# GLOSSARY

The glossary contains definitions of concepts that have been used in the **Policy Document on Climate Action for World Heritage (2023)**. These are drawn from the Intergovernmental Panel on Climate Change (IPCC) reports as well as reports from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Convention on Biological Diversity (CBD). It is hoped that this glossary can enable the heritage sector to better communicate and coordinate with the environment sector. The discrepancy between some of the terms such as 'mitigation' used in heritage and defined in the glossary based on IPCC reports also need to be recognised.

*Note for the readers*: Definitions in the IPCC Glossary may change over time. The definitions included in the glossary below are the ones used at the time of adoption of the Policy Document on Climate Action for World Heritage in November 2023[1].

*Disclaimer*: These definitions are listed for education and information purpose and should in no way be understood as States Parties agreeing to or adopting them.

[1] IPCC, 2021: Annex VII: Glossary [Matthews, J.B.R., V. Möller, R. van Diemen, J.S. Fuglestvedt, V. Masson-Delmotte, C. Méndez, S. Semenov, A. Reisinger (eds.)]. In Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 2215–2256, doi:10.1017/9781009157896.022.

IPCC, 2022: Annex II: Glossary [Möller, V., R. van Diemen, J.B.R. Matthews, C. Méndez, S. Semenov, J.S. Fuglestvedt, A. Reisinger (eds.)]. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 2897–2930, doi:10.1017/9781009325844.029.

IPCC, 2022: Annex I: Glossary [van Diemen, R., J.B.R. Matthews, V. Möller, J.S. Fuglestvedt, V. Masson-Delmotte, C. Méndez, A. Reisinger, S. Semenov (eds)]. In IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. doi: 10.1017/9781009157926.020

Lo, V. (2016). Synthesis report on experiences with ecosystem-based approaches to climate change adaptation and disaster risk reduction. Technical Series No.85. Secretariat of the Convention on Biological Diversity, Montreal, 106 pages.

## Adaptation:

“In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.” (IPCC-2021, AR6-WGI)

## Adaptation limits:

“The point at which an actor’s objectives (or system needs) cannot be secured from intolerable risks through adaptive actions.

- Hard adaptation limit – No adaptive actions are possible to avoid intolerable risks.
- Soft adaptation limit – Options may exist but are currently not available to avoid intolerable risks through adaptive action.” (IPCC-2022, AR6-WGII & WGIII)

## Adaptive capacity:

“The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences (MA, 2005).” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

## Baseline scenario:

“Scenario used as starting or reference point for a comparison between two or more scenarios.

Note 1: In many types of climate change research, reference scenarios reflect specific assumptions about patterns of socio-economic development and may represent futures that assume no climate policies or specified climate policies, for example those in place or planned at the time a study is carried out. Reference scenarios may also represent futures with limited or no climate impacts or adaptation, to serve as a point of comparison for futures with impacts and adaptation. These are also referred to as baseline scenarios in the literature.

Note 2: Reference scenarios can also be climate policy or impact scenarios, which in that case are taken as a point of comparison to explore the implications of other features, for example, of delay, technological options, policy design and strategy or to explore the effects of additional impacts and adaptation beyond those represented in the reference scenario.

Note 3: The term business as usual scenario has been used to describe a scenario that assumes no additional policies beyond those currently in place and that patterns of socio-economic development are consistent with recent trends. The term is now used less frequently than in the past.

Note 4: In climate change attribution or impact attribution research, reference scenarios may refer to counterfactual historical scenarios assuming no anthropogenic greenhouse gas (GHG) emissions (climate change attribution) or no climate change (impact attribution).” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

## Carbon budget:

“Refers to two concepts in the literature: (i) an assessment of carbon cycle sources and sinks on a global level, through the synthesis of evidence for fossil fuel and cement emissions, emissions and removals associated with land use and land-use change, ocean and natural land sources and sinks of carbon dioxide ($CO_2$), and the resulting change in atmospheric $CO_2$

concentration. This is referred to as the global carbon budget; (ii) the maximum amount of cumulative net global anthropogenic $CO_2$ emissions that would result in limiting global warming to a given level with a given probability, taking into account the effect of other anthropogenic climate forcers. This is referred to as the total carbon budget when expressed starting from the pre-industrial period, and as the remaining carbon budget when expressed from a recent specified date.

