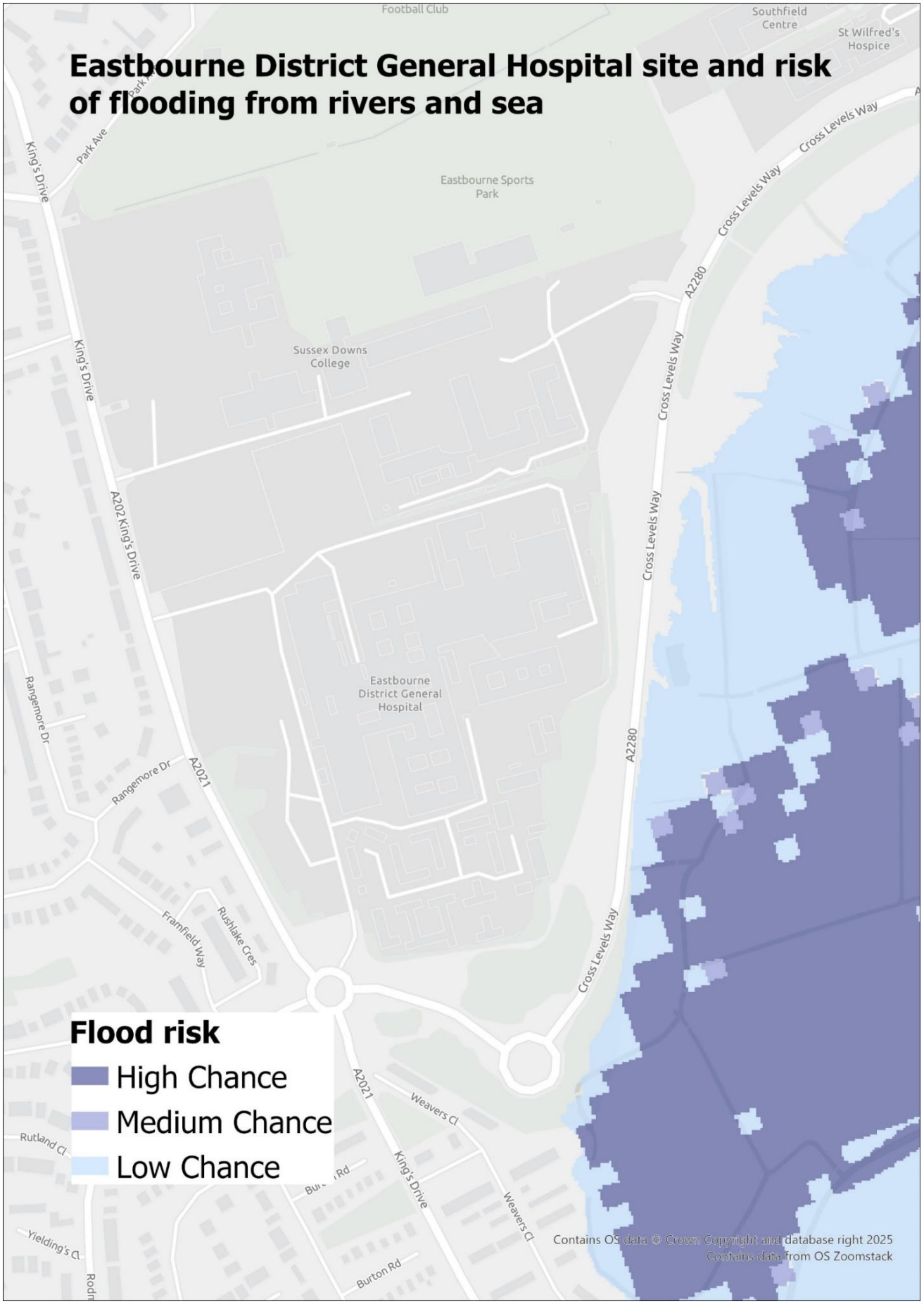
Considering local infrastructure, an analysis of where flooding may occur in the county has shown that 9 care homes, and 17 schools are at risk of flooding from rivers and seas; one care home is in an area which has high-risk of flooding.

Local case study- Eastbourne district general hospital (EDGH)

Flood mapping suggests that EDGH is unlikely (less than 1 in 1000) to be affected by flooding from river and seas between now and 2069, but it is located very close to modelled flooding to the east of the A2280, Cross Levels Way.

Surface water flood mapping shows EDGH located within an area impacted by flooding both now and in 2060, taking into account climate change. At present the building is shown to largely be at risk of flooding during the low chance (1 in 1,000) event, however by 2060 that has increased to a medium chance (1:100).

2 People at risk from flooding in the county has been calculated by multiplying the residential properties at risk by the average household size as defined by the Office of National statistics.


Eastbourne District General Hospital site and risk of flooding from rivers and sea
Football Club
Southfield Centre
St Wilfred's Hospice
Park Ave
King's Drive
Eastbourne Sports Park
Cross Levels Way
A2280
Sussex Downs College
A202 King's Drive
Eastbourne District General Hospital
Rangemore Dr
A2021
Framfield Way
Rushlake Cres
Flood risk
High Chance
Medium Chance
Low Chance
Weavers Cl
Rutland Cl
Yielding's Cl
Burton Rd
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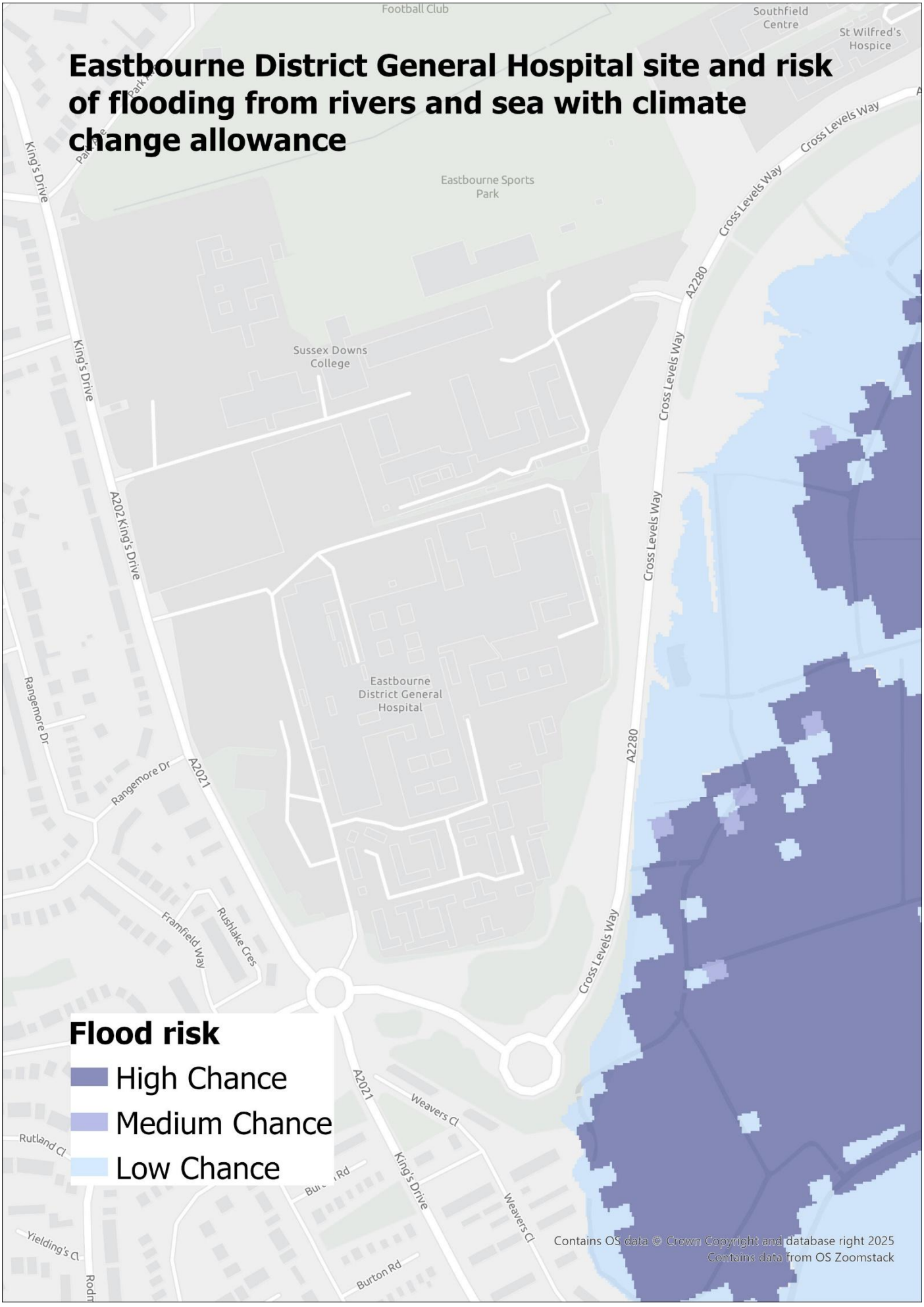
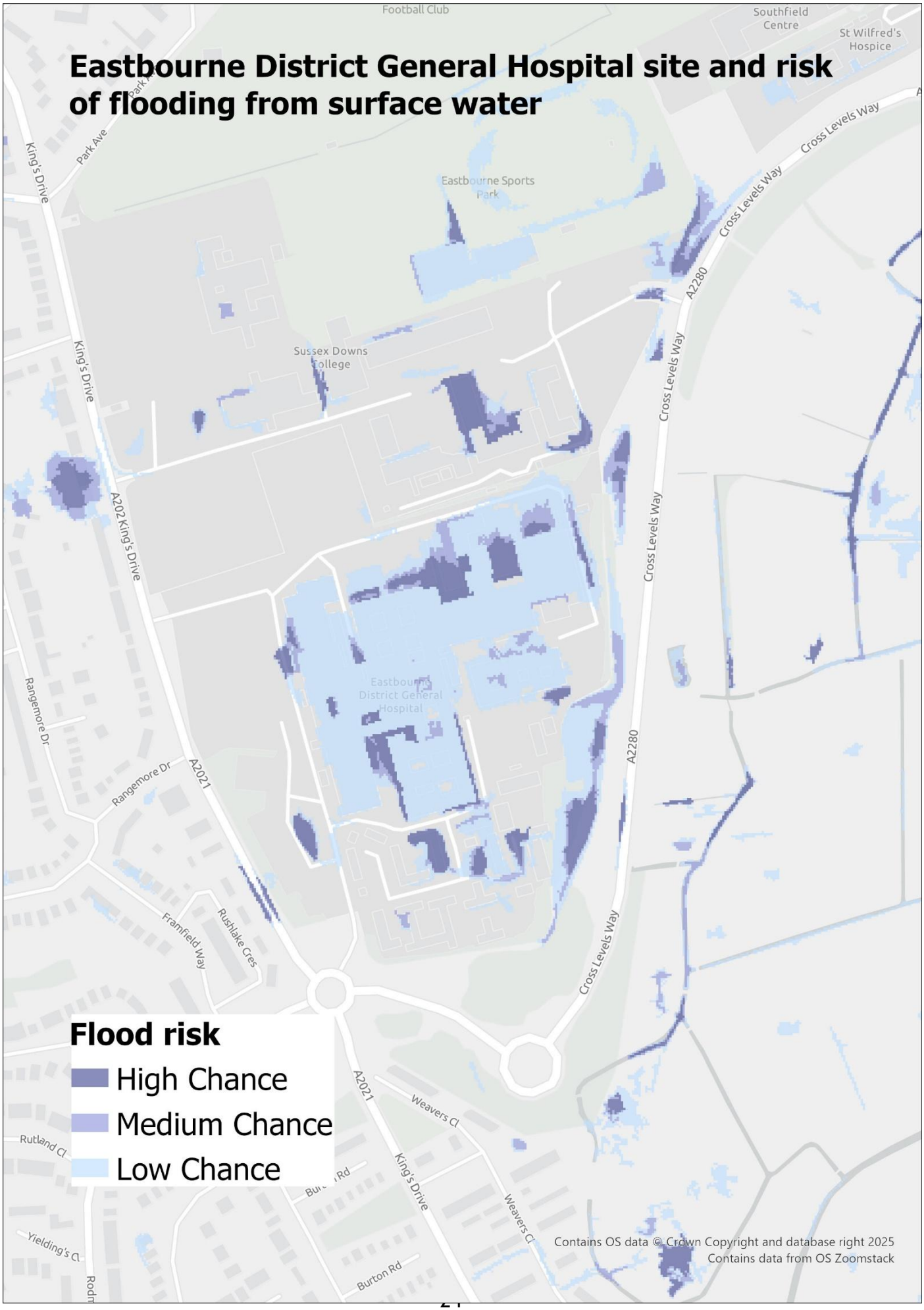
Contains data from OS Zoomstack

Eastbourne District General Hospital site and risk of flooding from rivers and sea with climate change allowance

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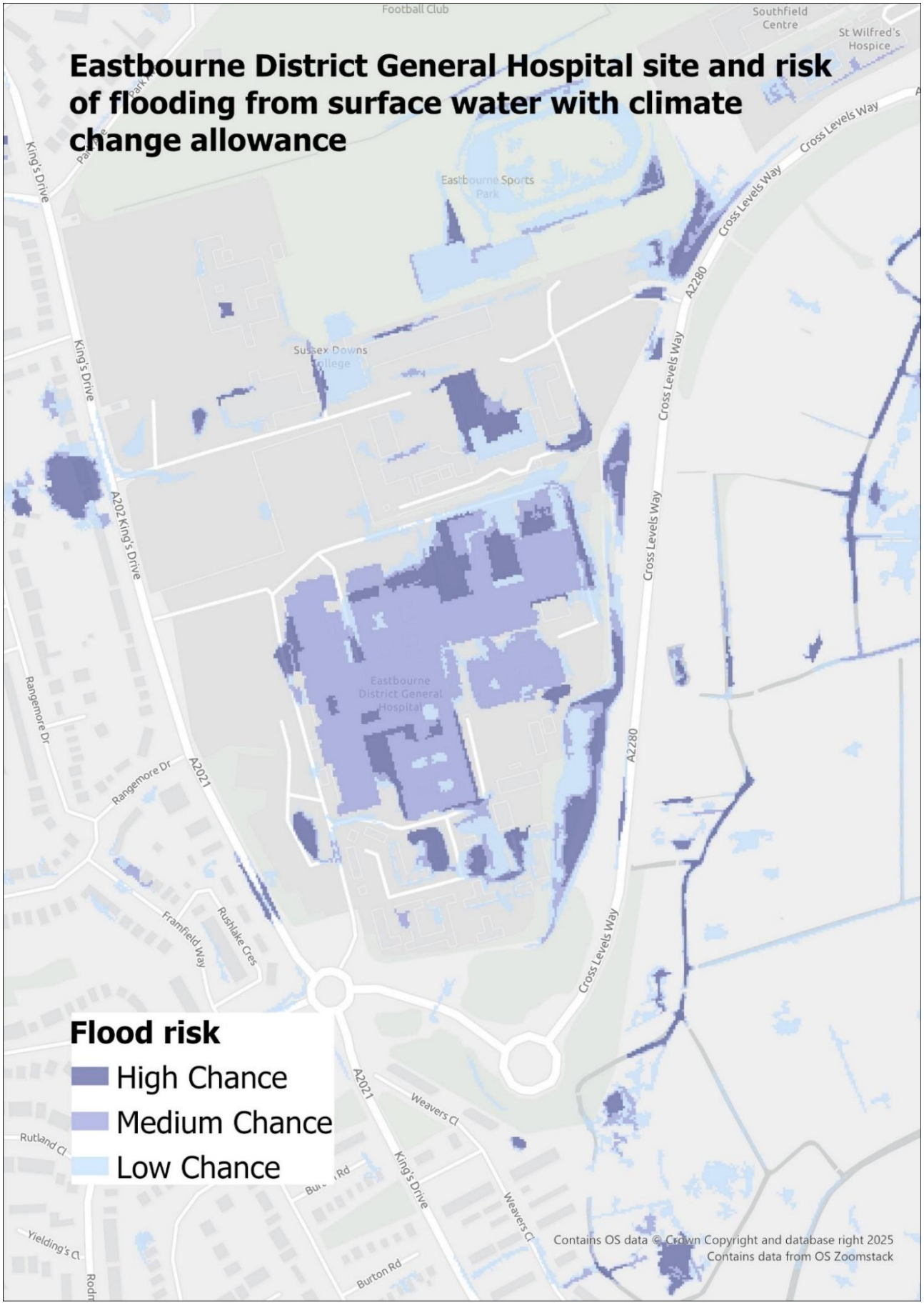
Eastbourne District General Hospital site and risk of flooding from surface water with climate change allowance
Football Club
Southfield Centre
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Weavers Cl
Rutland Cl
Yielding's Cl
Burton Rd
Flood risk
High Chance
Medium Chance
Low Chance
Contains OS data © Crown Copyright and database right 2025
Contains data from OS Zoomstack

This case study is one example of the possible changes to flooding risk with a changing climate; however, many other areas of East Sussex are at risk of flooding today, which may change in the future. Much of Eastbourne and the surrounding area, southeast of EDGH, including the Pevensey Bay and Pevensey Levels are at risk of flooding from rivers and seas at varying levels from 1 in 1000 to 1 in 30. Additionally, parts of Newhaven, Lewes and Rye are affected by high risk of flooding form rivers and seas.

For more information:

- Technical map - Check your long-term flood risk - GOV.UK

Other than damage to local infrastructure, the health harms of damage to healthcare settings, and risk of water contamination and accidents, flooding has been shown in a large national study to cause significant harms to mental health. This has been shown in both peoples whose lives have been disrupted though flooding and those who have lost their homes, and this worsening of mental health can persist for 3 years (Public Health England, 2020). Not only are people directly at risk from increasing flood risk due to climate change, but significant infrastructure leads to long lasting social effects.

The economic evaluation has highlighted the significant economic effects of flooding within this report. Whilst flood risk cannot be eliminated, the East Sussex Local Flood Risk Management Strategy sets out ESCC's aims and objectives in mitigating against the impacts of flooding where possible. An updated strategy is being developed, with a target publication date of 2026/2027. This updated strategy will utilise the most up to date flood modelling available, take into consideration the findings of this HIA and be based on modern sustainable flood risk management approaches championed by the industry.

For further information, data and insights:

- The English National Study of Flooding and Health - Summary of the evidence generated to date
- Flooding | East Sussex County Council

1.9. Infectious Diseases

Central Climate hazard: Infectious diseases

Associated climate hazards:

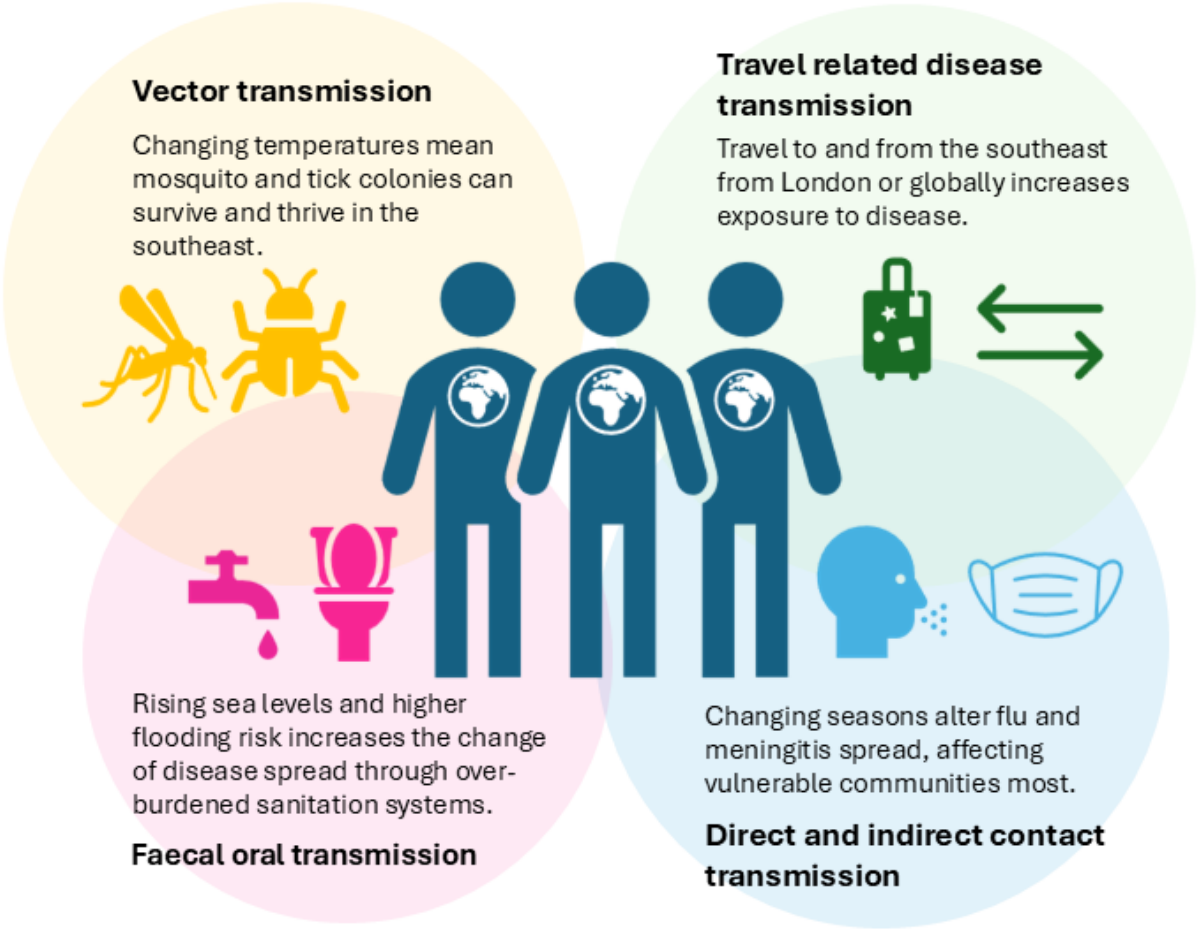
- Temperature: Warmer temperatures increase the ability for vectors to colonise the UK
- Flooding: Possible water contamination from storm events
- Food supply: Changing infection seasons and patterns may affect crops as well as humans

Sectors of interest:

- Healthcare: Increasing pressure due to infections and outbreaks
- Environmental services: Increased risk of outbreaks, and water contamination
- Agriculture: Increased spread of infections to crops and livestock, reducing yields

Infectious diseases can be caught in a number of ways, the diagram shows how the different transmission routes are likely to be impacted by climate change; making healthcare planning, health protection and environmental health work changeable or even unpredictable (UK Health Security Agency, 2025).

- Vector borne diseases may increase due to climate that support survival in the UK of species that spread infections such as Chikungunya and West Nile fever.
- Travel related disease transmission: people travelling from London or the rest of the world will bring infections into the southeast.
- Direct and indirect contact transmission: Climate will alter the seasons of key diseases like influenza and meningitis increasing the likelihood of transmission and outbreaks. Also changing weather will mean people might spend more time indoors in winter months which will increase transmission.
- Faecal-oral transmission: Rising sea levels and increased flood risk increase the chances of humans being in contact with sewage and coliform bacteria.



For more information:

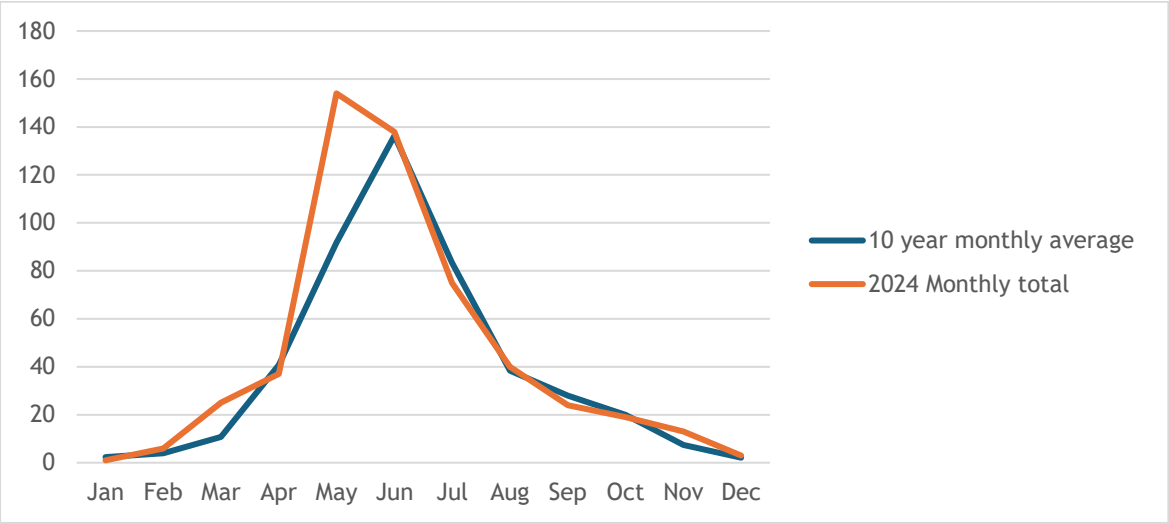
[Priority pathogen families research and development tool]

Vector transmission

Under a 2°C global warming scenario, annual average temperatures could increase by +1.7°C, with warmer winters and milder springs creating more favourable environments for vectors like mosquitoes and ticks (Met Office, 2025). Increased outdoor activity due to improved weather also raises the likelihood of human exposure to these vectors, especially in rural areas, coastal paths, and forested zones — all of which are prevalent in East Sussex.

National data shows the tick activity is highest during warmer months. In 2024, tick activity begins to diverge from the mean as early as March–April, suggesting an earlier start to the tick season than typical over the last decade (See Graph 8: UKHSA data dashboard | ticks). Most commonly in the UK tick transmit Lyme disease, but they can also transmit a range of other tropical diseases.

