

Climate Cost Working Forum

4 July 2025

City Hall, London

- **Invite-only** one-day collaborative workshop at City Hall, London.
- **Date & Time:** 4 July, 09:00–17:00
- **Purpose:** Develop guidance to help organisations generate real-world, bottom-up data on climate-related costs (impacts and the financial benefits of adaptation).
- **Organised** by the London Climate Ready Partnership, with support from Arup.
- **Participants:** Key organisations with London-based operations and assets, alongside cross-cutting experts.
- **Audience:** Not limited to climate specialists — includes professionals across organisational functions (e.g. strategy, business planning, delivery, risk, assurance, systems, and estate management). Attendees selected for their expertise.
- **Keynote:** Emma Howard-Boyd, CBE (Chair of ClientEarth’s Global Board, Chair of Climate Resilience, and former Chair of the Environment Agency).
- **Format:** Guided breakout workshops and group discussion. Pre-briefing materials provided in advance.
- **Outcome:** LCRP will draft a “**getting started guide**” based on workshop outputs and informed by existing guidance and standards, to be shared in draft for attendee feedback before publication. LCRP will also support continued collaboration and knowledge sharing post-event.

Problem statement

- The **climate has already changed**, and organisations are facing impacts on assets, operations, staff, and customers — affecting costs, service reliability, and strategic progress.
- Climate change will continue for at least the next century, with increasingly severe **impacts driven by both average climate shifts and extreme weather events**.
- Adaptation is urgently needed regardless of decarbonisation progress — **it's typically cheaper to adapt than to bear the costs of inaction**.
- Many decision-makers **lack the tools to factor adaptation into project and operational design** using quantified cost-benefit analysis.
- **Some data exists** (see next slide and Appendix A), **but it is sparse** and often not relevant to specific organisations, assets, or operations.
- **Existing accessible data is typically high-level** (e.g. broad regions or asset types) and qualitative; **generating useful insights often requires time-consuming, bespoke research**.
- The **lack of tools and detailed, organisation-specific data** hampers both the business case for adaptation and understanding of what actions are needed.
- **Most organisations are currently absorbing the costs of climate impacts** rather than addressing them proactively.

Examples of data for case making (1)

Generalised by adaptation measure type – Some general cost benefit data for types of adaptation measure, but limit sector specific.



“In the absence of further adaptation, the number of risks with annual impacts costing of the order of £billions per year is likely to triple by the 2080s....” (p.13)
[\(Hyperlink\)](#)

