LCAT
LOCAL CLIMATE ADAPTATION TOOL

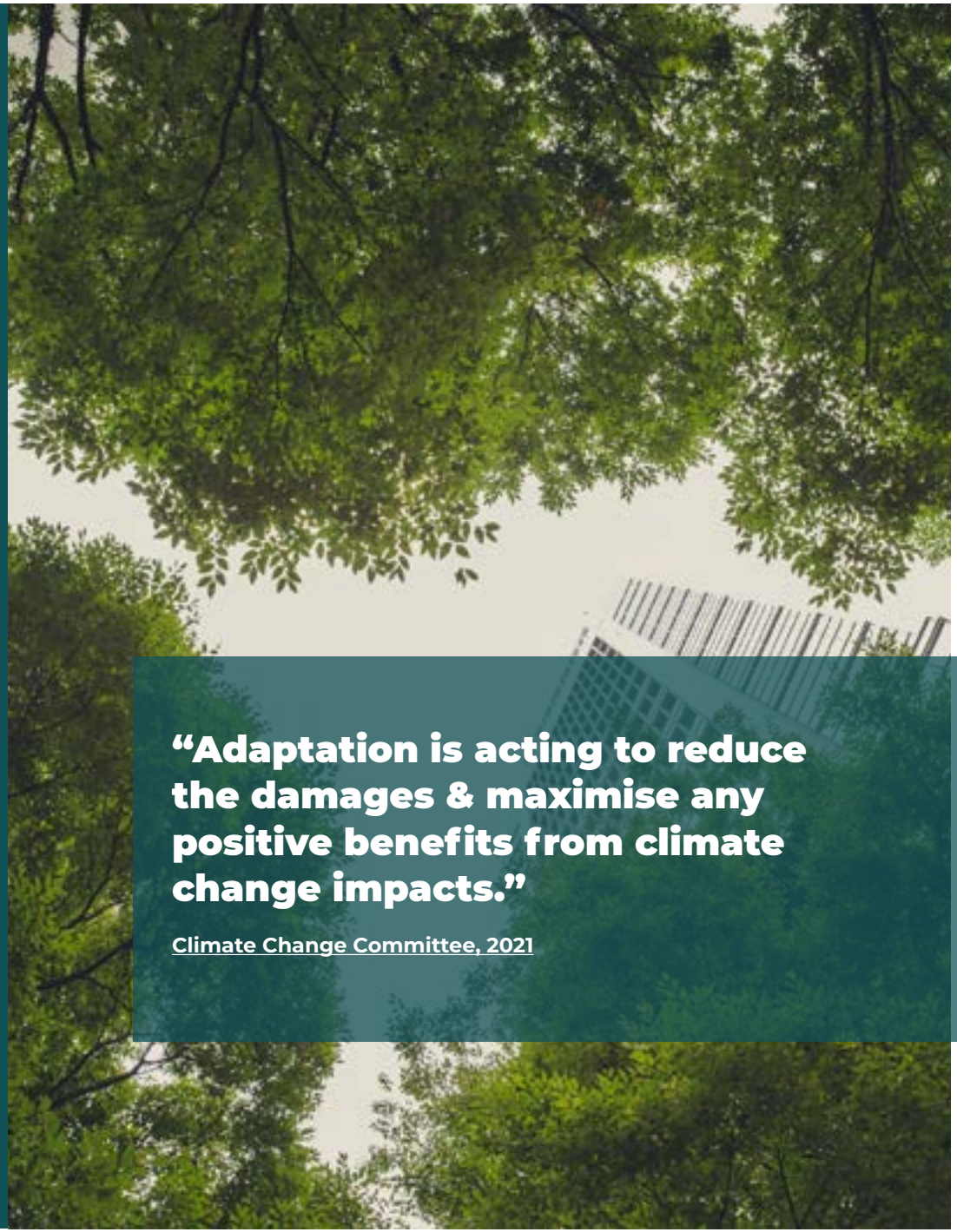
# LOCAL CLIMATE ADAPTATION

An introductory guide for organisations and individuals working with, and for, their local community

**This guide will provide you with:**

- Information on why climate adaptation is essential
- Information on who should be involved in adaptation and how to do it well
- Real life examples & stories
- Guidance suitable for all sectors, disciplines and positions
- Evidence and expertise

**This is a quick and easy starter guide.**
**It takes about 1 hour to read.**



**“Adaptation is acting to reduce the damages & maximise any positive benefits from climate change impacts.”**

Climate Change Committee, 2021

University of Exeter
European Centre for Environment & Human Health
OXFORDSHIRE COUNTY COUNCIL
CORNWALL COUNCIL
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lcat.uk

# WELCOME TO THE LOCAL CLIMATE ADAPTATION GUIDE

**This introductory guide focusses on what climate adaptation is, why it is needed and how to do it well.**

It is aimed at local services and decision-makers. For example, those working for local authorities, NHS organisations, emergency services, charities or businesses.