Graph 8: UKHSA Surveillance 2024-and 10-year average monthly tick numbers



This is particualrly relevant for areas of the county which are woodland or home to sheep, cattle or deer, such as the Southdown National Park, Ashdown Forest, or Friston Forest (Centre for Climate and Health Security and UK Health Security Agency, 2023).

East Sussex has many coastal blue spaces such as Camber Sands beach, Eastbourne and Hasting pier's that allow residents to enjoy the outdoors in times when the risk of being bitten by ticks may be highest.

Although the likely transmission of Lyme will remain low in the UK there are other health detrements of increasing tick populations such as general health anxiety, concern for children and pets, or as a deterrent to outdoor physical activity.

European data also shows that disease carrying mosquito species are able to survive in new areas of northern europe compared to 2017 when suveillence began (European Centre for Disease Prevention and Control, 2023). Suveillence of the southeast has found disease carrying mosquitos were able to lay eggs, however colonies weren't established (UK Health Security Agency, 2025). Although moqsuitos may not carry disease straight away there are other significant health harms from new species in the UK including the biting nuscance and the need for costly housing adaptation.

For more information:

- UKHSA data dashboard | ticks
- Mosquito maps
- Vector-Borne RADAR | Mosquito-borne viral diseases of wild birds

Direct and indirect contact transmission

Warmer, wetter conditions are likely to extend transmission seasons for infectious agents, while higher housing density including overcrowding and increased houses in multiple occupation (HMOs) may compound risk by facilitating faster aerosol, respiratory or faecal-oral spread (Centre for Climate and Health Security and UK Health Security Agency , 2023).

The UKHSA HECC Report found that acute gastrointestinal illnesses (e.g. norovirus, E. coli, Campylobacter) may become more frequent due to prolonged transmission windows in warmer, wetter months, increased surface water contamination, and pressure on wastewater systems during flood events. Waterborne and foodborne infections may also rise in frequency due to temperature-sensitive bacterial growth and algal blooms in recreational or supply waters. There is also national evidence that there will be an increase in more resistant bacteria due to climate change (van Bavel, et al., 2024).

Some respiratory illness' have been linked to seasons, specifically Influenza and Meningitis B. The most vulnerable people can be vaccinated against these infections to protect them from serious illness. Local data shows that coverage of older adults is generally good, meeting the national 75% coverage target (Nuffield Trust, 2025). However, other at-risk groups such as children fail to meet the WHO standard which is 95% national coverage for all vaccine preventable diseases (Nuffield Trust, 2025).

Table 5: Local and national seasonal Influenza vaccine coverage, as a percentage of the overall population.

Specific population	East Sussex coverage	England coverage	Target
Flu (aged 65 and over)	78.1%	77.8%	75%
Flu (at risk individuals)	41.3%	41.4%	95%
Flu (2 to 3 years old)	47.8%	44.4%	95%
Flu (primary school aged children)	48.0%	55.1%	95%

Data on vaccine rates in pregnant women is not available locally; however, this is a key vulnerable group who may be disproportionately affected during climate change. Not only are pregnant women more prone to contracting infectious diseases they also are commonly caregivers to children and older adults increasing the likelihood of both exposure and transmission.

We also know that 11% of women in East Sussex are smoking at delivery. Smoking makes this this already vulnerable group more prone to infections, particularly respiratory infections, and there is no local data to monitor this.

Additionally, women and children are more likely to live in homes with multiple occupants or who are overcrowded, increasing their risk of infection transmission (Gale, 2020). Over-crowding and houses of multiple occupancy disproportionately affect deprived communities; in Eastbourne almost 1 in 4 rented homes were classified as overcrowded, creating conditions conducive for outbreaks (East Sussex County Council, 2025).

For further information, data and insights:

- Explaining the Immunization Agenda 2030
- Annual Public Health Report 2019/20 - Health and Housing |
- Housing - county | East Sussex | Report Builder for ArcGIS

1.10. Food Systems

Central Climate hazard: Food systems

Associated climate hazards:

- Drought: Leading to reduced yields locally or globally
- Infectious diseases: contamination of crops or affecting livestock reducing yield locally or globally
- Air quality: possible increased pesticide usage to protect yields lead to worse air quality

Sectors of interest:

- Agriculture: yields affected by various climate hazards, locally and globally, or an opportunity for local food production.
- Health care: Possible effects on nutrition due to poor supply or rising costs, particularly of fruit and vegetables
- Environment Services: Water contamination could increase from chemical run off

Local food supply is a global issue, although the UK does supply around 60% of food consumed from domestic sources it relies on other countries products that the UK climate is unable to cultivate such as rice, bananas or tea (Department for Environment Food & Rural Affairs, 2024). The UK is predominantly self-sufficient in its production of grains, meat, milk and eggs, however there is a disproportionate importation of fruit and vegetables (78%) (Centre for Climate and Health Security and UK Health Security Agency, 2023).

The local food supply assets include 1,700 farm holdings, which equates to 28,600 Ha of farmed land (Department for Environment, Food & Rural Affairs, 2025).

A recent case study showed that the most common types of farming locally are sheep, mixed farming (livestock and crops) and arable cropping. A smaller sector is horticulture which is mostly made up of growing vegetables, and cereals (except rice) and legumes. These farms do mostly supply locally via box schemes, restaurants or grocers (Sustain, 2022).

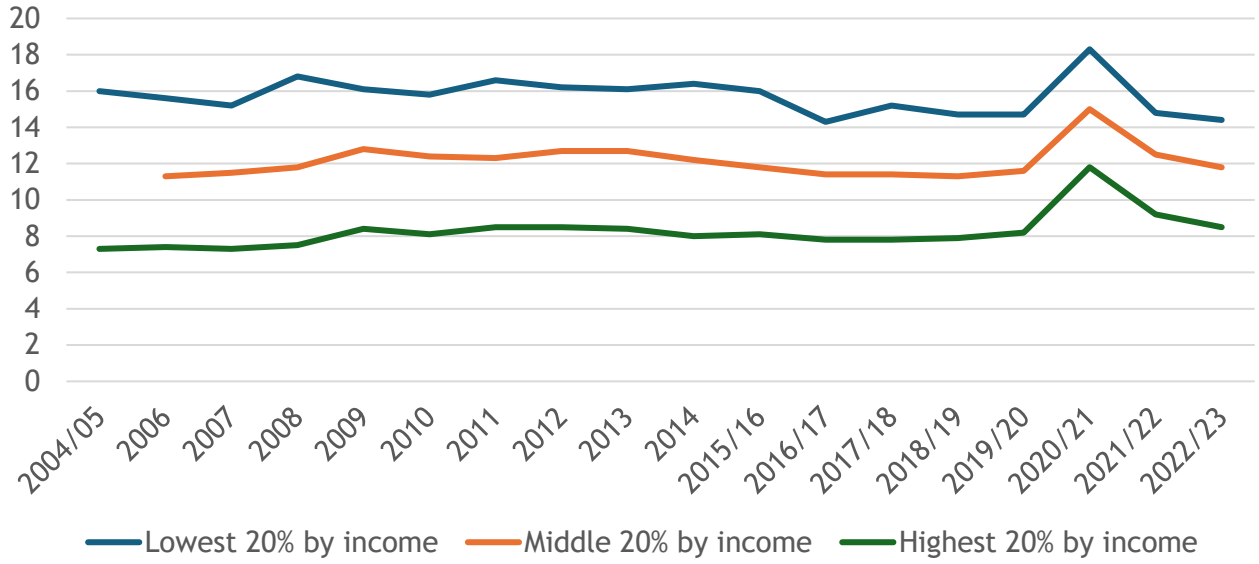
For more information:

A tale of two counties: Strengthening local food cultures through mapping supply chains in East Sussex and Lancashire | Sustain

Impact of Climate Change on the UK Food System | Published in FSA Research and Evidence

Due to global events, including climate change, the cost of food has increased in recent years; with the most significantly affected households on lower incomes. National data in graph 9 below that people who have the lowest income are spending on average 6% more of their disposable income on food annually (Department for Environment, Food & Rural Affairs, 2024). 11% of older adults in East Sussex are already in poverty, and climate change will increasingly affect the likelihood of an increasing number of older adults being in food poverty.

The 2025 Broken Plate Report found that the most deprived 20% of the population would need to spend 45% of their disposable income on food, 70% for those with children, in order to meet the government recommended healthy diet (The Food Foundation, 2025).



Graph 9: The average share of household income spent on food and non-alcoholic drinks in the UK.

For more information:

- United Kingdom Food Security Report 2024 - GOV.UK

Rising temperatures can cause reduced crop resilience through increasing insects (Deutsch, et al., 2018). This, coupled with an increasing need for locally grown food may increase use of chemicals in food production, such as pesticides. Pesticides are almost certainly (99%) made from fossil fuels (Pesticide Action Network UK, 2025) further contributing to the climate crisis in a vicious cycle. Additionally, increased pesticide use could lead to greater air pollution or contaminate the water supply from water run-off from farmland.

Local case study: River Ouse, Lewes. May 2023

Environment agency data on the prevalence of five chemicals toxic to wildlife found that The River Ouse in Lewes is one of the rivers found to contain all five chemicals of concern PFOS, PFOA, PFBS and PFHxS, the pesticide 2,4-D and the commonly used painkiller ibuprofen (The Rivers Trust, 2025). These have been shown to have detrimental effects on wildlife, although human health effects are not yet clear.

Similarly, all five chemicals were found in the Cuckmere River, and 3 of five were found at multiple groundwater sites across the county.

For more information:

- Chemical Cocktail Campaign | The Rivers Trust

Despite the challenges farms in East Sussex are embracing new evidence on nature friendly farming. The Sussex Wildlife Trust described this as farming practices that are sustainable socially, environmentally and economically.

Nature friendly farming encompasses multiple different practices; two key ones include;

- **Regenerative Agriculture:** A practice of maximising soil quality by minimising artificial chemical use, minimising soil disturbance and increasing crop diversity, and soil microbiome (Regenerative Food and Farming, 2025).
- **Agroecology:** A scientific, and holistic approach to the whole food system. It includes landscape diversification, crop rotation, and minimising synthetic inputs (Kerr, et al., 2023). This has been shown to have both adaptive and mitigative effects on climate change and has been nominated by the Green Alliance the best means to balance the climate with food production and the economy (Green Alliance, 2023).

The Sussex Wildlife Trust has worked with the Brighton and Hove Food Partnership and the Sussex Food Partnerships to identify local producers who produce sustainable, community friendly food.

These include Ashurst organics, a local vegetable producer, Court lodge organics farm, a dairy producer in Pevensey and Limden Brook organics in Etchingham.

For more information:

- Nature Friendly Farming | Sussex Wildlife Trust
- Good Food for East Sussex | Celebrating Everything Food

1.11. Transitioning and Adapting Infrastructure

Central Climate hazard: Net Zero

Associated climate hazards: All

Sectors of interest: All

Net zero refers to achieving a balance between greenhouse gas emissions produced and those removed from the atmosphere (IPCC, 2018). The UK is legally bound to reach net zero emissions by 2050. East Sussex has committed to this transition, focusing on decarbonising its energy, transport, housing and land use systems. This shift presents a major opportunity to improve human health locally.

The UK Co-Benefits Atlas is an interactive dashboard that highlights the various co-benefits of achieving Net Zero, including the benefits that are most likely to be

seen in each region. For East Sussex the most prevalent health benefits of achieving net zero are increased physical activity and improved air quality.

For more information:

- UK Co-Benefits Atlas

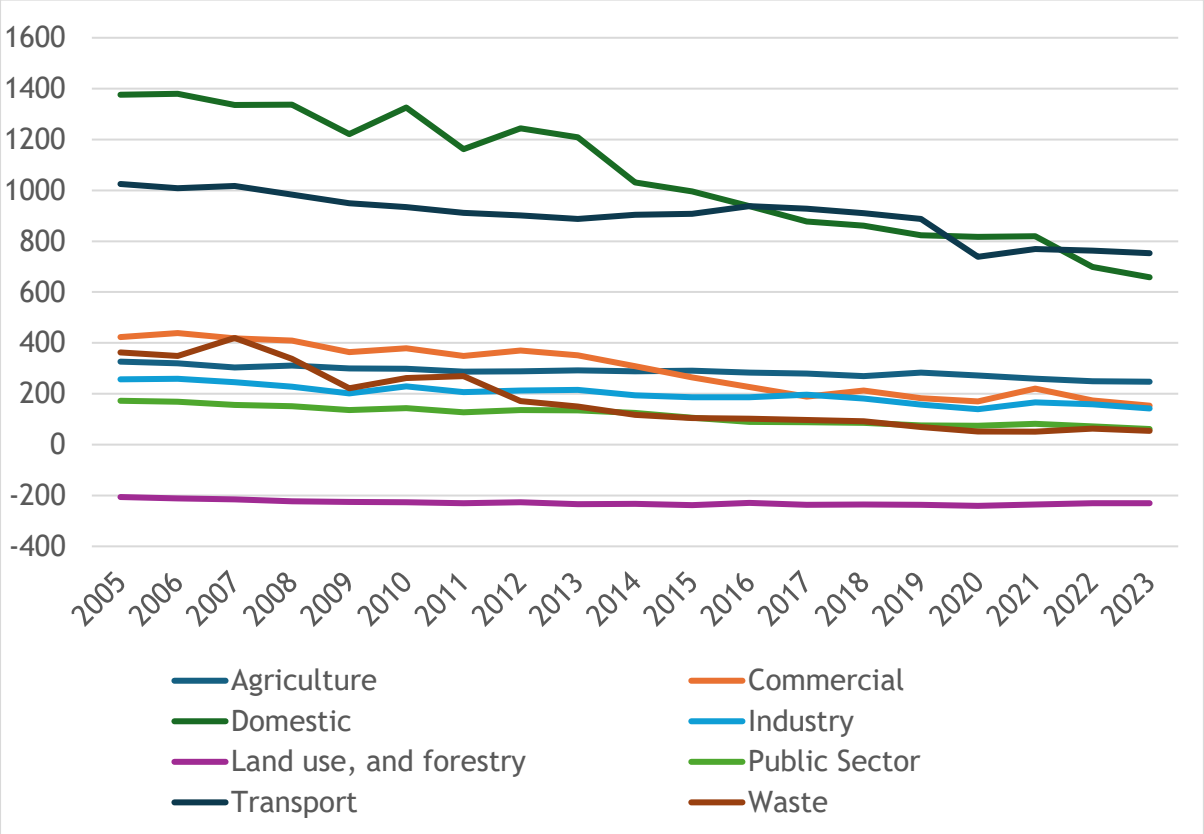
As well as health co benefits multiple publications have identified other co benefits of Net Zero, including economic benefits. A recent report from UK 100, a UK based network for councils engaged in the climate crisis, found that for every £1 spend on climate mitigation and protection from extreme weather events, £9 is saved.

For more information:

- UK100 | Publication | Economic Benefits Local Climate Action | UK100

As noted in graph 1 below, despite a general downward trend, emissions in East Sussex are not yet aligned with 2030 or 2050 net zero targets. Transport and domestic fuel use remain the largest contributors (GOV.UK, 2025).

Graph 1: East Sussex total emissions by sector, 2005-2023.



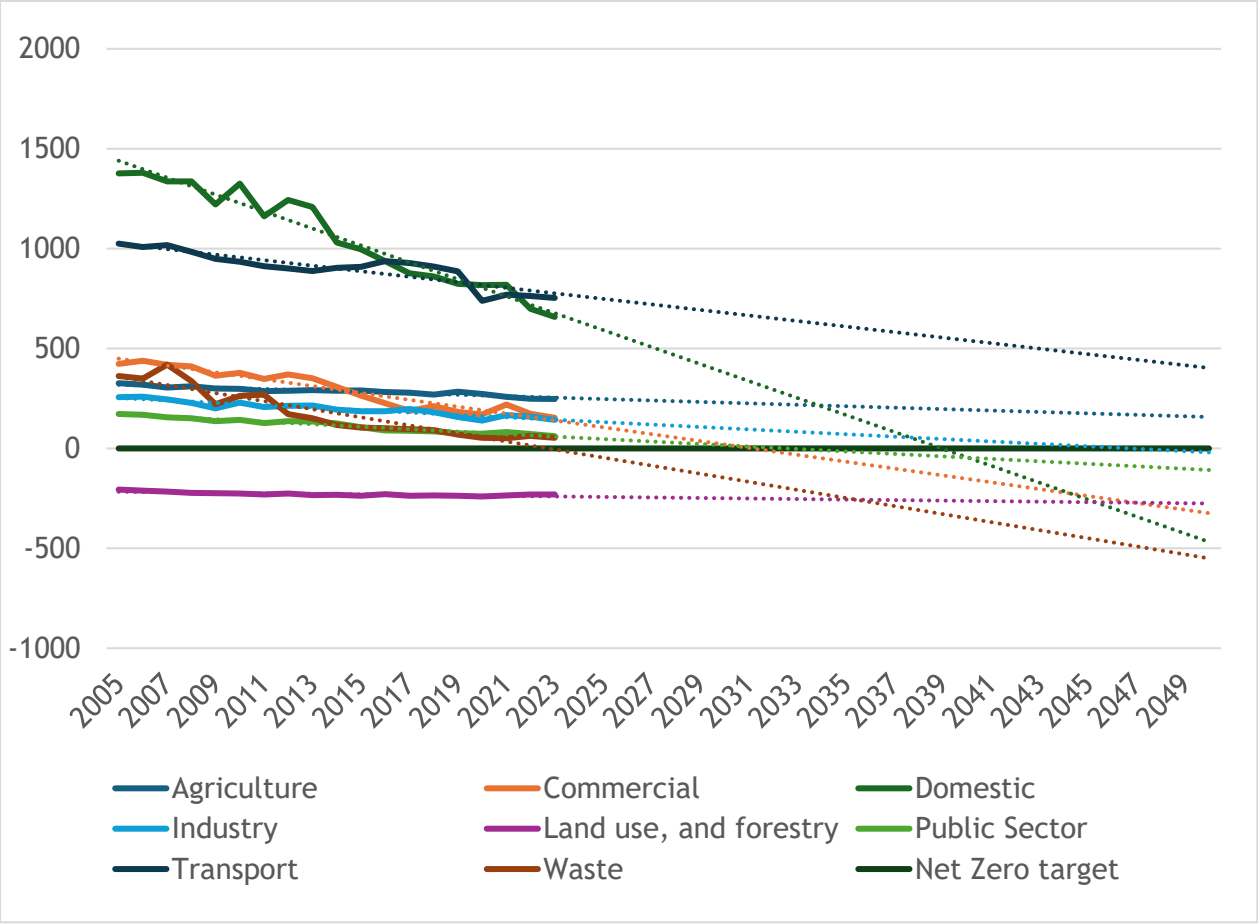
Overall, the graph reflects a positive downward trend in emissions across sectors, with the most substantial contribution but also reduction in the domestic sector.

Domestic and commercial sectors have made reductions through improved energy efficiency, insulation, and lower reliance on fossil fuels for heating, and shift to lower-carbon technologies. While local rural land, and forestry is a consistent carbon sink.

Some of the local natural assets that contribute to this are Ashdown Forest, Forest Way Country Park, and Ditchling Common.

East Sussex County Council aims to be Net Zero by at least 2050 (East Sussex County Council, 2025). Based on the local emissions data displayed in Graph 1, trends from 2005 to 2023 were used to calculate a possible trajectory of emissions, this is presented in Graph 2. This suggests that many of the sectors are on target to meet Net Zero by 2050, but that agriculture and transport sectors will fail to meet this target through current actions.

Graph 2: East Sussex total emissions by sector projected trend, 2005-2050



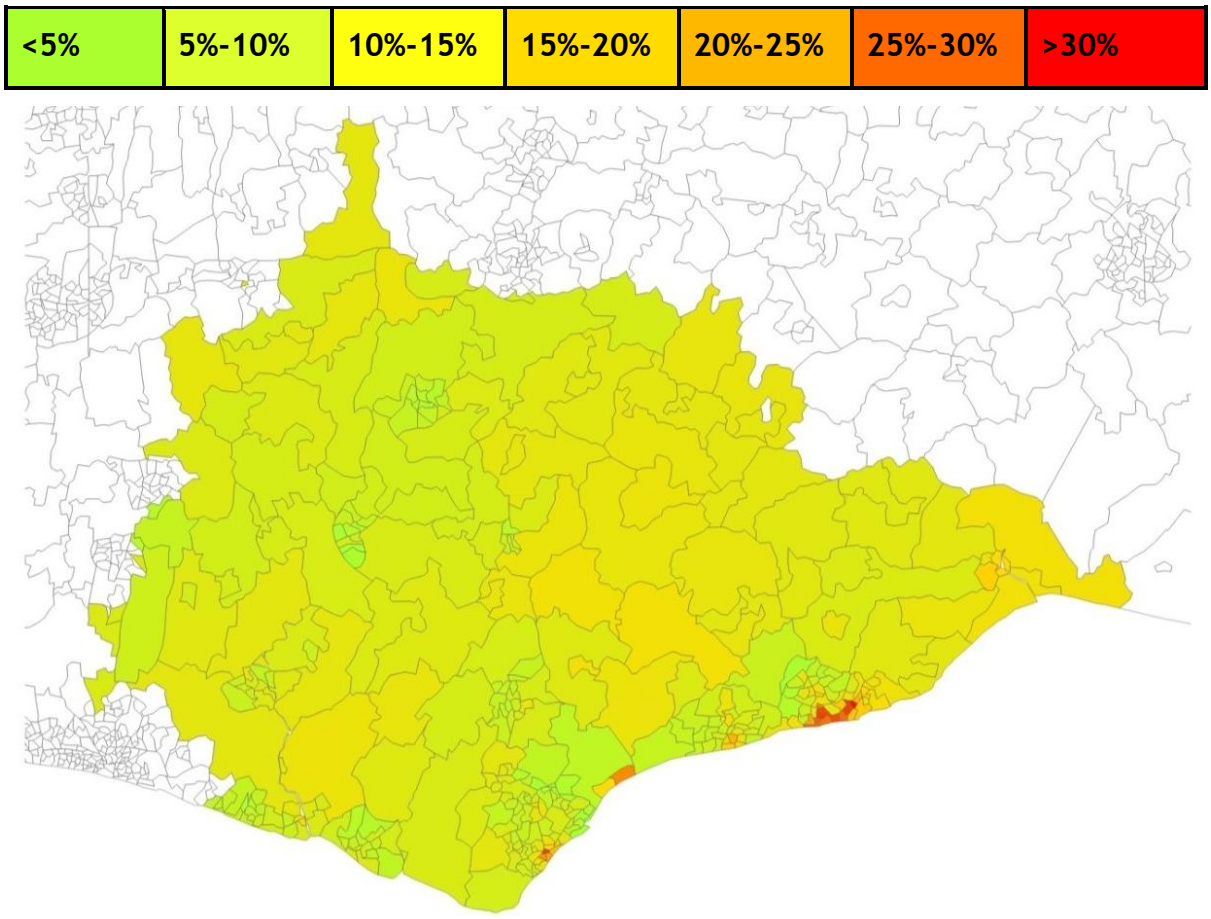
The data underscores the value of local decarbonisation initiatives while also identifying the domestic and transport sectors as the largest ongoing sources of emissions. Transport and agriculture sectors will likely require additional initiatives to reach the local Net Zero target.

How can Transitioning and Adapting Infrastructure improve Health and Wellbeing in East Sussex?

According to government organisations and the NHS, tackling climate change hazards through the net zero transition could benefit health in multiple ways:

- **Improving air quality:** Prevent thousands of premature deaths annually through cleaner air.
- **Optimising temperature:** Increase physical activity by supporting walkable, cyclable, car-light environments, which in turn reduces cardiovascular disease, and contributes to improved mental health
- **Food Supply**: Support healthier sustainable diets with lower environmental impact.
- **Managing sun and UV exposure:** Green spaces have been shown to support mental wellbeing, social connection, and lower stress.
- **Warmer Homes:** Fewer cold-related deaths (winter mortality index), especially amongst the elderly, and reduce financial stress by reducing fuel costs. 12.2% of households in East Sussex were in fuel poverty in 2022, higher than the South East regional average of 9.7%. This indicates a significant energy vulnerability in East Sussex, with more than 1 in 8 households unable to afford to keep their homes warm, or cool in warmer months. The map below shows the areas of the county with the highest concentrations of fuel poor homes; it shows that our most fuel deprived areas are concentrated in our most deprived LSOAs in Hastings and Eastbourne (Cotality, 2025).

Map 1: Showing the proportion of fuel poor homes within each area (LSOAs)



Local Green Jobs: Better local employment opportunities as part of building blocks for health

Health service: Reduce demand on the NHS, improve life expectancy through prevention-focused interventions.

"Meeting the UK's climate goals could save 44,000 lives each year—5,700 from cleaner air and 38,000 from a more physically active population." – NHS Net Zero Strategy (NHS England, 2022)

For more information:

- Moutet L, Bernard P, Green R, Milner J, Haines A, Slama R, Temime L, Jean K. The public health co-benefits of strategies consistent with net-zero emissions: a systematic review. The Lancet Planetary Health. 2025 Feb 12.
- The Royal Society – A healthy future - tackling climate change mitigation and human health together
- The Health Foundation – Policy levers for a net zero NHS: four priorities
- Office for Health Improvement & Disparities – Climate and health: applying All Our Health
- NHS England – Delivering a net zero NHS

- Department for Energy Security & Net Zero – Powering Up Britain: Net Zero Growth Plan

Moving towards adapting Infrastructure

East Sussex has made major strides in expanding clean energy generation. The county now has over 15,000 renewable energy installations, generating more than 127,000 MWh annually (East Sussex in Figures, 2023).

