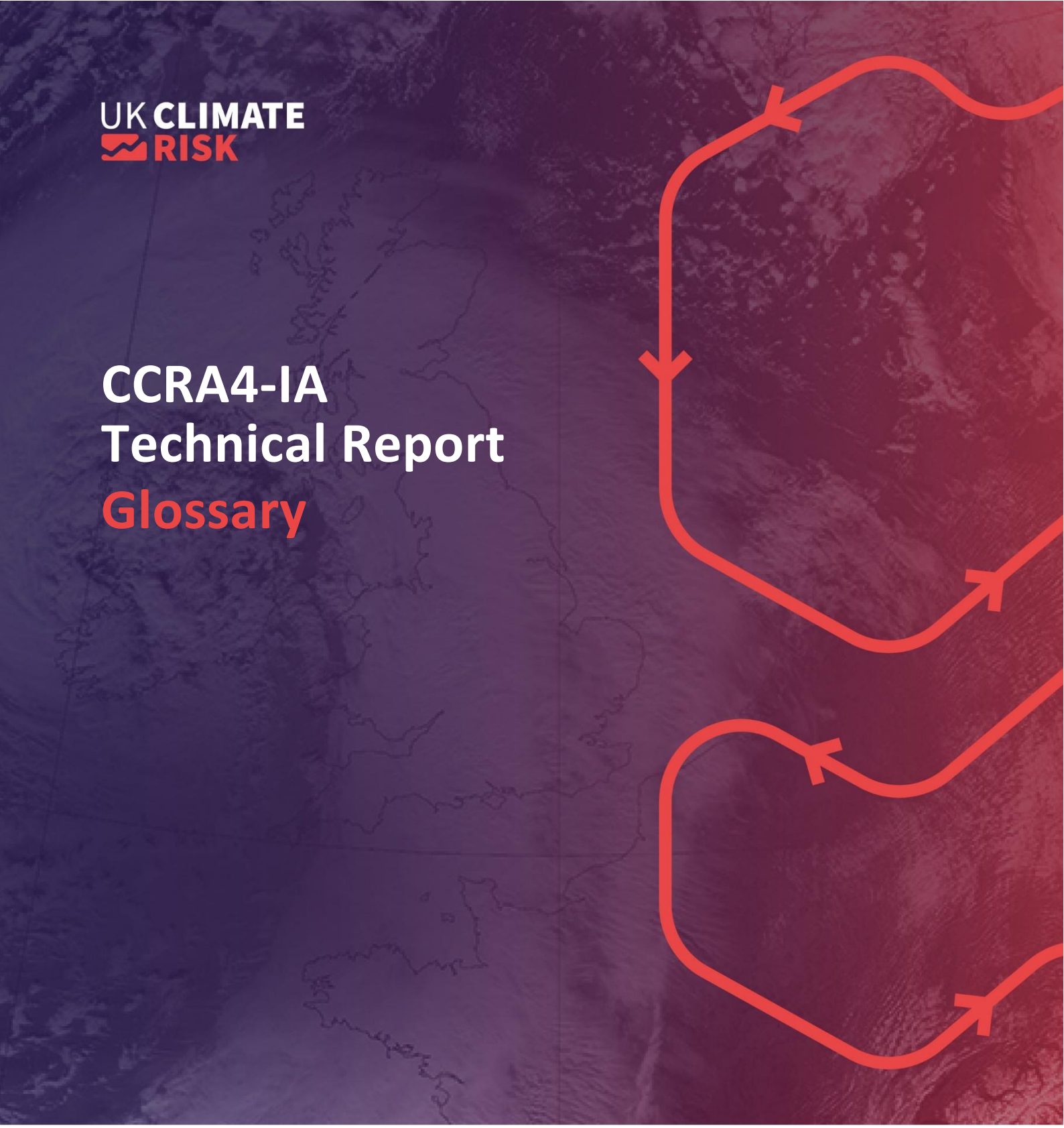

UK CLIMATE RISK

CCRA4-IA Technical Report

Glossary

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Adaptation

The process of adjustment to the observed or expected climate and its impacts, in order to moderate harm or exploit opportunities.