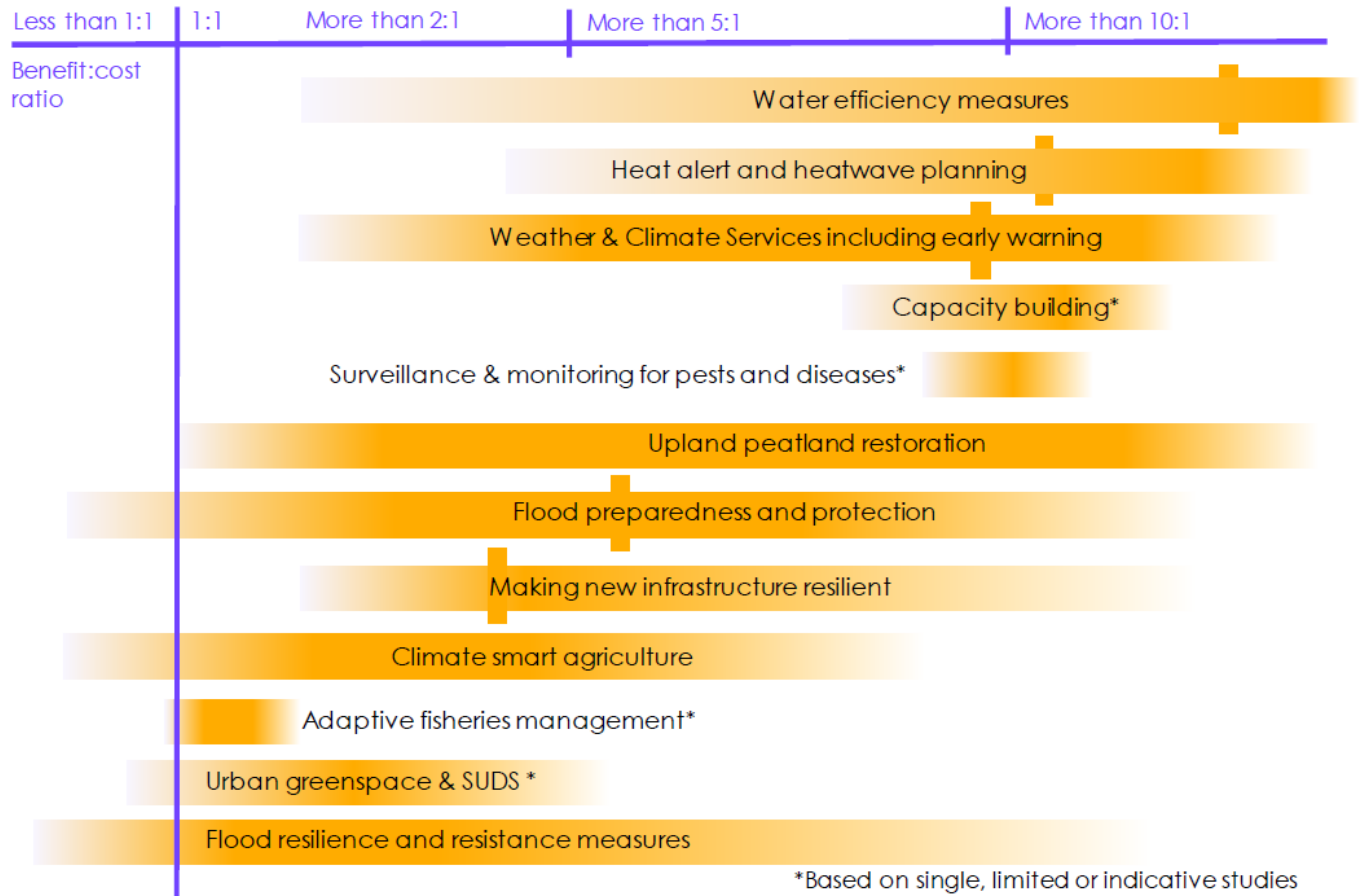


Fig 4, P. 28 Benefit-cost ratios of adaptation measures included in CCRA3

Examples of data for case making (2)

Insurance Data – Used to express the financial impact of specific events or aggregated across all claims over time to illustrate the financial impact of climate change.



([Hyperlink](#))



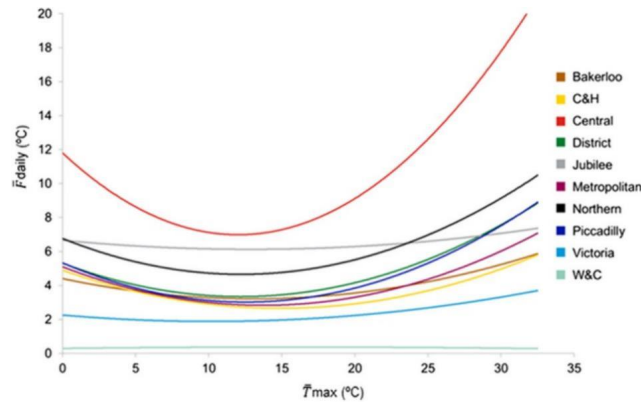
Aviva said extreme weather damages for the decade to 2023 hit \$2tn, while GallagherRE said the figure was \$400bn in 2024. ([Hyperlink](#))

Examples of data for case making (3)

Organisation specific – Here are some examples from Transport for London....