Note 1: Net anthropogenic $CO_2$ emissions are anthropogenic $CO_2$ emissions minus anthropogenic $CO_2$ removals. See also Carbon dioxide removal (CDR).

Note 2: The maximum amount of cumulative net global anthropogenic $CO_2$ emissions is reached at the time that annual net anthropogenic $CO_2$ emissions reach zero.

Note 3: The degree to which anthropogenic climate forcers other than $CO_2$ affect the total carbon budget and remaining carbon budget depends on human choices about the extent to which these forcers are mitigated and their resulting climate effects.

Note 4: The notions of a total carbon budget and remaining carbon budget are also being applied in parts of the scientific literature and by some entities at regional, national, or sub-national levels. The distribution of global budgets across individual different entities and emitters depends strongly on considerations of equity and other value judgements." (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGIII)

## Carbon footprint:

"Measure of the exclusive total amount of emissions of carbon dioxide (CO2) that is directly and indirectly caused by an activity or is accumulated over the lifecycle stages of a product (Wiedmann and Minx, 2008)." (IPCC-2022, AR6-WGII & WGIII)

## Carbon neutrality:

"Condition in which anthropogenic $CO_2$ emissions associated with a subject are balanced by anthropogenic $CO_2$ removals. The subject can be an entity such as a country, an organization, a district or a commodity, or an activity such as a service and an event. Carbon neutrality is often assessed over the life cycle including indirect ('scope 3') emissions but can also be limited to the emissions and removals, over a specified period, for which the subject has direct control, as determined by the relevant scheme.

Note 1: Carbon neutrality and net zero $CO_2$ emissions are overlapping concepts. The concepts can be applied at global or sub-global scales (e.g., regional, national and sub-national). At a global scale, the terms carbon neutrality and net zero $CO_2$ emissions are equivalent. At sub-global scales, net zero $CO_2$ emissions is generally applied to emissions and removals under direct control or territorial responsibility of the reporting entity, while carbon neutrality generally includes emissions and removals within and beyond the direct control or territorial responsibility of the reporting entity. Accounting rules specified by GHG programmes or schemes can have a significant influence on the quantification of relevant $CO_2$ emissions and removals.

Note 2: In some cases, achieving carbon neutrality may rely on the supplementary use of offsets to balance emissions that remain after actions by the reporting entity are taken into account." (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGIII)

## Carbon sink:

“Any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere (UNFCCC Article 1.8 (UNFCCC, 1992)).” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGIII)

## Climate change:

“A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/ or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that the United Nations Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods’. The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes.” (IPCC-2021, AR6-WGI)

## Climate risk:

“In the context of the assessment of climate impacts, the term risk is often used to refer to the potential for adverse consequences of a climate-related hazard, or of adaptation or mitigation responses to such a hazard, on lives, livelihoods, health and wellbeing, ecosystems and species, economic, social and cultural assets, services (including ecosystem services), and infrastructure. Risk results from the interaction of vulnerability (of the affected system), its exposure over time (to the hazard), as well as the (climate-related) hazard and the likelihood of its occurrence”. (IPCC-2018)

## Co-benefits:

“A positive effect that a policy or measure aimed at one objective has on another objective, thereby increasing the total benefit to society or the environment. Co-benefits are also referred to as ancillary benefits.” (IPCC-2022, AR6-WGII & WGIII)

## Common but Differentiated Responsibilities and Respective Capabilities:

“Common but Differentiated Responsibilities and Respective Capabilities (CBDR–RC) is a key principle in the United Nations Framework Convention on Climate Change (UNFCCC) that recognises the different capabilities and differing responsibilities of individual countries in tacking climate change. The principle of CBDR– RC is embedded in the 1992 UNFCCC. The convention states: “… the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions.” Since then, the CBDR-RC principle has guided the UN climate negotiations.” (IPCC-2018)