AMOC (Atlantic Meridional Overturning Circulation)

A system of ocean currents in the South and North Atlantic Oceans. This includes well-known currents like the Gulf Stream, which flows from the Gulf of Mexico towards Europe, and lesser-known currents like the Subpolar Gyre (SPG), which flows anticlockwise south of Greenland. The currents transport warm surface waters from the tropics northwards and cold denser waters southwards.

Anthropogenic

Resulting from or produced by human activities.

Baseline (Reference Period)

The baseline (or reference period) is the time frame against which change is measured.

Biodiversity

The variability of all living organisms from all sources including plants, animals, fungi and microorganisms. It includes diversity within species, between species, and across ecosystems.

Cascading impacts

Cascading impacts from extreme weather/climate events occur when a hazard generates a sequence of secondary events in natural and human systems that result in environmental, social or economic disruption, whereby the resulting impact is significantly larger than the initial impact.

Climate Model

A qualitative or quantitative representation of the climate system based on the physical, chemical and biological properties of its components, and their interactions and feedback processes. Climate models of varying complexity are applied as research tools to study and simulate the climate and for operational purposes, including monthly, seasonal and interannual climate predictions.

Co-benefits

Additional positive effects generated for society and/or the environment that occur when a climate policy or action delivers wider improvements beyond its primary purpose.

Compound risk

The combination of multiple hazards or sequential events that interact with exposed systems or sectors and contribute to societal and/or environmental risk. For example, the combination of precipitation and wind extremes increases the risk of infrastructure damage during storms.

Confidence

Level of quality and consistency of the evidence base expressed qualitatively as High, Medium or Low.

Critical infrastructure

Infrastructure whose disruption could severely undermine essential services, national security, defence, or core functions of the state. It also includes sites and organisations that require protection because their compromise could pose potential danger to the public (e.g., civil nuclear and chemical sites).

Ecosystem services

Contributions of ecological processes or functions to the economy and society. These include supporting services (e.g., biodiversity maintenance), provisioning services (e.g., food), regulating services (e.g., carbon sequestration), and cultural services (e.g., tourism).

Extreme weather events

A weather event that is rare for a place and time of year, with 'rare' typically meaning in the top or bottom 10% of recorded observations.

Feedback loops

Processes in the Earth system that, once triggered, feed back to influence their own behaviour, potentially amplifying or reducing climate effects. For example, an amplifying feedback loop is when initial warming brings about changes that lead to even more warming.

Fire Weather

Weather conditions that can trigger and sustain wildfires, usually based on indicators such as temperature, soil moisture, humidity, and wind; importantly, 'fire weather' refers only to atmospheric conditions and does not include the presence or absence of fuel load.

Food security

Ensuring that everyone has reliable physical, social and economic access, at all times, to sufficient, safe and nutritious food that meets their dietary needs and food preferences, and supports an active and healthy life.

Global Warming Level (GWL)

The increase in global mean surface temperature relative to a pre-industrial baseline (usually 1850–1900), used to assess how future climate conditions correspond to different degrees of warming.

Hazard

The potential for an event or trend that may cause loss of life, adverse health impacts, or damage and disruption to property, infrastructure, livelihoods, essential services, ecosystems and environmental resources.

Heat stress

A range of conditions that arise when organisms absorb excess heat during exposure to high air or water temperatures or thermal radiation. For example, in humans, heat stress can be intensified by high temperatures and humidity combined with low wind speeds, which can cause body temperature regulation to fail.

Indirect impacts

Consequences that arise as secondary effects of a hazard, such as economic disruption or health impacts that occur not from the initial event itself but from the cascading effects that follow.

Inequality

Differences in opportunities, resources, social positions, and experiences of discrimination within society, that arise from factors such as gender, class, ethnicity, age and (dis)ability, often reinforced by uneven development; this includes income gaps both within and between countries.

Invasive species

A non-native species that lacks natural controls and tends to rapidly increase in abundance, displacing native species and sometimes damaging the economy or human health.

Macroeconomics

The study of the overall functioning and performance of an economy, focusing on broad economic outcomes such as growth, inflation, employment, and national income from an economy-wide perspective.

Magnitude

Level of impact or severity from the risk or opportunity, often expressed in monetary, societal, or environmental terms, as very high, high, medium, or low.

