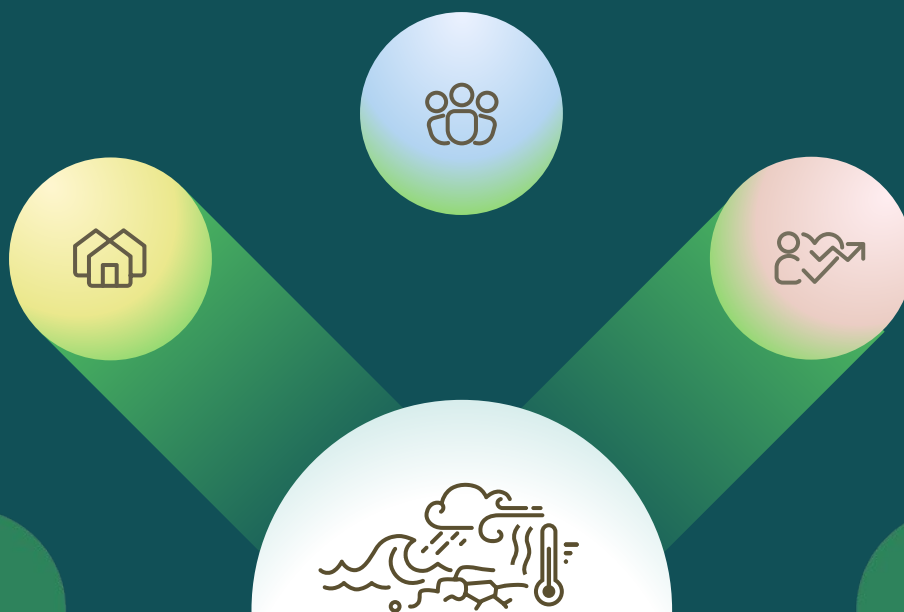


Local Adaptation Workshop Guide:

Using the Local Climate Adaptation Tool (LCAT)
to start conversations, develop plans and more



University
of Exeter

Green Futures
Network



European Centre for
Environment & Human Health



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UK Research
and Innovation



Blue
Adapt

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Purpose of this toolkit

The Local Climate Adaptation Tool (LCAT) has been used across the UK to support better decision making on adaptation, but it has also been used in many varied and unpredictable ways by organisations, community groups, and more.

LCAT has a huge amount of information, and may feel overwhelming, or sometimes not relevant to your work and role in the adaptation system. This toolkit is designed to support you to personalise how you use LCAT, through activities that combine the peer reviewed research and structure of the tool with your own knowledge, experience, and motivations in talking about or taking action on adaptation.

Please use these activities as a starting point, change them however you choose, and let them help you work out which parts of LCAT can be most useful for you and those you work with.

Who is this for?

This toolkit is for anyone working for their local community, and interested in tackling the complex effects of climate change. Depending on their experience level, it may be useful to circulate the '[Introduction to Local Climate Adaptation](#)' to your participants ahead of time, to give them a clear outline of Climate Adaptation.

Councils & Organisations

People involved in local decision making such as county, town, or parish councillors.

Local Community groups

Individuals who represent local or community groups, such as those who run or volunteer for a local charity, foodbank, or sports group.

The General Public

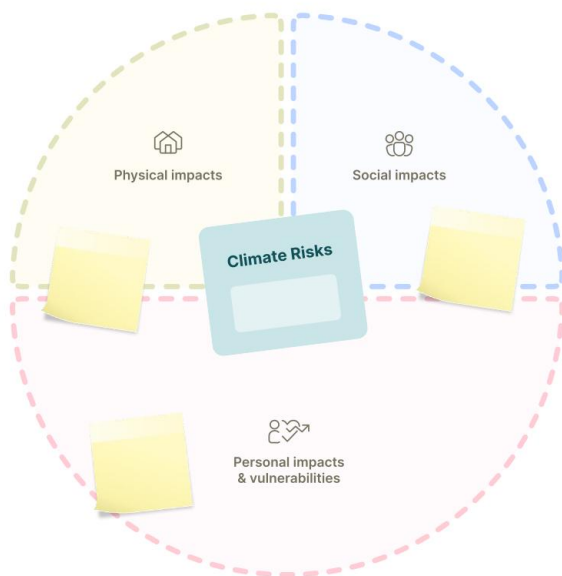
Members of the public who want to understand future local climate and its associated impacts; particularly those who feel they lack access to local decision-making processes.

What's inside?

4

This toolkit includes guides and resources for two exercises to help you facilitate conversations in your own context. You may choose to do both the exercises in a single session, in multiple sessions, or do any one of them based on your goals.

Impact mapping exercise



The first part of the toolkit contains the impact mapping exercise that helps you explore the **interconnected physical, social and personal impacts of local climate risks**.

Adaptation mapping exercise



The second part helps you explore and **prioritise adaptation measures to help tackle the interconnected impacts** of climate change in your local area.

How to use it?

The exercises in this toolkit are meant to be used in person with a small group of people. You can simply **print out this document that contains all the resources** and instructions to conduct the exercises. You may refer to the LCAT website (<https://lcat.uk>) before or after conducting an exercise to see climate risks and vulnerabilities for your area, and other peer reviewed research into local impacts and adaptations.

You can follow the activities exactly, printing out all of the resources, or feel free to adapt them however you want to, drawing out similar but different resources, or building them into existing conversations and ways of working that you are using.

Activity 1:

Impact Mapping

This exercise is designed to help you have discussions and understand the local impacts of climate change on spaces, society and people. People are encouraged to contribute from their experiences and local knowledge to enrich the understanding.

Participants

We suggest to do this exercise in-person with a **diverse group of people** who can contribute from their local knowledge and expertise. The participants may include:

- Local residents, workers, and volunteers
- Community organisers and groups engaging with vulnerable communities
- Local councillors and officers across sectors
- Local climate experts or advocates

Duration

The exercise is discussion based and you are free to take as long as you like. However, **we recommend giving it at least an hour**.

Space

You will need a room to facilitate discussions, accommodating all participants, and a **table or desk to lay out the impact mapping template** for organising your answers. You can run the exercise online if needed, but we recommend being together in a room to make the conversation as valuable as possible.

Materials

Print this document on A4 size sheets. **Find the resources to conduct this exercise from page 21**. These can be printed in colour or black and white. Keep some sticky notes, pens and markers handy to map your responses on the template. You can also draw your own versions of the resources if you want to make changes, or don't have access to a printer.

Step 1: Impact wheel set-up

You will be using the template below for this exercise. Pages 21 to 24 can be printed on an A4 size paper and assembled to create a large enough version. You may also simply use markers/ tape on a large sheet of paper or table top to replicate the framework:

Climate Risk

Place a climate risk card at the centre of the wheel and respond to the questions in **step 3** to ground it in your context.

Physical impact

The first sheet of the printed template is for physical impacts. Respond to the questions in **step 4A** and place notes here.

Social impact

The second sheet of the printed template is for social impacts. Respond to the questions in **step 4B** and place notes here.

Personal impacts

The third and fourth sheets of the printed template are for mapping personal impacts and vulnerabilities. Respond to the questions in **step 4C** and place your notes here.



Step 2: Pick a climate risk

Before starting the impact mapping, you'll be selecting the type of climate risk you wish to map for. You may cut out the cards on **page 25** or simply write on a sticky note. There are 4 broad categories to pick from:



Step 3: Ground it in your context

Start with grounding the climate events selected in their own town or area by responding to prompts around its relevance to their work, local concerns and lived experiences. Reflect on the following questions together and write responses on the card or place sticky notes in the middle of the impact wheel template:

- Q1** How does the topic of < selected climate risk > affect your place?
- Q2** Have there been past examples of impacts related to this?
How were these impacts felt or noticed?
- Q3** Are there any existing plans or priorities in place relating to this topic?