It aims to increase your knowledge and skills, so you feel more confident taking action.

This guide is part of the **Local Climate Adaptation Tool (LCAT)**. LCAT is an online tool which supports local decision-makers across the UK to plan and adapt to climate change.

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## WHAT IS CLIMATE ADAPTATION?

Understanding how climate change will impact us now and into the future

Making changes to the way we live, work, make and do things

Making adjustments to our natural and built environments

Working to reduce risks and maximise opportunities

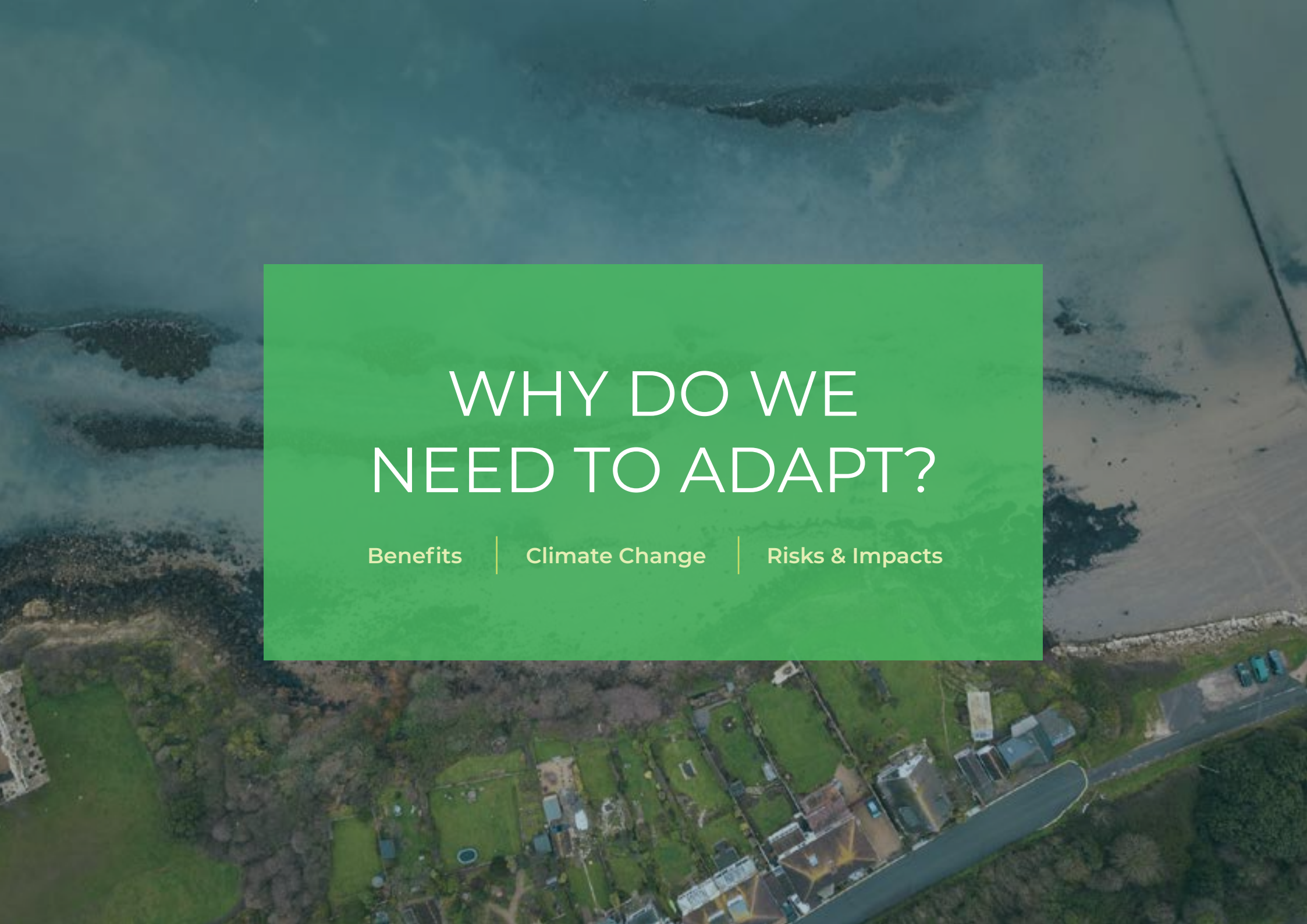
## How is adaptation different to mitigation?