- 127,391 MWh Total electricity generated (2023)
- 179 MWh Total electricity capacity (2023)
- 15,476 Total number of sites (2023)

East Sussex has shown substantial progress over the past decade, nearly doubling renewable generation since 2014. However, nationally, the UK produced 135 TWh in the same year (2023), which means that East Sussex contributes only 0.094% renewables to energy generation (Department for Energy Security & Net Zero, 2024), suggesting more investment in renewables is required locally.

A Just Transition

Both climate change and the move towards Net zero will reshape society through; jobs, land, housing and energy, factors deeply tied to health equity. Given the effects of climate change already disproportionately affect our most deprived communities, East Sussex must ensure that climate action does not widen existing inequalities.

The UK co benefits atlas (Phillips, et al., 2025) described above highlights this. It predicts that our least deprived district, Wealden (East Sussex Research and Intelligence Team, 2025), could financially benefit more than double compared to our most deprived borough, Hastings (£2868.5 vs £1291.6 per capita).

Example: Renewable energy sector

Opportunity:

- Investment in renewables can create new, high-quality jobs in construction, energy, transport, and land management.
- Renewables generate green energy, allowing ongoing supply to the county while moving towards net zero

Risk to manage:

- Visual changes from adaptation (e.g. wind farms, solar farms) may cause local opposition or worsen noise, and air pollution locally, particularly where planning engagement is weak.
- New industry may disproportionately be placed in poorer areas due to land costs and competing needs (e.g. green spaces).

Example: Green jobs

Opportunity:

Green jobs training initiatives and retrofit programmes can target long-term unemployed or low-income residents. Only 32% of the properties in East Sussex are within higher (A-C) energy bands (Cotality, 2025).

- Local employment reduces commuting times and stress, improving work-life balance and wellbeing. Of the properties that need retrofit adjustments locally, many are located in urban areas, but there are opportunities across the county (Cotality, 2025).
- Regenerative agriculture and nature-based solutions create pathways for healthier food systems and active land stewardship.

Risks to manage:

- Without targeted support decline in certain industries, such as fossil fuel, transport, intensive agriculture, or carbon-intensive manufacturing, may lead to job losses in those with lowest education and training such as those in deprived communities or those with less work opportunities such as migrants; worsening inequalities.

The Net Zero transition is a public health intervention in itself. But to deliver its full potential in East Sussex, it must be:

1. Grounded in place-based data: mapping emissions, vulnerabilities, assets, and opportunity zones.
2. Equity-led: prioritising the needs of those facing the greatest environmental and health burdens.
3. Co-produced: engaging communities in shaping energy, housing, transport, and land use changes.
4. Integrated: linking the Local Net Zero Strategy with the Health and Wellbeing Strategy, Local Nature Recovery Strategy, and emerging adaptation plans.

For further information, data and insights:

- Department for energy scrutiny and net zero, renewable planning database: Renewable Energy Planning Database | DESNZ & Barbour ABI

1.12. Conclusion

East Sussex is vulnerable to the health effects of a changing climate through deprivation, costal inequalities and rurality. A changing climate is already affecting the health and wellbeing of people in East Sussex and is likely to exacerbate existing health inequalities if action is not taken. While progress is being made, further efforts are needed to reduce emissions, strengthen resilience, and protect the most vulnerable communities. Improving the local evidence base on climate change and health will be essential for informing decision-making, targeting resources effectively, and monitoring the impact of interventions. By integrating climate action with public health priorities, East Sussex can work towards a healthier, more resilient, and more sustainable future.

East Sussex has work to do to reach adaptation ambitions and should set targets for this. Local people including children and young people are worried about a changing climate.

Data on a changing climate and health needs to be further developed at the local level to manage gaps as well as to help develop the monitoring and evaluation of initiatives.

1.13. Data Profile Recommended Considerations, Opportunities and Action Steps

Specific recommendations against data points can be found in Appendix J East Sussex Climate Change Data Profile Sources.xlsx

- Maintain and update the data profile at regular intervals (e.g., every 2-3 years) to reflect emerging evidence, new datasets and updated indicators.
- Strengthen local data collection in partnership with stakeholders with a focus on hazards and populations where current data is sparse or missing.
- Improve data disaggregation by key demographic and socio-economic variables to better assess inequalities.
- Explore integration of environmental, health and socio-economic datasets to enable more comprehensive pathway analysis and correlational analysis.
- Continue stakeholder engagement building on the collaborative approach used in this project to ensure the profile remains relevant, credible and useful

across sectors. Align with national frameworks for climate and health indicators to ensure consistency and comparability across regions while retaining the East Sussex specific focus.

- Extract, compare and present Neighbourhood level data for Phase 2 of the HIA: Spatial indicators of vulnerability to climate related hazards in the UK (Sayers and Partners) - UK Climate Risk in phase 2.

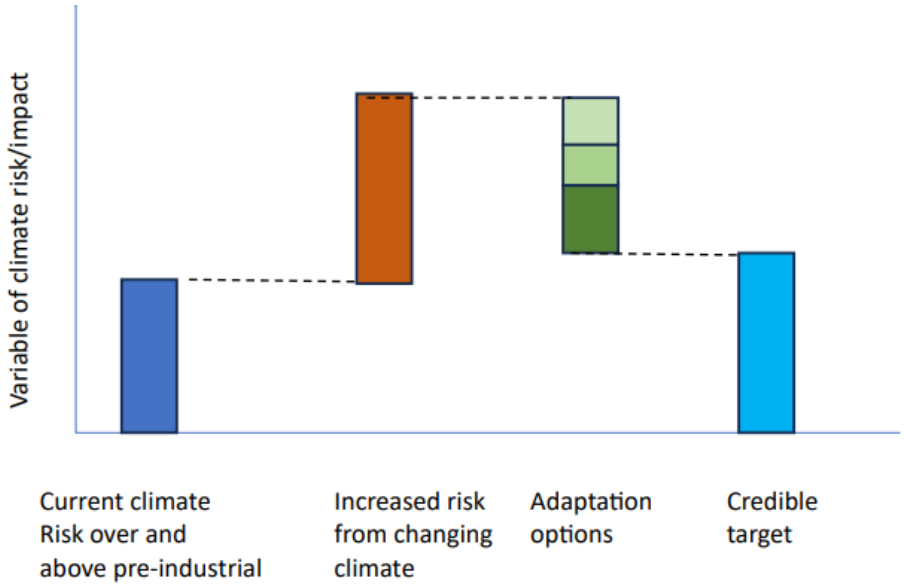
2. The East Sussex Changing Climate and Health Economic Evaluation

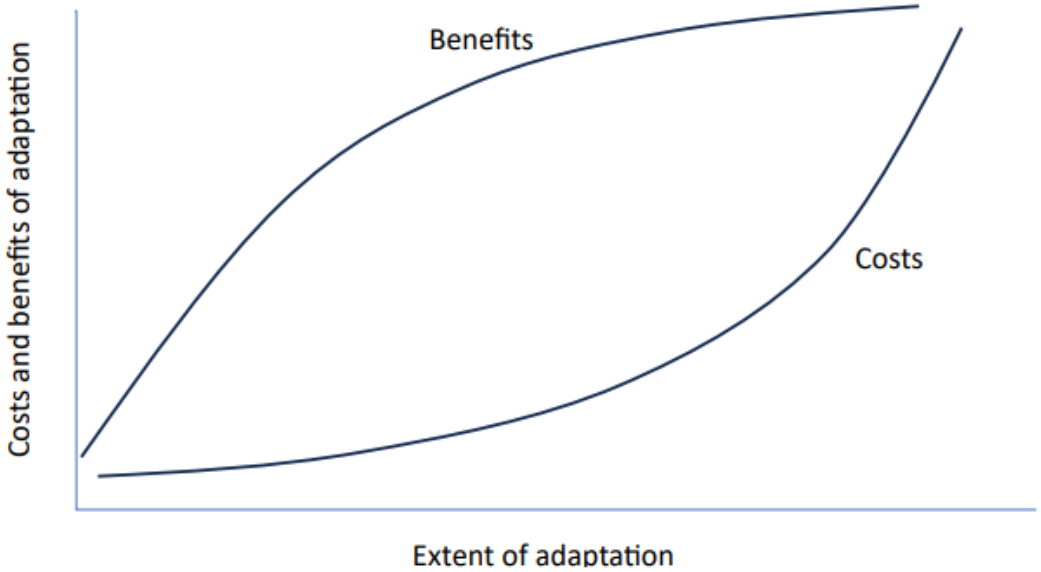
2.1. Introduction

This section sets out the economic case for action on the climate crisis, and in particular for early intervention which does not merely delay impacts but instead seeks to meaningfully mitigate the consequences of climate changes for population health and health inequalities. To do so, it sets out both risks and opportunities. This section emphasises for East Sussex the substantial financial cost of inaction and the substantial economic savings from taking action. Broad categories of action are discussed, including those with high benefit-cost ratios. These are illustrative of the anticipated benefits of implementing the contextually tailored and more detailed recommendations for action set out in this East Sussex Climate Change HIA.

The Advisory Group on the Economics of Climate Change Risk and Adaptation[2] provide the following conceptualisations of the economic costs and benefits of climate change adaptation. The conceptualisations show the substantial role that cost-effective investment in adaptation can play in reducing climate risks.

Figure 11.1: Conceptual models of economic costs and benefits of climate change adaptation





2.2. Key messages

It is established by UK Government and international reviews that in general terms it is not only cost-effective to respond to climate change (i.e. the costs are considered worthwhile in relation to the benefits that will be reaped from that expenditure), but also cost-saving to respond to climate change (meaning that the costs to the economy of not responding would be greater than the costs of responding) [3,4,5,6,7,8,9,10,11].

The HIA has considered economic calculations of the cost of inaction in relation to climate change related health effects. It is concluded that, for East Sussex, there are multiple climate change health opportunities, and risks, with values each ranging from less than £50,000 to multiples of £5 million per year up to 2080.

Accounting for both reducing negatives and achieving positives, between 2050 and 2080 there is estimated to be at least a £71 million to £85 million per year economic value in East Sussex to action on climate change related health impacts (direct and indirect) under a 2°C warming scenario (increasing to £90 million under a 4°C scenario).

This is conservative as the evaluation's highest economic bands are already reached by 2050 on many of the impacts and likely to be much greater by 2080.

Early action is strongly correlated with substantial long-term gains, with benefit-cost ratios indicating that for every £1 invested in adaptation could result in £2 to £10 in net economic benefits.

2.3. Key Policy Papers and Research Reports

Looking at climate economic costs across Europe, absolute impacts (i.e. not relative to alternative scenarios) are projected to be the highest in most developed countries in Europe such as Germany, France, Italy and the UK.[12]

The key current economic assessment publication for the UK is the Defra 2022 UK Climate Change Risk Assessment[13] and its supplementary assessment[14]. The evidence indicates that the costs of climate change to the UK are high and increasing. The analysis covers 61 climate risks and eight of these are expected to exceed costs of £1billion per year with a 2°C warming scenario.

"Recent international modelling work estimates the economic costs to the UK could be from 1 to 1.5% of GDP/year by 2045 (central estimate). The benefits of the Paris Agreement (and net zero) are only really seen after 2040 in avoiding high warming pathways with large economic costs after mid-century."[15]

Despite the benefits of current action not being apparent until 2040 at earliest, the extensive and pivotal Stern review (2006) states:

"This Review has assessed a wide range of evidence on the impacts of climate change and on the economic costs and has used a number of different techniques to assess costs and risks. From all of these perspectives, the evidence gathered by the Review leads to a simple conclusion: the benefits of strong and early action far outweigh the economic costs of not acting."[16]

More recent work by the London School of Economics and Political Science (2022) reported "Under current policies, the total cost of climate change damages to the UK are projected to increase from 1.1% of GDP at present to 3.3% by 2050 and 7.4%

by 2100… Strong mitigation policies can reduce this to 2.4% of GDP by 2100, avoiding costs equivalent to five percentage points of GDP."[17]

A near-consensus amongst economic studies is that the impact of climate change on economic output will be negative, with more warming leading to larger impacts.[18] See, for example, Tol, R., A meta-analysis of the total economic impact of climate change, 2024, as well as the box titled Estimating Global Economic Impacts from Climate Change in IPCC, Chapter 16: Key Risks across Sectors and Regions of IPCC Sixth Assessment Report, 2023.

The Office for Budget Responsibility[19] notes that two of the most comprehensive studies of potential climate change-related damage to the UK economy generated estimates somewhat above a 5 per cent of GDP loss under a below 3°C scenario:

The Bank of England's 2021 Climate Biennial Exploratory Scenarios included a 'no additional action' scenario which estimated that 3.3 degrees of warming results in a -7.8 per cent impact on GDP in the UK in 2050.

The Grantham Research Institute estimated that 3.9 degrees of global warming produces a -3.3 per cent impact on UK GDP by 2050, and a -7.4 per cent impact by 2100.

2.4. Vulnerable Groups

Vulnerable groups are discussed in greater detail within other parts of the HIA (see Part 3A), but it is noted within the economic evaluation that certain groups, who are also protected in terms of public sector equity duty under the Equality Act 2010, are at particular risk due to climate change and effects to them can have disproportionately high economic effects compared to the general population. These are illustrated for two prominent climate impacts, heat and flood risks, from the Government's economic guidance used during policy development.[20]

Figure 11.2: Protected groups and climate risk noted in relation to the Government Green Book Supplementary Guidance: Accounting for the Effects of Climate Change 2020

Protected characteristics	Overheating risk factors	Flooding risk factors
Pregnancy	Pregnant women exposed to heat are more likely to have miscarriages (CCC 2022)	Pregnant women can be less able to prepare for and respond to flooding emergencies (UKHSA 2023).
Disability	People with mental health illnesses are significantly more likely to have their health impacted by high temperatures.	Disrupted access to healthcare can make disabled people more vulnerable to health effects from flooding.
Age	Around 88% of casualties during the 2020 heatwave were over the age of 65<	Elderly people are more likely to live in communities that are exposed to coastal storms.

2.5. Mitigation

The IPCC defines mitigation in the context of climate change as: "A human intervention to reduce emissions or enhance the sinks of greenhouse gases."[21] Mitigation therefore relates to taking steps to reduce climate change.

The London School of Economics and Political Science (2022) report goes on to state that transitioning from a current policies scenario to a high mitigation scenario reduces climate change losses by 1.1% of GDP by 2050 and 5% of GDP by end of century[22]. Whilst mitigation action is needed now, the benefits typically accrue in the second half of the century.

The HIA notes that although this does not represent a long delay between action and benefit, this is a delay on a scale that has potential for misalignment with political horizons, being beyond normal electoral cycles. This speaks to a need for a system wide approach that is not reliant on political will. There is a tension between future planning for climate change and short-term political priorities

which must be resolved by consensus-built delivery plan that works across sectors and beyond political horizons.

2.6. Adaptation

The IPCC defines adaptation in the context of climate change as: "In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects."[23] Adaptation therefore relates to taking steps to respond to a changing climate.

The Ministry of Justices Climate Change Adaptation strategy provides some key contextual statements as to the benefits of proactive adaptation:

"Even if the Paris Agreement goals are achieved, the significant costs of climate change events in the UK over the next 20 years can only be reduced with adaptation. Building our adaptive capacity to the impacts of climate change and enhancing climate resilience is a cost-effective way of protecting people and our operations."[24]

"It is challenging to quantify the costs of adaptation fully, however research by the Global Commission on Adaptation[25] [looking at a global context] has found that investing $1.8 trillion in five key areas from 2020 to 2030 could generate $7.1 trillion in total net benefits. Many early adaptation investments are highly effective and deliver value for money with benefit-cost ratios typically ranging from 2:1 to 10:1. For example, every £1 invested in adaptation could result in £2 to £10 in net economic benefits."[26]

With inaction the climate change cost to the UK would be at least 1% of GDP by 2045. Adaptation action would not only reduce this risk but also generate direct economic gains and co-benefits.[27] Early adaptive action is strongly correlated with long-term returns and economic gains.

2.7. Opportunities to Act

There is a strong case for acting now – not later – especially in three key areas[28]:

"Reducing current (and growing) large economic costs from climate extremes. There are large net economic benefits today from reducing large economic costs with low- and no-regret actions which have high benefit to cost ratios.

Initiating action in situations where, without current action, we commit (lock-in) to large negative future impacts. This is particularly the case in areas that involve decisions or investment that are very difficult to reverse, e.g. new housing and infrastructure.

Applying extremely low-cost preparatory actions that can be taken to improve future decisions. This involves developing adaptive management plans, especially for decisions that have long lead times or involve major future change in the future that is uncertain."

Enhancing community resilience by addressing existing inequalities is an example of a no regret climate change action related to health provide by the UKHSA, who state:

"As risks will manifest along existing social gradients in health, addressing current social and health inequities can help build resilience to a range of climate-health risks. This strategy has the benefit of improving resilience to a wider range of health risks and thus has strong evidence as a 'no-regrets' intervention approach."[29]

2.8. Drivers of Economic Impact

Some of the key mechanisms by which economic impacts are likely to arise include via increase food costs, heath-related labour productivity reductions and infrastructure damage[30].

System responses that support adaptation to these and direct climate extreme weather health injury include early warning systems, emergency management plans, health systems strengthening, safer housing, flood protection, vector control and improved surveillance.[31]

Defra have UK specific unit costs to support in quantifying some of the specific climate impacts32 (see Table) based on a range of sources[33 , 34 , 35, 36, 37]. Whilst not exhaustive, these are indicative of costs associated with the population's health directly and indirectly through wider determinants of health.

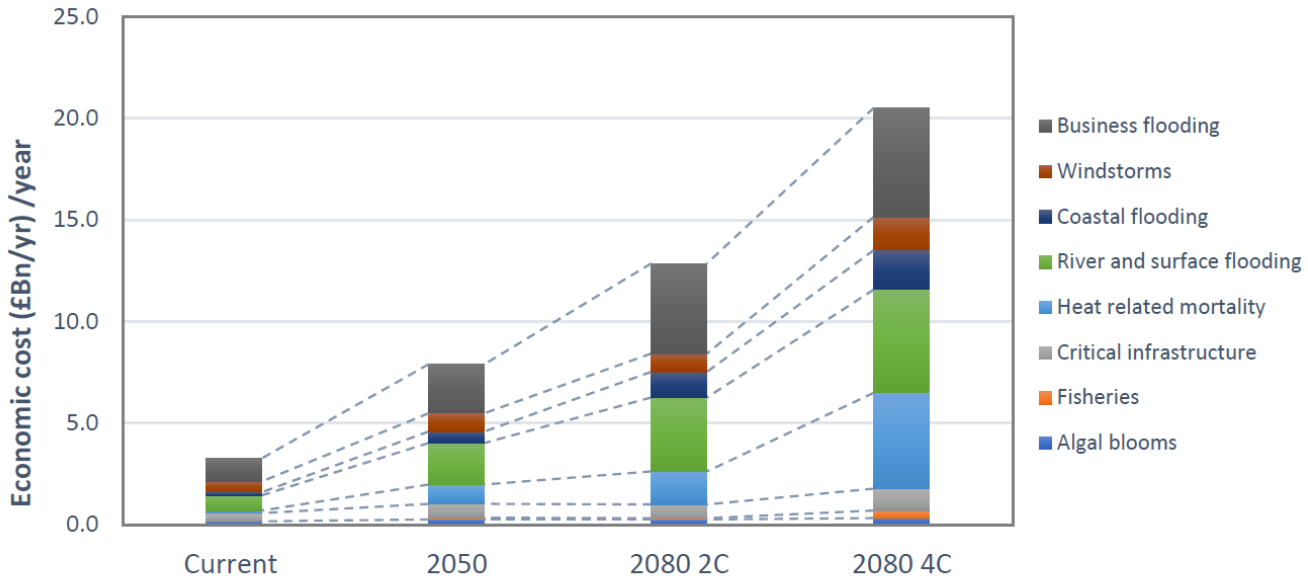
Table 3: Reproduced 'Annex D: Summary table of UK Climate Change Economic Impacts' from Defra (May 2024 version)[38]

Impact	Description	Low	Central	High	Unit
Flood transport costs	The cost of the 2015/16 floods on vehicles, rail, & roads	£363	£457	£552	£m 2023 prices
Flood health costs	The cost of the 2015/16 floods on health	£39	£52	£66	£m 2023 prices
Flood utilities costs	The cost of the 2015/16 flood on utilities	£110	£126	£142	£m 2023 prices
Flood local authority and emergency services cost	The cost of the 2015/16 flood on local authorities & emergency services	£70	£92	£115	£m 2023 prices
Total flood costs	The total cost of 2015/16 floods	£1,577	£1,941	£2,305	£m 2023 prices
Heatwave health costs	The average annual cost of heat mortality for 2000-2009	£144	-	£4,411	£m 2023 prices
Heatwave transport costs	The cost of 2003 heatwave on transport sector	-	£69	-	£m 2023 prices
Heatwave energy costs	The cost of 2003 heatwave on energy	-	£125	-	£m 2023 prices
Heatwave built environment costs	The cost of 2003 heatwave on built environment	-	£193	-	£m 2023 prices

Impact	Description	Low	Central	High	Unit
Heatwave productivity costs	The cost of 2010 heatwave on productivity	-	£1,010	-	£m 2023 prices

The Monetary Valuation of Risks and Opportunities in CCRA3 report (2021)[39] found that a significant number of known climate threats have very high (aggregate) economic costs (£billions/year) in the UK, even by the mid-century. These include river and surface water flooding to residential properties, business and infrastructure, and the impacts of sea-level rise, coastal flooding and storm-surge to the same receptors. They also include the impact of extreme heat, notably in terms of health and well-being (including fatalities) and overheating in the built environment (residential and business), impacting either in terms of discomfort / reduced productivity, or increasing cooling demand for households and business. The other main hazard, that of water (and the water supply-demand balance) is potentially high in monetary terms in mid- and late-century, although it varies between regions (with England projected to be the most affected). This is projected to occur even though water management plans are already integrating climate change.

Figure 11.3: Annual UK economic costs of climate change for a selection of risks.



Annual economic costs of climate change in the UK (£Billion) for a selection of risks.

2.9. Valuation of Risks and Opportunities Extrapolated to East Sussex

A detailed economic analysis was undertaken for the UK, including England, context in 2021. This Monetary Valuation of Risks and Opportunities in CCRA3 report (2021)[40] analysis is considered a recent and good benchmark for the UK, being an independent report to the Climate Change Committee pursuant the Climate Change Act 2008 risk assessment activities, the report also states it has had reviewers from across Government Departments. The report is considered a reasonable basis for developing an estimate for East Sussex, as equivalent direct analysis at the county level would be a large independent research activity that is not considered feasible or proportionate as a sub-task of the HIA. The findings of the Monetary Valuation of Risks and Opportunities report present a clear picture that there are numerous health related climate change outcomes where DEFRA directs to the evidence from the climate risk assessment and the economic data in the Monetary Valuation of Risks and Opportunities in CCRA3 report (2021).

As part of the third iteration of UK Climate Change Risk Assessment work, the government published an economic evaluation of the risks and opportunities from climate change to the UK. The synthesis valuation analysis includes all significant costs and benefits that affect the welfare and wellbeing of the population, and therefore includes environmental, cultural, health, social care, justice and security effects. Valuations have been estimated for 2°C and 4°C pathways (globally, relative to pre-industrial), both in the mid-century and the end of the century. The magnitudes are rated as 'very high' (VH), 'high' (H), 'medium' (M) and 'low' (L). One of the themes covered by the report is 'Health, Communities and the Built Environment':

Risks: "There are very large monetary values associated with flooding (river, surface and coastal), extreme heat (on health and well-being) and increased cooling demand. These all individually have estimated costs of £billions/year. There is also a potentially very high magnitude for the impact of climate change on building fabric, though this is driven by storm risk, which is very uncertain."

Opportunities: "At the same time, there are also very high benefits (opportunities) from the improvement in health and well-being from warmer temperatures, and from the reduced winter heating demand and energy use, which also potentially run to £billions/year."

The report explains the positives should not be summed against the because they affect different geographical areas as well as different groups, and also require contrasting adaptation strategies.

Table 4 UK Climate Change Risk Assessment Economic Evaluation Summary Table for Health.

Risk / Opportunity	Present Day	2050s	2080s, 2°C	2080s, 4°C	Confidence
H1. Risks to health and wellbeing from high temperatures	VH	VH	VH	VH	Low - medium
H2. Opportunities for health and wellbeing from higher temperatures	+M	+ VH	+ VH	+ VH	Low - medium
H3. Risks to people, communities and buildings from flooding					
H3a River and surface flooding	VH	VH	VH	VH	Medium
H3b Coastal flooding	H	H	H	H	Medium
H4: Risks to the viability of coastal communities from sea level rise	L	L	L	M	Low
H5: Risks to building fabric	H	H	VH	VH	Low
H6 Energy demand					
H6a: Opportunities from reduced winter household energy demand	+ H	+ VH	+ VH	+ VH	Medium
H6b: Risks from increased summer household energy demand	L-M	H	VH	VH	Low
H7: Risks to health and wellbeing from changes in air quality					

Risk / Opportunity	Present Day	2050s	2080s, 2˚C	2080s, 4˚C	Confidence
H7a: Risks to health and wellbeing from changes in air pollution	L	L	L	L	Low
H7b: Risks to health and wellbeing from changes in aeroallergens	Unknown	Unknown	Unknown	Unknown	Low
H8: Risks to health from vector-borne disease	L-M	L-M	M	M	Low
H9: Risks to food safety and food security	L	L-M	L-M	L-M	Low
H10: Risks to household water					
H10a: Risks to household water supplies	M	H	H	H	Low - medium
H10b: Risks to water quality	Unknown	Unknown	Unknown	Unknown	Low
H11: Risks to cultural heritage	Unknown	Unknown	Unknown	Unknown	Low
H12: Risks to health and social care delivery	Unknown	Unknown	Unknown	Unknown	Low
H13: Risks to education and prison services	Unknown	Unknown	Unknown	Unknown	Low

Table 5 Key, including prorated East Sussex Economic Evaluation Risks and Opportunities.