Step 4: Map the impacts

8

Reflect on the following questions together and place sticky notes in the respective quadrants on the impact map template. You may refer to the example impacts provided in the appendix from **page 26 to 30**.



A] Physical impacts

Q1

Which physical infrastructure are you concerned about being impacted?
E.g. energy and power, phone and internet, roads, water.

Q2

What is it that makes these places or things vulnerable?

Q3

Which physical infrastructure are you less concerned about being impacted?



B] Social impacts

Q1

What social support systems and institutions would you be concerned about being impacted? E.g. health care, food supply, schools and work.

Q2

What is it that makes these parts of the community vulnerable?

Q3

Which social infrastructure are you less concerned about being impacted?



C] Personal impacts and vulnerabilities

Q1

Which parts of the community will be most affected and how?

Q2

How would you find out who had been affected?

Q3

What health, social or economic impacts might people experience?

Step 5: Explore interconnections

9

None of these impacts happen in isolation, and very often one impact can cause another one to become larger or smaller. Use the questions below to reflect on how these physical, social and personal impacts affect each other. Where possible, you can also decide whether the interconnections have a positive (as one impact increases, so does the other one) or negative (as one impact increases, the other one decreases) connection. Place notes with your responses on the outermost circle.

Q1 How do the physical and social impacts affect each other?

Q2 How do the social and personal impacts affect each other?

Q3 How do the personal and physical impacts affect each other?

Examples of interconnections:

- Damage to physical infrastructure such as roads could make it harder for people to get access to the food and medication that they need.
- When people are ill, injured, or unable to leave their homes, they may be less likely to be able to work or volunteer, which could affect the local services that are available to others.
- If schools are forced to close, there could be ripple effects on parents' ability to provide childcare, lunch, home education, work and more.



Step 6: Reflections and take-aways

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Use the worksheet provided on **page 31** to reflect on the final take-aways from your discussions and how you wish to carry them forward for adaptation planning and community preparedness. You can print out the worksheet, or simply make a note of the different headings. The key here is capturing your reflections from the activity, so that they can be shared with others and/or returned to later on.

LCAT Impact Mapping Reflections and Takeaways

Group name: _____

Date: _____

Look back at your wheel — local **climate risks, physical, social and personal impacts**, and their areas of intersection — and as a group, reflect on the questions below. These conclusions can be carried forward into the next activity and any ongoing adaptation planning.

Q1. What new impacts did you identify?

Note down what felt particularly important to notice, including anything that surprised the group, or hadn't been considered before

Q2. What areas are most relevant to your development and adaptation plans?

Tick the segments that felt most interesting or important, then note why in the space below

 Physical impacts ☐

 Social impacts ☐

 Personal impacts ☐

Q3. What do you need to prioritise exploring further?

Where do you not have enough information, or which potential impacts will require wider collaboration or emergency planning?

Top 3 headline messages

Who else needs to see this?

Suggested next steps:

Explore the LCAT website

Through this exercise, you would have gotten a sense of how people are thinking about the impacts of climate change, vulnerabilities and priorities for local planning. The LCAT website can help you build on this and explore related resources in detail. Visit <https://lcat.uk> and select your local area on the map. Scroll down to the bottom of the Climate Impact Summary section, and click on this button:

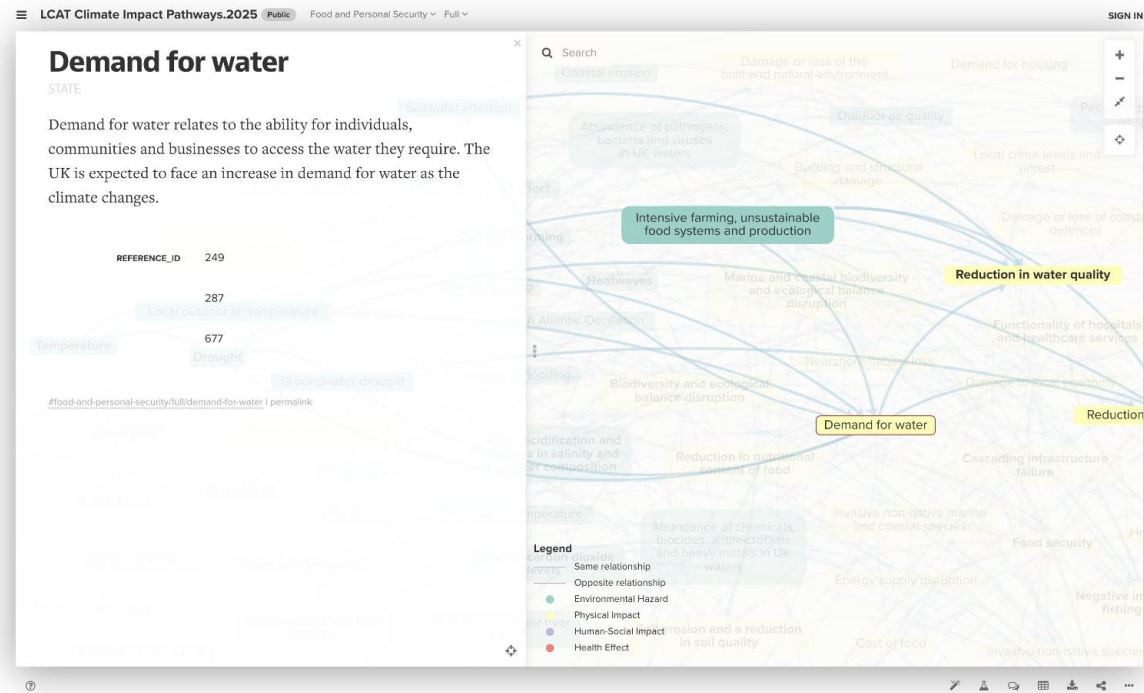


You will then see a complex web of information, called an impact pathway. This shows potential impacts of climate hazards (heat, storms etc.) across similar categories to the ones you just used, e.g. physical impacts.

You can make the impact pathway more or less complex and comprehensive by changing the drop down option between summary and complete. You can also select different categories, e.g. extreme storms or flooding and drought.

Following this, you can:

1. See the impact pathways for multiple climate hazards in detail - this can seem overwhelming, but thanks to ongoing research we know more about these potential impacts and interconnections than ever before
2. Notice what you have added that LCAT does not include - your local knowledge and experience is incredibly important, and can add valuable insight where there is no existing academic research
3. Explore anything in the LCAT that you have not considered yet - it can be hard to notice or predict impacts that we are not already aware of, so consider what might be outside of your existing perspectives
4. Select any type of impact or vulnerability to access journal articles, reports and guidelines
5. Explore related adaptation measures and do the adaptation mapping exercise



While exploring the impact map, you can click on any box or connection and find more information. If you would like to read the peer-reviewed evidence behind any impact or connection, you can use the ID numbers to find it on the Reference List

(<https://docs.google.com/spreadsheets/d/1rrfPiOEN28adM5KZRx97NYg87LztP0t3Qrwl-8TDb9k/edit?gid=0#gid=0>)

Activity 2:

Adaptation Mapping

This exercise is designed to help you identify adaptation measures that can address the concerns highlighted in the impact map, prioritise them and explore next steps to create your adaptation plan. This exercise ideally needs to build on the impact map but you can do it separately with a different mix of people.