## Ecosystem-based Approaches:

The ecosystem-based approach “incorporates biodiversity and ecosystem services into an overall adaptation strategy to help people to adapt to the adverse effects of climate change (Convention on Biological Diversity). [It] [u]ses biodiversity and ecosystem services as part of an overall adaptation strategy to help people and communities adapt to the negative effects of climate change at local, national, regional and global levels (United Nations Environment Programme). Any initiative that reduces human vulnerabilities and enhances adaptive capacity in the context of existing or projected climate variability and changes through sustainable management, conservation and restoration of ecosystems (IUCN).” (CBD Technical Series n°85, *Synthesis report on experiences with ecosystem-based approaches to climate change adaptation and disaster risk reduction,* 2016)

## Enabling condition:

“Conditions that enhance the *feasibility* of *adaptation* and *mitigation* options. Enabling conditions include finance, technological innovation, strengthening policy instruments, *institutional capacity*, *multi-level governance*, and changes in *human behaviour* and lifestyles.” (IPCC-2022, AR6-WGII & WGIII)

## Exposure:

“The presence of people; livelihoods; species or ecosystems; environmental functions, services, and resources; infrastructure; or economic, social, or cultural assets in places and settings that could be adversely affected.” (IPCC-2021, AR6-WGI ; IPCC-2022, AR6-WGII & WGIII)

## Extreme weather event:

“An event that is rare at a particular place and time of year. Definitions of ‘rare’ vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense.” (IPCC-2021, AR6-WGI ; IPCC-2022, AR6-WGII & WGIII)

## Land use, Land use change and Forestry (LULUCF):

“In the context of national greenhouse gas (GHG) inventories under the United Nations Framework Convention on Climate Change (UNFCCC, 2019), LULUCF is a GHG inventory sector that covers anthropogenic emissions and removals of GHG in managed lands, excluding non-CO2 agricultural emissions. Following the 2006 IPCC Guidelines for National GHG Inventories and their 2019 Refinement, ‘anthropogenic’ land-related GHG fluxes are defined as all those occurring on ‘managed land’, that is, ‘where human interventions and practices have been applied to perform production, ecological or social functions’. Since managed land may include carbon dioxide (CO2) removals not considered as ‘anthropogenic’ in some of the scientific literature assessed in this report (e.g., removals associated with CO2 fertilisation and N deposition), the land-related net GHG emission estimates from global models included in this report are not necessarily directly comparable with LULUCF estimates in National GHG Inventories. (IPCC 2006, 2019).” (IPCC-2022, AR6-WGIII)

## Land use:

“The total of arrangements, activities and inputs applied to a parcel of land. The term land use is also used in the sense of the social and economic purposes for which land is managed (e.g., grazing, timber extraction, conservation and city dwelling). In national greenhouse gas (GHG) inventories, land use is classified according to the IPCC land-use categories of forest land, cropland, grassland, wetlands, settlements, other lands (see the 2006 IPCC Guidelines for National GHG Inventories and their 2019 Refinement for details (IPCC, 2006, 2019)).” (IPCC-2021, AR6-WGI ; IPCC-2022, AR6-WGII & WGIII)

## Land-use change (LUC):

“The change from one land use category to another. Note that in some scientific literature, land-use change encompasses changes in land-use categories as well as changes in land management.” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

## Life Cycle Assessment (LCA):

“Compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product or service throughout its lifecycle (ISO, 2018).” (IPCC-2022, AR6-WGIII)

## Maladaptive actions (Maladaptation):

“Actions that may lead to increased risk of adverse climate-related outcomes, including via increased greenhouse gas (GHG) emissions, increased vulnerability to climate change, or diminished welfare, now or in the future. Maladaptation is usually an unintended consequence.” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

## Mitigation:

This report uses the IPCC definition of mitigation: “A human intervention to reduce emissions or enhance the sinks of greenhouse gases” (IPCC-2021, AR6-WGI). This is essentially the same sense in which the word was used in the 2007 World Heritage Committee Policy (“Mitigation: an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases (IPCC)”). Readers should not confuse this usage with the more general sense in which the word ‘mitigation’ is sometimes used in the heritage context (namely, measures to avoid, prevent, reduce or offset negative effects on Outstanding Universal Value or other values).