Quantitative

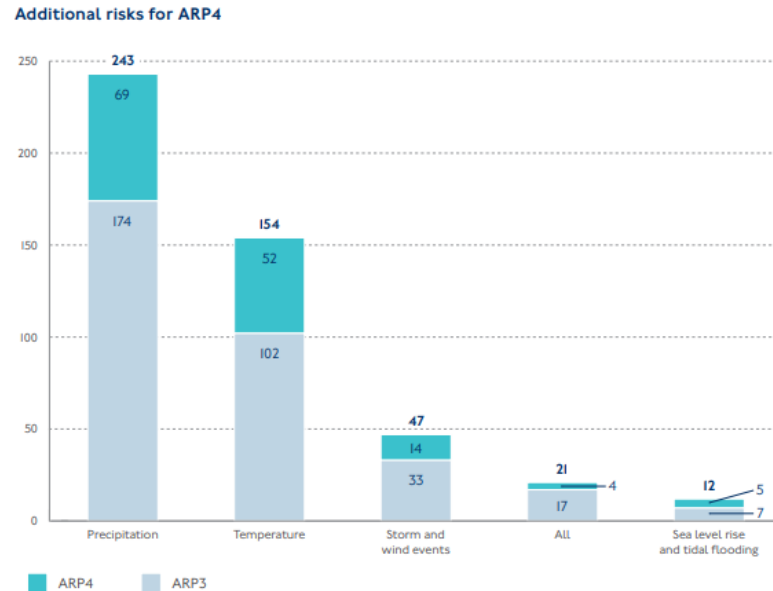
A year-long research project for TfL created quantified data on underlying relationship between ambient air temperature and the performance of the London Underground network.



(See appendix for more detail)

Qualitative

TfL climate risk assessment for their 4th Adaptation Reporting Power Submission.



Single event

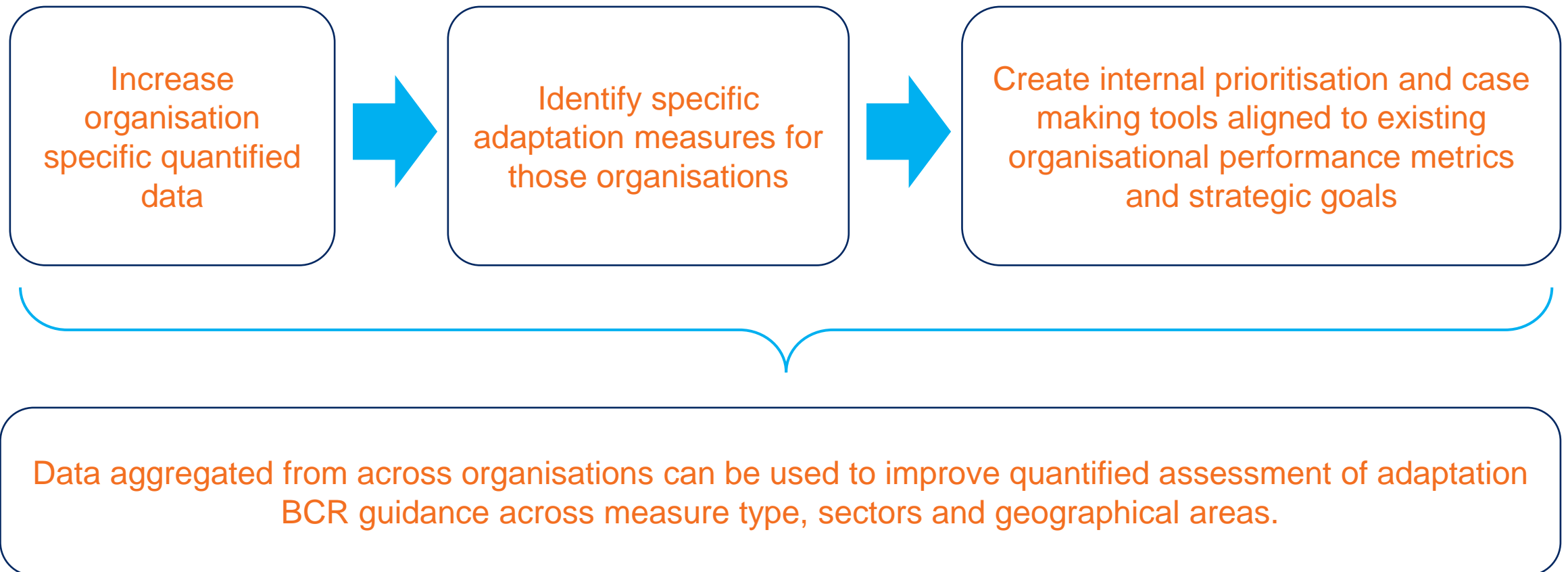
- TfL lost £2m in passenger income from the July 2021 flooding and £8m during the July 2022 London heatwave.
- However, TfL was not able to fully calculate the costs (such as asset damage, cost of clean-up and repairs)

