Assessing climate risk and strengthening resilience for UK Higher Education Institutions

KEY MESSAGES

- Incorporate climate risk indicators into risk registries as the first step towards acknowledging their importance and identifying and managing existing and anticipated climate risks and priorities for adaptation including consideration of risks to overseas activities.
- Prepare for current and futuree O• " Q’%¡)QPÒ$øð àuep3825(n)2.2 s100C0.8 (rs0300S0 cep)n8jd(e).100CB5Tj 0 F8

This working paper and accompanying case studies aim to support UK Higher Education Institutions (HEIs) to develop processes to assess their current and future climate risks, put in place plans to adapt to these risks, and identify opportunities to strengthen their resilience. This guidance summarises the latest evidence in line with national climate risk assessment and adaptation planning, and is intended to support

However, resilience has potential to be much more than the ability to cope with climate risks, as it also offers various co-benefits – greener spaces, improved

This is fundamentally a proactive rather than reactive approach to managing both existing and anticipated climate risks.

One of the first climate risk management frameworks was developed by the UK Climate Impacts Programme (UKCIP). This followed a sequential and iterative approach that has been adopted by most frameworks since (see Figure 1). Most start by defining the intended outcomes of the climate assessment, then proceed to identify options for managing climate risks to people, assets, and operations as well as maximising any benefits from climate change over the specified time horizon(s). It is also important to begin the process with a clear specification of the primary units of interest such as physical sites, policies, or activities.

Hazards faced by UK HEIs include flooding from water courses and heavy rainfall, heatwaves, droughts and storms. These can affect human and animal health, damage critical infrastructure, buildings and biodiversity, as well as disrupt transport systems, supply chains, research, teaching and sports activities. Extreme weather events can also interrupt essential services – such as food, water, and energy – supplied by third parties to HEIs. Case studies from Cranfield University[9], Loughborough University[10] and Newcastle University[6] illustrate the impact of flooding on HEIs and actions that are being taken to adapt and build resilience to future flood related risks.

Systematic risk evaluation frameworks typically identify:

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Identifying climate vulnerable receptors

There are many types of climate vulnerable receptor. These can include vulnerable groups of people, critical sites and/or infrastructure, specific activities, animal welfare and habitats. Receptor scales may span from highly localised environments with endangered species, individual rooms and buildings, a campus with student/staff travel routes, through to international supply chains and overseas facilities. Hence, it is important to consider climate risk exposure beyond the physical footprint of the HEI. This may take a few iterations: beginning with a high-level view of climate risks to operations at the institution (such as to teaching, research, student experience), before then evaluating risks to critical assets, specific activities and off-site interests. Moreover, there may be compounding and cascading risks to HEIs – such as when a flood impacts a power supply which, in turn, causes failure of IT systems.

Referring to climate change scenarios and storylines

Anticipation of climate risks involves imagining plausible scenarios of climate and socio-economic change for exposed receptors. This may draw on information from national climate change scenarios, such as the 2018 UK Climate Projections (UKCP18) of rainfall and temperature (and other weather variables) which can be ‘downscaled’ a

Climate risk	Likelihood level	Consequence level				
Description		Nu				

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SUGGESTIONS FOR ASSESSING RISK AND STRENGTHENING RESILIENCE IN UK HEI

Climate risk assessment should bring together
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making up the HEI community.

Undertaking a climate risk assessment is as much a technical as social endeavour. Contextualising physical climate hazards using ‘storylines’ is an important tool in climate risk assessment. These storylines should be developed from scenarios of climate and socio-economic change

Stakeholder group	Suggested actions
Communities	

I3	Risks to infrastructure services from coastal flooding and erosion
I4	Risks to bridges and pipelines from flooding and erosion
I5	Risks to transpo ks to transp nsp s a ansps