Participants

We suggest to do this exercise in-person with a **diverse group of people** who can contribute from their local knowledge and expertise. The participants may include:

- Local residents, workers, and volunteers
- Community organisers and groups engaging with vulnerable communities
- Local councillors and officers across sectors
- Local climate experts or advocates

Duration

The exercise is discussion based and you are free to take as long as you like. However, **we recommend giving it at least an hour**.

Space

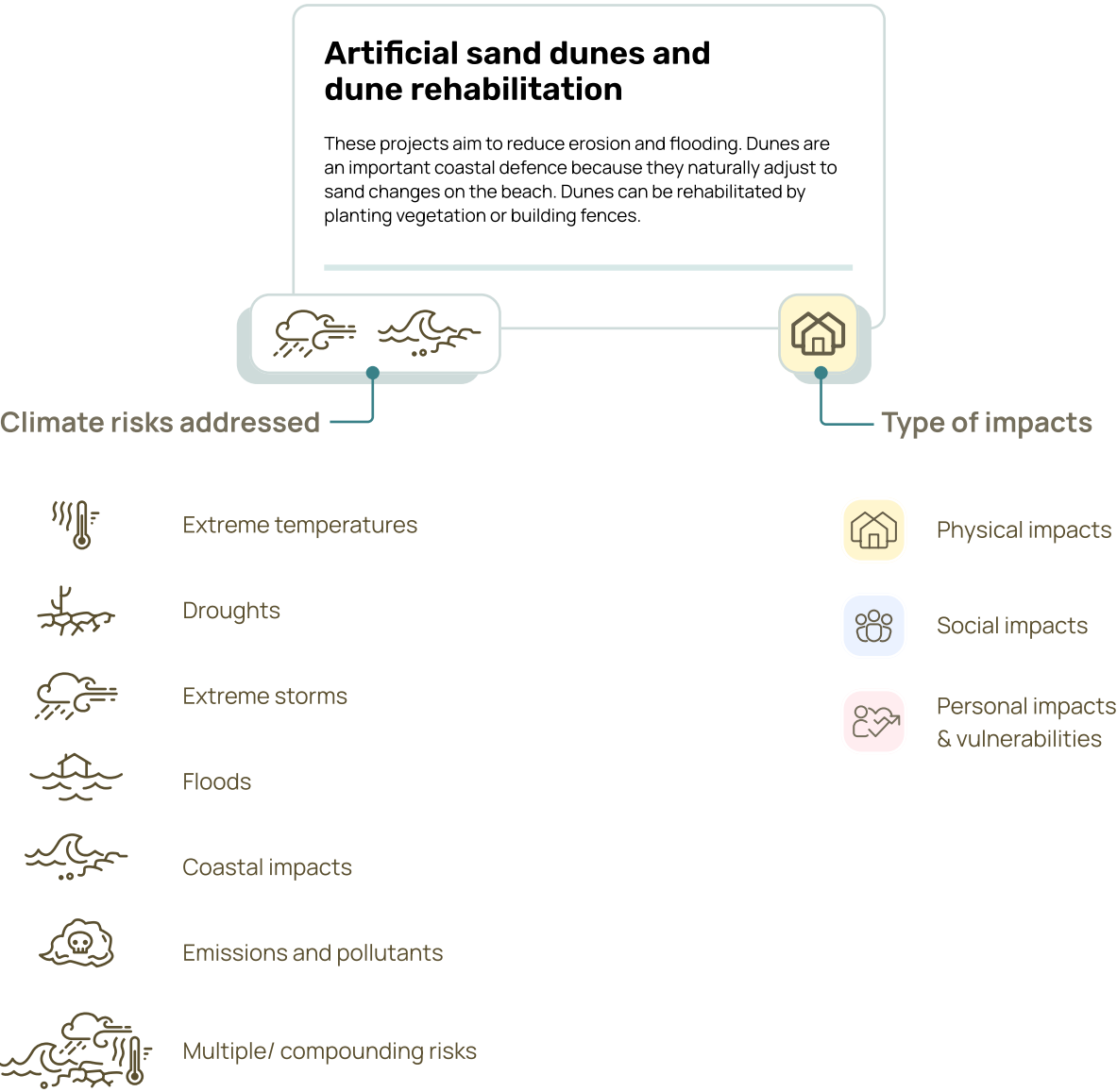
You will need a room to facilitate discussions, accommodating all participants, and a **table or desk to lay out the impact mapping template** for organising your answers.

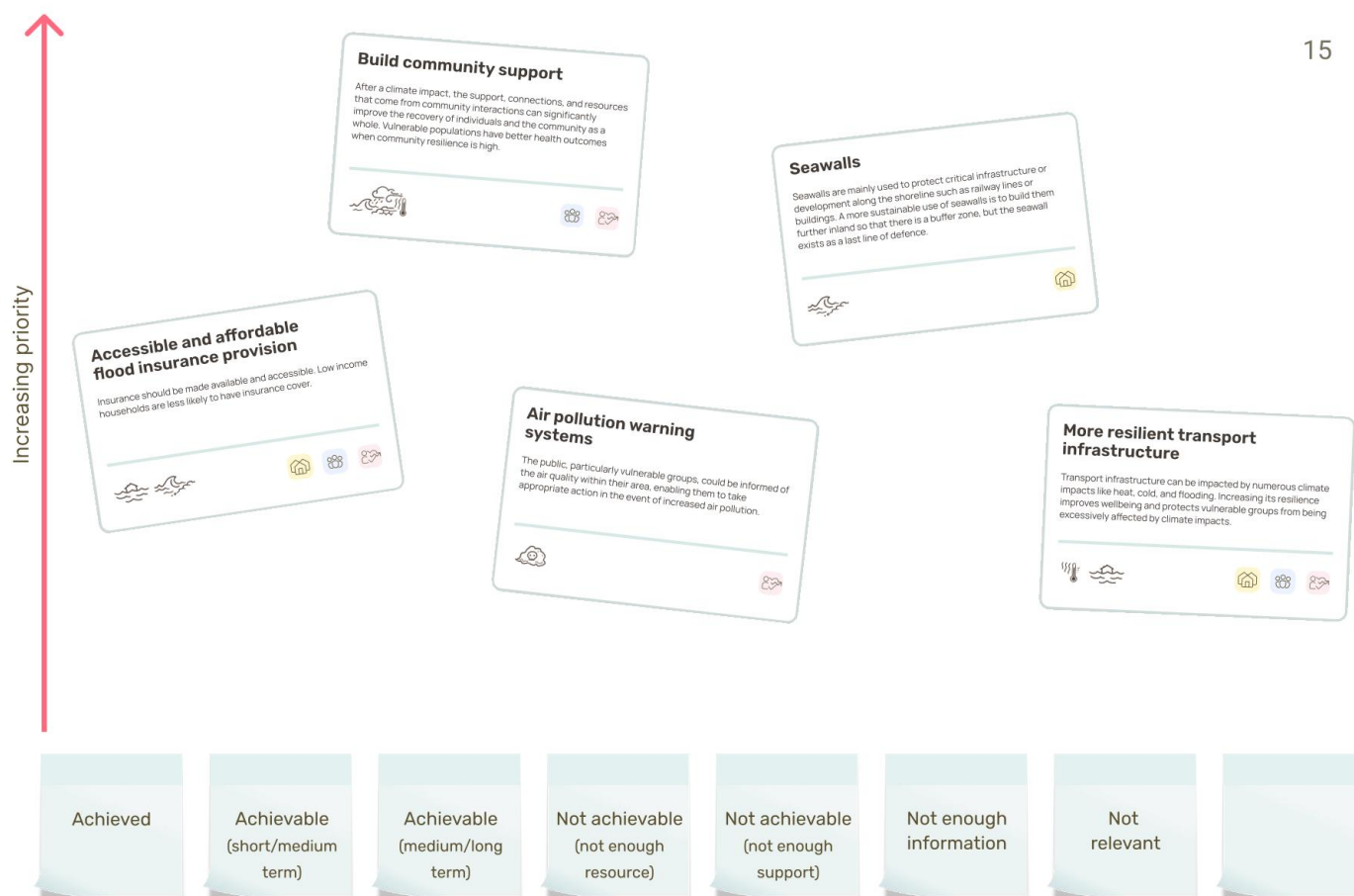
Materials

Find the resources to conduct this exercise from **page 32**. These can be printed on in colour or black and white. Keep some sticky notes handy to map your responses on the template. Cut out the adaptation cards at the end of the appendix, as many as you want to use. Create a grid using the guide in step 1, either on a large piece of paper or spread out on a table.