Performance metrics

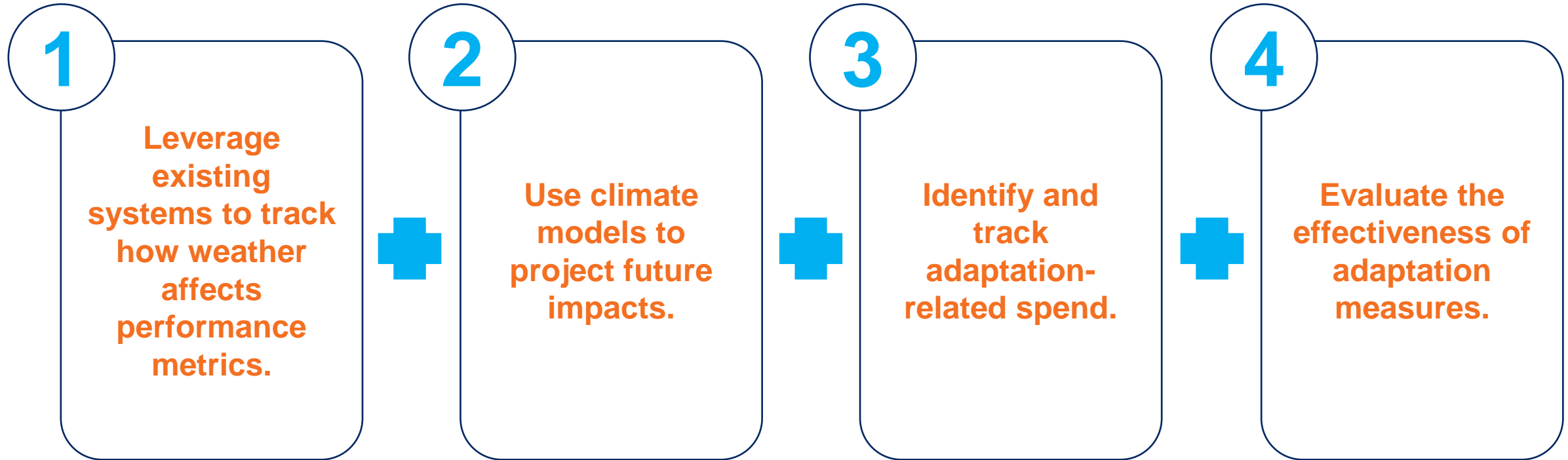
Like many organisations, TfL collects a lot of performance data (such as ridership, excess journey time, revenue, customer injuries etc), but does not routinely link this to weather or climate.

Objective of this work

The examples of potential data for case-making on the previous slide are not granular or specific enough to properly inform project by project investment decisions. Therefore, the objectives of this work are too...