**Mitigation addresses the causes of climate change. Adaptation addresses the impacts.**

Mitigation is the term commonly used to describe activities that cut greenhouse gases. For example, cutting fossil fuels and moving to renewable energy. The aim is to limit future global warming.

Adaptation aims to reduce risks & maximise opportunities related to the impacts of climate change that are already here and predicted in the future.

Both mitigation and adaptation are needed to tackle climate change and should be planned together. Check out page 11 for more information on integrating both into decisions.



# WHY DO WE NEED TO ADAPT?

Benefits | Climate Change | Risks & Impacts

# WHY DO WE NEED TO ADAPT?

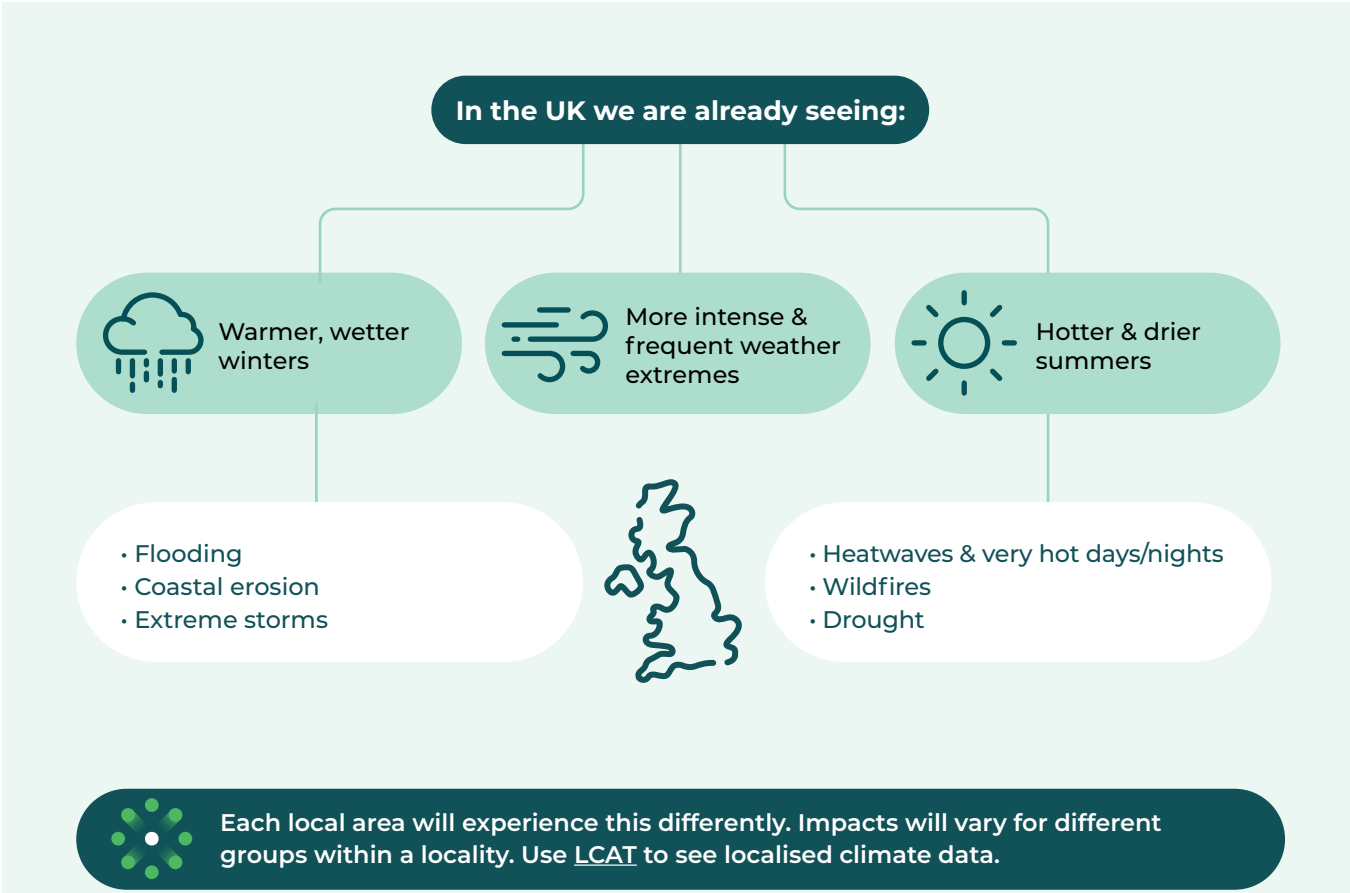
**Our climate has changed and will continue to change into the future, even with efforts to cut greenhouse gas emissions.**