Step 1: Sort and prioritise

We recommend that you use a random selection of adaptation cards (provided from **page 35-45**), as having some that are more or less familiar or relevant will help with the sorting. But if you prefer you may select ones that feel most interesting, or most relevant to the interconnected impacts that you mapped in the previous exercise.





If an adaptation measure can have a desired ripple effect of addressing multiple physical, social and personal impacts directly or indirectly, for example, you might give it a higher priority. After prioritising, sort these measures in the following categories. You are free to create your own categories or add to the list:

1. Achieved
2. Achievable (short/ medium term)
3. Achievable (medium/ long term)
4. Not achievable (not enough resources)
5. Not achievable (not enough support)
6. Not enough information
7. Not relevant
8. Sticky note left blank for participants to fill in

If the adaptation measure is already implemented or is in planning, place it in the Achieved column, or if it is not relevant to your context, place it under Not relevant. For other cards, place them according to your specific context - i.e. not whether or not you think it should happen, but whether it is or is not achievable **for your group or organisation**.

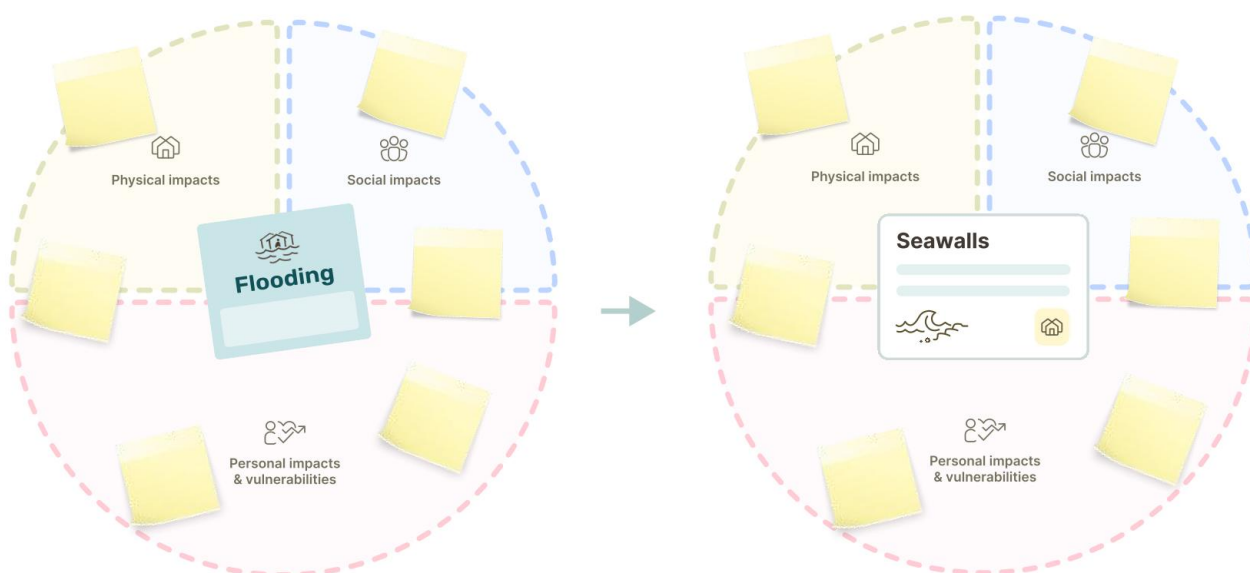
Step 2: Map with impacts (Optional)

16

Do this step if you have already done the impact mapping exercise. Select a handful of adaptation actions from the grid activity. These could be the most relevant, most interesting, or most highly prioritised. Use these cards for this part of the activity.

A] Using the impact map

If doing this exercise in the same session as the impact mapping, take the impact wheel and swap the central card of climate event with different adaptation cards to see the range of impacts it can address directly or as a ripple effect.



B] Using the reflection sheet

If doing this exercise in a different session where you don't have access to the impact wheel, use the worksheet with your reflections to identify adaptation measures that address key priorities.

LCAT Impact Mapping Reflections and Takeaways

Group name: _____ Date: _____

Look back at your wheel — local climate risks, physical, social and personal impacts, and their areas of intersection — and as a group, reflect on the questions below. These conclusions can be carried forward into the next activity and any ongoing adaptation planning.

Q1. What new impacts did you identify?
Note down what felt particularly important to notice, including anything that surprised the group, or hadn't been considered before.

Q2. What areas are most relevant to your development and adaptation plans?
Tick the segments that felt most interesting or important, then note why in the space below.

☒ Physical impacts ☒ Social impacts ☒ Personal impacts

More resilient transport infrastructure
Transport infrastructure can be impacted by numerous climate impacts like heat, cold, and flooding, increasing its resilience improves safety and reduces the risk of people from being

Build community support
After a climate impact, the support, connections, and resources that come from community interactions can significantly improve the recovery and resilience of the community as a whole.

Accessible and affordable flood insurance provision
Insurance should be made available and accessible. Low income households are less likely to have insurance cover.

Step 3: Map next steps for adaptation planning

After sorting the adaptation measures based on priority and potential impact, discuss in your group and fill out the sheets on **page 32 to 34**. You may wish to use this to work towards an adaptation plan.

Adaptations List the top priority and high impact adaptation actions across the relevant columns.

Your role Write down your team, group, or organisation's role in making the adaptation action happen. Consider your level of agency, and the resources you have to use. List the other organisations responsible for implementing these measures, including collaborators, and the communities to involve.

Next steps Select from the example actions in each column or write your own plans to work towards each adaptation action.

Achieved

Adaptation measures identified:

Your role:

Next steps for adaptation planning

☐ Evaluate its impact

☐ Strengthen impact

☐ Communicate the impact

Achievable (short/medium term)

Adaptation measures identified:

Your role:

Next steps for adaptation planning

☐ Find resource

☐ Get support

☐ Plan implementation

Achievable (medium/long term)

Adaptation measures identified:

Your role:

Next steps for adaptation planning

☐ Lobby for action

☐ Communicate its importance

☐ Provide support to others

Not achievable (not enough support)

Adaptation measures identified:

Your role:

Next steps for adaptation planning

☐ Gather information

☐ Ask for help

Not enough information

Adaptation measures identified:

Your role:

Next steps for adaptation planning

☐ Gather information

☐ Ask for help

Suggested next steps:

Explore the LCAT website

The final section of [LCAT](#) features a comprehensive list of potential adaptation actions that can be filtered to help you find actions that are relevant to your work.