## Nature-based solutions (NbS):

This report acknowledges that there still does not exist a multilaterally agreed definition on NbS. In the lack thereof, one of the possible definitions might be: “Actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”. (IPBES-2019)

## Nationally Determined Contributions (NDCs):

“A term used under the United Nations Framework Convention on Climate Change (UNFCCC) whereby a country that has joined the Paris Agreement outlines its plans for reducing its emissions. Some countries’ NDCs also address how they will adapt to climate change impacts, and what support they need from, or will provide to, other countries to adopt low-carbon pathways and to build climate resilience. According to Article 4 paragraph 2 of the Paris Agreement, each Party shall prepare, communicate and maintain successive NDCs that it intends to achieve. In the lead up to 21st Conference of the Parties in Paris in 2015, countries submitted Intended Nationally Determined Contributions (INDCs). As countries join the Paris Agreement, unless they decide otherwise, this INDC becomes their first Nationally Determined Contribution (NDC).” (IPCC-2018)

## Resilience:

“The capacity of interconnected social, economic and ecological systems to cope with a hazardous event, trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure. Resilience is a positive attribute when it maintains capacity for adaptation, learning and/or transformation (Arctic Council, 2016).” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

## Risk:

“The potential for adverse consequences for human or ecological systems, recognizing the diversity of values and objectives associated with such systems. In the context of climate change, risks can arise from potential impacts of climate change as well as human responses to climate change. Relevant adverse consequences include those on lives, livelihoods, health and well-being, economic, social and cultural assets and investments, infrastructure, services (including ecosystem services), ecosystems and species.

In the context of climate change impacts, risks result from dynamic interactions between climate-related hazards with the exposure and vulnerability of the affected human or ecological system to the hazards. Hazards, exposure and vulnerability may each be subject to uncertainty in terms of magnitude and likelihood of occurrence, and each may change over time and space due to socio-economic changes and human decision-making (see also risk management, adaptation and mitigation).

In the context of climate change responses, risks result from the potential for such responses not achieving the intended objective(s), or from potential trade-offs with, or negative side-effects on, other societal objectives, such as the Sustainable Development Goals (SDGs) (see also risk trade-off). Risks can arise, for example, from uncertainty in implementation, effectiveness or outcomes of climate policy, climate-related investments, technology development or adoption, and system transitions.” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

## Risk assessment:

“The qualitative and/or quantitative scientific estimation of risks.” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

### Risk management:

“Plans, actions, strategies or policies to reduce the likelihood and/or magnitude of adverse potential consequences, based on assessed or perceived risks.” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

### Risk transfer:

“The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.” (IPCC-2022, AR6-WGII)

### Safeguard:

In the context of the Policy Document, it refers to law, rules, or measures intended to prevent social and environmental systems from being harmed by climate mitigation and/or adaptation actions.

### Transformation:

“A change in the fundamental attributes of natural and human systems.” (IPCC-2022, AR6-WGII & WGIII)

### Transformative change:

“A system-wide change that requires more than technological change through consideration of social and economic factors that, with technology, can bring about rapid change at scale.” (IPCC-2022, AR6-WGII)

### Uncertainty:

“A state of incomplete knowledge that can result from a lack of information or from disagreement about what is known or even knowable. It may have many types of sources, from imprecision in the data to ambiguously defined concepts or terminology, incomplete understanding of critical processes, or uncertain projections of human behaviour. Uncertainty can therefore be represented by quantitative measures (e.g., a probability density function) or by qualitative statements (e.g., reflecting the judgement of a team of experts) (see Moss and Schneider, 2000; IPCC, 2004; Mastrandrea et al., 2010).” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)

### Vulnerability:

“The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.” (IPCC-2021, AR6-WGI; IPCC-2022, AR6-WGII & WGIII)