

From Risk Management to Precautionary Principle: New Tools for World Heritage

Climate change threatens world heritage of all kinds on every continent, from melting glaciers in Norway to the erosion threatening the Easter Island *moai* (statues). A well-documented cultural heritage site in danger of climate change victimization is the city of Venice. The city of Venice and its Lagoon were inscribed on the UNESCO World Heritage Site List in 1987, and climate change now threatens the very existence of this city above the water.¹

As discussed in our recent GLS report, “Overcoming Legal Barriers to Climate Change Solutions: The Interrelated Roles of Activists, International Organizations, Markets, and Central Banks,” the Convention Concerning the Protection of the World Cultural and Natural Heritage of 1972 (known colloquially as the World Heritage Convention) focuses on the preservation of sites of “Outstanding Universal Value,” both cultural and natural.² The UNESCO World Heritage List is perhaps the most well-known feature, providing a highly visible list of properties that are considered to be of universal significance and import, regardless of their location in a single States Party’s territory.

The World Heritage Committee (the Convention’s governing body) has acknowledged the threat climate change poses to properties of cultural and natural heritage (whether on the List or not), but has struggled with crystallizing an effective and comprehensive response. The current approach to climate change under the Convention follows a risk management approach, relying on the assumption that traditional scientific processes can sufficiently foretell environmental outcomes of human activity.³ Conversely, various documents of international significance, particularly those relating to environmental concerns, have moved beyond risk management, decrying the limits of traditional science to handle the vast and incalculable challenges of climate change. These documents and their associated bodies have embraced the precautionary principle, which requires that “action should be taken to limit, regulate, or prevent potentially dangerous undertakings even in the absence of scientific proof.”⁴

Two new projects have emerged in recent years in regard to climate change: the Climate Vulnerability Index (CVI) and Heritage on the Edge. Both tools demonstrate paradigms of both the risk management and precautionary principle and could be important stepping stones for the World Heritage Committee and the Convention’s States Parties to shift from their traditional risk management approach to the more expansive precautionary principle.

The Climate Vulnerability Index (CVI)

¹ Venice and its LAGOON rest in fragile balance. findings of new study on the World heritage site. (2018, October 10). Retrieved April 01, 2021, from <https://en.unesco.org/news/venice-and-its-lagoon-rest-fragile-balance-findings-new-study-world-heritage-site#:~:text=The%20%E2%80%9CVenice%20and%20its%20Lagoon,into%20an%20extraordinary%20natural%20landscape.>

² Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, UNESCO, Operational Guidelines for the Implementation of the World Heritage Convention ¶ 49 (2019).

³ Alexander Gillespie, *The Precautionary Principle in the Twenty-First Century: A Case Study of Noise Pollution in the Ocean*, 22 Int’l J. Marine & Coastal L. 61, 63 (2007).

⁴ P.H. Martin, “If You Don’t Know How to Fix it, Please Stop Breaking it!” *The Precautionary Principle and Climate Change. Foundations of Science* Vol. 2, Nov. 1997, 263, 266 (Nov. 1997).

In 2017, experts gathered on the German Baltic island of Vilm to discuss revisions to the World Heritage Committee's highly outdated climate policy. Within this discussion, the experts raised the idea for a vulnerability index that could be applied to assess the risk from climate change on individual heritage sites. The resulting [Climate Vulnerability Index \(CVI\)](#), a rapid assessment tool, was first tested in 2018 and soon after was adopted by the International Council on Monuments and Sites (ICOMOS), one of the three official Advisory Bodies of the World Heritage Committee.⁵

The CVI has two distinct stages, wherein it evaluates the vulnerability of: (1) the property's Outstanding Universal Value due to climate drivers, and (2) the economic, social, and cultural dependence of the community on the heritage property, including the community's adaptability to climate change.⁶ The CVI is flexible enough to be applied to any site of universal heritage, whether cultural or natural. Additionally, it has been praised for its potential to help States Parties to the World Heritage Convention accurately understand the climate risks to their heritage sites and also "prioritize action on climate resilience."⁷

Heritage on the Edge

Unlike the CVI, another new tool, the [Heritage on the Edge](#) project, predominantly focuses on sites of cultural heritage imperiled by climate change, such as the erosion threatening The Malindi Mosque, the oldest mosque along the East African coast.⁸

Heritage on the Edge touts the use of both technology and community involvement for cultural heritage preservation, showcasing both as critical factors to effective preservation.⁹ For example, the project highlights the use of 3D scanning of the Edinburgh Castle in Scotland and Augmented Reality use to explore the sacred domes of Bagerhat in Bangladesh. The use of such technologies achieves three aims: firstly, the scans are used as data points to track changes in the site across seasons and years, allowing for prompt conservation efforts to be initiated. Secondly, the digital record preserves rich documentation of the heritage for future generations, even if there should be climate change-fueled degradation of the property itself. Finally, the project highlights the use of technology as an alternative for the carbon-intensive tourism industry, allowing viewers to experience cultural heritage sites without increasing their carbon footprint by physically visiting the sites.