Restore rivers, wetlands and floodplains

Description:

Restoring rivers, wetlands and floodplains can provide multiple benefits including natural flood management. Successful restoration requires a skilled workforce and public support.

Related impact pathways: Coastal Security, Flooding and Drought, Food and Personal Security, Marine Health Hazards

Case Studies:

- [Technologies for climate change adaptation](#)
- [Working with Natural Processes to reduce flood risk](#)
- [Rivers by design: Rethinking development and river restoration](#)

References:

Journal Article (5)

Report (11)

Each adaptation action features a description, a list of impact categories that it relates to, a list of case studies (where available), and a collection of references which you can expand and explore further.

Not all of the actions will be relevant to you. Some may be outside of the scope of your area, while some may not be possible for you to influence. But if you would like to learn more about the potential actions, or consider other options beyond the cards you have been sorting, then this list is a good next step to look at.

Engage others

Consider sharing your conclusions from this activity with other groups and organisations that have the responsibility and/or resources to take action on some of the adaptation actions that you have agreed are a priority.

Use these discussions to create or improve plans to collaborate on making some of these adaptations happen in the short, medium, or long term.

Further Information

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There is a constantly growing collection of resources and tools that can help you effectively engage with climate adaptation. Here are some recommendations of where you can access more support and information:

LCAT Guide to Local Climate Adaptation

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

<https://www.ecehh.org/wp/wp-content/uploads/2021/09/LCAT-Introduction-to-Local-Climate-Adaptation-May-2024.pdf>

LCAT Handbook

Practical and technical information about the tool

https://www.ecehh.org/wp/wp-content/uploads/2025/12/LCAT-USER-GUIDE_FINAL-Dec-25.pdf

Met Office Local Authority Climate Service

Tools and resources to support councils to better understand climate change and adaptation

<https://climatedataportal.metoffice.gov.uk/pages/lacs>

What are the Impacts of Climate Change in the UK?

Interactive maps to explore the potential impacts of 2°C warming in the 2030s

<https://storymaps.arcgis.com/stories/bb62a2d844e74174ac137e0433038440>

OpenCLIM

Integrated assessment framework that brings together existing models for highlighting the impacts of climate change and informing adaptation needs at national and place-based scales

<https://tyndall.ac.uk/projects/openclim/>

Coastal Risk Screening Tool

Interactive maps of potential sea level rise and coastal flooding

<https://coastal.climatecentral.org/>

Adaptation Community of Practice

Monthly online peer-led sessions on what it means to work on climate adaptation

<https://gfn.exeter.ac.uk/adaptation-community-of-practice/>

The MACC Hub

Case studies, webinars, and resources to support action on adaptation

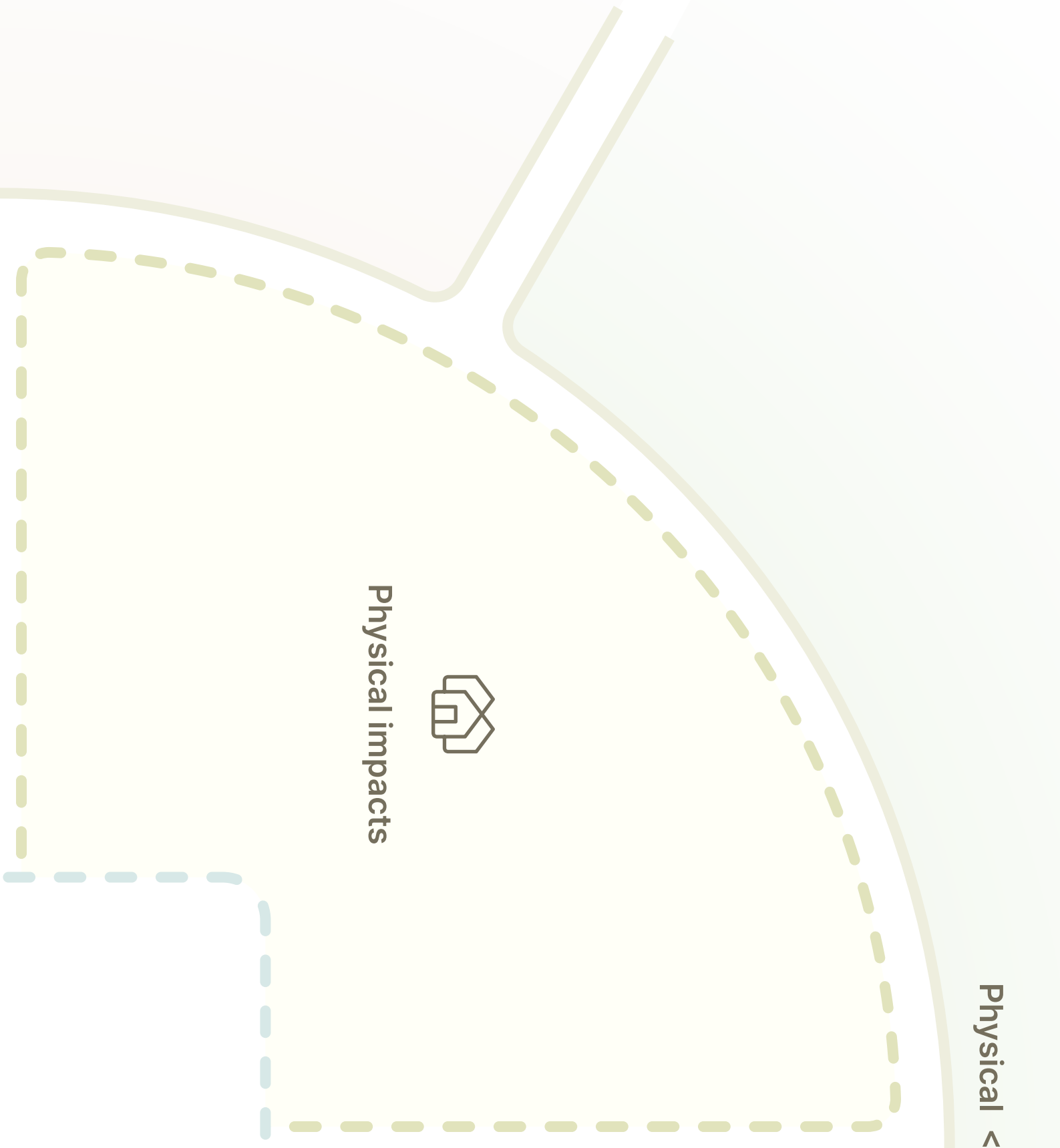
<https://macchub.co.uk/>

Appendix

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From the next page, you will find all the resources to conduct both the exercises.

1. Impact Mapping	21 - 31
Impact wheel template	21-24
Climate risk cards	25
Examples of impacts	26-30
Reflection sheet	31
2. Adaptation Mapping	32 - 45
Adaptation sorting and planning worksheets	32-34
Adaptation action cards	35-45



> Social

TEMP -
LATE



Social impacts

Personal < > Physical

Personal impacts

o

TEMP - LATE



& Vulnerabilities

Social < > Personal

IMPACT WHEEL



Flooding

When water cannot drain away quickly enough, land can become flooded. This can be caused by heavy rainfall, strong ocean waves, snow melting, or breaking dams.

Write details...



Heat and Drought

Heat and drought are considered significant risks when they occur over a long, unbroken period, usually three days or more.

Write details...



Coastal Erosion

The loss of land along a coastline, caused by strong waves and winds. Impacts can vary greatly based on the level of human interaction with the area at risk.

Write details...