Risks	Opportunities	UK value	East Sussex equivalent value per year (note need to make plural)
Very high (VH)	VH	£billions/year	£ 5,000,000
High (H)	H	£hundreds of millions/year	£ 500,000
Medium (M)	M	£tens of millions/year	£ 50,000
Low (L)	L	£<10 million/year	£<50,000

Set out below is the basis for a prorated estimate of what these risk and opportunities values mean in cost terms per year for East Sussex.

The HIA review has examined and summarised the key findings from recent UK Government economic evaluation and tools. These provide a robust context specific basis for concluding that action on climate change in ways that promote public health would be cost effective and cost-saving.

The economic analysis is frame in terms of how many Billions of pounds are saved each year for the UK. To provide East Sussex specific context an estimate of what these costs would mean if apportioned to the size of the East Sussex economic (within the wider UK economy) has been undertaken. This indicative calculation is based on establishing the East Sussex element as a crude percentage of the UK economy and they apply that percentage to the UK Climate Change Risk Assessment Economic Evaluation.

The Office for National Statistics, Gross Domestic Product estimates by local authority[41] (data 1998-2023 release date 17 April 2025) was used to estimate the contribution of East Sussex to the UK economy.

The analysis used GDP at current market prices, pounds million, (Table 5 of that publication). The data for Eastbourne, Hastings, Lewes, Rother and Wealden was extracted. Data was selected for 2023 (the most recent year in the release) which aligns with the UK Climate Change Risk Assessment 2023. The data and calculation is summarised in

Table . The calculation indicates that East Sussex corresponds to approximately 0.5% of UK GDP.

Table 11.4: ONS Local Authority GPD (current market prices, pounds millions), April 2025 release.

LA Name	2023	Calculated Percentage
Eastbourne	2,702	0.1%
Hastings	2,207	0.1%
Lewes	2,827	0.1%
Rother	2,026	0.1%
Wealden	3,899	0.1%
Sum of East Sussex LAs	13,661	0.5%
Sum of all UK LAs	2,689,853	100.0%

Risk / Opportunity	Present Day	2050s	2080s, 2°C	2080s, 4°C	Confidence
H1. Risks to health and wellbeing from high temperatures	VH	VH	VH	VH	Low - medium
H2. Opportunities for health and wellbeing from higher temperatures	+M	+ VH	+ VH	+ VH	Low - medium
H3. Risks to people, communities and buildings from flooding					
H3a River and surface flooding	VH	VH	VH	VH	Medium
H3b Coastal flooding	H	H	H	H	Medium

Risk / Opportunity	Present Day	2050s	2080s, 2˚C	2080s, 4˚C	Confidence
H4: Risks to the viability of coastal communities from sea level rise	L	L	L	M	Low
H5: Risks to building fabric	H	H	VH	VH	Low
H6 Energy demand					
H6a: Opportunities from reduced winter household energy demand	+ H	+ VH	+ VH	+ VH	Medium
H6b: Risks from increased summer household energy demand	L-M	H	VH	VH	Low
H7: Risks to health and wellbeing from changes in air quality					
H7a: Risks to health and wellbeing from changes in air pollution	L	L	L	L	Low
H7b: Risks to health and wellbeing from changes in aeroallergens	Unknown	Unknown	Unknown	Unknown	Low
H8: Risks to health from vector-borne disease	L-M	L-M	M	M	Low
H9: Risks to food safety and food security	L	L-M	L-M	L-M	Low
H10: Risks to household water					
H10a: Risks to household water supplies	M	H	H	H	Low - medium
H10b: Risks to water quality	Unknown	Unknown	Unknown	Unknown	Low

Risk / Opportunity	Present Day	2050s	2080s, 2˚C	2080s, 4˚C	Confidence
H11: Risks to cultural heritage	Unknown	Unknown	Unknown	Unknown	Low
H12: Risks to health and social care delivery	Unknown	Unknown	Unknown	Unknown	Low
H13: Risks to education and prison services	Unknown	Unknown	Unknown	Unknown	Low

Table offers an adjusted key representing East Sussex for the categories (e.g. very high, high, medium and low) used in the UK Climate Change Risk Assessment economic evaluation set out in Table .

Applying

Risk / Opportunity	Present Day	2050s	2080s, 2°C	2080s, 4°C	Confidence
H1. Risks to health and wellbeing from high temperatures	VH	VH	VH	VH	Low - medium
H2. Opportunities for health and wellbeing from higher temperatures	+M	+ VH	+ VH	+ VH	Low - medium
H3. Risks to people, communities and buildings from flooding					
H3a River and surface flooding	VH	VH	VH	VH	Medium
H3b Coastal flooding	H	H	H	H	Medium
H4: Risks to the viability of coastal communities from sea level rise	L	L	L	M	Low
H5: Risks to building fabric	H	H	VH	VH	Low
H6 Energy demand					
H6a: Opportunities from reduced winter household energy demand	+ H	+ VH	+ VH	+ VH	Medium
H6b: Risks from increased summer household energy demand	L-M	H	VH	VH	Low
H7: Risks to health and wellbeing from changes in air quality					

Risk / Opportunity	Present Day	2050s	2080s, 2˚C	2080s, 4˚C	Confidence
H7a: Risks to health and wellbeing from changes in air pollution	L	L	L	L	Low
H7b: Risks to health and wellbeing from changes in aeroallergens	Unknown	Unknown	Unknown	Unknown	Low
H8: Risks to health from vector-borne disease	L-M	L-M	M	M	Low
H9: Risks to food safety and food security	L	L-M	L-M	L-M	Low
H10: Risks to household water					
H10a: Risks to household water supplies	M	H	H	H	Low - medium
H10b: Risks to water quality	Unknown	Unknown	Unknown	Unknown	Low
H11: Risks to cultural heritage	Unknown	Unknown	Unknown	Unknown	Low
H12: Risks to health and social care delivery	Unknown	Unknown	Unknown	Unknown	Low
H13: Risks to education and prison services	Unknown	Unknown	Unknown	Unknown	Low

Table shows that there are multiple climate change health opportunities, and risks, that are rated as ‘very high’ (VH), with values at multiples of £5 million per year. Action to reduce these risks and harness these opportunities is likely to be particularly cost saving for the East Sussex system.

Table sets out an evaluation that takes into account both the CCRA direct link to Health (the ‘Health, Communities and the Built Environment’ category risks and opportunities, as well as additional wider determinants of health linked risks and opportunities that appear in other CCRA categories. The calculations include some estimate based on expected economic impacts in areas of uncertainty, for example ‘H12. Risks to health and social care delivery’ are rated as unknown by CCRA but for the East Sussex context are judged as reasonably being associated with very high degrees of risk. Such judgments have been considered and are balanced, with some risks remaining unknown and some estimates downgraded where CCRA offers a range, e.g. ‘I11. Risks to offshore infrastructure from storms and high waves has been judged as a high rather than very high rating.

Table estimates £68 million per year is the annual cost to the East Sussex system of climate changes risks related directly or indirectly to public health that could be avoided though action by 2080 under a 4°C warming scenario. A further £21 million per year of opportunity for climate change public health related economic gains could also be realised by 2080 under a 4°C warming scenario.

Table estimates that the total swing value (taking account of reducing negative effects and taking up opportunities for positive effects) would be:

- £71,325,000 per year in East Sussex in 2050;
- £85,300,00 per year in East Sussex in 2080 under a 2°C warming scenario; and
- £89,825,000 per year in East Sussex in 2080 under a 4°C warming scenario.

This is conservative as the evaluation’s highest economic bands (the very high category) are already reached by 2050 on many of the impacts and likely to be much greater by 2080.

This is also conservative as factors such as the risks relating to ‘H3b Coastal flooding’ have been prorated from the national average, when in fact coastal flooding impacts on the south coast of England are likely to be disproportionately higher.

Table 5: Estimate of annual costs associated with direct and indirect health risks and opportunities in East Sussex

Risks	CCRA direct link to Health	HIA CC indirect link to Health	2050s	2080s, 2˚C	2080s, 4˚C
NE5. Risks to natural carbon stores and sequestration			£5,000,000	£5,000,000	£5,000,000
I1. Risks to infrastructure networks from cascading failures		Y	£5,000,000	£5,000,000	£5,000,000
H1. Risks to health and wellbeing from high temperatures	Y		£5,000,000	£5,000,000	£5,000,000
H3a River and surface flooding	Y		£5,000,000	£5,000,000	£5,000,000
B1. Risks to business from flooding		Y	£5,000,000	£5,000,000	£5,000,000
B4. Risks to finance, investment and insurance		Y	£5,000,000	£5,000,000	£5,000,000
ID8: Risk finance sector			£5,000,000	£5,000,000	£5,000,000
I2. Risks to infrastructure services from flooding		Y	£5,000,000	£5,000,000	£5,000,000
H5: Risks to building fabric	Y		£500,000	£5,000,000	£5,000,000
H6b: Risks from increased summer household energy demand	Y		£500,000	£5,000,000	£5,000,000

ID7: Risks international trade disruption			£50,000	£500,000	£5,000,000
B5. Risks to business from reduced employee productivity			£50,000	£50,000	£5,000,000
I12. Risks to transport (in addition to flooding)		Y	£500,000	£500,000	£500,000
NE4. Risk to soils			£500,000	£500,000	£500,000
NE6. Risks to Agriculture		Y	£500,000	£5,000,000	£5,000,000
ID1: Risks to UK food availability		Y	£5,000,000	£5,000,000	£5,000,000
I10. Risks to energy (in addition to flooding)		Y	£500,000	£500,000	£500,000
I11. Risks to offshore infrastructure from storms and high waves			£500,000	£500,000	£500,000
N11.Risks to freshwater species and habitats			£500,000	£500,000	£500,000
I8. Risks to public water supplies from reduced water availability		Y	£500,000	£500,000	£500,000
H3b Coastal flooding	Y		£500,000	£500,000	£500,000
B3. Risks to businesses from water scarcity			£500,000	£500,000	£500,000
NE7. Risks to agriculture from pests, pathogens and invasive		Y	£50,000	£500,000	£500,000

H10a: Risks to household water supplies		Y	£500,000	£500,000	£500,000
I5. Risks to transport networks from slope / embankment failure			£50,000	£50,000	£500,000
NE8. Risks to forestry from pests, pathogens and invasive			£50,000	£50,000	£500,000
NE14. Risks to marine species, habitats and fisheries			£50,000	£50,000	£500,000
I13. Risks to digital			£50,000	£50,000	£500,000
ID4: Violent conflict			£50,000	£50,000	£500,000
NE16. Risks to marine from pests, pathogens and invasive			£50,000	£50,000	£50,000
NE17. Risks to coastal species and habitats			£50,000	£50,000	£50,000
I3. Risks to infrastructure services from coastal flooding		Y	£50,000	£50,000	£50,000
I4. Risks to bridges and pipelines from flooding and erosion			£50,000	£50,000	£50,000
I6. Risks to hydroelectric generation from low or high river flows			£50,000	£50,000	£50,000
I7. Risks to subterranean and surface infrastructure			£50,000	£50,000	£50,000

NE6. Risks to Forestry			£50,000	£50,000	£50,000
B2. Risks to business and infrastructure from coastal change		Y	£50,000	£50,000	£50,000
H8: Risks to health from vector-borne disease	Y		£50,000	£50,000	£50,000
ID9 Public Health		Y	£25,000	£50,000	£50,000
N12. Risks to freshwater from pests, pathogens and invasive			£25,000	£25,000	£50,000
H4: Risks to viability of coastal communities from sea level rise	Y		£25,000	£25,000	£50,000
H7a: Risks to health and wellbeing from changes in air pollution	Y		£25,000	£25,000	£25,000
H9: Risks to food safety and food security	Y		£25,000	£25,000	£25,000
ID3: Human mobility		Y	£25,000	£25,000	£25,000

Unknown			Estimates by HIA (professional judgment for context)		
NE1. Risks to terrestrial species and habitats			£50,000	£50,000	£50,000

NE2. Risks to terrestrial from pests, pathogens and invasive			£50,000	£50,000	£50,000
N10. Risks to aquifers and agricultural land from sea level rise		Y	£5,000,000	£5,000,000	£5,000,000
NE18. Risks and opportunities to landscape character		Y	£5,000,000	£5,000,000	£5,000,000
I9. Risks to energy generation from reduced water availability					
H7b: Risks to health / wellbeing from changes in aeroallergens	Y				
H10b: Risks to water quality	Y				
H11: Risks to cultural heritage	Y				
H12: Risks to health and social care delivery	Y		£5,000,000	£5,000,000	£5,000,000
H13: Risks to education and prison services	Y				
ID5: Law and governance					
ID10 Multiplication					
B6. Risks to business from disruption to supply chains / distribution		Y			

Opportunities

I10. Opportunities for energy (in addition to flooding)		Y	£500,000	£500,000	£500,000
I11. Opportunities for offshore infrastructure from storms and high waves			£500,000	£500,000	£500,000
I6. Opportunities for hydroelectric generation from low or high river flows			£50,000	£50,000	£50,000
H2. Opportunities for health and wellbeing from high temp	Y		£5,000,000	£5,000,000	£5,000,000
B7. Opportunities for businesses from changes in demand		Y	£5,000,000	£5,000,000	£5,000,000
H6a: Opportunities reduced winter household energy demand	Y		£5,000,000	£5,000,000	£5,000,000
NE9. Opportunities for agricultural and forestry productivity		Y	£500,000	£500,000	£5,000,000
ID2: Opportunities for UK food availability		Y	£500,000	£500,000	£500,000
ID6: Opportunities international trade routes			£50,000	£500,000	£5,000,000
NE15. Opportunities to marine species, habitats and fisheries			£50,000	£50,000	£500,000

N13. Opportunities to freshwater species and habitats			£25,000	£25,000	£50,000

Unknown

Estimates by HIA (professional judgment for context)

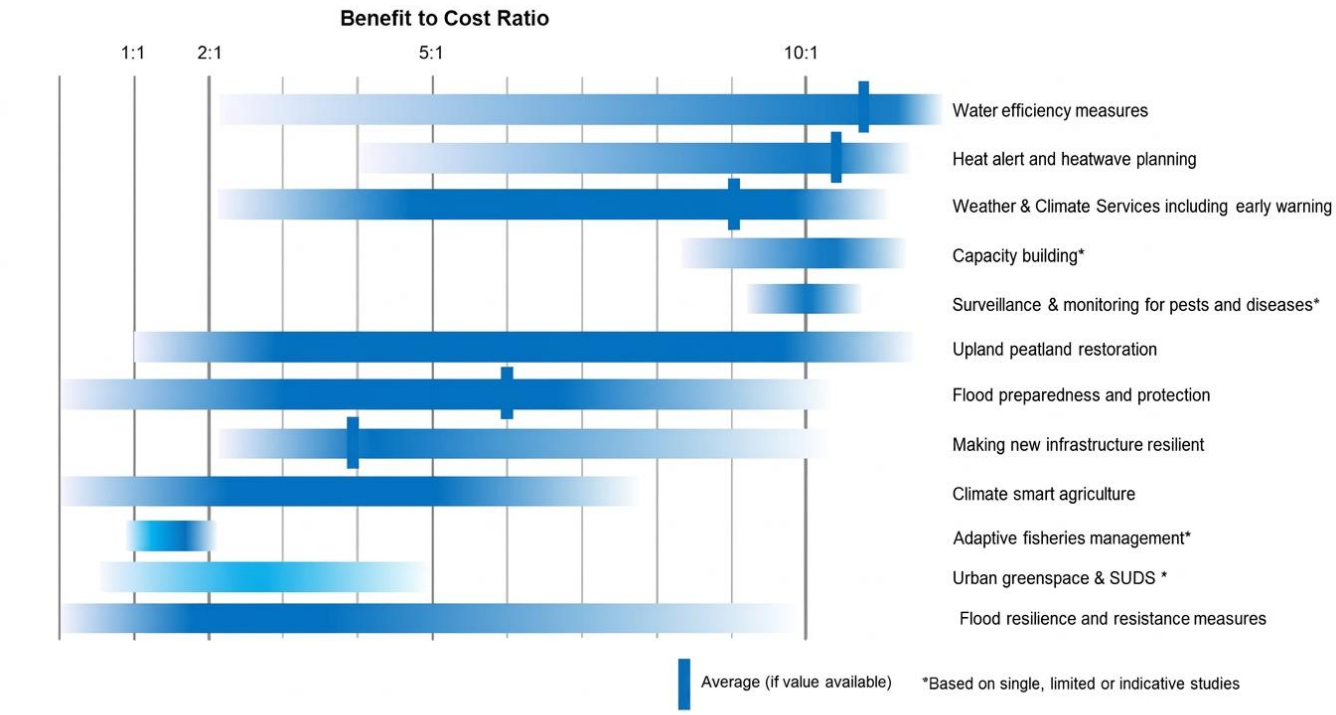
NE1. Opportunities for terrestrial species and habitats					
NE3. Opportunities from new species colonisations (terrestrial)					
NE18. Opportunities for landscape character		Y	£500,000	£500,000	£500,000
H11: Opportunities for cultural heritage	Y				
H12: Opportunities for health and social care delivery	Y				
H13: Opportunities for education and prison services	Y				
ID5: Opportunities for Law and governance					
ID10 Opportunities for Multiplication					

		Direct (as per ccra)			Indirect (professional judgement)			Total		
		2050s	2080s, 2°C	2080s, 4°C	2050s	2080s,2°C	2080s,4°C	2050s	2080s,2°C	2080s,4°C
Risks	Total	£16,625,000	£25,625,000	£25,650,000	£37,700,000	£42,675,000	£42,675,000	£54,325,000	£68,300,000	£68,325,000
Opportunities	Total	£10,000,000	£10,000,000	£10,000,000	£7,000,000	£ 7,000,000	£11,500,000	£17,000,000	£17,000,000	£21,500,000
Both	Net swing	£26,625,000	£35,625,000	£35,650,000	£44,700,000	£49,675,000	£54,175,000	£71,325,000	£85,300,000	£89,825,000

2.10. Illustrative Interventions Identified as Particularly Economically Favourable

The Monetary Valuation of Risks and Opportunities in CCRA3 report (2021)[42] found variation in the cost to benefit ratios of interventions. Many of these are highly favourable as illustrated in Figure 11..

Figure 11.4: Benefit to cost ratios of illustrative interventions.



Benefit to Cost ratios for Adaptation for Selected CCRA3 risks.

For those climate risks and opportunities related to health with VH ratings the following low-cost intervention points are noted, coastal issues are also included due to their particular relevance in East Sussex:

H1: Risks to health and wellbeing from high temperatures. This includes the effect of extreme heat (and heatwaves) on health (mortality and morbidity). A "hot" summer day has historically had an annual probability of 10%, but this will increase to 50% (depending on the emissions scenario) by mid-century. The risks primarily relate to overheating in buildings, with around 20% of English dwellings having a likelihood of overheating in hot weather. Adaptation policy including heatwave plans and heat-health warning systems could reduce these impacts significantly. No-cost options include natural ventilation (opening windows) and using existing blinds and curtains during the day to limit heat gain. Introducing shade is typically the most cost-effective option for cooling houses.

H2: Opportunities for health and wellbeing from higher temperatures. This includes potential benefits from warmer winters for cold-related mortality. Benefits to physical and mental health may also arise from increased physical activity in winter months. Effects are moderated by anticipated population change increasing the proportion of older people. Applying established public health communication and awareness raising interventions are likely to be no-regret and low-cost options, although evidence of their application in this context is currently lacking.

H3: Risks to people, communities and buildings from flooding. Including river and coastal flooding risks associated with property damage and injury risk. Hard and soft protection measures, and grey and green infrastructure improvements are associated with high benefit to cost ratios, with may measures already being implemented or planned within adaptation strategies. For property interventions, flood resilience and resistance measures are likely to be no-regret adaptation measures, albeit retrofit is typically more expensive than installation within new buildings.

H4: Risks to the viability of coastal communities from sea level rise. This includes coastal change associated with coastal erosion, landslip, inundation and accretion. Coastal adaptation is extremely cost-effective[43, 44, 45] in locations of high population density. In areas of very few properties, benefit-to-cost ratios may be below one, such that from a purely economic evaluation perspective discussion as to community sustainability and viability may be appropriate. There may be other issues to consider including threat to life and social justice.

H5: Risks to building fabric. This includes subsidence caused by drought and dry soil, damp or excessive moisture due to flooding, and intense or vertical rain; and structural damage due to high winds. It is noted that there is high uncertainty in relation to such hazards. Windstorms are one of the most damaging events that occurs in the UK, and the frequency and intensity of such events is likely to increase with climate change. Uncertainty includes whether the North Atlantic storm track may shift in the future. The underpinning research[46] suggests that potentially risks may increase in central UK and decrease on the south coast of England, including East Sussex. Subsidence impacts are noted asl relating to soil type, e.g. clay soils, which are a relevant consideration for the South East of England. Adaptation to subsidence is typically reactive repair. There are potentially low-regret options from adaptation planning and awareness raising to households focusing on monitoring, measurement and prediction. In high-risk areas vegetation control (tree management) and local wate management are likely to be low-regret interventions. Household insurance is the main intervention relevant to windstorm impacts, including that this spreads risks and costs. Retrofitting to be storm resilient has high costs but these can also result in high benefits, though evidence for a UK context is limited. For new buildings there are lower costs by intervening early with, siting and orientation, as well as design and

materials. Building code changes that anticipated intense windstorms are likely a low-regret option.

H6: Risks and opportunities from summer and winter household energy demand. This includes both the benefits of reduced building health costs, but also the risks of higher building cooling costs (air conditioning). Cooling adaptations include passive ventilation, changes in behaviour, green infrastructure and land-use planning. Passive cooling solutions are likely to be more cost effective than air conditioning solutions, though there are moderators including building type frequency of overheating risk. Energy efficiency awareness programmes for homes targeting cooling (in the same way that current initiatives target heating) are likely to be low cost or no-regret. See further points in relation to H1 above.

2.11. Methods for Interpolating from National to East Sussex

The HIA review has examined and summarised the key findings from recent UK Government economic evaluation and tools. These provide a robust context specific basis for concluding that action on climate change in ways that promote public health would be cost effective and cost-saving.

The economic analysis is frame in terms of how many Billions of pounds are saved each year for the UK. To provide East Sussex specific context an estimate of what these costs would mean if apportioned to the size of the East Sussex economic (within the wider UK economy) has been undertaken. This indicative calculation is based on establishing the East Sussex element as a crude percentage of the UK economy and they apply that percentage to the UK Climate Change Risk Assessment Economic Evaluation.

The Office for National Statistics, Gross Domestic Product estimates by local authority[47] (data 1998-2023 release date 17 April 2025) was used to estimate the contribution of East Sussex to the UK economy.

The analysis used GDP at current market prices, pounds million, (Table 5 of that publication). The data for Eastbourne, Hastings, Lewes, Rother and Wealden was extracted. Data was selected for 2023 (the most recent year in the release) which aligns with the UK Climate Change Risk Assessment 2023. The data and calculation is summarised in Table 11.8: The calculation indicates that East Sussex corresponds to approximately 0.5% of UK GDP.

Table 11.8: ONS Local Authority GPD (current market prices, pounds millions), April 2025 release.

LA Name	2023	Calculated Percentage
Eastbourne	2,702	0.1%
Hastings	2,207	0.1%
Lewes	2,827	0.1%
Rother	2,026	0.1%
Wealden	3,899	0.1%
Sum of East Sussex LAs	13,661	0.5%
Sum of all UK LAs	2,689,853	100.0%

3. Summary of Our Methods

This section provides an overview of the methods and approaches used in this HIA and for Climate Scenarios. The full methods are set out in the HIA's Methods Statement. For details, please see Appendix B.

The HIA has used the UK Met Office Local Authority Climate Service3 climate predictions for East Sussex that use with the UK Government Climate Change Risk Assessment (CCRA) and the 3rd National Adaptation Plan (NRP3) 'central' and 'high impact' scenarios. Temperature increase compared to baseline of +2°C (prepare) and +4°C (assess risks) are considered. The timing of exactly when the +2°C or +4°C increase would arise has some uncertainties, but the Met Office models predict changes in the 2030s, 2050s and 2080s. The central scenario is of a +2°C increase in the 2050s, with the high impact scenarios predicting this point being reached by the 2030s. Data is set out for temperature, precipitation and sea level rises specific to East Sussex.

Implications and predications of the climate change scenarios for East Sussex include that direct health impacts are likely to arise due to increased high temperature days. Indirect health impacts are also likely to improved food production opportunities.

3 Met Office Climate Data Portal. Local Authority Climate Service. Online. Accessed 13/05/25. Available at https://climatedataportal.metoffice.gov.uk/

High temperature health effects may be exacerbated by increases in the need to cool buildings, particularly dwellings; with the increase in days when cooling is required greatly outstripping the reduction in days when heating is required. Increases in sea levels are perhaps more gradual but are likely to increase the population exposed to coastal flooding and reduce the extent of coastal areas available for recreation.