Four pillar approach



- The aim is for organisations using the four-pillar approach to generate data over time, enabling stronger business cases for adaptation. See Appendix B for some more detail on each pillar.
- Even without considering climate change, Pillar 1 alone would offer valuable insight into a key external factor affecting asset and operational performance.
- **It is proposed that the Climate Cost Forum include parallel workshops, each focused on one of the four pillars** (see next slide).

- The workshops will be high-level and will not involve analysis of data, but for participants to share insights and experience to shape a common approach for each pillar.
- They will involve people from a range of typical discipline across and organisational value chain (see examples to the right) and cross-cutting expertise. See next slide for example role.
- The aim is to target organisations with significant operations and assets in London and for each of those organisations to have several representatives across a diversity of disciplines. This will be supported by attendees with cross-cutting expertise.
- Involving subject matter experts from diverse roles and disciplines — including those new to climate adaptation—ensures the guidance uses familiar language, concepts and reference to relevant standards and guidance.
- This inclusive process supports early internal engagement, helping organisations bring colleagues on board ahead of implementing the approach post-event.
- The workshop activities will be facilitated and are in the process of being designed by the organisers. Thoughts and suggestions welcome!
- LCRP will draft a “getting started guide” based on workshop outputs and informed by existing guidance and standards, to be shared in draft for attendee feedback before publication.
- LCRP will also support continued collaboration and knowledge sharing post-event.

Example roles of attendees

- Asset Managers
- Risk Analysts / Managers
- Operational / Performance Managers
- Business Intelligence Analysts
- Meteorological Data Specialists
- Health & Safety Leads
- Service Reliability Leads
- IT / Enterprise Architects
- Business / Strategic Planners
- Economists / Financial Planners
- Sustainability / Climate Change SMEs
- Climate / Atmospheric Scientists
- Finance / Procurement Leads
- Capital Investment Managers
- Programme / Project Managers
- Sustainability / ESG Teams
- Policy and Strategy Advisors
- Reporting and Compliance Leads
- Infrastructure / Engineering Leads
- Monitoring & Evaluation Specialists
- Data / Performance Analysts
- Operational / Service Delivery Managers
- Asset Performance Leads
- Finance and Benefits Realisation Teams
- Auditors / Internal Review Leads
- Academic or Research Partners

If you would like to find out more, provide input or attend Climate Cost Working Forum taking place on the 4 July 2025 at City Hall, please email either:

- samlongman@tfl.gov.uk (Vice Chair of the LCRP and lead event organiser)
- info@climatelondon.org

Thank you.

Appendix A

**More examples of data, tools
& case studies**

Examples for case making & tools (1)



Funding Calculator ([Hyperlink](#))

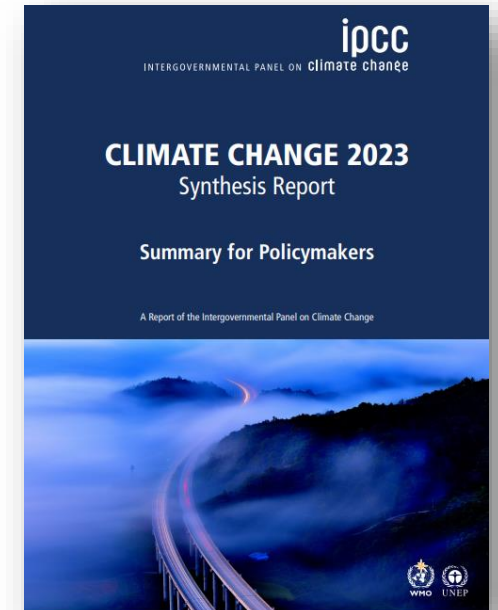
- 1.The overall benefit cost ratio of the scheme.
- 2.How long the scheme will last, in terms of dealing with climate change.
- 3.How many homes the scheme will move from specific bands of flood risk.
- 4.How much high-quality habitat the scheme creates.