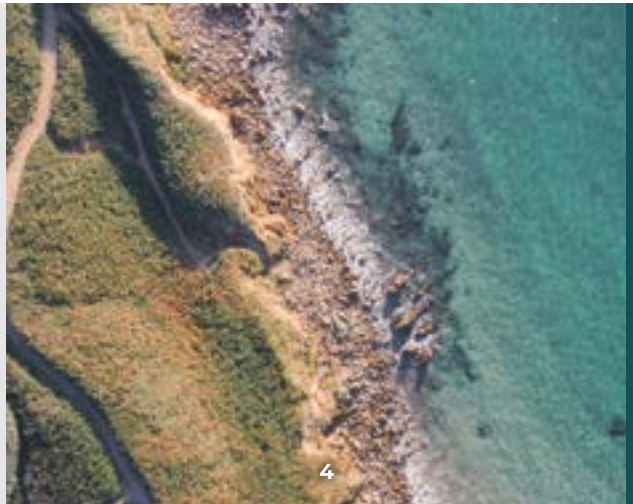
In the UK, our warmest years on record have all occurred in the last 10 years. We have already been experiencing impacts like heatwaves, wildfires and flooding.

By making adaptations, we can reduce some of the negative impacts of climate change. We also have a huge opportunity to change things for the better. We can choose actions that are better for our health and nature and make life fairer for everyone.

## Benefits to Climate Adaptation:

- Improve where we live to make it greener, healthier & safer
- Help make our communities stronger so they can better cope with & recover from shocks, especially those who are most vulnerable
- Cut damage to our homes, workplaces & essential services (e.g. hospitals & schools)
- Save money in the long run, by investing now
- Protect people from health & wellbeing impacts like illness during heatwaves or trauma from flooding



### Case study

Positioned on the far north coast of Cornwall, Bude is exposed to storms and sea level rise. Organisations across Bude have come together to future-proof their town and local area. Actions are community-led and include creating a community jury, sustainable tourism project and shoreline adaptation project focussed on managing sea level rise.

[www.budeclimate.org]

# WHAT IS CLIMATE CHANGE?

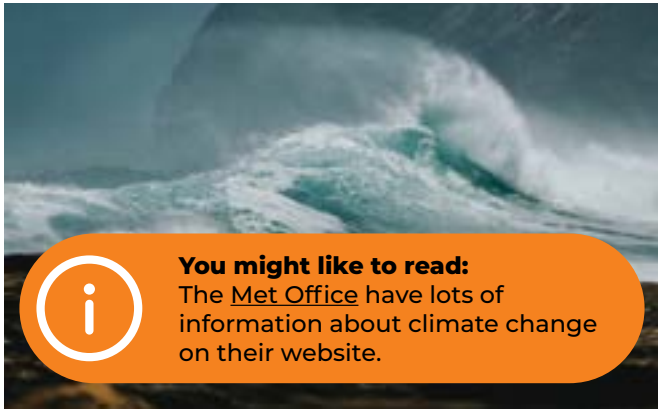
**Climate change is:**

- **A long-term shift in the world's weather patterns**
- **Changes to average temperatures**

## What's the difference between weather and climate?

**Weather:** This describes short-term changes in the atmosphere. For example, it will be rainy this morning but sunny this afternoon. Weather is what you hear about on a weather forecast.

**Climate:** Describes the average weather pattern over a longer period. For example, that a place has warm, dry summers or warm and wet winters.



**You might like to read:**
The Met Office have lots of information about climate change on their website.

**What caused climate change?**

**Human activity is the leading cause of climate change.**
This is through greenhouse gas emissions (for example releasing carbon dioxide). Greenhouse gasses come from different activities & sectors. For example:

**Energy**
Burning fossil fuels for electricity & heat



**Agriculture, forestry & other land use**
Rearing livestock, using fertilisers, deforestation & developing land

**Transport**
Using fuel-combustion trucks, cars & planes



**Industry & manufacturing** use fossil fuels.
They also produce pollution during the process itself, such as carbon dioxide in cement production

# WHAT ARE THE RISKS & IMPACTS?

**Climate change impacts the whole of society.**

**Some major impacts for the UK include:**

Illness & disease including mental health impacts

Overheating & damage to buildings & homes

Threats to food security & supply

Water scarcity

Disruption & damage to public services like healthcare & transport

Disruption & damage to power supply, IT & communications

Risks to nature & ecosystems

Risks to agriculture, fisheries, forestry

## Case study

Community-led food projects across Dundee were created to shift to a more sustainable food system. Multiple local growing projects were established, with a major focus on supporting deprived communities and working with local community groups.