Extreme Storms

Associated with strong winds, heavy rain or hail, wildfires and more, extreme storms can mean severe weather but also weather that is unseasonal and unprepared for at particular times of year.

Write details...



Write details...



Write details...



ENVIRONMENTAL IMPACTS

Extreme temperatures

- Heatwaves
- Urban heat-island
- Wildfires
- Warmer winters
- Extreme cold spells



ENVIRONMENTAL IMPACTS

Rains and Floods

- Extreme rainfall
- Erratic rainfall
- River and surface flooding



ENVIRONMENTAL IMPACTS

Storms

- Wind storms
- Extratropical cyclones
- Thunderstorms



ENVIRONMENTAL IMPACTS

Droughts

- Groundwater decline
- Reduced summer river flows
- Subsidence
- Wildfires



ENVIRONMENTAL IMPACTS

Ocean and coastal impacts

- Sea-level rise
- Coastal flooding
- Coastal erosion
- Saltwater intrusion
- Ocean acidification



ENVIRONMENTAL IMPACTS

Emissions and pollutants

- Elevated CO2 levels
- Air pollution and poor AQI
- Chemical pollution in soil and water
- Harmful algal blooms



PHYSICAL IMPACTS

Built environment

- Cascading infrastructure failure
- Damage or loss of coastal defences
- Damage to shelter and housing
- Demand for housing



PHYSICAL IMPACTS

Energy infrastructure

- Energy supply disruption
- Fuel poverty risks
- Cooling water potential



PHYSICAL IMPACTS

Water infrastructure

- Reduction in water quality
- Reduction in water availability
- Demand for water



PHYSICAL IMPACTS

Transportation

- Public transport disruption
- Railway problems
- Overheating in public transport
- Active transport use
- Fuel poverty risks



PHYSICAL IMPACTS

Ecosystem and biodiversity

- Disruption of ecological balance
- Invasive non-native species
- Loss of natural habitat
- Loss of greencover
- Pathogenic bacteria and viruses



PHYSICAL IMPACTS

Coastal ecosystem

- Damage or loss of coastal defences
- Risk to offshore infrastructure
- Recreational and coastal activities
- Abundance of marine litter



SOCIAL IMPACTS

Local economy

- Damage to cultural heritage
- Recreational outdoor activities
- Domestic tourism
- Work performance and productivity
- Occupational activities



SOCIAL IMPACTS

Food security

- Soil erosion and poor soil quality
- Length of growing season
- Reduction in nutritional content
- Impacts on livestock
- Impact on food supply chain
- Cost of food



SOCIAL IMPACTS

Social safety

- Homelessness
- Forced displacement
- Immigration and migration
- Acclimatisation to heat
- Conflict and civil unrest



SOCIAL IMPACTS

Access to safe outdoor spaces

- Urban green and blue space decline
- Recreational outdoor activities
- Domestic tourism
- Connectedness to nature



SOCIAL IMPACTS

Healthcare

- Hospital admissions
- Functionality of healthcare services
- Functionality of community care
- Functionality of care homes



SOCIAL IMPACTS

Education

- Impact on schools
- Children's mobility
- Children's health
- Connectedness to nature
- Recreational outdoor activities



PERSONAL IMPACTS

Mental health and wellbeing

- Social isolation
- Climate anxiety and grief of loss
- Cognitive performance



PERSONAL IMPACTS

Lifestyle and dietary impacts

- Malnutrition
- Obesity
- Diabetes
- Bone health and immune system



PERSONAL IMPACTS

Chronic health conditions

- Cardiovascular diseases
- Respiratory diseases
- Cancers



PERSONAL IMPACTS

Physical harm and dangers

- Drowning or flood-related accidents
- New or pre-existing disability
- Injuries



PERSONAL IMPACTS

Exposure to pathogens

- Vector-borne diseases
- Pandemics and zoonotic diseases
- Antimicrobial resistance



PERSONAL IMPACTS

Exposure to pollutants

- Illness from biological contaminants
- Allergies
- Skin conditions and diseases
- Mental and cognitive health



VULNERABILITIES

Older People (over 65)

- More sensitive to climate impacts, finding it harder to regulate temperatures during extreme heat.
- More likely to have other physical vulnerabilities such as poor health or reduced mobility.



VULNERABILITIES

Children (under 5)

- Less able to regulate their own temperatures in high heats.
- Reliant on their care givers to support them to adapt to hazards or temperature changes.



VULNERABILITIES

People with disabilities & limited mobility

- May not be able to respond quickly during an extreme weather event.
- The support network they rely on can be reduced during extreme weather events.



VULNERABILITIES

People on low incomes

- Less financial means by which to prepare for, respond to and recover from a changing climate and extreme weather.
- More likely to live in properties that are less resilient to flooding and more exposed to extreme heat



VULNERABILITIES

Tenants & temporary residents

- Lack local knowledge about localised risks, local services, or how to take action during an extreme weather event.
- Less likely to have contents insurance to cover loss and damage.



VULNERABILITIES

Socially isolated people

- Lack of support networks to alert them to an extreme event, support them to respond and recover.
- More likely to be unknown by community and local services making them hard to identify and help.

LCAT Impact Mapping

Reflections and Takeaways

Group name: _____

Date: _____

Look back at your wheel — local **climate risks, physical, social and personal impacts**, and their areas of intersection — and as a group, reflect on the questions below. These conclusions can be carried forward into the next activity and any ongoing adaptation planning.

Q1. What new impacts did you identify?

Note down what felt particularly important to notice, including anything that surprised the group, or hadn't been considered before

Q2. What areas are most relevant to your development and adaptation plans?

Tick the segments that felt most interesting or important, then note why in the space below



Physical impacts

☐


Social impacts

☐


Personal impacts

☐

Q3. What do you need to prioritise exploring further?

Where do you not have enough information, or which potential impacts will require wider collaboration or emergency planning?

Top 3 headline messages

Who else needs to see this?

Achieved

Adaptation measures identified:

Your role:

Next steps for
adaptation planning

- ☐ Evaluate its impact
- ☐ Strengthen impact
- ☐ Communicate the impact

Achievable (short/medium term)

Adaptation measures identified:

Your role:

Next steps for
adaptation planning

- ☐ Find resource
- ☐ Get support
- ☐ Plan implementation

**Achievable
(medium/long term)**

Adaptation measures identified:

Your role:

**Next steps for
adaptation planning**

- ☐ Find resource
- ☐ Get support
- ☐ Identify what needs to happen first

**Not achievable
(not enough resource)**

Adaptation measures identified:

Your role:

**Next steps for
adaptation planning**

- ☐ Lobby for action
- ☐ Communicate its importance
- ☐ Provide support to others

Not achievable (not enough support)

Adaptation measures identified:

Your role:

Next steps for
adaptation planning

- ☐ Lobby for action
- ☐ Communicate its importance
- ☐ Ask support from relevant groups

Not enough information

Adaptation measures identified:

Your role:

Next steps for
adaptation planning

- ☐ Gather information
- ☐ Ask for help

Build community support

After a climate impact, the support, connections, and resources that come from community interactions can significantly improve the recovery of individuals and the community as a whole. Vulnerable populations have better health outcomes when community resilience is high.



Accessible and affordable flood insurance provision

Insurance should be made available and accessible. Low income households are less likely to have insurance cover.



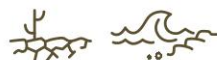
Seawalls

Seawalls are mainly used to protect critical infrastructure or development along the shoreline such as railway lines or buildings. A more sustainable use of seawalls is to build them further inland so that there is a buffer zone, but the seawall exists as a last line of defence.