Note: The EA funding calculator favours large coastal flood defence projects and doesn't work well for complex urban built environments.

The Guardian UK ▾

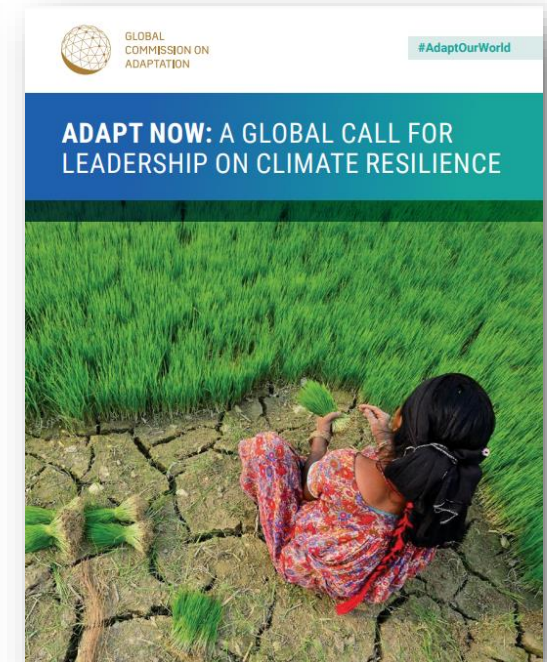
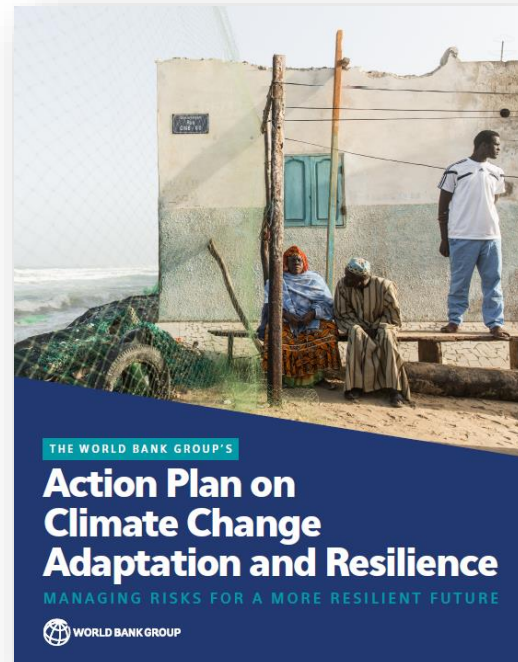
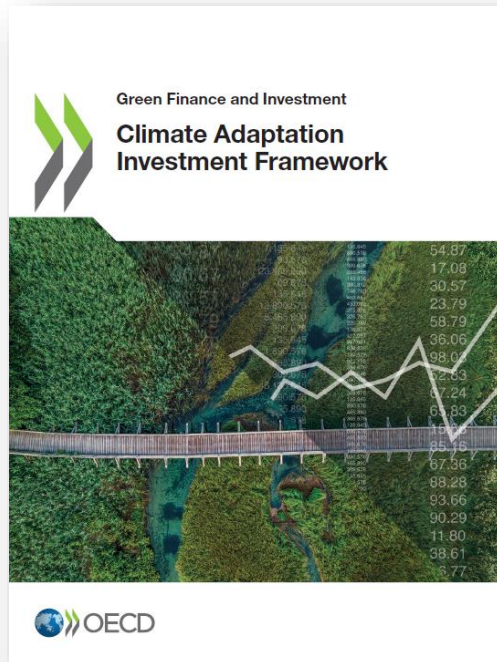
In recent reports, Aviva said extreme weather damages for the decade to 2023 hit \$2tn, while GallagherRE said the figure was \$400bn in 2024. ([Hyperlink](#))

The IPCC Sixth Assessment Report (AR6) warns that climate damages increase exponentially with rising temperatures, while adaptation costs are more stable and manageable in comparison.