This project provided multiple benefits including for people's health and wellbeing and community cohesion. Growing locally reduces the carbon footprint of the current food system and helps reduce the risk of food insecurity caused by our changing climate.

[carboncopy.eco/initiatives/dundee-food-growing-strategy]

# WHY ARE CLIMATE RISKS & IMPACTS COMPLEX?

**The impacts of climate change are wide ranging. They affect multiple sectors, environments & communities. Many are interconnected & can cause a 'cascade effect'. This is where one problem causes another problem & so on.**

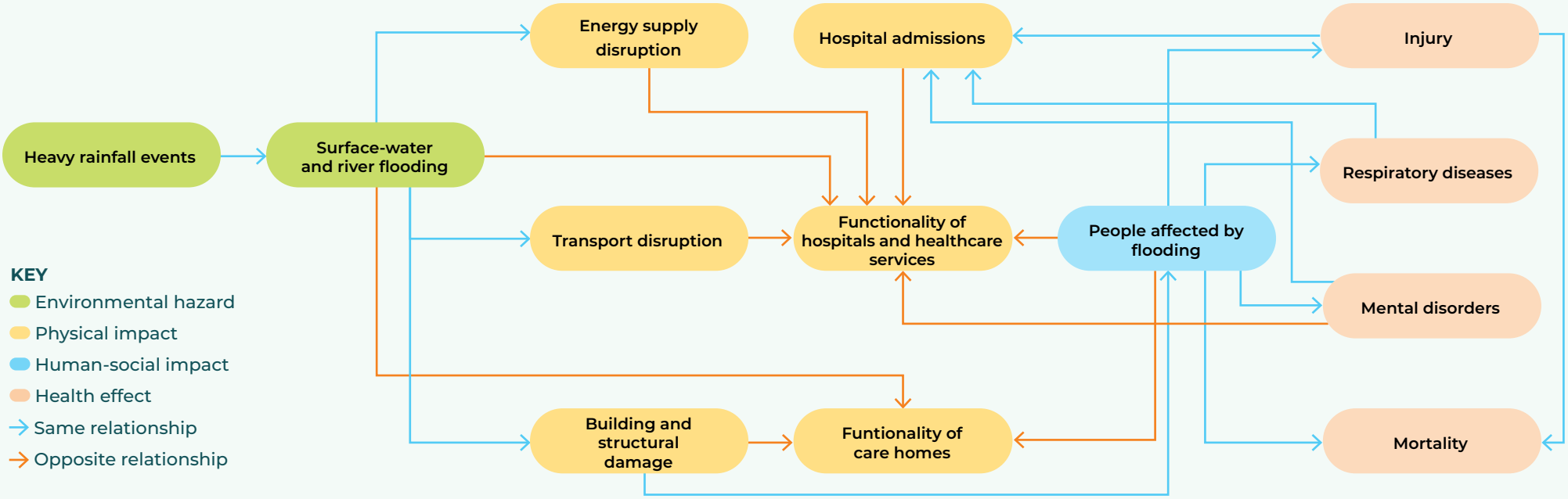
The diagram below is a snapshot of just some of the complex relationships and cascade effects from flooding.

## Thinking about health impacts

Climate change impacts health and wellbeing both directly (e.g. injury) & indirectly (e.g. trauma from flooding).

**In the UK, some of the key health impacts of concern include:**

- heat-related illness and death
- mental health impacts of flooding
- food insecurity
- infectious disease




LCAT provides multiple impact pathways, like this one, for you to explore. Visit the 'impact' section of the tool for more information.

**You might like to read:**
The UKHSA's report on the health impacts of climate change in the UK or The World Health Organisation's report on health threats.

# WHAT HAVE WE LEARNT?

**1.** A friend asks you to explain what climate adaptation is. How might you explain it?

**Not sure? Revisit the quote on page 2 for a reminder.**

**2.** You're pitching your adaptation idea at work. Someone asks you to explain the benefits of adaptation. Can you think of at least 2?

**Not sure? Revisit page 4 for a reminder.**

**3.** A colleague asks you about the risks and impacts of climate change in the UK. Can you think of at least 2? If you managed that, can you think of 1 that might be relevant to your local area?