Saltwater resilient crops

Saltwater resilient crops are tolerant or thrive when exposed to saltwater. Planting these crops can ensure that if coastal flooding or saltwater intrusion occurs the crops do not fail.



Air pollution warning systems

The public, particularly vulnerable groups, could be informed of the air quality within their area, enabling them to take appropriate action in the event of increased air pollution.



Artificial sand dunes and dune rehabilitation

These projects aim to reduce erosion and flooding. Dunes are an important coastal defence because they naturally adjust to sand changes on the beach. Dunes can be rehabilitated by planting vegetation or building fences.



Beach clean events

Due to the harmful nature of microplastics and chemical pollutants, methods to manage and remove plastic waste and litter are required. For example, beach cleans can help to reduce the abundance of litter within the environment.



More resilient transport infrastructure

Transport infrastructure can be impacted by numerous climate impacts like heat, cold, and flooding. Increasing its resilience improves wellbeing and protects vulnerable groups from being excessively affected by climate impacts.



Congestion charging zone within a clean air zone

Where traffic congestion is contributing to poor air quality, consider incorporating a congestion charging zone within the clean air zone.



Promote the efficient use of water

Efficient use of water can reduce individual volume use and limit scarcity of water supplies.



Adapt the fishing industry

Adapting fishing practices can help to make the fishing industry resilient to change. The arrival of new species due to warm temperatures could be considered as an opportunity. Monitoring changes to identify potential impacts or opportunities can improve adaptation practices.



Build community engagement

Successful climate adaptation requires communities to understand their local climate risks, the resources available to them, and the benefits of getting involved. Communities can reduce future risk and promote more sustainable futures with increased climate science literacy.



Improve housing quality including new developments

Examples include building materials that recover from flood quickly, renewable energy systems, low impact materials, and adequate ventilation.



Coastal setback

Coastal setback is a proactive decision to define a minimum distance from the shoreline that development may occur. These setbacks can be done to adapt to flooding or erosion. Pursuing coastal setback allows for a buffer zone between the impending climate impacts and human infrastructure.



Avoid the development of buildings in flood risk areas

Building in areas at risk of flooding increases people's exposure risk, particularly in areas such as floodplains. Avoiding building in areas with a history of flooding or at an increased future risk can limit exposure.



Conserve and maintain existing green and blue spaces

Existing green and blue spaces should be maintained to provide ecosystem services.



Community Relocation

Some climate impacts, particularly coastal, pose wide- spread threats to communities. Other adaptations should be considered first, but early action could reduce the social and economic impact. If relocation happens, ensure that vulnerable populations are not displaced or left behind.



Routine monitoring of UK food security

Anticipating potential future climate risks which may impact the UK food system can help to ensure that public health impacts are minimised and groups vulnerable to food insecurity are protected.



Improve resilience of private water supplies

Suggestions to improve the water supplies include risk assessments of water quality issues from various climate impacts, developing household water storage capacity, and monitoring and anticipating water demand fluctuation.



Make railway tracks more resilient to heat

Ensuring railway tracks are resilient to heat impacts would reduce the vulnerability of the rail during hot weather. Sensitive electronic signal equipment should be installed appropriately so it does not overheat.



Early flood warning systems

Early flood warning systems can increase the ability to plan and prepare in the event of heavy rainfall and potential flood events. People whose property or business is at risk of flooding can sign up for the free flood warning service.



Develop warm spaces for local population use

Warm spaces should be implemented in communities to provide a safe, supportive, and caring environment to those at risk due to cold temperatures in winter.



Increase access to green and blue spaces

Increasing access to green and blue spaces provides multiple benefits to health and wellbeing.



Encourage less unhealthy processed food in diets

Reducing the proportion of processed food in people's diets and improving processing methods can limit exposure to the associated health impacts. This could involve taxes on unhealthy ingredients and health education.



Use speed limits and average speed technology

Speed limits and average speed technology on the roadside can promote a smoother driving style and speed reduction, with positive impacts on air pollution and the number of accidents



More fruit, vegetables and plant-based food in diets

This can help people to become more resilient to certain health conditions exasperated by climate change and reduces pressure on land and water use, reducing the vulnerability of food systems.



Reduction of heat risk in care settings

Care homes could benefit from simple measures at low or no cost at all, such as switching off unnecessary heat sources and applying rules for window opening and use of curtains.



Introduce driver training to reduce emissions

Introduce fuel-efficient driving as part of any training for staff who drive as part of their work. This could include reducing rapid accelerations and decelerations, and vehicle care, e.g. inflating tyres to the recommended pressure.



Identify and monitor areas at risk of flooding

Identifying and monitoring areas at risk of flooding can enable individuals and communities to prepare and adapt to flood risks.



Property flood resilience measures

Strategies such as blocking water entry points, using water resistant paint, replacing carpets with non-porous materials and raising electrical points, meters and boilers above flood level can help to limit flood impacts to existing buildings.



Increase regulation and transparency in food labelling

Increasing transparency in food labelling can increase people's awareness of products in relation to health and sustainability and enable them to make better choices on products with less environmental and health impacts.



Introduce clean air zones

Consider introducing a clean air zone that supports zero- and low-emission travel (including active travel) and aims to reduce exposure to air pollution across the whole zone rather than focusing on air pollution hotspots.



Routine monitoring and treatment of seafood

Regulatory control measures should be used to monitor water quality in seafood harvest waters. Methods to reduce pathogens within shellfish can limit the risk of infection.



Strategies and interventions to reduce food waste

Reducing food waste can reduce the need for additional production and potentially freeing-up land for other uses. The highest percentage of food waste is from households, although manufacturers and hospitality also contribute.



Antimicrobial resistance planning

The pressures of climate change will increase reliance on antibiotics to foster the health and wellbeing of people. Further planning to mitigate and prevent additional antimicrobial resistance consequences is necessary.



Natural flood management strategies

Examples include woodland planting, floodplain restoration, and sustainable urban drainage systems. These strategies can also be used to reduce the concentration of pollution entering aquatic ecosystems.



Installation of permeable pavements

Pavement surface temperature influences air temperature, so permeable pavements can be used as an alternative to reduce heat impacts. Permeable pavements can reduce flooding through increasing drainage and limiting run-off.



Take precautions for cyclists at busy roads

Where busy roads are used consider providing as much space as possible between the cyclist and motorised vehicles. Reduce the time cyclists spend at highly polluted sites, including some junctions.



Relevant retrofit of existing buildings

Some examples of retrofit actions include the insulation of walls, roofs, and floors, replacing windows and doors, increase airtightness, renewable rooftop installation, and protection for openings to resist wind, debris, and rain.



Do not site buildings where pollution levels will be high

Minimise the exposure of vulnerable groups to air pollution by not siting buildings (such as schools, nurseries and care homes) in areas where pollution levels will be high.



Modify bridges vulnerable to flood damage

Bridges vulnerable to flood damage and infrastructure contained within, such as pipes and cables, should be modified.



Expand education on health and drought risks

Increasing education on the health impacts and risks associated with climate impacts can enable people to invest, adapt and prepare more effectively.



Include air pollution in planning

Include air pollution in 'plan making' by all tiers of local government, regional bodies, and transport authorities. Local Plans and other strategic planning processes (such as the core strategy and health and wellbeing strategies) should include zero- and low-emission travel.



Access to rehabilitation services

After climate impacts occur, people with new or pre-existing disability, disease, or conditions will require rehabilitation through physical, mental, or occupational therapy. Access to these services is crucial for wellbeing.



Installation of reflective surfaces

Adaptation through design measures such as reflective surfaces can help to reduce overheating risks.