Examples for case making & tools (2)

The [OECD](#), [World Bank](#), [UN Environment Programme \(UNEP\)](#) and [Global Commission on Adaptation](#) all conclude that proactive adaptation measures generally offer cost–benefit ratios between 2:1 and 10:1.



Case Study: July 2022 Heatwave



- In July 2022, London reached 40°C for the first time, earlier than expected.
- London Fire Brigade experienced its busiest day since World War Two.
- Operations at hospitals were cancelled due to IT server failures caused by the heatwave.
- Energy prices surged as power supply struggled to meet demand
- The East Coast mainline was disconnected from King's Cross as train lines buckled.
- There were 3,271 heat-related deaths in England and 387 in London.
- £8m was lost in revenue due to 5 million fewer passengers on the London Underground.



Case Study: July 2021 flooding

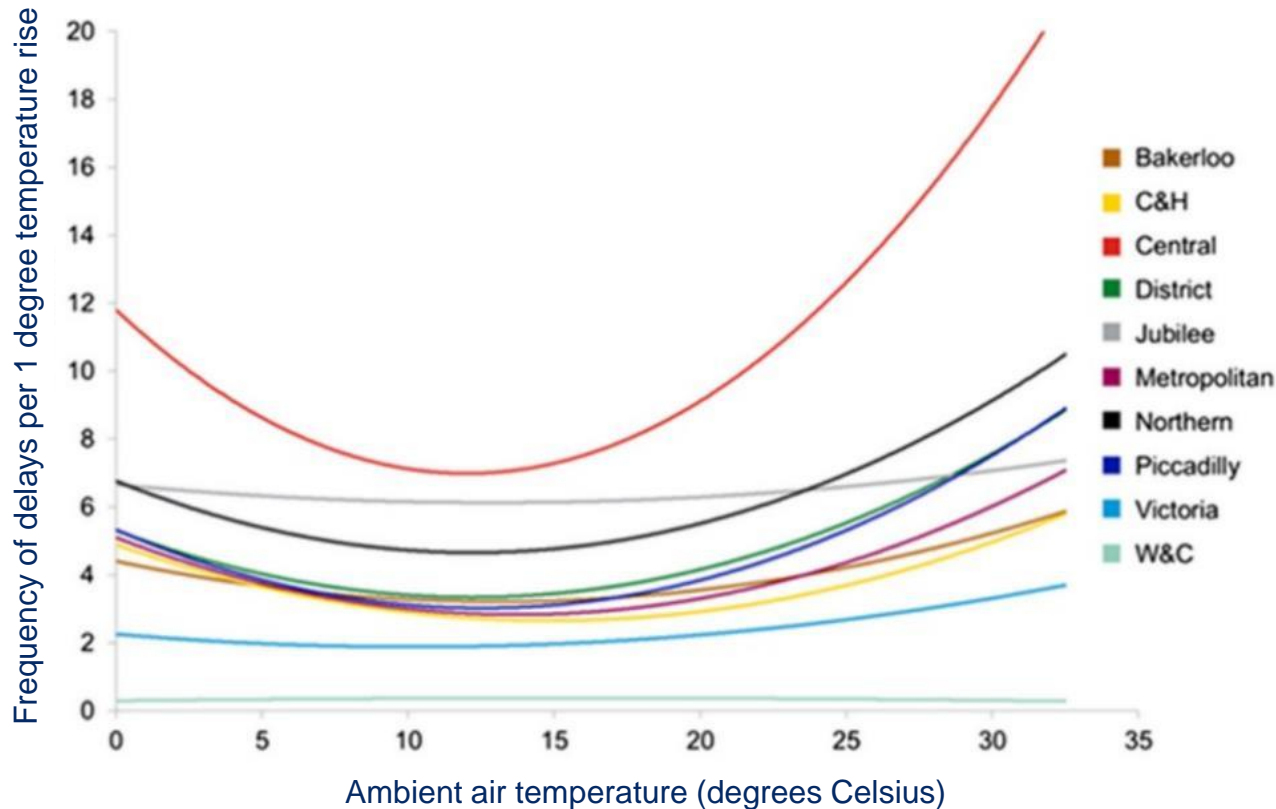


- In July 2021, extreme rainstorms dropped twice the average monthly rainfall in two hours.
- Over 2,000 properties flooded with stormwater and sewage.
- Estimated £281m in insurance losses (12 July)
- More than 30 tube stations affected; hospital wards evacuated.
- TfL lost £2m of income due to flooding on the London Underground in July 2021.
- London Underground TfL ended up wading in raw sewage whilst dealing with the incident.



Case Study: LU Performance & Heat

The impacts of heat and climate change on the London Underground - 2023 study ([Hyperlink](#))



KEY RESEARCH FINDINGS

1. There is a lot of variation in LU rates of failure across the network in response to temperature e.g. Surface failure rates are highest during high and low temperatures, while Deep tube tunnel failure rates are highest during high temperatures.
2. Some LU points assets are particularly vulnerable to heat, and potential failure temperature thresholds could be identified.
3. There are indications of failure harvesting in points assets, which may impact future asset management in the transition from spring to summer.
4. It is possible to estimate tunnel temperatures using surface temperature measurements to support failure rate analyses.
5. Climate change is likely to increase future LU points failures.

Appendix B

**More examples of data, tools
& case studies**

Leverage existing systems to track how weather affects performance metrics

Automatically extract and analyse data on how weather and extreme events impact current performance indicators.

Background

- Organisations already use performance metrics to inform operational and business planning.
- These metrics are often sector- or organisation-specific and already matter to decision-makers.