In conjunction with technology, the Heritage on the Edge project emphasizes the importance of community buy-in and involvement with heritage preservation. The project notes that heritage professionals have the responsibility not to simply "save" sites of cultural heritage, but to empower the local communities to make informed decisions about the sites they cherish.¹⁰

⁵ Markham, A. (2019, July 02). A new way to assess impacts of climate change on world heritage sites. Retrieved April 01, 2021, from <https://blog.ucsusa.org/adam-markham/a-new-way-to-assess-the-impacts-of-climate-change-on-world-heritage>.

⁶ Climate Vulnerability Index (CVI) - About. (n.d.). Retrieved April 01, 2021, from <https://cvi-heritage.org/about>.

⁷ Markham, A. (2019, July 02). A new way to assess impacts of climate change on world heritage sites. Retrieved April 01, 2021, from <https://blog.ucsusa.org/adam-markham/a-new-way-to-assess-the-impacts-of-climate-change-on-world-heritage>.

⁸ Heritage on the edge - Google Arts & Culture. (n.d.). Retrieved April 01, 2021, from <https://artsandculture.google.com/project/climate-risk-to-heritage>.

⁹ *Learn Anywhere: Heritage on the Edge* [PDF]. (n.d.). Google Arts & Culture. Retrieved April 01, 2021, from https://storage.googleapis.com/lesson-plans/Heritage-on-the-Edge_Learn-Anywhere.pdf.

¹⁰ Preserving built and natural heritage - Google Arts & Culture. (n.d.). Retrieved April 01, 2021, from <https://artsandculture.google.com/story/OwXBdfLGvehIwQ>.

Both official tools, such as the CVI, and awareness-based projects, such as Heritage on the Edge, showcase aspects of the risk management and precautionary approaches explained in the GLS “Overcoming Legal Barriers to Climate Change Solutions” report. On one hand, both CVI and Heritage on the Edge embody the three functions of the traditional risk management approach we discuss in the report: that of protecting heritage, adapting it to changing conditions, and focusing public attention on the consequences of such changes. The CVI is protective in that it allows States Parties of the World Heritage Convention to fulfil their duties to identify and research climate change threats and how to counteract them. Heritage on the Edge’s approach to reducing carbon-intensive tourism through the use of technology and virtual site exploration neatly encapsulates the adaptive function of risk management, ensuring both the sites and the intertwined industries are on board. Finally, both tools focus public attention on tangible consequences of climate change when sites of cultural and/or natural heritage can be easy parables of an occasionally amorphous problem. As Andrew Potts of ICOMOS said, “highlighting the effects of climate changes on [cultural heritage] sites can help more people to comprehend the tragedy of climate change.”¹¹

On the other hand, both CVI and Heritage on the Edge are clearly imbued with a precautionary approach. Heritage on the Edge quotes Rafael Rapu, the head of the Department of Archeology in Ma’u Henua as saying “We must first conserve to investigate. Nothing helps us if everything is already destroyed and we can not carry out research on the subject.”¹² This is the precautionary principle put succinctly—where there is the threat of serious or irreversible damage, lack of full scientific certainty cannot forestall measures to prevent degradation.¹³ Further, CVI’s structure of generating data, modeling uncertain impact of climate change, and then quantifying threats without full scientific certainty also stretches the traditional risk management framework of the World Heritage Convention to embolden States Parties to shift to a more precautionary approach.

¹¹ The Future of OUR Past: Why Heritage Matters - Google Arts & Culture. (n.d.). Retrieved April 01, 2021, from <https://artsandculture.google.com/story/VAURLj1AbTErIg>.

¹² How the People of Rapa Nui are Using Technology to Address Conservation Issues - Google Arts & Culture. (n.d.). Retrieved April 01, 2021, from <https://artsandculture.google.com/story/5gXxd3o-Z8HfeA>.

¹³ U.N. Conference on Environment and Development, Rio Declaration on Environment and Development, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), principle 1 (Aug. 12, 1992).