**Not sure? Revisit page 6 for a reminder.**

# HOW DO WE ADAPT?

Key principles | Step-by-step | Vulnerability

# WHAT ARE THE KEY PRINCIPLES WE SHOULD FOLLOW?

**Good adaptation, according to experts including The Intergovernmental Panel on Climate Change (IPCC) and Climate Change Committee, follows these principles:**

## Equitable

Climate impacts are experienced unfairly. Work to reduce wider inequalities. Identify and support vulnerable communities. Make sure your diverse community are involved in decision-making.

### Case study

Newcastle City Council used vulnerability and hazard data to better understand flood risk across their communities. They brought together Climate Just data & the council's own local datasets to understand how socio-economic inequalities would be made worse by flooding. This helped them understand the impact on people's ability to adapt and recover.

View the report

## Collaborative & inclusive

Remove unhelpful siloed working, create partnerships & maximise everyone's collective skills and experience.

### Case study

North Uist in Scotland offers an example of community collaboration. Using a technique called 'participatory mapping', professionals and at-risk communities worked together. They shared both personal and expert insight to co-develop adaptation ideas.

View the report

## Climate change in all policies

Climate change impacts every sector. It can be looped into other policy areas and practices.

### Case study

Lancaster City Council used the Local Plan to prioritise sustainable development and future proof the area to a changing climate. Local Plans are frameworks that guide the development of local areas. Lancaster's process highlights an example of embedding both mitigation and adaptation into key policy.

View the report

## Prioritise health & nature

Embed health in all decision-making and maximise nature-based solutions. Consider the impact of decisions on health & nature throughout your journey.

### Case study

Salford and Cardiff offer examples of adaptations that prioritise both nature and health. In Salford, tree planting helps reduce flood risk, provide shade on hot days, improve air quality, create new habitats & improve people's health. In Cardiff, efforts to cut flood risk have included creating rain gardens & transforming urban streets. There are more green spaces, improved cycling and walking routes & new engineering that diverts & cleans stormwater.

View Salford | View Cardiff

## Evidence based & localised

Create plans that reflect the diversity of your place and people. Local data and insight will help build a picture. This should include expert insight as well as insight from your local communities.

### Case study

In Northern Ireland, the Red Cross worked with communities impacted by flooding to understand the long-term impacts they experienced. As a result of this research, positive changes included better identification of vulnerable groups & the development of new community resilience projects.

View the report

## Sustainable & flexible

Shifting to long-term decision-making helps make sure our services and buildings are fit for the future. Consider direct and indirect impacts of your chosen adaptations to avoid unintended harms.

### Case study

Adaptation was a core part of the planning process for a new build hospital in Omagh. By considering long term climate change in the planning process, it aimed to avoid future disruption, related risks & costs. The project brought together flood data alongside an analysis of the viability of different adaptation actions.

View the report

## Integrated with mitigation

There are many shared benefits. Considering mitigation and adaptation together maximises impact, better protects the health of your community and helps avoid poor adaptation.

### Case study

A new school building in Scotland not only considered energy efficiency to stay warm in winter (mitigation). It also included ventilation systems to avoid overheating in increasingly hot summers (adaptation). This future-proofs the building and maximises the comfort and wellbeing for staff and children.