3.1. Scoping Climate Impacts and Health Determinants – Golden Interactions

The Scoping step in HIA establishes the focus of the assessment, it is also a stage where planning is undertaken for other activities. In this HIA the focal issues are termed the *'golden interactions'*, which are defined as the key issues for East Sussex that arise from the relationship between 'climate change impacts' and 'determinants of health'. These golden interactions are the issues most likely to be significant in terms of population health outcomes and health inequalities.

Identifying the golden interactions was an important part of the HIA as a proportionate scope of issues needed to be focused on. This is because the early scoping work of the HIA identified 91 potentially relevant determinants of health from guidance and local context, as well as 14 climate change impacts building on the UK Health Security Agency publication Health Effects of Climate Change (UKHSA, 2023) and professional judgments about local context. This produced a matrix of 1,274 potential issues for the HIA to investigates (see Appendix H of the HIA Main Report). Through a systematic scoping exercise led by the HIA Programme Management Team, which was verified by systemwide stakeholders during Workshop 1, the scope of issues was narrowed to 37 key interactions between climate change impacts and health determinants relevant to East Sussex. In reaching this shortlist, the scoping decisions were iteratively reviewed, including against the evidence generated from other HIA workstreams on stakeholder engagement, the community survey, baseline data collation, policy analysis and literature review.

The HIA termed the shortlist of 37 as '**golden interactions'**. The golden interactions spanned wider determinants of health and included all the climate impacts identified by the UKHSA. In reaching this list, vulnerable groups, temporal and geographic dimensions were also considered. The golden interactions formed the basis of a manageable and consistent structuring of analysis across the HIAs workstreams. Considerations in relation to exclusion criteria and bias were undertaken to improve the robustness of the scoping process and output.

3.2. East Sussex Baseline Data Profile and Indicators

As part of the HIA work a workstream was created, with its own data stakeholder steering group, to development a data profile of climate change and health for East Sussex. The data profile acts as a point of reference (baseline) against which to judge current and future challenges and opportunities for intervention.

The profile provides a structured, data-driven overview of projected climate impacts, environmental conditions, local vulnerabilities, and core population health outcomes. The baseline was developed through the following process:

1. **Data source identification**: Datasets were systematically identified from recognised statistical repositories, official surveillance systems, and environmental and health monitoring platforms. Sources included OHID Public Health Profiles (Fingertips), the Office for National Statistics, UKHSA, the Met Office, the Environmental Agency, East Sussex in Figures, and local authority/partner datasets such as the East Sussex Fire and Rescue Service (ESFRS) wildfire dataset. Both publicly available datasets and organisational metrics accessible to local authority or steering group members were included.
2. **Inclusion/exclusion criteria**: Datasets were included if they were quantitative, verifiable, and relevant to climate and health pathways in East Sussex, with geographic resolution at county, district/borough level, or smaller scales where available. National or regional levels were included only where they enabled relevant and comparable analysis for East Sussex. Excluded were datasets of unverifiable origin, those not routinely updated, those lacking clear metadata/methodology, and purely narrative or policy sources without extractable indicators.
3. **Indicator identification**: From each data source, potential indicators were identified and catalogued according to three themes: climate impacts, determinants of health and health outcomes. Indicators were selected where they aligned with the “golden interactions” identified in the HIA scoping stage and could act as measures across the climate and health pathways. Guidance from the Health Effects of Climate Change in the UK: 2023 Report (HECC), particularly Chapter 15 on climate and health indicators, was used to inform selection.
4. **Geographic and time bounding**: Local refers to East Sussex County Council and, where available, constituent districts/boroughs or smaller areas. Regional refers to the South East of England; national refers to England. Site-specific or community-level data were eligible if robust and relevant. Temporal scope focused on the most recent data available at the time of review, with preference for routinely updated indicators that allow trend analysis.
5. **Baseline data collation**: In addition to pathway-specific indicators, baseline data were collated to provide essential context on the East Sussex population. This

included demographic indicators, socio-economic determinants, and prevalence of key health conditions. Much of this baseline data was sourced from East Sussex in Figures and did not need to go through earlier stages of review.

6. **Impact Exclusions**: Migration and chemicals were excluded as standalone topics. Migration was treated as a vulnerability factor rather than a hazard, and chemicals were excluded due to lack of direct local health-related data though relevant contexts were signposted via Defra's MAGIC Map Service. Wider exclusions applied to outdated datasets, data from outside the UK, and modelling outputs without extractable local indicators.

The results of this process were compiled into a series of thematic data profiles to inform the HIA. The full baseline dataset is set out in the East Sussex Climate Change Data Profiles Sources.xlsx and summarised in the above.

3.3. Economic Analysis

The analysis uses the Government UK Climate Change Risk Assessment economic evaluation (CCRA3 report), as well as other national statistics and reliable sources. The analysis was extended to consider the overall potential value of climate change economic impacts that directly and indirectly affect health outcomes. This included both the financial benefits of realising climate change opportunities and the financial benefits of avoiding climate change health risks. Expert judgment by the HIA Programme Management Team and East Sussex County Council key informants was used to estimate if values were likely to be low, medium, high or very high in the East Sussex context on issues where the CCRA3 report identified uncertainty. The economic analysis is set out above in PART 2, Section 2.

3.4. Policy Mapping, Review and Analysis

A key activity of the HIA was to undertake a policy analysis, this was to:

1. Map the extent to which the East Sussex system covered and integrated the concepts of environment, climate change and human health within relevant policy areas, e.g. environmental strategies, climate change action plans, health strategies and local plans.
2. Identify policy documents currently being refreshed and provide 'considerations, opportunities' (recommendations) and action steps to achieve a greater synergy for climate change and health, notably across East Sussex's Local Plans.
3. Provide a baseline of the policy landscape in East Sussex against which future evaluation could review progress and policy coherence.

To do this a new policy analysis tool was developed to systematically and consistently ask the right questions about the nature of the documents being reviewed and the way concepts of climate change and health were addressed. The steps in the tool were:

- Stage 1: Policy and review details
- Stage 2: Document's internal coherence in setting policy
- Stage 3: Context questions
- Stage 4: Climate change questions
- Stage 5: Health questions
- Stage 6: Climate/health interaction questions
- Stage 7: Key quotes, reflections, clarifications or opportunities
- Stage 8: Review outcome
- Stage 9: Follow-up questions for the HIA to consider beyond the policy review

The policy analysis tool is set out in Appendix E. A key focus of the policy work was in identifying and aiming to influence the 'operative wording' of polices, i.e. that small subset of a policy document's wording that contains statements of 'commitment or requirement', either for the policy document owner or for other parties. A secondary outcome of this approach was to give insight into the proportion of policy documents in the East Sussex system that meaningfully met this definition of a policy, an insight that may support improved policy making more broadly in the future.

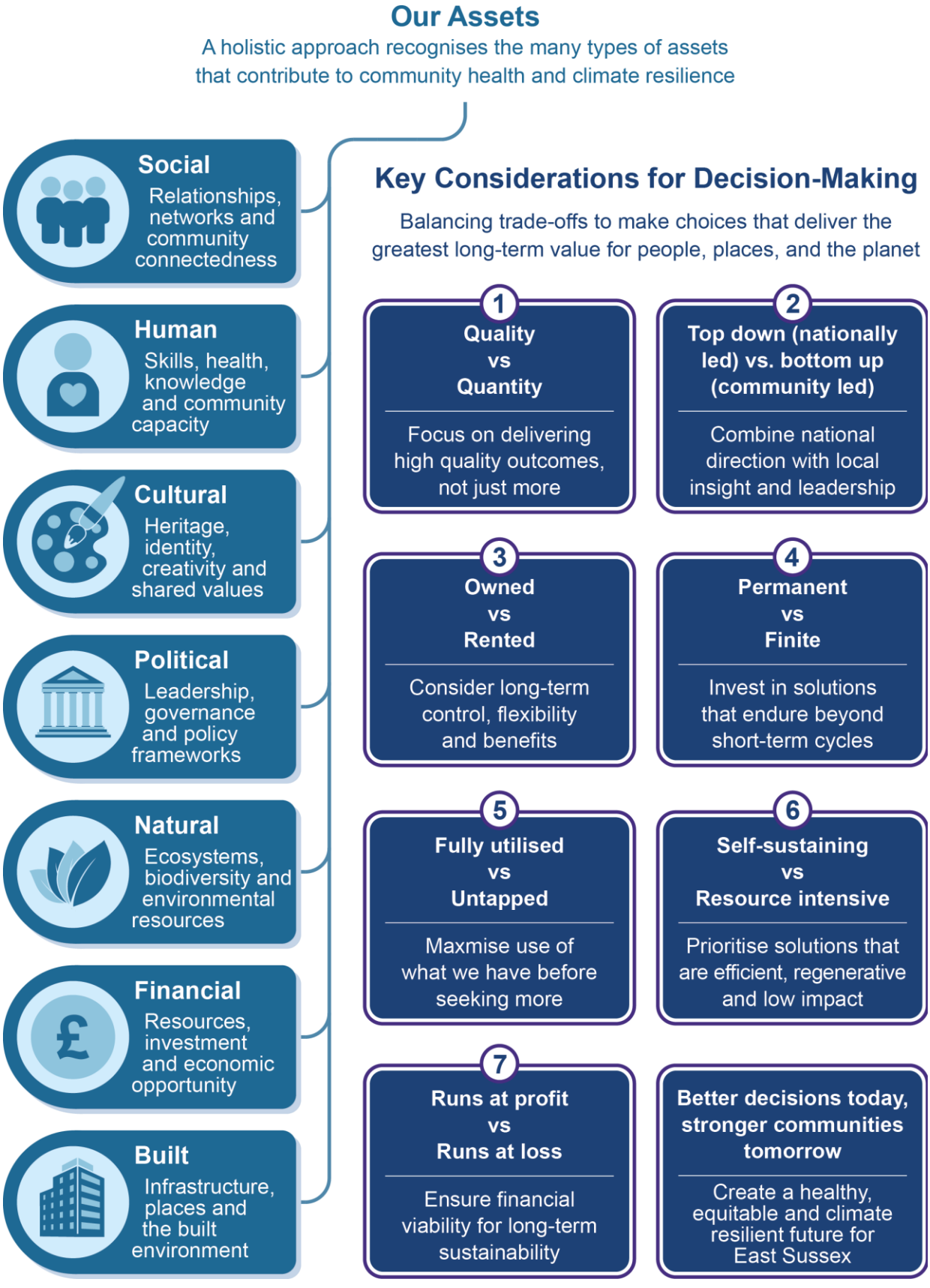
Three key findings and conclusions from the policy review revealed that:

1. In responding to the recommendation of the UKHSA Health Effects of Climate Change in the UK: State of the evidence 2023 report section 3.5.2 to take a '*health-in-all-climate policies*' and '*climate-in-all-health-policies approach*', the East Sussex Climate Change HIA identified and confirms that it is not just about a focus on health and climate policy documents but all policies and 'all approaches' across the whole of the East Sussex system.
2. Policies need to 'adapt' to balance both climate change mitigation (achieving net zero) and 'climate and health adaptation.'
3. All policy owners can, through the existing policy refresh cycles, look to include succinct but specific wording in the operative parts of their documents to trigger joined up action on the issues of climate change adaptation and delivering public health benefits.

3.5. Review of Assets and Protective Factors

The HIA considered what assets and protective factors mean in the contexts of climate change health impacts. Workshop 1 explored these categories. The data

profile work stream then identified illustrative assets and protective factors on key climate change impacts. An overarching recommended consideration as to more detailed and consistent mapping of assets in East Sussex is made.



3.6. Stakeholder Engagement, Interviews and Workshops

Stakeholder engagement and data collection is a key activity as part of developing any HIA. It is a central process.

Stakeholders were engaged through:

- A first initial meeting to introduce the project aim and an introduction to HIA, the purpose, process and methodology of HIA
- Policy reviews and development meetings
- A number of 'Climate and Health Conversations'
- A set of three workshops (workshop 2 and 3 informed the co-development of the recommended considerations, opportunities).
- Three rounds of validating the recommended considerations, opportunities and action steps generated by the system at systemwide partnership meetings and via workshop 3 as well as individual conversations.
- A public consultation survey on climate and health impacts in East Sussex
- A revalidation stage of the recommended considerations, opportunities and action steps via further discussions and emails. This also provided the opportunity for partners to refine and work with colleagues/fellow subject matter experts who were not involved in the process.

They were engaged for the purpose of:

- Gathering and mining information, data, intelligence and learning from them as subject matter experts in their own respective areas of work
- Mapping policies, strategies and plans to be reviewed and enhanced
- Brining the system together to act as critical friends across policy areas to identify opportunities, gaps, barriers and tensions across efforts to address the health effects of climate change in East Sussex
- To collectively consider the 'Art of the Possible' and develop the recommended considerations, opportunities and action steps.
- Training and learning purposes
- Identify opportunities across the system for systemwide partners to collaborate and work better together
- To coordinate, support and facilitate the opportunity to get the systems within the system to pull in the same direction in which to help drive and deliver unified and coordinated consciousness and collective action across services, sector, systems and boundaries.

Data collection for the development of this HIA consisted of a number of stages/activities related to stakeholder engagement including interviews, workshops and a public consultation survey.

‘Climate and Health Conversations’

We conducted 20 in-depth *Climate and Health Conversations* across the East Sussex system, engaging with services, sectors, departments and external subject matter experts from academic, regulatory and advisory organisations. Stakeholders were selected based on their professional roles and their involvement in policy areas at the intersection of climate change, health and wellbeing. Participants worked across a broad range of climate-adjacent sectors, including housing, transport, land-use planning, flood risk management, ecology, natural environment, emergency planning, health and social care, utilities (water and energy), food systems, economy, infrastructure and environmental health.

The conversations were undertaken between May 2024 and April 2025 and were preceded by a series of introductory engagement sessions held between October 2023 and March 2024. These initial discussions introduced stakeholders to the Health Impact Assessment (HIA) process, explained the aims and scope of the HIA, and outlined how the project would be used to strengthen understanding of the interactions between climate change, health, wellbeing and inequalities across East Sussex. They also provided an opportunity to build awareness of the project, secure organisational support, encourage participation in subsequent workshops and create the foundations for a collaborative, co-produced approach.

Each Climate and Health Conversation followed a broadly consistent structure. The first round of discussions began with an overview of the HIA process and the purpose of the project before exploring the stakeholder’s relevant policies, plans and strategies. Participants were invited to reflect on policy reviews undertaken as part of the HIA and provide feedback on how climate change and health considerations were currently represented within their policy areas. These discussions also helped to socialise the project across the wider system, identify opportunities for collaboration, secure support for workshop participation and facilitate the co-development of recommendations. Stakeholders were then asked to discuss their service area in greater depth, including existing activity, emerging challenges, evidence gaps, barriers to implementation, tensions between competing priorities and opportunities for improvement or system-wide action.

The conversations generated rich qualitative evidence on how climate change is influencing health and wellbeing across East Sussex. There were clear synergies in stakeholders’ perspectives, with consistent recognition of the interconnected nature of climate change, public health, social care, environmental sustainability and wider determinants of health. Across sectors, participants demonstrated a strong

appreciation of the need to better integrate health and wellbeing considerations into climate change policy, planning and decision-making, and vice versa.

Following each engagement session, detailed transcripts were produced from meeting recordings and notes. These transcripts were then subjected to thematic analysis to identify recurring themes, areas of consensus, emerging risks, opportunities, gaps, tensions, barriers and examples of good practice from across the system. The findings from this analysis were used to inform the Considerations, Opportunities and Action Steps section of this report (Part 3), ensuring that proposed actions are grounded in stakeholder experience, local knowledge and system-wide evidence gathered throughout the HIA process.

As a separate stage of engagement and consultation following the Climate and Health Conversations and Workshops, stakeholders were engaged through partnership meetings and emailed the draft HIA Recommended Considerations, Opportunities and Action Steps in September 2025. The email included sector-specific recommended considerations, opportunities and action steps, as well as draft recommendations relating to the wider determinants of health and the health effects of climate change. Stakeholders were invited to review the draft recommendations and provide feedback through an accompanying survey, with opportunities to suggest comments, edits or additional actions. Written responses were requested, and stakeholders were provided with a three-week consultation period to review and respond to the materials.

3.7. Literature Search, Review and Analysis

A scoping literature review has been complete as part of the HIA. Whilst not a systematic review, the review took a systematic approach, in mapping the published literature on climate change and health effects. A detailed search strategy was devised using Medical Subject Headings (MeSH) to index review academic and grey literature sources spanning social science, public health, and environmental studies. PubMed and Google Scholar were used. The approach to analysing the literature built on the policy analyses work in terms of fields and focus. Reviews were undertaken by a dedicated librarian resource to conduct the search, and use of F2 doctors doing placements to review and summarise articles. The review provides a detailed bibliography informing the professional judgments reached during the HIA. It also provides an evidence-base to support stakeholders across the East Sussex system during the implementation stages of the HIA, including the considerations, opportunities and action steps to address the health effects of climate change. The bibliography and review analysis and summaries of the full sources identified by the literature review is provide in Appendix D of the HIA Main Report.

3.8. Evaluation Framework

Three types of evaluation have been identified based on the Institute of Public Health HIA Guidance 2021, namely, Process Evaluation, Impact Evaluation and Outcome Evaluation. The most relevant to the current stage of the HIA is Process Evaluation, which considers if the steps typically expected of a HIA have been undertaken. The HIA self-reviewed itself using the Wales Health Impact Assessment Support Unity Quality Assurance Framework for HIA (2017). The results of that process evaluation are set out in Appendix B to the HIA. A further independent process review may also be undertaken as part of Phase 2 of the HIA work. Impact evaluation in relation to the implementation of the HIAs recommended considerations, opportunities and action steps is also an activity for later phases of the HIA work, and a tool to support that is presented in Appendix C to the HIA. Focused outcome evaluation activities have been identified, including on policy review updates and climate change scenarios, both to track real world outcomes against predictions. Wider outcome evaluation in relation not health outcomes is not typically undertaken as it involves extensive epidemiological research by academic institutes. By considering the evaluation options the HIA as set out an evaluation framework that can be applied and further developed to confirm the benefits of the HIA work.

4. Summary of the Evidence Base

This section summarises the evidence base that underpins the recommended considerations, opportunities and action steps of the report; this includes reviews, findings and activities undertaken. The evidence-base comprises:

- Literature review (detail on this is set out in Appendix D);
- Policy review (detail on this is set out in Appendix E);
- Public consultation (detail on this is set out in Part 1);
- Workshops (detail on this is set out in Appendix G);
- Summary of stakeholder meetings

The following are set out in full:

- Data Profile (Part 2, Section 1).
- Economic analysis (Part 2, Section 2).

4.1. Summary of the Policy Review

The Health Impact Assessment strategic systemwide policy review undertook a systematic analysis of 62 purposively selected documents from across the East Sussex system. In doing so, it has surfaced key insights into the state of policy coherence, operational readiness, and the degree to which climate and health, two of the most defining challenges of our time, are integrated and advanced into the county's strategic frameworks.

The East Sussex Strategic Systemwide Policy Review considered the extent to which climate was integrated into all health policies, and the extent to which health was integrated in all climate policies across the diverse policy documents of the East Sussex system. This responds to the recommendation of the UKHSA Health Effects of Climate Change in the UK: State of the evidence 2023 report section 3.5.2. This HIA clarifies this to about actions on all approaches, not just policies, and confirms that it is not just about a focus on climate specific policy documents and health specific policy documents.

The policy review, therefore, assessed the extent to which climate change and health ('climate change in all health policies' and 'health in all climate change and environment policies') is explicitly or implicitly integrated into the policy samples. This includes assessing the frequency of climate-related language, the degree to which climate change is woven into policy purpose or operative content, and whether climate change mitigation and adaptation are structurally embedded into the policies (with support from operative wording). The review also considered to what extent climate pathways such as net zero transition, air quality, food systems, flooding, or temperature-related risks, are recognised and embedded in the policy documents.

The overarching finding is that while there is clear thematic ambition and sectoral engagement with both health and climate change, the system as a whole exhibits fragmentation, variability in structure, and frequent disconnects between policy intent and actionable delivery. These issues limit the ability of the policy infrastructure to function as a joined-up, responsive mechanism for promoting health equity and climate resilience. Only 37% of reviewed policies demonstrated high internal coherence, fulfilling core criteria: setting out actions, offering decision-making guidance, and aligning document purpose with title. Many policies position themselves between aspiration and strategy, lacking the specific operative language, clear institutional ownership, or delivery frameworks required for robust implementation. Around half include action plans, and even fewer establish monitoring mechanisms or accountability loops.

From a health systems perspective, these shortcomings are particularly consequential. When policies lack clarity in language, structure, and institutional ownership, they weaken the public sector's ability to coordinate action across

complex and interdependent challenges such as climate adaptation, population health, and social equity. The analysis further showed that while climate change is mentioned in the majority of policies, it is not routinely embedded in a way that supports joined-up action. Only one-third of documents make any attempt to connect climate and health, and only 11% with strong links. Similarly, although health is referenced in nearly all policies, it is often positioned peripherally, without clear objectives, operational commitments, or mechanisms for delivery. This limits the health system's capacity to work upstream and misses a crucial opportunity to harness health as a catalyst for wider environmental and socioeconomic value.

The implications are significant. Despite widespread rhetorical support for sustainability, wellbeing, and resilience, some policy narratives are not yet being translated into the kind of integrated, cross-sectoral action that is required to address the scale and complexity of the climate crisis. This is particularly concerning in a region where the risks of climate-related health inequities are already material and growing. While a number of East Sussex policies demonstrate strong practice, especially those that align climate, health, and equity goals, the samples reveal fragmented and inconsistent action to deliver sustained, population-level impact. This is however a relatively quick fix and opportunity for substantial progress on integrating climate change and health policy to leverage win-wins. All policy owners can, through the existing policy refresh cycles, look to include succinct but specific wording in the operative parts of their documents to trigger joined up action on the issues of climate change adaptation and delivering public health benefits. A coherent policy and 'all approaches' context across the East Sussex system on this agenda would be transformational. We need all of our policies and 'all approaches' (not just climate and health specific ones) to adapt to balance both climate change mitigation and climate and health adaptation.

The policy review was designed around three principal aims:

1. First, to map if the degree to which local policies integrate climate and health (and if they do to what degree), identifying where these considerations are present in language, framing, and priorities.
2. Second, it aimed to identify policies currently undergoing revision, with a view to influencing, shaping, and developing recommendations that promote synergy across climate change and health domains;
3. Third, to establish a robust baseline against which future evaluations of policy coherence and progress can be addressed.

To fulfil these aims, a new policy analysis tool was developed and applied systematically to a set of 62 policy documents spanning different services, sectors and geographies within East Sussex. The tool consisted of nine interrelated analytical stages: documenting the basic details of the policy (stage 1); assessing its internal

coherence, including whether it set commitments or expectations (stage 2); evaluating its stated context and scope (stage 3); assessing its explicit and implicit engagement with climate change (stage 4); similarly assessing its engagement with health (stage 5); analysing whether and how the policy draws connections between climate and health (if any) (stage 6); recording any key quotes, observations, clarifications, or opportunities (stage 7); issuing a judgement on whether the policy represents a potential lever for climate-health synergy (stage 8); and formulating follow-up questions or needs for stakeholder clarification (stage 9). The full tool and methodological approach, including a detailed account of its development process and links to relevant policy literature, are provided in Appendix B Methods Statement, Section 11: Policy Mapping, Review and Analysis.

The review attempted to assess as many policy documents as practicable and available at the time currently in use across East Sussex system. The analysis employed a purposive sampling strategy following inclusion and exclusion criteria (outlined in 11.2. Inclusion and Exclusion Criteria of Appendix B). This approach was selected to ensure that the review focused on illustrative, and potentially influential documents in the local system, those which are thematically linked to health, environment and climate change, and that guide strategic direction or public service delivery, those situated within organisations or governance levels that shape the local environment outcomes and population health outcomes.

As such, while the policy review does not claim to be exhaustive or statistically representative of the entire East Sussex policy landscape, it does assess a targeted and thematically rich cross-section of the local policy environment. The review acknowledges that further and future policies may also play a role in shaping climate and health outcomes beyond the reviewed sample.

The assessment of internal coherence across the East Sussex policy landscape sought to interrogate the structural integrity of each policy document. Internal coherence was understood as the degree to which a policy exhibited a clear alignment between its stated objectives, its internal structure, and its capacity to support implementation.

This was assessed through three key coherence criteria:

1. Whether the policy articulated specific actions or responsibilities for the issuing body or its partners;
2. Whether it provided clear guidance capable of shaping decision-making or practices;
3. Whether its title, signalling its purpose, was aligned with its scope, and content and ambition.

The review found that:

- 44% (27 out of 62 policy documents) analysed fulfilled all three coherence criteria.

- 50% (31 out of 62 policy documents) demonstrated partial coherence, meeting only one or two of the criteria. These comments were partially inconsistent considering the assessment criteria for consistency, exhibiting at the very least a slight disconnect between their stated ambitions and the mechanisms required to fulfil them. Some provided high-level guidance but failed to assign clear roles and responsibilities at the individual and organisational level, leaving room for ambiguity regarding implementation. Other policies matched the expectations raised by their title but lacked the procedural clarity or directive language needed to translate ambition into outcomes. These policies were robust in setting strategic direction or framing, but weaker in terms of supporting practical action. Such limitations raise questions about how these policy documents might be operationalised or monitored in the context of linking systemwide climate-health actions.

- 6% (4 out of 62 policy documents) reviewed did not meet any of the coherence criteria. These tended to be high-level strategies, vision documents or institutional plans that acted more as articulations of values and long-term intentions rather than as actionable policies. Examples include Social Value Policies and Corporate Strategies among others. While these policies had merit as expressions of organisational purpose or priority, they lacked operational clarity, enforceable commitments, or assigned roles that would enable them to function as tools for delivering integrated policy responses and actions. The language was general and discursive and offered narrative but less reporting on structured delivery.