Morbidity

The presence and progression of illness or poor health in a population, encompassing chronic diseases, functional decline, frailty, and other conditions that reduce quality of life.

Nature-based solutions

Actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges in effective and adaptive ways, while also providing benefits for human well-being and biodiversity.

Net zero

A state in which anthropogenic greenhouse gas emissions are balanced by removals from the atmosphere over a specified period.

Non-linear processes

A process in which changes in cause do not lead to proportionate changes in effect. The climate system contains many such non-linear processes, resulting in a system that behaves in complex ways that may produce sudden shifts or tipping points.

Opportunity

The potential for a beneficial consequence, as a result of a changing climate, to be realised through Government policy or enabling environment (the opportunities that we would presently forgo).

Peatlands

Wetland ecosystems where organic matter decomposes slowly in waterlogged conditions, leading to the accumulation of carbon-rich peat soils.

Physical risks

The potential for adverse consequences arising from the physical impacts of climate change (e.g., intense extreme weather events) that affect human or ecological systems, such as infrastructure facilities, operations, and supply chain disruptions.

Representative Concentration Pathway (RCP)

A scenario which represents one of many possible future climates over time based on different levels of greenhouse gas emissions and concentrations. The four RCPs commonly used in climate assessments span a wide range of plausible futures from well-below 2 °C warming to above 4 °C globally by 2100: RCP 2.6, RCP 4.5 and RCP 6.0 and RCP 8.5. RCP 2.6: A strong-mitigation pathway where radiative forcing peaks at approximately 3 Wm^{-2} and then declines to be limited at 2.6 Wm^{-2} in 2100. RCP 4.5 and RCP 6.0: Two intermediate stabilisation pathways in which radiative forcing is limited at approximately 4.5 Wm^{-2} and 6.0 Wm^{-2} in 2100. RCP 8.5: A high-emissions pathway which exceeds 8.5 Wm^{-2} in 2100.

Residual risk/opportunity

Level of risk/opportunity which remains after considering current, planned and announced adaptation actions.

Resilience

The capacity of interconnected social, economic and ecological systems to respond and adapt to hazards while maintaining their essential functions. Resilience is considered a positive attribute when it preserves or strengthens a system's ability to adapt to future change.

Risk

The potential for an adverse consequence, as a result of a changing climate.

Saltmarsh

A coastal, intertidal habitat dominated by herbs, grasses or low shrubs that grow at the interface between land and sea, which are regularly flooded by tides. Saltmarshes form part of the tidal marsh system and provide important coastal protection and ecological functions.

Storm surge

The temporary, local increase in sea level due to low atmospheric pressure and/or strong winds, representing the excess height above the expected tide at that time and place.

Stranded assets

Assets that lose value or become liabilities because of unanticipated shifts in technology, markets, or regulatory frameworks that alter their anticipated revenues.

Surface runoff

The flow of water across the land surface when rainfall or snowmelt exceeds the soil's ability to absorb it. Surface runoff moves water downslope towards streams and catchments, influencing flood risk, soil erosion and water quality.

Systemic risk

The risk that a failure or disruption in one part of an interconnected system (e.g., financial market, supply chain or critical infrastructure) can cascade across the system, causing widespread disruption or system collapse.

Tipping points

A critical threshold beyond which a climate or ecological system can shift abruptly and potentially irreversibly into a fundamentally different state due to reinforcing feedback loops. Such tipping events can dramatically alter system function and increase risks to societies.

Urban Heat Island Effect

A phenomenon in which towns and cities experience higher temperatures than nearby rural areas, particularly at night, due to the release of heat stored in artificial surfaces, heat from human activities, and the reduced cooling from limited vegetation cover.

Urgency Score

Result of combined magnitude and confidence scores after adaptation has been considered. There are six possible scores ranging from 'Sustain current action' to 'Critical action needed' (Table 1.5).

Vulnerability

The predisposition to be adversely affected, including a system's sensitivity or susceptibility to harm and its limited capacity to cope with and adapt to impacts.

Wildfire

Any uncontrolled fire in vegetation, such as grassland, moorland, forests or peatland, that can spread rapidly and pose risks to people, property, and the environment, which requires a decision, or action, regarding suppression.