Education and advice to reduce exposure to low air quality

Measures to educate people on how to reduce exposure to low air quality can limit negative health impacts of air pollution.



Provide a choice of cycle routes

Provide a choice of cycle routes, including routes that avoid highly polluted roads. Ideally use quiet streets or segregated routes.



Installation of cool and green roofs

Cool and green roofs can reflect heat and help to absorb water and reduce rainfall run-off, reducing the risk of flooding and pollution.



Restore rivers, wetlands and floodplains

Restoring rivers, wetlands and floodplains can provide multiple benefits including natural flood management. Successful restoration requires a skilled workforce and public support.



Promote uptake of electric vehicles

Strategies for pollution reduction include the promotion of electric vehicles.



Temporary restriction of beach access

Temporary restriction of access to beaches when harmful algal blooms and a high abundance of bacteria are present can reduce the number of people exposed and limit the risk of infection.



Restore peatlands

Rewetted peatlands have the potential to provide various benefits including natural flood management and climate change mitigation, although peatland restoration should be undertaken based upon scientific research to avoid negative impacts.



Expand education on vector-borne diseases

For example, strategies for education in rural areas can enable people to take action to prevent or limit exposure to ticks. Providing training to healthcare professionals can help them identify and respond to vector-borne diseases.



Increase water-source storage capacity

This can ensure that reserves from excess winter rainfall are available during periods of water scarcity. Harvesting of water, such as on-farm reservoirs could increase the ability to conserve groundwater resources to a sustainable level.



Provide charging points for electric vehicles

Providing charge points for electric vehicles in workplaces, commercial developments and residential areas, is a strategy for achieving zero- and low emission travel.



Address emissions from public sector transport activities

Consider making low vehicle emissions (nitrogen oxides and particles) one of the criteria when making routine procurement decisions. This could include selecting low-emission vehicles, including electric vehicles.



Encourage use of zero- or low emission vehicles for deliveries

Encourage the use of zero- or low emission vehicles for deliveries to retail, office, residential or other sites in the clean air zone, particularly for the last mile of deliveries.



Plan new buildings to reduce the need for motorised travel

The need for motorised travel could be reduced by considering the location and design of new estates, facilities and buildings when planning.



Installation of cool pavements

Cool pavements/roads with highly reflective coating reduces air temperatures near paved surfaces. Consider installing these in pedestrianized areas, cycling lanes and cycle hire stations. This is especially important in more urbanized areas.



Expand education on healthy and sustainable food choices

People's dietary choices and diets are shaped by numerous factors. Clearer educational approaches may be more effective, e.g. eating local and seasonal produce is a simple choice as long as it is accessible and affordable.



Support 'no vehicle idling' areas

This is particularly important where vulnerable groups congregate (such as outside schools, hospitals and care homes) and in areas where exposure to road-traffic-related air pollution is high.



Invest in increasing renewable energy sources

Increasing energy production from renewable energy sources can increase resilience of UK energy systems and support the UK in meeting its goals to reduce greenhouse gasses and carbon emissions.



Nature-based carbon storage

Nature-based carbon storage describes the capture of carbon emissions through vegetation and sediment like plants, trees, soil, or the ocean. Nature-based carbon storage is one of the most critical ecosystem services at risk with a changing climate.



Provide cooling shelters

Cooling Centres are designated locations which provide people with a cool environment to escape the heat. Cooling shelters should be provided as a public health intervention to address heat risks within the community. Passive cooling shelters which do not rely on energy use are prioritised.



Encourage active travel

Active transport, through methods such as walking and cycling, should be encouraged to promote health and wellbeing, as well as reducing air pollution associated with motorised travel.



Undertake further research and increase collaboration

It is essential that scientific knowledge is shared effectively in order to influence change and provide recommendations. Ensuring researchers and stakeholders from different sectors collaborate can help to achieve more adaptations.



Plant suitable street trees in viable urban locations

Trees planted within urban environments can provide multiple benefits, including improving air quality and reducing flood risks, although species should be carefully selected.



Cold weather plans

Services should provide alerts and a series of appropriate actions on the negative cold weather health effects, enabling people to respond and prepare appropriately, particularly for vulnerable populations.



Increase awareness of antimicrobial resistance

Awareness campaigns and training should be undertaken to increase people's understanding of the risks associated with antimicrobial resistance and increase knowledge on how they can reduce the impacts.



Sign up for the UKHSA Weather Health Alerting System

The Weather-Health Alert System was created by UK Health Security Agency and the Met Office. This system covers England and provides alerts for heat-health and cold-health concerns.



Increase biodiversity

Biodiverse ecosystems are more resilient to climate change and provide multiple ecosystem services. Biodiversity can be increased through protecting existing ecosystems by reducing negative pressures which enable natural regeneration.



Communicate heat health action plans

Heat health action plans should be communicated to ensure interventions are effectively implemented.



Increase the resilience of food supply chains

Ensuring transport is resilient to climate change impacts can help to limit impacts to food supply and distribution. Encouraging local, seasonal produce can reduce pressure on transport networks, reducing emissions in some cases.



Ensure adequate mental health service provision

Mental healthcare services should be in place to reduce the negative health impacts and associated physical health conditions, particularly in relation to the stress of climate change impacts.



Use pollen count public warning systems

Pollen count warning systems can enable people to take action when pollen forecasts are high.



Rapid provision of healthcare during and after floods

Establishing health clinics to people experiencing or who have experienced flooding can ensure adequate healthcare service provision.



Use heatwave warning systems

Heatwave plans are good at protecting people during the hottest days, but less effective in weather where no alert is issued. Many people, including the most vulnerable, are not taking all of the Heatwave Plan's recommended actions to protect themselves and others.



Wildfire prevention and management strategies

Land can be managed to reduce wildfires from spreading through techniques such as grazing and wetland restoration. It is also beneficial to increase the public awareness of wildfire risks and implications.



Reintroduce beavers into viable sites

Research suggests beaver behaviour reduces flood risk, trapping sediment and increasing biodiversity. During periods of drought, water slowed and stored by dams can protect local ecosystems, ensuring they have water access.



Encourage outdoor activities

Spending time outdoors provides multiple health and wellbeing benefits, including improving immunity. However, care should be undertaken to reduce exposure to hazards and pathogens within the environment which may impact health.



Resilience monitoring and horizon-scanning

Improved surveillance, horizon-scanning, and modelling capability through local and international collaboration is required for identification and management of emerging risks.



Enhance drought monitoring and early warning systems

Drought monitoring and warning systems can help to identify the emergence of drought and increase the ability to prepare.



Improvement of ventilation

Buildings should be designed and adapted to ensure that they are well ventilated, to increase airflow and maintain rooms at comfortable temperatures. Improved indoor ventilation can reduce mould and moisture associated with flooding and heavy rainfall.



Use adaptation pathways and tipping points in planning

Climate adaptation plans should include different scenarios and aims depending on the outcome of global policy and climate events. This allows for flexibility in choosing the correct adaptation actions based on changing pressures.



Increase tree and woodland cover in viable locations

Woodland creation and tree planting within viable locations can provide multiple benefits. Tree species should be carefully selected based upon the location considered.



Community-focused adaptation strategies

Communities and individuals should be educated on how they can take action for both climate change adaptation and mitigation strategies and become more resilient.



Installation of internal blinds or curtains

Internal blinds or curtains can be installed as a passive cooling measure to reduce internal heat.



Plan adaptations to protect electricity infrastructure

Electricity substations and infrastructure should be adapted to protect them where there is a known or potential risk of flooding or overheating.