View the report

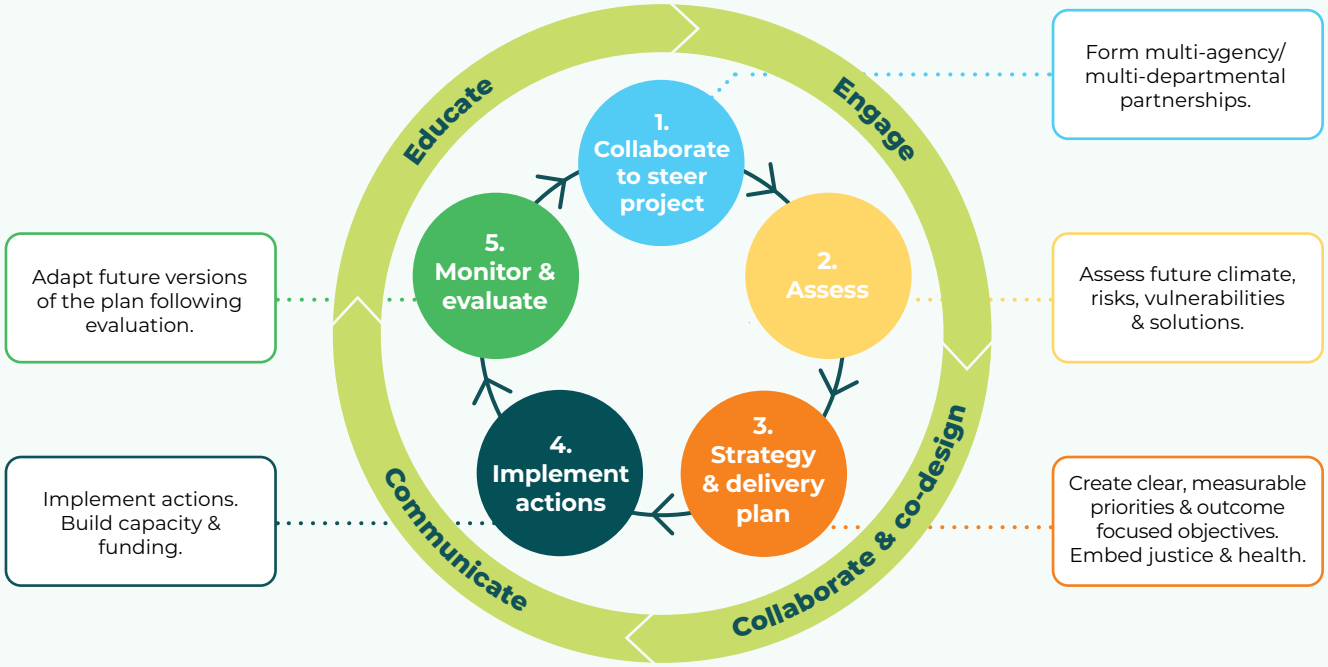
## Well-resourced & funded

While everyone has a role, there will be need for dedicated training, resources, expertise and funding.

**You might like to read:**
The Adaptation Scotland website has many practical resources and tools to help you. Their website is relevant wherever you are in the UK.

# WHAT IS THE STEP-BY-STEP PROCESS?

A whole area approach is recommended. This means bringing in representation from across sectors & communities. This would typically be led by the Local Authority (or equivalent). As part of that process individual sectors, organisations and departments may create their own bespoke plans too, following similar steps.




LCAT can support you to understand your local future climate, hazards, risks & impacts, vulnerable groups & evidence-based adaptation actions. Impact maps within LCAT will support you to consider complexity & cascading impacts.

## Case study

Manchester has taken a whole area approach. They work in partnership with other organisations and empower residents to take part. They prioritise health and justice in their strategy and created a plan which integrates mitigation and adaptation actions. Decisions are based on an evidence-based assessment using data and insight. The work is resourced through funding for a Climate Change Agency.

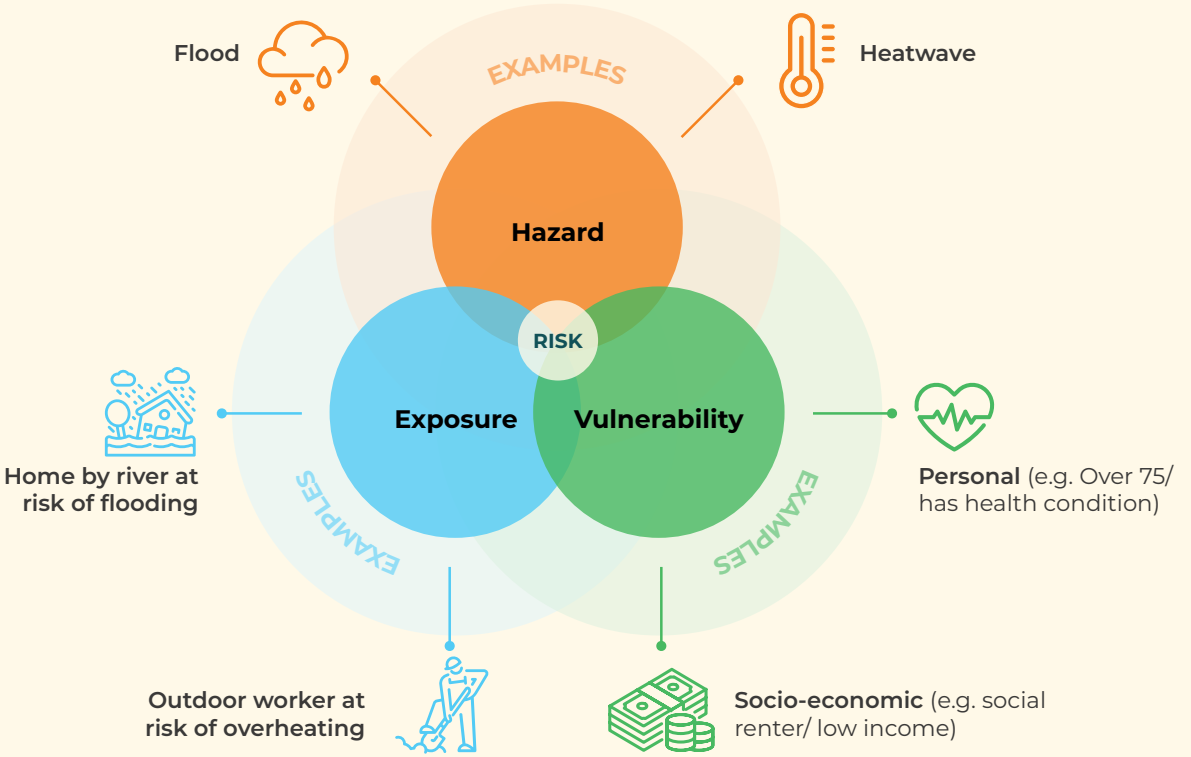
[www.manchesterclimate.com]