- Existing tools and methods can help link these metrics to financial impacts or monetised outcomes.
- Automated systems are often in place to collect and process high-frequency data (e.g. for TfL: safety incidents, asset failures, excess journey time, reliability, lost customer hours, passenger numbers, revenue, etc.).
- These systems could be adapted to automatically generate insights into how performance metrics correlate with weather, climate and extreme weather events.

Use climate models to project future impacts

Feed this data into climate models to predict how performance metrics may change over time.

Background

- Climate models can be used to project how weather and climate risks will evolve over time.
- When combined with performance metric data, these models can help forecast future operational and asset-level impacts.
- This approach supports long-term planning and helps identify future vulnerabilities and costs.
- Translating model outputs into useful, organisation-specific insights requires cross-disciplinary collaboration.
- Feeding observed data into models improves their accuracy and relevance to decision-making.

Identify and track adaptation-related spend

Categorise spend that contributes to adaptation, whether standalone or part of broader projects.

Background

- Adaptation-related spend often occurs across a range of projects, not just those explicitly labelled as "adaptation".
- Many organisations do not currently track or categorise adaptation spend in a consistent or visible way.
- Understanding where and how adaptation is being funded can help build the case for investment and inform strategic decision-making.
- This includes identifying co-benefits from adaptation measures delivered as part of wider programmes.
- Better tracking enables improved reporting, evaluation, and alignment with regulatory or funding requirements.

Evaluate the effectiveness of adaptation measures

Assess whether adaptation efforts are reducing climate-related impacts on performance.

Background

- Many organisations implement adaptation measures but lack clear methods to evaluate their effectiveness.
- Assessing impact requires linking actions taken to measurable changes in performance over time.
- Understanding what works helps prioritise investment and scale successful approaches.
- Evaluation should consider both direct outcomes (e.g. reduced service disruption) and indirect benefits (e.g. improved resilience, cost avoidance).
- A consistent evaluation approach supports accountability, continuous improvement, and external reporting.
- A challenge will be attributing climate risk reduction of specific adaptation measures in the context of broader action.