- 63% (39 of the 62 policy documents) were accompanied by action plans, delivery appendices or monitoring frameworks. These additional components strengthened the credibility of the policy documents in which they were embedded. In the absence of such features, even well-written or ambitious policies risked remaining abstract and difficult to operationalise. The disparity in inclusion of action plans and roadmaps highlights a fragmentation in this area policy formation, where there is no standardised expectation or system requirement for how a policy should be structured to support delivery.

- Of the 11% (7 of the 62 policy documents) demonstrated a strong and consistent integration of climate and health—coded as Level 4 ‘strong mention and links between climate and health’. These policies stood out for the depth and clarity with which they treated the two domains as structurally and causally linked. In

these documents, the climate–health nexus was not a rhetorical aside but a central organising principle. Language was specific, mechanisms were defined, and co-benefits were explicitly named. For example, one forward-leaning strategy described how **"transport decarbonisation will deliver air quality improvements, which in turn reduce respiratory illness, cardiovascular disease, and health inequalities,"** thereby drawing a direct line between emissions policy and measurable health gains. Another document integrated mental health considerations, including climate anxiety and eco-distress, into its adaptation planning, demonstrating a mature understanding of emerging climate-health pathways.

- A further 23% (14 of the 62 policy documents) were coded at Level 3 'mentions and links climate and health', meaning they made explicit but partial or inconsistent linkages between climate and health. These policies often included references to health co-benefits in individual sections, such as the role of green space in supporting mental health or the respiratory benefits of improved air quality but did not weave these linkages into the full logic of the document. Typically, such references appeared in background rationale or vision statements, rather than in policy levers or operational clauses.

- 24% (15 of the 62 policy documents) were coded at Level 2 ('mention both – 'climate change and health but not linked'). This means that they contained content on both climate and health but these we separate and distinct and did not draw connections between the two. This siloed treatment suggests a persistent failure to apply systems thinking in policy design.

- An additional 27% (17 of the 62 policy documents) were coded as Level 1 (mentions one or other – climate change/health). These policies engaged meaningfully with either climate or health, but not both. Some of these were strong within their domain, offering robust plans for emissions reduction, resilience-building, or health service improvement. However, by failing to address the other domain, they missed important opportunities to leverage shared interventions or identify co-benefits.

- 11% (7 of the 62 policy documents) made no meaningful reference to either climate or health and were therefore coded as Level 0 ('no mention / link'). These tended to be procedural or narrowly administrative in focus, for example, internal governance frameworks or budgetary policies. While such documents are often peripheral to service delivery, their exclusion of climate and health considerations points to a broader structural gap in how risk, sustainability, and wellbeing are conceptualised across the wider governance system. In contexts where policies are increasingly expected to reflect environmental and social

responsibility, these blind spots represent missed opportunities to mainstream climate–health linkages.

- 34% (21 of the 62 policy documents) made no direct linkage between their stated aims and health outcomes. In these cases, health appeared, if at all, as a peripheral or contextual reference. Some acknowledged health through indirect mentions of related frameworks or legislation but failed to integrate health into the core purpose or operational design of the policy.

This lack of structural embedding reduces the likelihood that such policies will yield coherent or measurable health outcomes, or that they can be held accountable for their effects on public health. these findings suggest that while health and wellbeing is acknowledged across many policy areas, the degree of integration remains highly uneven. In some sectors, health is central to strategic planning and service design. In others, it is treated as incidental or omitted altogether. Yet the evidence is clear: health outcomes are shaped by factors far beyond the health sector itself. The broader policy environment, from procurement and planning to economic development and environmental management, plays a key role in shaping the conditions in which people live, work, and age.

These findings suggest substantial variation in the internal coherence and operational readiness of policies within the East Sussex policy samples chosen. While a subset of policies displayed the features required to guide and enable action, the majority fell into a grey area, asserting ambition but not fulfilling their full potential to present operative wording to trigger specific actions lacking in operationalisation.

The analysis revealed that while most East Sussex policies demonstrate some engagement with climate or health individually, the integration of both, and especially the articulation of their interconnections, remains limited. Only 1 in every 3 documents makes any attempt to link climate and health (Levels 3 and 4 combined), and only a very small subset demonstrated a mature, systemic understanding of their interconnections. This highlights a key area of improvement particularly for cross-sectoral climate and health policy interventions and long-term resilience planning.

The review also examined the extent to which policies acknowledged or engaged with the specific needs of vulnerable groups, and it found that:

- Vulnerability was defined in broad terms to include age, income, health status, geographic location, and social disadvantage.
- 48% of policies referenced age, often in relation to children, older adults, or life course approaches.
- 31% of policies referred to income or financial hardship, sometimes in the context of fuel poverty or affordability.

- 36% policies addressed health status, with references to long-term conditions, poor mental health or general wellbeing.
- 32% of policies acknowledged social disadvantage, often linking it to broader aims of reducing poverty or inequality.
- 39% of policies discussed issues of access or geographic isolation, particularly in relation to transport, service delivery or digital exclusion.
- Some policies included specific language regarding rurality and coastal communities, Black, Asian and Minority Ethnic (BAME) populations, or other marginalised groups.

The findings indicate that recognition of vulnerability was uneven and often confined to introductory or contextual sections rather than embedded within the core structure of the policies. For example, while a number of policies referenced older adults, children, or people with long-term health conditions, these acknowledgements were rarely translated into targeted action or resourced commitments acknowledging these vulnerabilities. Similarly, while issues such as fuel poverty, digital exclusion, and rural isolation were occasionally noted, these were framed as contextual considerations rather than policy priorities.

Several policies did contain promising references to specific demographic or geographic challenges, such as acknowledging the particular risks faced by coastal communities, the importance of engaging 'hard-to-reach' communities, or the compounded vulnerabilities experienced by people in poor housing.

The contextual review highlights both the breadth and limitations of the current East Sussex policy environment. There is a clear orientation towards climate and health outcomes, and a recognition of the need for systemic responses to climate and health vulnerabilities. However, this recognition is not always matched by depth, specificity or strategic follow-through. Many policies operate within well-defined geographic or institutional parameters, but their articulation of who they serve and how they will deliver equity remains inconsistent.

The review assessed whether climate change was explicitly framed as part of the document's purpose, vision, aims and strategic objectives. 15% (9 of the 62 policy documents) made implicit links to climate change, acknowledging it indirectly without stating it as a policy purpose or a core driver or target of action. These policies often use adjacent language such as "sustainability", "net zero", or "resilience", but failed to define climate change as a strategic threat or opportunity. Climate change was embedded more as background context than as a target of action. This degree of integration signals awareness and acknowledgement but lacks the clarity and specificity required to deliver policy coherence and operative action regarding climate change, especially where responsibilities for action are not clearly attributed.

Regarding climate adaptation in policy as a priority, in general, adaptation was found to be less systematically embedded than mitigation. It appeared more sporadically across policy domains and often lacked time-bound, measurable actions or dedicated funding streams. This imbalance suggests that while climate change mitigation (reduction) has become a more familiar component of local policymaking, particularly were linked to decarbonisation targets, adaptation may remain an underdeveloped area, despite its key role in safeguarding public health and local resilience. The focus on climate change mitigation (carbon reduction) at the cost of thinking about adapting and addressing the health effects of climate change puts at risk the safeguarding of health systems capable of withstanding climate change transitions and shocks. We need our policies to adapt to balance both climate change mitigation and climate and health adaptation.

The review reveals a policy sample that is uneven but evolving. Climate change is widely recognised and increasingly central to strategic framing in East Sussex. A growing number of policies are beginning to embed climate considerations into their operative content. However, this integration remains fragmented, particularly with regard to adaptation and the full spectrum of climate–health pathways. The imbalance between mitigation and adaptation, the underrepresentation of less visible or chronic risks, and the limited engagement with health equity all point to areas requiring focused attention.

To conclude, this is why there are three specific key policy related **recommendations** in relation to climate change and health formulation and actions:

1. Policies need to ‘adapt’ to balance both climate change mitigation (achieving net zero) and ‘climate and health adaptation’. Policy tensions, contradictions and barriers must be addressed.
2. The East Sussex system works towards achieving policy coherence across services and sectors in climate adaptation and public health so that it is recognised and referenced consistently.
3. All policy owners can, through the existing policy refresh cycles, look to include succinct but specific wording in the operative parts of their documents to trigger joined up action on the issues of climate change adaptation and delivering public health benefits.

4.2. Summary of Stakeholder Meetings (Climate and Health Conversations)

Key Evidence from Stakeholder Climate and Health Conversations in East Sussex

Taken together, the stakeholder conversations present a strong and consistent picture that the changing climate is not solely an environmental issue but a significant and growing public health challenge affecting physical health, mental health, healthcare systems, social care, housing, infrastructure, community resilience and health inequalities across East Sussex.

Overarching Narrative

A recurring message across almost all interviews is that the links between the changing climate and health are widely recognised by stakeholders, but these links remain insufficiently embedded in policy, governance, planning and decision-making. Stakeholders consistently highlighted the need to move from parallel climate and health agendas towards a fully integrated "health in climate" and "climate in health" approach.

There was broad agreement that environmental challenges, risks and a changing climate act as a threat multiplier, exacerbating existing vulnerabilities, inequalities and service pressures rather than creating entirely new problems. Those already experiencing disadvantage—including older adults, people with disabilities, people living in poor-quality housing, socially isolated individuals, deprived communities, refugees and asylum seekers—are expected to experience disproportionately severe impacts.

1. Environmental challenges, risks and a changing climate is Already Affecting Population Health

Stakeholders identified a wide range of direct and indirect health impacts associated with climate change:

Direct physical health impacts

- Heat-related illness and overheating, particularly among older adults and care home residents.
- Increased risks from flooding and extreme weather events.

- Emerging risks from vector-borne diseases linked to changing environmental conditions.
- Poor air quality and respiratory health impacts.
- Health consequences associated with water insecurity and environmental degradation.

Mental health impacts

Mental health emerged as one of the strongest and most consistent themes.

Stakeholders described:

- Anxiety associated with climate change and uncertainty.
- Psychological impacts of flooding and displacement.
- Trauma associated with loss of homes, livelihoods and community connections.
- Social isolation resulting from climate-related disruption.
- Climate anxiety, particularly among younger people and vulnerable communities.

Several participants suggested mental health impacts remain under-recognised within current climate adaptation planning despite potentially representing one of the largest future burdens.

2. Climate Change is Worsening Health Inequalities

A particularly strong body of evidence concerned unequal exposure and unequal ability to respond to climate risks.

Stakeholders highlighted increased vulnerability among:

- Older people.
- People with chronic health conditions.
- Care home residents.
- Communities experiencing deprivation.
- Rural populations with poor service access.
- Socially isolated residents.
- People living in flood-prone areas.
- Refugees, migrants and asylum seekers.
- Individuals living in poor-quality or energy-inefficient housing.

Flood risk colleagues repeatedly emphasised the need to combine flood exposure data with deprivation and vulnerability data in order to identify communities least able to prepare, respond and recover from climate shocks.

Housing stakeholders similarly stressed that fuel poverty, poor housing conditions and inadequate thermal comfort increase health risks during both winter and summer climate extremes.

3. Climate Change Presents Major Risks to Health and Care Systems

Health, social care and emergency planning stakeholders highlighted growing concerns about the resilience of health and care services.

Evidence included:

- Increased healthcare demand during heatwaves and flooding.
- Overheating risks within hospitals, care homes and community facilities.
- Pressures on adult social care systems.
- Risks to workforce wellbeing and capacity.
- Disruption to critical infrastructure and access routes.
- Growing need for emergency planning and resilience measures.

Stakeholders from NHS Sussex and adult social care emphasised that the system must prepare for future climate scenarios rather than continuing to focus primarily on carbon reduction. Adaptation and resilience were repeatedly identified as underdeveloped themes.

4. Flooding Represents One of the Most Significant Climate-Health Risks

Flooding emerged as one of the clearest and most immediate climate-health challenges facing East Sussex.

Evidence identified:

- Physical injury and health impacts.
- Significant mental health consequences.
- Long-term impacts on community wellbeing.
- Threats to critical infrastructure and service access.
- Disproportionate impacts on vulnerable populations.
- Increasing future risk under climate change projections.

Several stakeholders emphasised that flood vulnerability must be viewed through both environmental and social lenses, recognising that vulnerability is determined not only by exposure to flooding but also by people's ability to recover.

5. Housing is a Critical Climate and Health Determinant

Housing stakeholders provided substantial evidence linking housing, climate resilience and health.

Key issues included:

- Fuel poverty.
- Poor energy efficiency.
- Overheating risks.
- Housing insecurity.
- Poor thermal comfort.
- Need for climate-resilient retrofit programmes.
- Future need for cooling and passive ventilation measures.

There was strong recognition that housing interventions can produce multiple health co-benefits, including reduced respiratory illness, improved mental wellbeing, reduced fuel poverty and greater resilience to climate extremes.

6. Nature-Based Solutions Provide Significant Health Co-Benefits

A substantial body of evidence highlighted the role of nature-based solutions in addressing both climate and health objectives.

Examples included:

- Tree planting.
- Urban woodland creation.
- Wetland restoration.
- River re-naturalisation.
- Sustainable drainage systems.
- Natural flood management.
- Green infrastructure.

Stakeholders identified multiple co-benefits:

- Reduced flood risk.
- Urban cooling.
- Improved air quality.
- Better mental health.
- Opportunities for physical activity.
- Increased biodiversity.
- Greater community resilience.

The evidence suggests nature-based solutions represent one of the strongest opportunities for delivering simultaneous climate, health and environmental gains.

7. Active Travel is a Major Health and Climate Opportunity

Transport and active travel stakeholders identified walking, wheeling and cycling as high-value interventions capable of delivering significant co-benefits.

Benefits include:

- Reduced carbon emissions.
- Increased physical activity.
- Lower obesity rates.
- Improved air quality.
- Better mental wellbeing.
- Reduced dependence on private vehicles.

There was strong support for infrastructure designed for both climate resilience and health, including shaded routes and improved active travel networks.

8. Community Resilience is a Key Protective Factor

Many stakeholders emphasised the importance of social capital, community cohesion and local networks in determining resilience to climate impacts.

Evidence included:

- Role of community organisations during emergencies.
- Importance of voluntary and community sector partners.
- Community-based resilience and preparedness.
- Need for public education and behavioural change.
- Value of local support networks during extreme events.

The Refugee Buddy discussion particularly highlighted social connection, community integration and anti-racist practice as critical elements of resilience in the context of future climate-related migration.

9. Climate-Related Migration is an Emerging Health Issue

The Refugee Buddy conversation introduced an important emerging theme that was largely absent from other interviews.

Evidence suggested:

- Climate change increasingly acts as a driver of displacement and migration.
- Migrant populations may face heightened mental health, housing and food security challenges.
- Climate-related migration may increase in coastal counties such as East Sussex.
- Local services may need greater cultural competence and inclusive planning capabilities.

This represents an important future-facing health issue that warrants consideration within adaptation planning.

10. Governance and Policy Gaps are Hindering Progress

Perhaps the most consistent finding across all conversations was that health and climate are not yet systematically integrated into governance structures.

Stakeholders repeatedly described:

- Policies that refer to climate but not health.
- Policies that refer to health but not climate.
- Weak operational wording and accountability.
- Lack of ownership for delivery.
- Fragmented responsibilities across organisations.
- Limited resources and capacity.
- Need for stronger leadership and champions.

Many identified forthcoming policy reviews and strategy refreshes as significant opportunities to embed climate-health objectives more explicitly.

Overall Conclusion

The stakeholder evidence demonstrates strong consensus that a changing climate is already affecting health in East Sussex and is likely to become one of the most significant determinants of future health and wellbeing. The greatest risks identified relate to heat, flooding, mental health impacts, health inequalities, pressures on health and care systems, housing vulnerability and community resilience. At the same time, stakeholders identified substantial opportunities to improve health through climate action, particularly through housing retrofit, active travel, green infrastructure, nature-based solutions and stronger community networks. The dominant message across all conversations is the need for a coordinated, whole-system approach that embeds health considerations into climate policy and climate considerations into health policy, supported by stronger governance, evidence, leadership and cross-sector collaboration.

4.3. Summary and Findings of Workshop 1

Workshop 1 was attended by 45 East Sussex Systemwide Stakeholders across all of the partner organisations and services communicated in Part 1. The Workshop delivered and focused on:

1. Developing the HIA for East Sussex
2. Introducing the subject matter of 'Climate, Health and our East Sussex People and Place'
3. Forging 'The East Sussex Approach and a Systemwide Roadmap'
4. Communicating to stakeholders 'The Health Effects of Climate Change in the UK' (delivered by Dr Helen Macintyre, Principal Climate Change Scientist – Climate and Health Assessment Team at UK Health Security Agency (UKHSA)
5. Delivering further training to partners on Health Impact Assessment: What, Why and How
6. Validating the scope of the HIA – this meant communicating HIA scoping methods, proportionality and findings. To communicate and agree the HIA golden interactions between climate change impacts and determinants of health relevant to East Sussex".

It required the need to discuss, identify and agree what the critical climate change issues for East Sussex are and their potential for significant public health impacts. Discussion included whether any of the golden interactions (see Appendix B for further details) should be removed or any should be added.

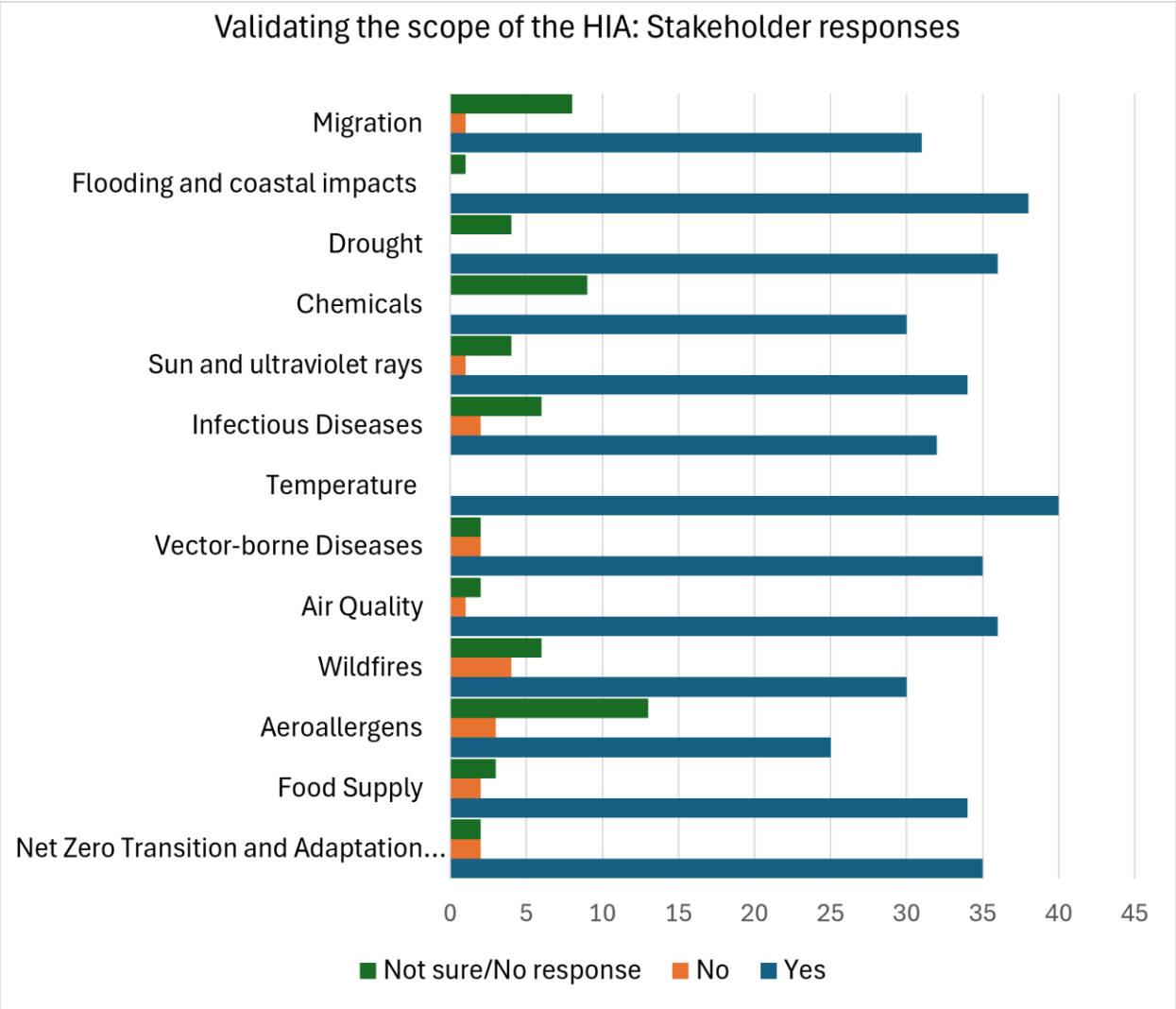
1. Identifying the vulnerable groups that are and could be affected and impacted by climate change health effects
2. Identifying 'protective factors' (in relation to East Sussex features, assets, people, places and systems for example)
3. Identifying 'Assets', that are and could be impacted by climate change (negatively but also used opportunistically/able to protect and respond to impacts on people and place.
4. Communicating and discussing the systemwide policy review (on every climate, environment and health policy, plan and/or strategy). This involved communicating the assessment of where East Sussex is as a system that enables 'Health in All Climate Change Policies' and 'Climate Change in all Health Policies'. The purpose of the policy review was communicated along with the methodology and findings. This led to wider discussion about stakeholder partner remits and what they are already doing to protect vulnerable groups and assets in relation to climate change and health. Following this discussion partners were asked to the identify (within their service, policy areas and ways of working) any gaps, facilitators, barriers, opportunities and tensions.

5. A wider discussion to identify win-wins including collaborations, policy hooks and early actions, which improve resilience efficacy and deliver financial and resource efficiencies.
6. The workshop also included a focus on the data and intelligence in relation to climate change and health. This specifically aimed for partners to share, identify and communicate what other information do you hold that can inform the HIA and the System-wide Roadmap.
7. The workshop concluded with 'next steps and the closing address which provided a summary of what had been achieved from the day.

The Workshop posed key questions to consider:

1. How can your service or directorate work with other services and directorates to address gaps and opportunities to join up and deliver both climate and health as a combined and joint priority?
2. How can we better bridge the gaps and policy gaps between climate and health?
3. We know that it is important and necessary to work as a 'whole system' to tackle health and climate change, but ***how does this work in principle, practically*** and how can we embed this further?
4. What is the sum of our total parts?
5. How do we ***optimize*** collective efforts for achieving climate and health resilience?
6. What are our ***joint priorities*** and how do we maximize ***economies of scale***, efforts, resources, and capacity?
7. What are the ***big wins*** (i.e., housing, infrastructure, economy, education…)?
8. How will we measure the success of the climate change health impact assessment?

Validating the Scope



Systemwide Structures and Dynamics - Gaps, Barriers, Tensions and Opportunities

A key consideration throughout this work is the need to recognise and carefully manage potential tensions between different policy objectives, particularly in relation to planning, heritage conservation, climate resilience, biodiversity enhancement and public health. For example, measures that seek to increase urban greening and tree planting to deliver climate adaptation, biodiversity and wellbeing benefits may, in some circumstances, raise concerns relating to aeroallergens, heritage settings, landscape character or other planning considerations.

It is important that the recommendations set out in this report are framed as considerations, opportunities and potential actions rather than policy requirements. They are intended to support informed decision-making and should not place planning authorities, developers or other stakeholders in a position where they are required to

act in a way that could conflict with the National Planning Policy Framework (NPPF) or other statutory and local policy requirements. Instead, they should be viewed as complementary measures that can be balanced alongside existing planning obligations and priorities.

In addition, there may be variations in how relevant planning policies are interpreted and applied across different districts and boroughs, reflecting local circumstances, evidence bases and policy contexts. As a result, some recommendations may be more readily applicable in certain areas than others. The emphasis should therefore be on promoting awareness of potential health, environmental and climate-related considerations and encouraging proportionate, locally appropriate responses that can be integrated within existing policy and decision-making frameworks.

An overarching principle is that potential synergies should be maximised wherever possible, while acknowledging and transparently addressing any trade-offs between competing policy objectives. This approach enables public health, environmental and planning outcomes to be considered holistically without creating conflicts with established policy or statutory duties.