**You might like to read:**
Local Partnerships have produced a highly detailed step-by-step toolkit & risk matrix

# HOW DO I KNOW WHO IS VULNERABLE IN MY LOCAL AREA?

**Everyone will be exposed to climate change. However, some people are more exposed to particular hazards or vulnerable because of their personal or social situation. These circumstances impact people's ability to cope with, adapt to and recover from climate events and extreme weather.**

It is important to understand the relationship between vulnerability, hazards & exposure when assessing local risks.




**Work on vulnerability should include identifying who is vulnerable, and why, and ensuring communities are part of the decision-making process. Researching appropriate adaptation actions and addressing the root causes of vulnerabilities, such as poverty, will also by important.**

**"Socially & economically disadvantaged & marginalized people are disproportionally affected by climate change"**

IPCC, 2014

## Case study

Hammersmith and Fulham identified social housing tenants as a community vulnerable to flooding and extreme heat. Working with tenants in 3 housing estates, the project considers a 'just' approach in its design. As well as prioritising a vulnerable community, they involved tenants in the decision-making and trained and employed tenants on the project. The project used nature-based solutions such as tree planting and green roofs. Co-benefits included improving air quality, biodiversity and the quality of the local area.

[Climate Adapt case study]

**You might like to read:**
Climate Just offers advice, guidance, UK case studies & a mapping tool on climate change, justice & vulnerability.

The IPCC's reports will help you understand why climate justice is important & how it will help avoid poor adaptation. Haven't much time? They offer a summary of findings too.

# WHAT HAVE WE LEARNT?

**1.** You've been asked by a manager to write a report on the key principles of adaptation. Can you name 3 key principles and, if possible, give a short description of what they mean?

**Not sure? Revisit pages 10 & 11 for a reminder.**

**2.** Every area will do adaptation planning in their own way. There are some key steps you might want to consider. Can you name some of those steps?

**Not sure? Revisit page 12 for a reminder.**

**3.** A colleague asks you to explain what makes particular communities vulnerable to climate change. Have a go at explaining.

**Not sure? Revisit page 13 for a reminder.**

# BIBLIOGRAPHY & FURTHER READING:


### Guidance, tools & advice

LCAT: Local Climate Adaptation Tool

Adaptation Scotland: Advice, guidance, case studies & practical tools for adaptation.

Climate Just website: Vulnerability mapping tool, advice, guidance & case studies of just adaptation.

Local Partnerships' Climate Adaptation Toolkit & risk matrix

### Facts & data

Climate Change Committee: The UK's climate change risk assessment

AR6 Synthesis Report: Climate Change 2023 – IPCC

Met Office: Climate Change facts & infographics

United Nations Climate Change (UNFCCC): The global response to climate change

Health Equity in England: The Marmot Review 10 Years On (2020).

### Climate & health

UKHSA: Health Effects of Climate Change in the UK, 2023

WHO's Climate Change & Health factsheet


## IDEAS FOR NEXT STEPS

- Share this resource with colleagues & local orgs
- Do a presentation to your team on adaptation
- Integrate ideas you've learnt into a project
- Do a policy review to better integrate climate change
- Create a climate adaptation strategy for your area or organisation


Thanks go to the many professionals across the UK who helped co-design this document. Particular thanks go to those working across Oxfordshire for their time, insight and support. This resource is part funded by Oxfordshire County Council.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