During workshop 1 stakeholders thought of their service/policy areas and ways of working within ‘the system’ and communicated what they perceived to be the ‘climate change and health’:

- Gaps
- Facilitators
- Barriers
- Opportunities
- Tensions

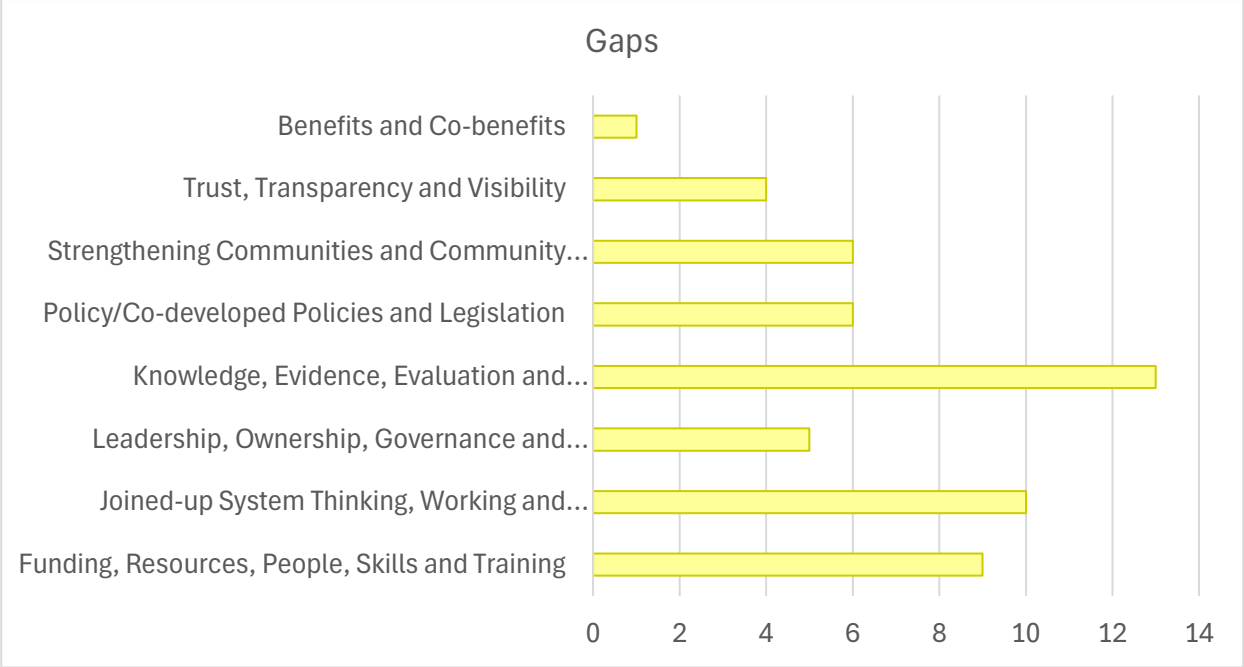
Partners were not restricted by the number of comments they could make against each of the above.

Following this, thematic analysis was to analyse what and how partners had commented and communicated against gaps, facilitators, barriers, opportunities and tensions.

The following themes, definitions and dynamics were identified and interpreted with regard to ‘gaps’:

Themes	Definitions and Dynamics
Funding, Resources, People, Skills and Training	Financial, People, Assets, Skills, Capabilities and Confidence
Joined-up System Thinking, Working and Collaboration	Whole systems approach, Ability to reform, Resistance to change, Equity, Ability to work together, Competition, Trust, Conflict, Statutory duties, Alignment
Leadership, Ownership, Governance and Accountability	National, Regional, Local and Organisational, Expertise
Knowledge, Evidence, Evaluation and Communication	Data, Evidence, Case Studies
Policy/Co-developed Policies and Legislation	Policy making, Equity, Influence, Alignment, Dynamics, Implementation, Trade-offs, Public support and reform, National, Regional, Local and Hyper local
Strengthening Communities and Community Enablement	Community development, Capacity, Confidence, Resilience, Trust and Delivery
Trust, Transparency and Visibility	Reliability, Ability, Truth, Confidence and Assured reliance
Benefits and Co-benefits	Win-win Strategies and Scenarios, and Positive outcomes

The numbers communicated in the below chart communicates the number of comments against each of the themes.



The findings from the analysis and results communicate that the greatest gaps with regard to partner services, organisations and 'the East Sussex System' being able to address the health effects of climate change are (and in order):

1. Knowledge, Evidence, Evaluation and Communication
2. Joined-Up System Thinking, Working and Collaboration
3. Funding, Resources, People, Skills and Training
4. Policy/Co-developed Policies and Legislation as well as Strengthening Communities and Community Enablement
5. Leadership, Ownership, Governance and Accountability
6. Trust, Transparency and Visibility
7. Benefits and Co-Benefits

This indicates and evidence that there are systemwide gaps/needs that need to be addressed to meet the challenge of being able to systematically and confidently address the health effects of climate change within services and organisations as well as a 'whole system'. Funding was not the biggest 'gap' despite often being identified as the central issue. It is interesting that 'joined-up system thinking' featured high on the list and that trust, transparency and visibility was deemed a gap in the system. Policy gaps were also identified as a key gap.

Facilitators

The following themes, definitions and dynamics were identified and interpreted with regard to 'facilitators':

Themes	Definitions and Dynamics
Collaboration and Facilitation	Partnerships, Networks, Multiagency, Engagement, Inclusion, the need to be in the same room
Local Organisations and Multiagency Efforts	Public, Private, Voluntary Sector, Bottom-up approach and Need for local action
Finance and Funding	Central government support and drive, A primed public sector, Private Sector Funding, Grants, Availability and Affordability, Funding = Commitment and the ability to deliver and be prioritised
Research and Intelligence	Digital, Expertise, Technology, Evidence, Data, Data tools, Data resources, Local intelligence, Knowledge, Best practice
Policy and Legislative Levers and Influence	HECiAP' (Health, Environment and Climate in All Policies), Policy Makers, Infrastructure policies, Incentivised policies, Equitable and 'Equal/Equality' Policies, 'Policy standards', Trust
Community Assets and Aspirations	People, Organisations, Networks, Spirit, Cohesion, Stewardship, Buildings, Champions, Councillors
Creating Healthy Places	Planning, Infrastructure, Neighbourhood Design, Built/Natural Environment, Green and Blue spaces, Services, Access to Education, Ecosystem Services
Media and Communications	National, Local, Celebrity, Engagement, Lived Experience, Targeted (older people, children and young people), Alerts/Emergency Alerts/Warnings, Education
Inspiring and Supportive Leadership	National, Regional, Local, Organisational and Expertise - Compassionate, Resourceful, Directional, Flexible, Cooperative, Nurturing, Innovative, Stewarding

The numbers communicated in the below chart communicates the number of comments against each of the themes.



The findings from the analysis and results communicate that the greatest facilitators with regard to partner services, organisations and 'the East Sussex System' being able to address the health effects of climate change are (and in order):

1. Local Organisations and Multiagency Efforts
2. Policy and Legislative Levers and Influence
3. Community Assets and Aspirations
4. Media and Communications
5. Collaborations and Facilitation as well as Finance and Funding
6. Research and Intelligence
7. Inspiring and Supportive Leadership

This indicates and evidences that key facilitators as identified above are necessary to successfully address the health effects of climate change and that the need and 'art of facilitation' is needed. For example, as demonstrated by 'the art and science of Public health' facilitating, enabling and conducting the Health Impact Assessment. Policy was again identified as a key theme and facilitator. Multiagency efforts was identified as the top facilitator. Leadership was again identified as being of need.

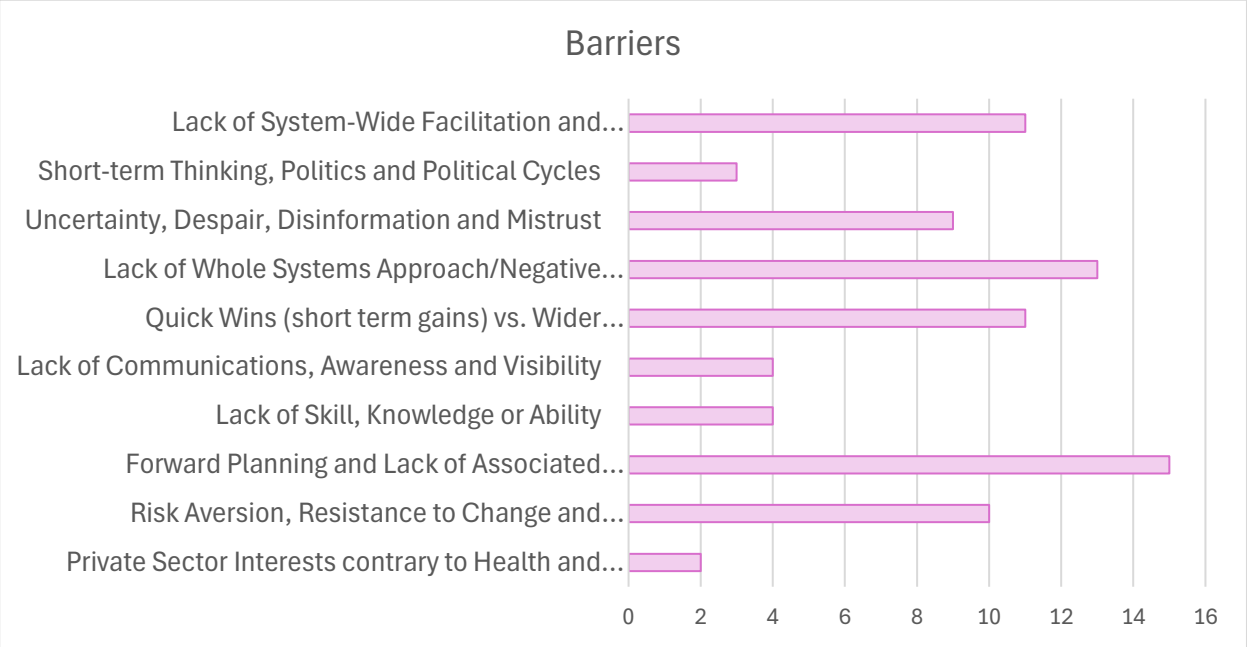
Barriers

The following themes, definitions and dynamics were identified and interpreted with regard to 'barriers':

Themes	Definitions and Dynamics
Private Sector Interests contrary to Health and Climate	Capitalism vs Planetary health, Commercial determinants of health, Conflicted interests
Risk Aversion, Resistance to Change and Cultural Barriers	Adverse to risk, Old-school mentality, Incumbents, Inertia, Restricted, Restrictions, Lacking vision, Short-term and Short-sightedness, Incomprehensive, Dependency and co-dependency, Second order beliefs
Forward Planning and Lack of Associated Resources	Lack of finances and funding, Competitive bids for funding, public finances, Short-term funding
Lack of Skill, Knowledge or Ability	Knowing the need of what needs to be done but not having the 'ability' (education, expertise, talent, knowledge and resources) to do it
Lack of Communications, Awareness and Visibility	Gap in targeted comms and how to target comms for specific groups around climate and health, Wrong comms for the wrong people, Misinterpretation, Lack of unified and effective messaging/campaigns
Quick Wins (short term gains) vs. Wider Strategic Approach (long term gains)	No big/bigger picture, Short-term imperatives, Time constraints and capacity, 'There is always tomorrow', 'What are we working to time wise etc?'
Lack of Whole Systems Approach/Negative System Dynamics	Lacking wider vision, Aspiration and joining up, No policy, Conflicting policies, Conflicting timescales, System defensiveness, Siloed working, Lack of freedom and competition
Uncertainty, Despair, Disinformation and Mistrust	Overwhelm from the size and nature of the issue, Hopelessness, Lack of agency (human, personal or organisational), Tomorrow's problem, Disinformation and fake news, New issues and a distrust for technology
Short-term Thinking, Politics and Political Cycles	Big 'P' vs little 'p', Political timeframes, Political mentalities, Short-termism vs the long-term needs

Themes	Definitions and Dynamics
Lack of System-Wide Facilitation and Representation	Lack of corporate buy-in, Lack of strategy, Too much strategy and not enough delivery, Too much optimism, Lack of freedom, Two-tier system, Red tape, Lack of sharing, Siloed working, Lack of legislation and enforcement, Difference, Indifference and Competing (time, staff, funding...)

The numbers communicated in the below chart communicates the number of comments against each of the themes.



The findings from the analysis and results communicate that the greatest barriers with regard to partner services, organisations and 'the East Sussex System' being able to address the health effects of climate change are (and in order):

1. Forward Planning and Lack of Associated Resources
2. Lack of Whole Systems Approach/Negative System Dynamics
3. Lack of Systemwide Facilitation and Representation
4. Quick Wins (short term gains) vs. Wider Strategic Approach
5. Risk Aversion, Resistance to Change and Cultural Barriers
6. Uncertainty, Despair, Disinformation and Mistrust
7. Lack of Skill, Knowledge or Ability as well as Lack of Communications, Awareness and Visibility
8. Short-term Thinking, Politics

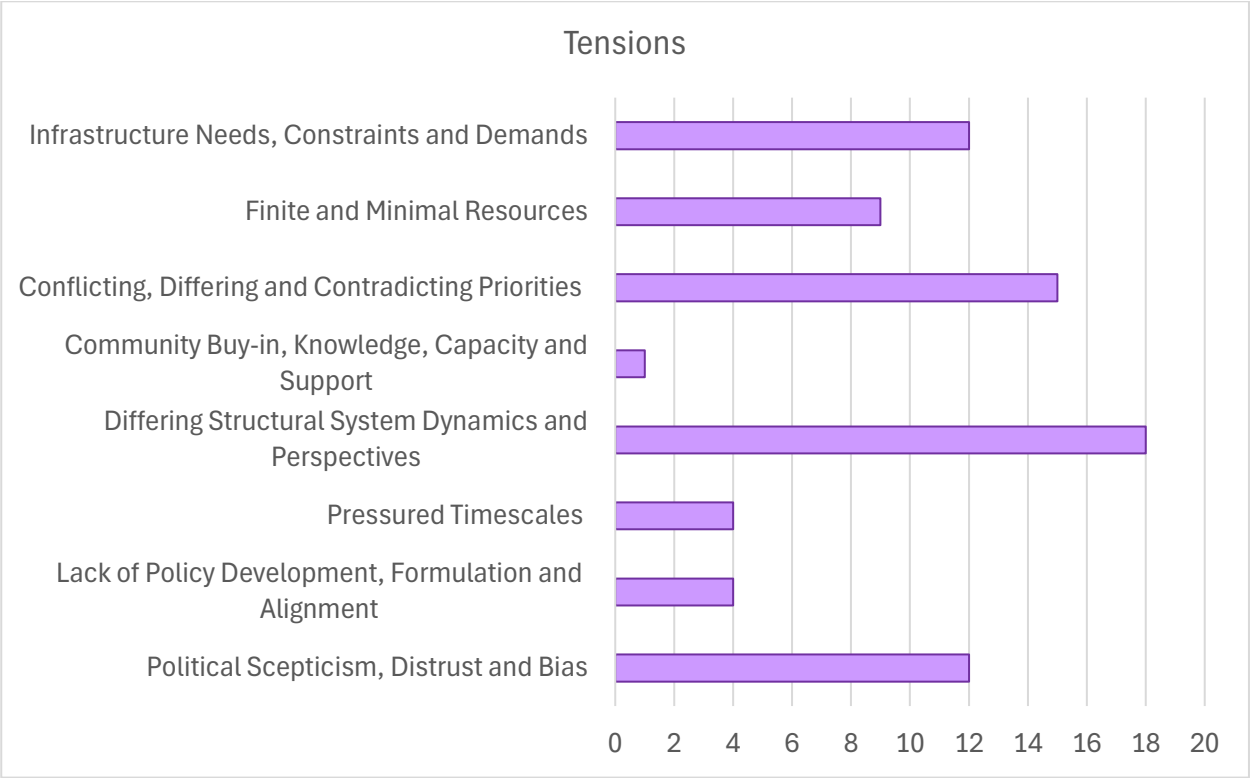
This indicates and evidences that the greatest barriers to addressing the health effects of climate change and building resilience to climate change more generally in East Sussex is related to 'the system', its dynamics, lack of a 'whole system approach', facilitation and representation. Quick wins (short terms gains), short term thinking, politics (including short term political cycles) are deemed at odds with taking risk, addressing cultural barriers and establishing a wider strategic approach. These barriers coupled with uncertainty, despair, mistrust and the lack of skills, knowledge, ability, resistance to real change, and visibility create and maintain toxic barriers to advancing and integrating climate change and health.

Tensions

The following themes, definitions and dynamics were identified and interpreted with regard to 'tensions':

Themes	Definitions and Dynamics
Political Scepticism, Distrust and Bias	Dynamics, Trust, Timeframes, Cycles, Priorities, Motives, Scepticism, Governance, Structures, Public support and Urgency
Lack of Policy Development, Formulation and Alignment	Policy making, Equity, Influence, Alignment, Dynamics, Implementation, Trade-offs, Public support and reform, National, Regional, Local and hyper local
Pressured Timescales	Short, Medium, Long-term, Pressure and Competing
Differing Structural System Dynamics and Perspectives	Ability to reform, Resistance to change, Equity, Ability to work together, Competition, Trust, Conflict, Statutory duties, Alignment
Community Buy-in, Knowledge, Capacity and Support	Support, Engagement, Equity, Consultation, Scepticism, Public support and Voice
Conflicting, Differing and Contradicting Priorities	Political, Community, National, Trade-offs, Local, Sectors and Organisations
Finite and Minimal Resources	Financial, People, Assets and Skills
Infrastructure Needs, Constraints and Demands	Built, Social and Economic

The numbers communicated in the below chart communicates the number of comments against each of the themes.



The findings from the analysis and results communicate that the greatest tensions with regard to partner services, organisations and 'the East Sussex System' being able to address the health effects of climate change are (and in order):

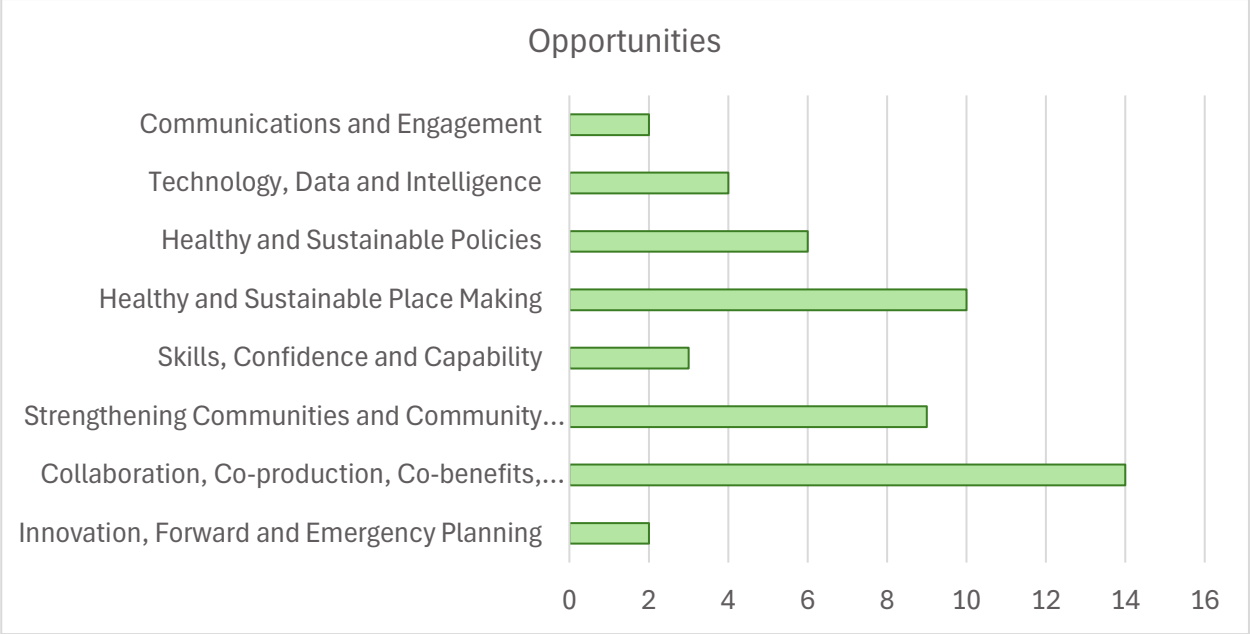
1. Differing Structural Systems Dynamics and Perspectives
2. Conflicting, Differing and Contradicting Priorities
3. Political Scepticism, District and Bias as well as Infrastructure Needs, Constraints and Demands
4. Infrastructure Needs, Constraints and Demands
5. Finite and Minimal Resources
6. Pressured Timescales and Lack of Policy Development, Formulations and Alignment
7. Community Buy-in, Knowledge, Capacity and Support

This indicates and evidences that tensions are more about differing and conflicting structures, contradicting priorities and policies as well as relationship dynamics across systems, services and policy areas. Infrastructure needs, constraints and demands alongside resources are key tensions but are not at the forefront.

Opportunities

The following themes, definitions and dynamics were identified and interpreted with regard to 'opportunities':

Themes	Definitions and Dynamics
Innovation, Forward and Emergency Planning	Crack complex issues, Ability to adapt, 'Preparedness' and Future resilience
Collaboration, Co-production, Co-benefits, Joint Resourcing and Shared Learning	Collective mentality, Efforts and Successes, 'Enthusiasm' and Willingness to 'work better together' at scale across boundaries (including political) and borders
Strengthening Communities and Community Enablement	Community interest, Empowered citizens, Community empowerment, Citizen and Community pride, Easy to reach communities, Thriving community networks
Skills, Confidence and Capability	Invested workforce development and forward planning, 'Anchored/anchor institutional' training and development, Skills to 'retrofit' and 'adapt'
Healthy and Sustainable Place Making	Resilient and revitalised places and spaces, Biodiverse and nature-based places and spaces, Flood proof places and spaces, green schemes for local places delivered for and by local people, 'Climate and socially just places', 'Adapting to all climates (the positive and negative)', People and nature-based approaches
Healthy and Sustainable Policies	‘In All of Our Approaches', People and nature-based approaches, Streamlined and consolidated process(es) and assessments
Technology, Data and Intelligence	Technological advancement, Technological adaptations, Recording, Monitoring, Studying and Evaluating
Communications and Engagement	Effectiveness, Clear, Consistency, Targeted, Correct and Unified



The findings from the analysis and results communicate that the greatest opportunities with regard to partner services, organisations and 'the East Sussex System' being able to address the health effects of climate change are (and in order):

1. Collaboration, Co-production, Co-benefits, Joint Resourcing and Shared Learning
2. Healthy and Sustainable Place Making
3. Strengthening Communities and Community Enablement
4. Healthy and Sustainable Policies
5. Technology, Data and Intelligence
6. Skills, Confidence and Capability
7. Innovation, Forward and Emergency Planning
8. Communication and Engagement

A key finding is that the most significant opportunities are not necessarily dependent on new funding or substantial resource investment. Rather, they can be realised through different ways of working that maximise existing assets, expertise and relationships across the system. In particular, collaboration, co-production, joint resourcing and shared learning emerged as the strongest opportunities for improving collective action on climate-related health impacts.

The process of undertaking this strategic, system-wide Health Impact Assessment (HIA) provides a practical example of these opportunities in action. Stakeholders highlighted the value of organisations learning together, rather than operating within organisational or professional silos. This collective approach enables the sharing of knowledge, resources and good practice, whilst helping to identify and deliver co-benefits across multiple priorities. The HIA itself has therefore acted not only as an assessment tool, but also as a catalyst for stronger partnership working and system learning.

Healthy and sustainable placemaking, strengthening communities, community enablement, and healthy and sustainable policies were also consistently identified as interconnected opportunities. The findings suggest that these themes are mutually reinforcing. For example, healthy and sustainable policies can create the conditions for community empowerment and participation, which in turn support the development of healthier, more resilient and sustainable places. Similarly, stronger communities are better positioned to contribute to and benefit from local environmental, health and climate initiatives.

Further opportunities lie in the effective use of technology, data and intelligence; enhancing skills, confidence and capability; and promoting innovation, forward planning and emergency preparedness. Stakeholders recognised this HIA as an innovative approach that supports long-term strategic thinking, strengthens evidence-based decision-making, and helps the system move from reactive responses towards prevention and preparedness. As such, the HIA itself was viewed as a significant opportunity for East Sussex.

Overall, the findings highlight substantial interrelationships between the identified gaps, facilitators, opportunities, tensions and barriers. Financial pressures were an important cross-cutting issue and were frequently cited as a challenge. However, financial constraints were not identified as the primary determinant of success. Instead, the evidence suggests that many of the barriers and opportunities are rooted in wider system factors, particularly the ways in which organisations work together, prioritise action, share resources and build trust.

The findings can therefore be further understood through five overarching system themes:

1. **Ways of Working** – including system structures, organisational silos, competing priorities and the extent of collaborative working.
2. **Trust and Relationships** – ranging from mistrust and fragmented partnerships to strong relationships, co-production and shared ownership.
3. **Forward Planning and Prevention** – balancing reactive, crisis-driven approaches with long-term planning, preparedness and resilience-building.
4. **Skills, Confidence and Learning** – encompassing capability, awareness, confidence and opportunities for individual and organisational learning.
5. **Finance, Funding and Resourcing** – including both the constraints posed by limited resources and the opportunities associated with joint investment and more efficient use of existing assets.

Taken together, these findings indicate that strengthening relationships, adopting more collaborative and preventative approaches, building confidence and capability, and making better use of existing resources may be as important as securing additional funding. By focusing on these interconnected themes, the East Sussex

system is well positioned to strengthen its collective response to climate change and maximise opportunities to improve both population health and environmental sustainability.

4.4. Summary and Findings of Workshop 2

Local assets and adaptive capacity (community resilience and health system readiness for the impacts of a changing climate

Workshop 2 was attended by 45 East Sussex Systemwide Stakeholders across all of the partner organisations and services communicated above. The Workshop delivered and focused on:

1. Developing a strategic systemwide approach to addressing the health impacts of climate change. They were inspired by theme, 'art of the possible' (public health approach), and the concept of 'leading without authority' in service areas outside of their own. This allowed and gave them the mandate in which to comment as 'critical friends' wishing to collaborate and identify systemwide opportunities and co-benefits across areas and the system as a whole.
2. Activity 1: Focused on service and policy area self-reflection. It served as an opportunity for sharing what their organisation does and could do with others. It also helped partners to identify what their organisation could do to integrate and advance climate and health actions (hence the 'art of the possible') and then what in their opinion others need to do. A template was created that aligned with the 'golden interactions' to collect this data from individual sector specific stakeholders.
3. Introducing a 'whole systems approach'.
4. Activity 2: Concentrated on group activity to identify what each part of the system:

- Agriculture
- Community Voluntary Sector
- Economic Development, Regeneration, Employment and Skills
- Education, Environmental Services
- Emergency Services
- Health and Social Care
- Housing,
- Media
- Members of the Public
- Planning
- Private Industry and Procurement

- Transport
- Utilities

should be doing to address the health effects of climate change. Each group was of mixed professions and commented on every sector. They commented as both a group and as individuals which allowed for intersectoral views and discussions to take place and this facilitated learning about each other's areas as well as accommodate individual commentary. A template that aligned with the 'golden interactions' was developed and used to collect data and generate sector specific recommendations.

5. Providing a summary of the learning and themes from Workshop 1 as presented above. It also provided the project progress.
6. Activity 3: Consisted of thinking about and sharing ideas to help develop and articulate possible recommendations by being unbounded by any remit or restrictions on what can and could be done to address the health effects of climate change. This encouraged 'blue sky thinking'/'the art of the possible' via imagining what could be possible if there were no barriers and limitations in policy, service, geography, governance and system areas etc.
7. Activity 4: Individuals were asked to identif quick wins. This meant identifying low cost and short terms actions that could be taken in their respective areas as well as part of a systemwide approach to addressing the health effects of climate change. Some examples of the quick wins identified were:

- Developing and sharing a Climate Change and Health Data Profile on East Sussex in Figures
- Developing a knowledge sharing platform
- All meetings to be held at locations accessible by public transport or online
- Making use of a collective Sharepoint/mailing list for projects to aid in collaborative working
- Connect with fire service re: health info/support to offer at their electric blanket testing sessions (captive audience)
- Maximising community/citizen led approaches to housing retrofit
- Develop a water retrofit pilot for new housing

The Workshop posed **key questions** to consider:

1. What is your opinion on what different parts of the system should be doing to address the health effects of climate change?
2. What does your organisation do?
3. What could your organisation do (art of the possible)?
4. In your opinion, what do others also need to do?

During workshop 2, stakeholders thought of their service/policy areas and the recommendations that they would like included in the HIA report as well by wider systemwide partners. The recommendations needed to be worked up with consideration to:

- Unlocking opportunities, removing barriers and tensions, address gaps and create facilitation in relation to improved/new ways of working for service areas and the system as a whole to address climate change health risks and effects.
- Being grounded in the reality of financial and resource pressures, local government reform and the need to deliver actual actions in the short, medium and long term (taking a sustainable approach).
- 'Blue Sky thinking' and consider 'the art of the possible' so that every aspect and ambition to address the health effects of climate change could be explored as part of recognising what must, should and could be made possible with unlimited resources compared to what can be done with limited resources. This was identified as important to manage the expectations of partners, their services and the whole system as well as the 'reality' of what is actually possible given current and future constraints.
- What activity is currently being delivered across climate change, environment and health. It also aim to capture what the activity is for services and sectors as part of capturing and communicating existing efforts and creating new activity/recommendations for climate change and health across the system.

Recommendation formulation was sensitive to:

- Level of individual organisation commitment and ownership
- Resourcing and capacity
- Having the power to influence and speak on behalf of their own organisation as well as on behalf of the public.
- Avoiding duplication whilst also balancing the need to share cross sector activities, responsibilities and priorities
- The consideration and need for sensitivity (political, partnership working, governance structures, overcommitting, finance, roles and responsibilities for example).
- Acting as critical friends and leading without authority

Following this, thematic analysis was used to analyse what and how partners had communicated and formalised recommendations. This allowed for the first draft of the recommendations to be developed. A further round of analysis, interpretation, refinement and scrutiny allowed a second draft of the recommendations to be worked up before presenting them at Workshop 3.

4.5. Summary and Findings of Workshop 3

Workshop 3 Summary: Validating and Prioritising the Climate Change Health Impact Assessment (HIA) Recommendations

Workshop 3 was held on **2 July 2025** in Eastbourne and represented the final workshop in the three-part stakeholder engagement process. The workshop brought together 27 representatives from across the East Sussex system to review progress on the Climate Change HIA, validate emerging findings, and help shape priorities for implementation and future delivery.

The day began with introductions and an update on the development of the HIA, including progress on the HIA write-up, data profile, economic evaluation, and public consultation survey results. Participants were provided with an overview of the findings from Workshop 2 and introduced to the draft HIA recommendations.

A key focus of the workshop was gathering stakeholder feedback on the recommendations that had been developed through the HIA process. Through facilitated group exercises, participants reviewed, sense-checked, validated and prioritised recommendations aimed at addressing the health impacts of climate change across East Sussex. Feedback was sought on recommendations relating to both the wider determinants of health and a range of climate-related hazards and risks, including flooding, drought, extreme temperatures, air quality, infectious diseases, wildfires, food supply, migration and other climate-sensitive issues.

Another important theme throughout the presentation was the concept and development of "**Population and Planetary Health in All of Our Approaches**", extending beyond traditional Health in All Policies models and seeking to embed climate-health considerations into every aspect of planning, governance, service delivery and decision-making

Participants also provided feedback on recommendations designed to embed **Population and Planetary Health in All of Our Approaches**, exploring how climate and health considerations can be better integrated into policies, strategies and decision-making across sectors. Further discussions focused on what a future delivery plan and potential Phase 2 of the programme should look like, including the development of a strategic framework and longer-term partnership arrangements to support implementation.

Key Findings

- Stakeholders provided extensive feedback on the draft HIA recommendations, helping to validate their relevance, practicality and priority across the East Sussex system.
- Participants identified opportunities to strengthen and refine recommendations before finalisation and implementation.
- There was support for embedding climate change and health considerations across all sectors and areas of decision-making through a “Population and Planetary Health in All of Our Approaches” model.
- Discussions highlighted the importance of a coordinated delivery plan and ongoing partnership working to drive implementation of the HIA recommendations across the system.

The workshop concluded with reflections on next steps, including how to deliver the HIA across the wider East Sussex system, further enhance and implement the recommendations, and develop an effective framework for long-term action on climate change and health.

Table 1. Thematic Analysis by Climate and Health Topic

Climate & Health Topic	Nature of Feedback	Key Issues Raised	Overall Interpretation
Temperature & Heat	Strong support but requests for expansion	School day adjustments, water fountains, cooling infrastructure, heatwave advice, heat training, shading, temperature on buses, protection of outdoor workers	Heat is viewed as a major and growing health risk requiring both infrastructure and behaviour change measures
Air Quality & Aeroallergens	Requests for stronger evidence and interventions	Air pollution mortality data, respiratory illness beyond asthma, pollen-producing tree species, ULEZ discussion, air alerts	Stakeholders want greater recognition of wider respiratory impacts and improved monitoring

Climate & Health Topic	Nature of Feedback	Key Issues Raised	Overall Interpretation
Water & Drought	Generally supportive	Water availability in parks, drought planning, SuDS, water butts, sustainable water collection, opening waterways	Strong support for water resilience measures with co-benefits for health and biodiversity
Flooding	Supportive with implementation focus	Flood evacuation plans, flood data sharing, SuDS, planning controls, community preparedness	Seen as an area where policy and planning can significantly improve resilience
Extreme Winds & Storms	Identified as a gap	Wind audits, wind-resistant design, emergency planning, lightning protection, tornado preparedness	Stakeholders believe this risk is underrepresented within the current HIA
Wildfires	Requests for more detailed planning	Evacuation points, biodiversity conflicts, defensible spaces	Viewed as an emerging risk requiring balancing of resilience and ecological objectives
Vector-borne Disease	Calls for awareness-raising	Ticks, mosquitoes, training, public understanding	Seen as an under-recognised and growing climate-health threat
Infectious Diseases	Strengthening recommendations	Port health messaging, healthcare integration, vaccine hesitancy	Greater integration between health protection and healthcare systems required

Climate & Health Topic	Nature of Feedback	Key Issues Raised	Overall Interpretation
Food Security	Strong emphasis	Food hubs, supply chain resilience, food storage, local production, food affordability	A major cross-cutting issue requiring greater prominence
Mental Health & Climate Anxiety	Widely seen as a gap	Climate anxiety, psychological impacts, communication approaches	One of the most significant omissions identified by stakeholders
Migration & Population Diversity	Requests for expansion and reframing	Refugee support, migrant participation, housing pressures, population diversity language	Need for a balanced and inclusive approach
Chemical Hazards	Governance concerns	Water contamination, local versus national powers	Limited local control creates implementation challenges
Coastal Risks	Supportive but requests more focus	Coastal vulnerability assessments linked to deprivation	Strong support for a dedicated coastal resilience lens

Table 2. Building Blocks of Health Analysis

Building Block	Key Stakeholder Feedback	Gaps Identified	Opportunities Identified
Education	Climate literacy, climate-resilient schools, staff training, youth engagement, schools as community hubs	Implementation in schools appears inconsistent	Schools seen as powerful agents of cultural and behavioural change

Building Block	Key Stakeholder Feedback	Gaps Identified	Opportunities Identified
Transport	Shading, affordable transport, women's safety, public health messaging through ports	Limited focus on heat impacts during travel	Opportunity to integrate climate adaptation into transport design
Housing	SuDS, heritage conflicts, climate-resilient design, drought planning	Need clearer implementation mechanisms	Opportunity to embed requirements into future planning policy
Planning	Climate-health design codes, 15-minute neighbourhoods, wind resilience, green infrastructure	Limited influence over some national planning frameworks	Strong opportunity to mainstream climate-health considerations
Agriculture	Food security, land management, worker protection, food partnerships	National policy constraints	Opportunity to strengthen local food resilience and community participation
Emergency Services	Cooling equipment, alerts, resilience partnerships, cascading failures	Some climate hazards require greater coverage	Existing partnerships provide a strong foundation
Health & Social Care	Heat-related care, staff training, health protection integration	Mental health and climate anxiety underrepresented	Opportunity for wider climate-health workforce development
Environment	Trees, biodiversity, ecological corridors, open streams	Some resource implications underexplored	Strong potential for multiple co-benefits

Building Block	Key Stakeholder Feedback	Gaps Identified	Opportunities Identified
Private Sector & Economy	Climate adaptation incentives, procurement mechanisms, sustainable tourism	Unclear delivery mechanisms	Opportunity to align business resilience with health outcomes
Media & Communications	Climate champions, public awareness, infographics, trusted messengers	Communications strategy not strongly developed	Significant potential for behaviour change and public engagement

Table 3. Gaps by Climate and Health Topic

Climate & Health Topic	Gaps Identified	Evidence from Feedback
Mental Health & Climate Anxiety	Insufficient coverage	Multiple comments state recommendations do not adequately reflect climate anxiety and mental health impacts
Extreme Winds & Storms	Underdeveloped recommendations	Repeated requests for planning, infrastructure and preparedness measures
Food Security	Not sufficiently integrated as a system issue	Feedback references food resilience across multiple sectors
Vector-borne Disease	Low awareness	Stakeholders frequently identified this as poorly understood
Heat Resilience	Needs stronger operational focus	Requests for action plans, cooling infrastructure and public guidance
Migration & Population Diversity	Requires more nuanced treatment	Suggestions for broader framing and support mechanisms

Evaluation & Monitoring	Insufficient detail	Frequent calls for metrics, indicators and accountability
Governance	Unclear ownership	Consistent requests for delivery leads and accountability arrangements

Table 4. Tensions Identified

Climate & Health Topic	Tensions	Example
Transport	Tourism versus environmental sustainability	Visitor access to natural areas versus emissions and environmental impacts
Housing & Planning	Housing need versus environmental resilience	Development pressure versus agricultural land and flood mitigation
Food Security & Agriculture	Food production versus housing growth	Competing land use requirements
Wildfire Management	Biodiversity versus safety	Defensible spaces potentially reducing habitat value
Heritage & Flooding	Conservation versus adaptation	Heritage policies restricting resilience measures
Air Quality	Public acceptability versus mitigation measures	Discussion around LEZs and local feasibility
Migration	Inclusivity versus service pressures	Need to support population change while addressing impacts on housing and services
Economic Development	Profitability versus adaptation investment	Private sector concerns regarding costs of adaptation measures

Table 5. Barriers to Implementation

Climate & Health Topic	Barriers	Description
Across All Topics	Funding	Most frequently cited implementation barrier
Across All Topics	Capacity	Local authorities and partners face workforce and resource pressures
Agriculture	National Policy Constraints	Many drivers outside local control
Planning & Housing	Long Timescales	Development plans take many years to develop and approve
Infectious Diseases	Public Engagement	Vaccine hesitancy may limit effectiveness
Environment	Public Expectations	Resistance to less manicured landscapes
Climate Communications	Misinformation	Public confusion around climate and health risks
Monitoring & Evaluation	Data Availability	Lack of consistent, shared data and outcome measures
Governance	Organisational Complexity	Local government reorganisation and devolution may complicate delivery

Table 6. Opportunities by Climate and Health Topic

Climate & Health Topic	Opportunities	Potential Benefit
Education	Climate-resilient schools	Lifelong behaviour changes and resilience
Heat	Shading and green infrastructure	Heat reduction, improved wellbeing and biodiversity

Flooding	SuDS expansion	Flood management, cooling and enhanced amenity
Food Security	Community food hubs	Improved resilience and healthy food access
Communications	Climate champions network	Increased community engagement
Emergency Preparedness	Existing resilience partnerships	Efficient implementation through established forums
Air Quality	Shared alert systems	Improved public protection
Planning	Climate-health design codes	Long-term resilience embedded into development
Data & Intelligence	Healthy Places Profile integration	Better targeting and monitoring
Governance	Climate and Health in All Policies approach	Embeds climate-health considerations across decision-making
Equity	Co-production with vulnerable groups	More inclusive and effective interventions

Cross-Cutting Strategic Conclusion

The feedback can be summarised as follows:

Area	Overall Stakeholder Position
Climate & Health Topics	Broad agreement with the identified risks and proposed direction
Building Blocks of Health	Strong support for cross-sector approaches, particularly education, planning and communications
Gaps	Mental health, climate anxiety, food systems, extreme weather and implementation planning

Barriers	Funding, governance complexity, limited local powers, capacity constraints and data limitations
Tensions	Growth versus sustainability, housing versus environment, biodiversity versus resilience and local versus national influence
Opportunities	Education, nature-based solutions, community leadership, partnership working and Climate & Health in All Policies

The strongest overall finding is that stakeholders are largely aligned on the climate and health challenges facing East Sussex. The main concern is not the evidence base or direction of travel, but the need for a prioritised, accountable, funded and measurable delivery framework that clearly identifies who will do what, by when, and with what resources.

4.6. Summary of the East Sussex Climate and Health Public Consultation: How does climate change in East Sussex impact you?

See PART 1 Section 4.

4.7. Summary of the Literature Review

Evidence from the Literature Review

The literature review provides strong and consistent evidence that climate change represents one of the most significant threats to population health in the twenty-first century.

Major international and national assessments, including those produced by the IPCC (2023), WHO (2023), UKHSA (2023), the Climate Change Committee (2021) and the Wales Climate Change Health Impact Assessment, consistently identify climate change as a systemic challenge requiring coordinated action across government, public services and communities.

Importantly, climate change does not affect health solely through direct environmental hazards. It also influences the wider determinants of health, including housing, employment, transport, food systems, access to services, social cohesion and economic security.

Health Inequalities and Vulnerability

One of the strongest and most consistent findings within the literature is that climate change is likely to exacerbate existing health inequalities.

Evidence from Edmonds and Green (2023), Green et al. (2024), UKHSA (2024), WHO (2023) and the Lancet Countdown reports (2023; 2024) demonstrates that certain groups are disproportionately vulnerable to climate-related harms, including:

- Older people.
- Children and young people.
- People living in deprivation.
- Disabled people.
- Ethnic minority communities.
- Migrants and refugees.
- Coastal communities.
- Individuals with pre-existing health conditions.

Vulnerability is shaped not only by exposure to climate hazards but also by adaptive capacity, income, housing quality, social support and access to services.

The WHO estimates that climate change could contribute to approximately 250,000 additional deaths annually between 2030 and 2050.

Physical and Environmental Health Impacts

The literature identifies a broad range of climate-related health risks including:

- Extreme heat and overheating.
- Flooding.
- Poor air quality.
- Drought.
- Food insecurity.
- Infectious and vector-borne diseases.
- Aeroallergens.
- Wildfire smoke exposure.

The UK Climate Change Risk Assessment and UKHSA reports identify overheating, flooding, infrastructure disruption and pressures on health and care services as priority risks requiring urgent adaptation measures.

At the same time, substantial evidence highlights opportunities to improve health through climate action.

Interventions such as active travel, energy-efficient housing, renewable energy, climate-resilient urban design, sustainable food systems and nature-based solutions can simultaneously reduce emissions and improve population health.

Mental Health and Wellbeing

Mental health is an increasingly prominent theme within the climate-health evidence base.

Research consistently links climate change with:

- Anxiety and eco-anxiety.
- Depression.
- Post-traumatic stress disorder.
- Sleep disruption.
- Social isolation.
- Reduced wellbeing.

Young people appear particularly vulnerable to climate-related concerns about the future.

Emerging evidence also suggests that rising temperatures may significantly affect sleep quality and duration, particularly among older adults, women and lower-income populations, representing an important but often overlooked pathway linking climate change and health.

Protective factors include strong social networks, access to nature, collective action, community participation and supportive local environments.

Community Resilience and Social Capital

The literature consistently demonstrates that social capital, community cohesion and volunteering play a critical role in strengthening resilience to climate change.

Evidence from Cruwys et al. (2024), Hall et al. (2023), Carmen et al. (2022), Public Health Scotland (2024) and the United Nations Volunteers Programme (2024) highlights the importance of:

- Community networks.
- Civic participation.
- Volunteering.
- Community hubs.
- Green spaces.
- Locally led adaptation.

These assets support preparedness, response and recovery during climate-related events whilst also strengthening wellbeing and social connectedness.

Health in All Policies and Health Impact Assessment

The literature strongly supports Health in All Policies (HiAP) as one of the most effective frameworks for integrating health considerations into climate-related decision-making. See Appendix D.

International guidance from WHO, the WHO Resolution on Climate Change and Health (2024), the Wales Climate Change HIA and numerous case studies demonstrate the value of embedding health considerations within transport, planning, housing, energy, environmental and economic policy.

Health Impact Assessment is consistently identified as the principal operational mechanism for delivering HiAP in practice.

Evidence from Wales, Greater Christchurch, Thurrock and Melbourne demonstrate that HIA can help identify unintended consequences, improve understanding of impacts on vulnerable populations and strengthen cross-sector decision-making.

Governance, Facilitators and Barriers

Across international, national and local evidence, successful climate-health action is consistently associated with:

- Strong leadership.
- Integrated governance.
- Cross-sector partnerships.
- Public participation.
- Dedicated funding.
- Long-term policy frameworks.
- Whole-system thinking.

Conversely, recurring barriers include:

- Siloed governance structures.
- Short political cycles.
- Limited funding.
- Workforce capacity constraints.
- Weak local data systems.
- Inconsistent integration of health considerations into non-health sectors.

These barriers help explain the persistent gap between policy ambition and implementation identified throughout the literature.

Conclusion

The evidence gathered through both the literature review and this HIA points to a clear conclusion: **a changing climate is fundamentally a health, equity, sustainability and systems issue**.

A changing climate is already influencing the conditions in which people live, work and age, with significant implications for physical health, mental wellbeing, social cohesion, economic resilience and environmental sustainability.

The evidence also demonstrates that many climate adaptation and mitigation measures can generate substantial co-benefits for health, wellbeing, equity and community resilience when designed and implemented through a whole-system approach.

Taken together, the findings strongly support the adoption of integrated, place-based and equity-focused approaches to policymaking. Health in All Policies, Health in All Climate Policies and, ultimately, Population and Planetary Health in All Policies and Approaches provide complementary frameworks for achieving this ambition.

For East Sussex, the challenge is no longer whether climate and health should be integrated. The challenge is how to embed this integration consistently across leadership, governance, policy, commissioning, service delivery and community action so that healthier people, healthier places and a healthier planet become shared outcomes across the whole system.

5. Overall Conclusions on all of the Evidence and Local Intelligence

A changing climate is already affecting the health, wellbeing and resilience of communities across East Sussex and these impacts will intensify over coming decades unless action is accelerated. The evidence is clear. By **combining local data, economic analysis, policy review, literature synthesis, stakeholder engagement and public consultation**, this report provides the most comprehensive assessment to date of the relationship between climate change and health in East Sussex.

Together, these complementary strands of evidence present a consistent message: a changing climate is not solely an environmental challenge but a cross-cutting public health, social, economic and organisational issue that requires coordinated action

across the whole system.

The **East Sussex Climate Hazards and Health Data Profile** demonstrates that East Sussex is particularly vulnerable because of its demographic profile, geography and existing health inequalities. The county has a larger proportion of older adults than the national average, significant coastal populations, extensive rural communities, areas of high deprivation, and relatively high levels of disability—all characteristics that increase vulnerability to climate-related hazards. Children and young people have also identified climate change as a significant concern, highlighting the importance of considering both the direct and indirect impacts of a changing climate across the life course. The evidence shows that climate hazards—including heat, flooding, drought, wildfire, poor air quality, changing infectious disease risks and pressures on food systems—are interconnected and interact with wider determinants of health such as housing, transport, employment, food security and access to services.

The analysis also demonstrates that a changing climate is likely to exacerbate existing inequalities. The greatest health impacts are expected to fall on those who are already most vulnerable, including older adults, people living with long-term conditions or disabilities, deprived communities, coastal populations, children and young people, and those living in poorly adapted housing. Many of these communities already experience poorer health outcomes and reduced adaptive capacity. Without targeted adaptation, climate change risks widening inequalities that already exist across East Sussex. Conversely, this HIA report identifies substantial opportunities to improve health through climate action, including cleaner air, increased physical activity, healthier homes, improved access to green space, stronger food systems and more resilient communities. These co-benefits reinforce that action on climate change should be viewed as an investment in population health rather than solely an environmental obligation.

The **Literature Review** confirms that the local findings are consistent with national and international evidence. Across publications from the UK Health Security Agency, World Health Organization, IPCC, Climate Change Committee and numerous peer-reviewed studies, there is strong consensus that a changing climate represents one of the greatest threats to population health this century. The review also highlights that effective responses require action beyond the health sector, recognising the influence of housing, planning, transport, education, food systems, economic development and the natural environment on both climate resilience and health outcomes. Importantly, the literature demonstrates that many adaptation and mitigation interventions generate significant health, social and economic co-benefits when designed using a whole-system approach.

The **Policy Review** found encouraging evidence that climate and health are increasingly recognised within local policy; however, **integration remains inconsistent across organisations and sectors**. While some strategies demonstrate strong alignment between climate and health objectives, opportunities remain to embed climate-health considerations more systematically into decision-making, governance arrangements and service planning. The development of the policy analysis framework provides an important baseline from which future policy coherence can be monitored and strengthened. Embedding a "Climate and Health in All Policies" approach will be essential if the county is to maximise co-benefits, reduce duplication and deliver coordinated action across the system.

Stakeholder Workshops and **Public Consultation** reinforced these findings. Participants demonstrated strong consensus regarding the importance of climate change as a health issue and broadly supported the direction of travel proposed throughout this Health Impact Assessment. stakeholders consistently highlighted the importance of partnership working, stronger governance, clearer accountability, improved communication, community involvement and better integration across sectors. They also identified common barriers, including fragmented funding, limited capacity, competing priorities, political cycles, governance complexity and gaps in local evidence. Despite these challenges, stakeholders recognised considerable opportunities to strengthen collaboration, embed climate and health within existing programmes, and develop more coordinated approaches across public services. Importantly, there was widespread recognition that successful implementation will require sustained leadership, dedicated resources, measurable objectives and long-term commitment.

The **Economic Evaluation** further strengthens the case for action by demonstrating that the costs of climate change extend far beyond environmental damage. Increasing temperatures, flooding, coastal erosion, infrastructure disruption, health impacts and productivity losses all have significant economic implications for local communities and public services. While adaptation requires investment, the evidence consistently suggests that **early intervention is substantially more cost-effective than responding to escalating climate impacts in the future**. Measures that improve resilience frequently generate multiple returns through avoided healthcare costs, reduced disruption, healthier populations, increased productivity and enhanced environmental quality. Climate action should therefore be viewed as both a public health intervention and a long-term economic investment.

A major strength of this HIA has been its methodological approach. By combining quantitative analysis, local intelligence, policy analysis, economic evaluation, evidence synthesis and stakeholder engagement, the assessment provides a robust and transparent evidence base for future decision-making. Nevertheless, important evidence gaps remain. Several climate-health pathways cannot yet be quantified

locally, particularly at neighbourhood level, and there is a need for improved integration of environmental, health and socioeconomic datasets, routine monitoring of climate-health indicators and stronger evaluation of interventions. Maintaining and regularly updating the East Sussex Climate and Health Data Profile will be essential to understanding changing risks and measuring progress over time.

Overall, this section concludes that East Sussex is well positioned to become a national leader in integrating climate change and public health. The county has developed a strong evidence base, engaged extensively with stakeholders and identified practical opportunities to strengthen resilience across communities and organisations. However, translating this evidence into meaningful change will require continued collaboration, political and organisational leadership, sustained investment and a commitment to embedding health equity within all aspects of climate policy and practice. Climate resilience cannot be delivered by any single organisation or sector; it depends on coordinated action across the entire system.

Ultimately, this report establishes a robust baseline against which future progress can be measured. It provides a clear rationale for integrating climate mitigation, adaptation and health improvement into a single strategic agenda, recognising that protecting the climate is also about protecting people. By using the evidence presented throughout Part 2 to inform policy, investment and partnership working, East Sussex has the opportunity to reduce future climate risks, improve population health, narrow health inequalities and create a healthier, fairer and more resilient county for current and future generations.

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